

Economic resilience in Central and Eastern European countries

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Abstract. *Interest in economic resilience has been rising particularly in the aftermath of the GFC. Since then, the experience has highlighted how a lack of resilience can have noteworthy and persistent harmful effects not only on the countries distressed, but also spill-overs on other countries. This topic is particularly relevant nowadays since the current health crisis came with rising vulnerabilities and increasing imbalances.*

The aim of this paper is threefold: (i) to distil features of economic resilience underlined in previous works and carefully select those most relevant for the CEE member states, (ii) to gauge the degree of resilience of individual CEE country through a composite index, and (iii) to highlight the temporal dimension of economic resilience.

This article underlines notable differences in the resilience of CEE countries, heterogeneity caused by a combination of economic, social and institutional factors. To quickly visualize the degree of economic resilience across CEE countries, we constructed a heatmap illustrating the strengths and weaknesses of each individual economy, reflecting differences across economies in the depth of the crisis, but also in their ability to recover.

Keywords: economic resilience, CEE countries, composite indicator.

JEL Classification: E60, J00.

1. Introduction

Countries can be affected by a wide range of shocks: (i) domestic versus external shocks, (ii) temporary versus permanent shocks, (iii) policy shocks and (iv) supply versus demand shocks – or both of them combined, as is the case during the ongoing pandemic. Furthermore, recent experience has shown that some CEE countries⁽¹⁾ may be more exposed than others to a symmetric shock, depending on their pre-shock macroeconomic imbalances, policies adopted, but also their structural features.

A lesson learned after the global financial crisis (henceforth GFC) and recently recalled during the current crisis is that countries should be better prepared to weather shocks and should increase their ability to quickly recover once they are affected by a shock. Since the GFC, the concept of economic resilience has attracted considerable interest among policy makers at both national and international level.

As potential shocks have in general a broader impact given the strong connections among European countries, and the frequency of shocks could even increase in the medium to long run given digital transition, climate change, demographic change and migration (Joint Research Centre, 2017), there is a need to dig deeper into economic resilience determinants. In addition, the ongoing discussions on the evaluation of economic governance at the European level calls for strengthening socio-economic resilience, while delivering on the twin transition (European Commission, 2021a). Basically, when redesigning the fiscal rules included in the Stability and Growth Pact, we should take into consideration the economic resilience principles.

The remainder of the paper is structured as follows. The second section provides an overview on the related literature. The third section reviews the main features of economic resilience and discusses the importance of economic resilience for CEE countries. The fourth section presents the methodology used to construct the composite indicator. The fifth section highlights the main results, ranks the CEE countries and interprets the main findings. The sixth section concludes with a word of caution regarding the results' interpretation. The Annex includes graphs for every CEE country to quickly visualize the macroeconomic developments over the last 15 years.

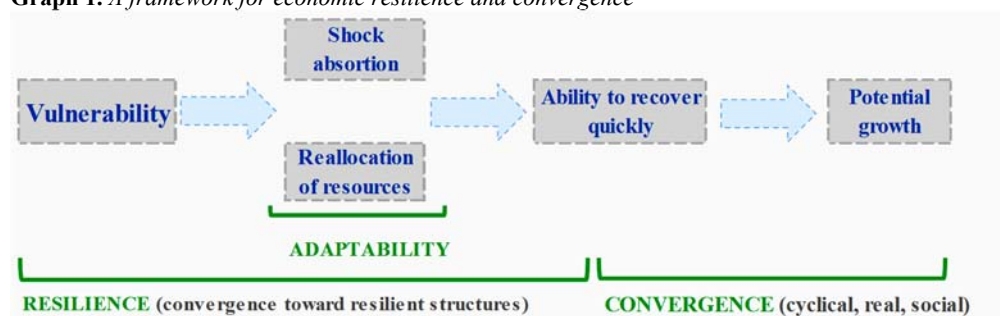
2. Literature review

Economic resilience can be defined as the ability of countries or regions to withstand shocks and for real GDP growth to return quickly to potential levels. Economic resilience is a key concept in the current narrative of the European Union entailing three components: (i) vulnerability to shocks, (ii) shock-absorption capacity and (iii) ability to recover quickly after a shock. Resilient economic structures hinder that economic shocks have large and persistent effects on income and employment levels and tame economic fluctuations (European Commission, 2017a).

An economy is considered “more resilient than another if it performs better once being hit by a common shock” (European Commission, 2018a). In a similar manner, the OECD defines economic resilience as “the capacity of an economy to reduce vulnerabilities, to

resist to shocks and to recover quickly” (OECD, 2016a). According to the Joint Research Centre framework, “a resilient system can face shocks and persistent structural changes in a way that it does not lose its ability to deliver societal well-being in a sustainable way” (JRC, 2017). In IMF’s views, “resilient economies combine strong, sustainable, and inclusive growth with the ability to absorb and overcome shocks” (IMF, 2016). Basically, a high degree of economic resilience ensures that countries spend relatively short periods in downswing and instead return to their long-term potential growth. In a nutshell, economic resilience can be perceived as the capacity of a country to minimise its output losses once being hit by an adverse shock (Sondermann, 2016).

Graph 1. *A framework for economic resilience and convergence*



Source: European Commission, DG ECFIN.

Beyond doubt, a particular country might be more vulnerable to a specific shock depending on the type of the crisis: currency crisis, banking crisis, broader systemic financial crisis, health crisis, natural disaster, etc. Reviewing post-1970 severe recessions and financial crisis, the OECD identifies several factors creating an economic environment prone to crisis, such as rapid growth of private credit, housing market imbalances, and to a smaller scale, large current account imbalances. On the other hand, higher-quality institutions⁽²⁾ (i.e., more effective government, greater voice and accountability, better control of corruption, etc.) boost the economic activity, while taming the occurrence of severe downturns (OECD, 2016b). Sound institutions are paramount for the resilience and long-term prosperity of countries (ECB, 2016). Likewise, economic freedom generates a greater ability to cope with hardship (Doucouliagos et al., 2006). At the European level, the comparison between Western and CEE countries highlights discrepancies on the institutional quality of business environment (Marinescu, 2013).

Performing an assessment at the EU level during 2000-2018, the World Bank highlights that resilience and institutions are strongest in Western European countries and weakest in Southern Europe, with CEE in an intermediate position. Also, sounder resilience is backed by better real exchange rate institutions since the Euro-Area countries were not able to use the nominal exchange rate and an independent monetary policy to absorb the shock and rebound after the GFC (the European Monetary Union’s architecture is not completed). Moreover, the Stability and Growth Pact imposes limits on the fiscal response of member states. In a nutshell, member states were split as follow: the most resilient economies (BE, AT, DE), substantial resilient economies (FR, NL, PL, DK, FI, DE, UK), somehow resilient economies (RO, CZ, BG, EE) and least resilient economies (HU, PT, LT, IT, IE, SI, HR, LV, ES, EL).

According to the World Bank, boosting economic resilience of EU member states should focus on: (i) protecting low-income earners, (ii) creating flexibility in labour markets and private sector conditions, (iii) improving trust in institutions. All these three elements reinforce economic resilience in a virtuous circle (World Bank, 2019).

In practice, the economic resilience framework faces several challenges. First of all, given its all-encompassing feature, it is difficult to operationalize it. In addition, the operationalization of such a framework calls for more evidence on the drivers of economic resilience. Beside this critical aspect, at national level, the challenge for policy makers is to design and timely implement structural reforms in order to make growth more resilient and inclusive, while the challenge at the global level is to raise the ability of economies to take synchronized actions since a more consistent global/regional approach tend to improve policy effectiveness (IMF, 2016). Despite notable progress achieved during GFC years, the OECD pointed out a substantial slowdown of reform momentum prior to the outbreak of the health crisis, frequently linked to the completion of an adjustment programme (OECD, 2016c). The track record of country specific recommendations is also moderate (ECB, 2019).

Worldwide, economies periodically face business cycles (booms and busts in economic activity), shocks generated by exogenous factors, as is currently happening amid the sanitary crisis caused by the pandemic. To tame such fluctuations, policies must be accurately identified and adapted to the causes of the crises, otherwise economic treatment will fail (Marinescu, 2021). Prior to the onset of the pandemic, the resilience of the global economy was still pre-GFC level, due to the slow post-crisis recovery (Swiss Re Institute, 2019). At the same time, according to the Swiss Re Institute, the current health crisis has reduced global resilience by almost a fifth compared to the pre-pandemic year, amid high costs with extraordinary stimulus measures, which have weakened many states' ability to fight a future crisis (Swiss Re Institute, 2021).

In the aftermath of the GFC, international organizations such as the European Commission, IMF, OECD, and BIS looked deeper into economic resilience drivers and developed extensive sets of early warning indicators. For example, the IMF has focused over the last years on measures to strengthen resilience, assessing risks such as supply risks, trade shocks and transmission channels. G20, under the German Presidency, published a list of key principles of resilience in the real sector, public and private finance, monetary policy and external sector (G20, 2017). Likewise, the European Commission launched the Macroeconomic Imbalance Procedure (MIP) as part of the European Semester cycle in order to detect in advance potential threats to economic and financial stability (European Commission, 2016). The main aim of this tool is to identify potential harmful imbalances and ensure adequate follow-up and policy responses.

Although MIP was a key driver in raising awareness of macroeconomic imbalances, it had not led to sustained reforms in those member states where imbalances have persisted (European Commission, 2021a). Moreover, up to now, the MIP proved to be more efficient in reducing current account deficits than it was in reducing large and persistent current account surpluses. Thus, there is room for improvement and the procedure should be fully exploited in the medium run. Also, the interaction with the Stability and Growth Pact

should be further developed while avoiding overlaps between them. The 2022 Alert Mechanism Report concluded that in depth reviews are required for 12 member states (HR, CY, FR, DE, EL, IE, IT, NL, PT, RO, ES and SE).

These countries were subject to an in-depth review in the previous cycle of the MIP surveillance and were considered to be experiencing excessive imbalances (CY, EL, IT) and the rest of them imbalances (European Commission, 2021b).

Measuring the efficiency of early warning indicators in predicting severe recessions, Hermansen et al. (2016) found out that most indicators issue first warning signals in average 1.5 year before the outbreak of a recession, providing enough time to policy makers to react. In general, global indicators seem to be more useful than domestic variables, especially to pre-identify economic downturns affecting a large number of countries, as was the case of the GFC. Some indicators outperform (global credit to GDP ratio, global equity price gap and global house price gap), highlighting the relevance of considering international development when evaluating the vulnerabilities of a particular country. Among domestic variables, those reflecting asset market misalignments (house and equity prices) and variables linked to domestic credit perform better.

In parallel, in order to limit the economic fragility and absorb the impact of shocks at national level, policy makers have developed ex-ante policy settings and mechanism. For example, member states with short time work scheme already in place when the GFC hit proved to be more successful in encouraging job retention, while mitigating the labour market consequences (Hijzen et al., 2013). Also, at the outbreak of the pandemic, several Western European countries had already in place short-time work schemes (Germany, Austria and Belgium).

The fast spread of the pandemic and the financial support (loans under favourable cost conditions) offered by the European Commission under the SURE programme⁽³⁾ led to an implementation of short-time work schemes at large scale among EU member states. The SURE instrument, with a financial envelope of €100 billion, was designed to protect jobs and incomes. Importantly, due to its timely implementation, it has largely contributed to job retention across member states.

According to the European Commission's assessment, the SURE instrument supported 2.5 million firms and ~ 31 million people in 2020 (both employees and self-employed), which represents more than one quarter of the total number of employed in the 19 beneficiary member states. Equally important, given the EU's AAA credit rating, members states saved an estimated €8.2 billion in interest payments thanks to this instrument (European Commission, 2021c).

Although there are several studies in the literature looking at disaster resilience, we have identified only few attempts to gauge the economic resilience at macroeconomic level. For example, Swiss Re Institute developed a resilience index covering 31 advanced and emerging economies during 2007-2021. However, the only CEE country included in the sample is Hungary. The composite index takes into consideration several elements, such as: macro buffers (fiscal and monetary policy space) and macro structural elements (insurance penetration, human capital, economic complexity, labour market efficiency,

banking industry backdrop, income inequality, financial market development, low-carbon industry). An essential difference compared to our analysis is that Swiss Re Institute used different weights for the above elements, for example fiscal space counts for 35%, while income inequality for 4% (Swiss Re Institute, 2021).

Looking at data for 86 countries and using min-max formula in order to standardize the observations, Briguglio et al. (2008) developed a composite index based on four elements with equal weights: macroeconomic stability (public deficit and debt, unemployment and inflation rate), microeconomic market efficiency, good governance and social development (education, health). All eleven CEE countries are included in the analysis and rank between 18th (Estonia) and 59th (Romania), with a large majority being placed between 35 and 45.

Based on an empirical investigation and focusing on the Euro Zone and its capacity to absorb and recover from a common shock, European Commission (2018b) underlined there is a notable difference among countries. Also, when looking at the temporal dimension of economic resilience, the analysis shows that performances are not automatically fully in sync with each other. For instance, in case of a common shock, in the short run, large openness to international trade might weaken the absorption capacity since export markets are touched by the same shock, while, in the medium run, those countries may have a stronger capacity to recover. Thus, open countries should adopt policies and reforms to increase their absorption capacity, i.e., prudent fiscal policies, better functioning of automatic fiscal stabilizers, as well as well-functioning of Banking Union and Capital Markets Union which rise risk sharing. Then, at the national level, well-functioning business environment has a paramount role in promoting economic resilience.

In general, CEE countries have been able to bounce forward, i.e., improving their situation compared to the pre-GFC period, more in terms of monetary variables (GDP, private consumption, income) than non-monetary aspects of well-being (income inequality, risk of social exclusion, share of NEETs⁽⁴⁾). In the aftermath of the GFC, private consumption was the leading driver of growth while investment remained at a low level with negative impact on economic resilience (World Bank, 2019). Conversely, the current narrative focuses on an investment-rich recovery, supporting the green and digital transition. On medium term, the Recovery and Resilience Facility will play a paramount role, providing large financial resources (€338 billion grants and €385.8 billion loans, current prices) for the implementation of structural reforms, in line with the 2019-2020 country specific recommendations published by the European Commission.

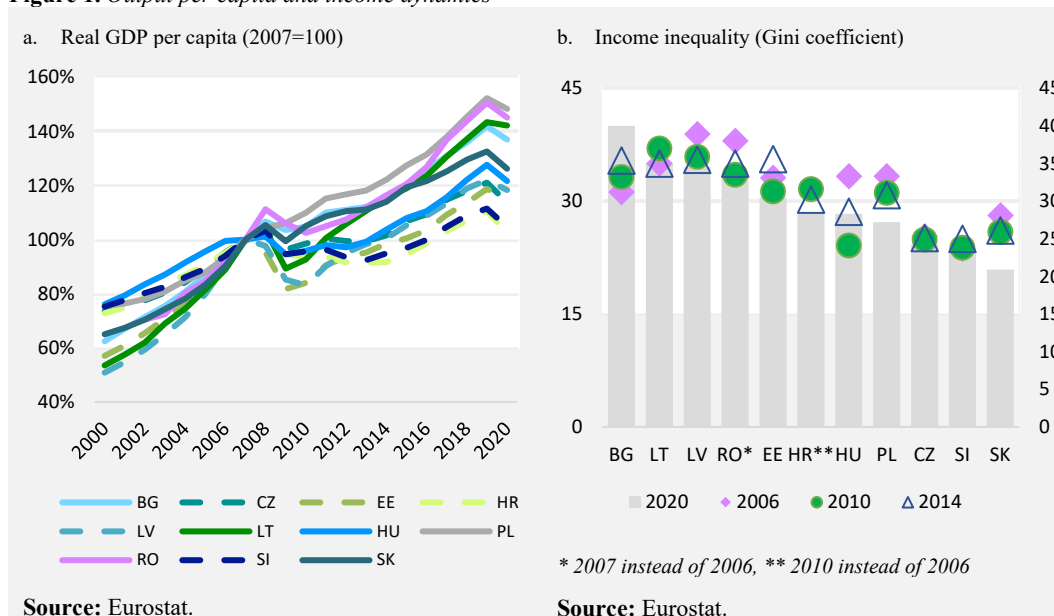
The Recovery and Resilience Facility aims to: (i) accelerate the economic recovery, (ii) increase the economic resilience, (iii) reduce divergences across member states, (iv) enhance the green and digital transition.

In practice, a share of 70% of grants were assigned to member states according to a pre-allocation key (population, GDP per capita and average unemployment rate over 2015-2019). For the remaining 30%, the unemployment rate is replaced by the loss in real GDP over 2020 and the cumulative loss in real GDP over 2020-2021. To absorb the funds, member states prepared a National Resilience and Recovery Plan enclosing reforms and investments, in line with the 2019 and 2020 country specific recommendations. All plans

dedicated at least 37% of total expenditures to green objectives and 20% to digital transition (European Commission, 2021d). Although the consensus reached at European level on the RRF is welcomed, at the end of the day implementation of reforms is key.

In order to further boost public investment, some member states are in favour to introducing a *golden rule* as part of the economic governance review in order to safeguard specific public expenditures. However, it will be challenging to reach a consensus among all European member states given the heterogeneity of their fiscal stance, their preference for more fiscal discipline versus more flexibility, and their different needs depending on countries' specific characteristics. On the other hand, the European Fiscal Board proposed a mechanism for increasing the EU budget through national envelopes and increase mainly investment in green and digital infrastructure (EFB, 2021).

Figure 1. Output per capita and income dynamics



3. Features of economic resilience and methodology

Previous works on economic resilience underlined several features defining a more resilient economy. In this paper, we firstly intend to distil those features and then carefully select a number of key social and economic variables considered the most relevant for CEE countries. Secondly, we split these features according to the three components of economic resilience mentioned earlier: (i) vulnerability to shocks, (ii) shock-absorption capacity, and (iii) ability to recover after a shock.

A. Vulnerability to shocks

- (i) **The size of the economy** matters, because, for instance a larger country could be more resilient to external shocks compared to a smaller open economy since it has more control over external shocks. In general, small economies tend to be more vulnerable due to a high degree of economic openness and high export concentration⁽⁵⁾. Also, a small country with limited resources tends to be highly dependent on strategic imports/commodities, which makes the country more vulnerable to the availability and costs of such imports (Briguglio, 2016).
- (ii) **The degree of openness to international trade**⁽⁶⁾ allows sharing part of the adjustment burden with the rest of the world. Although openness to international trade can be seen as a source of strength, could also be considered a vulnerability, the country being exposed in a greater extent to exogenous shocks, over which it has no direct control. At the same time, for a more open economy, policy responses are less effective in stimulating domestic demand since households tend to consume goods and services from abroad.
- (iii) Large **current account imbalances** and **negative net international investment positions (NIIP)** are considered among the factors creating an economic environment prone to severe downturns. External imbalances can point to macroeconomic and financial stress. Economies that accumulate external liabilities on too large scale may become vulnerable to sudden stops in capital flows that force abrupt cuts in spending – especially the case when large current account deficits are not financed by stable sources (foreign direct investments and capital transfers) and economies have to fund their external financing needs through volatile capital flows, such as portfolio investment. However, it should not be understood that current account deficits are undesirable all the time. The problem is their persistence throughout the economic cycles (Marinescu, 2021). During the financial crisis, economies characterized by large current account imbalances were highly vulnerable and, in addition, had limited capacity to recover. Notwithstanding the significant adjustment in flow imbalances over the last years, several stock variables remain elevated in advanced economies, indicating persisting vulnerabilities.
- (iv) **Domestic weaknesses**: for example, high pre-crisis levels of unemployment in some countries represent a fundamental risk. A country is more vulnerable when the pre-shock unemployment rate is higher.
- (v) **Financial sector**: some characteristics of the financial sector make economies more vulnerable to economic shocks, for instance low quality of credit, high private-sector indebtedness (households and non-financial corporations), housing and other asset bubbles, and low capacity to implement macro-prudential policies. In order to capture part of these features, we make use of the Financial Development Index constructed by the IMF. It highlights how developed financial institutions and financial markets are in terms of their depth (size and liquidity), access to financial services and efficiency.

B. Shock absorption capacity

- (i) An appropriate *fiscal stance* in combination with a *sustainable public debt* level creates room for counter-cyclical fiscal policy, which dampens the negative impact of a temporary shock. The pandemic has underlined the paramount role of counter-cyclical discretionary fiscal measures in preserving jobs and production capacity during the ongoing crisis. High public, but also private debt is not only associated with vulnerabilities but also with a weaker recovery (higher levels of public debt hinder the possibility of policy makers to adopt counter-cyclical fiscal policies, whilst private debt thwarts the capacity of both households and companies to take smooth consumption and investment decisions) (ECB, 2016).
- (ii) *Private sector debt* may reduce the ability of an economy to absorb shocks as it hinders the capacity to borrow to smoothen consumption over time. It may also push private sector into pro-cyclical deleveraging in the case of high levels of indebtedness (European Commission, 2018b). In general, research highlights that in economies with already high credit provision, a marginal expansion in private credit is correlated with milder medium to long term growth and rising income inequalities (Cournède and Denk, 2015). At household level, large part of debt consists of mortgage and, among different sources of debt, mortgage lending is negatively associated with economic performance since it potentially fuels housing booms and raises misallocation concerns (OECD, 2017).

Over the last years, highly accommodative monetary policies with historically low interest rates have created very favourable conditions for borrowers and encouraged investors to take more risk. At household level, the indebtedness is uneven across the income distribution and low-income indebted households have a higher debt service cost relative to income and also lower liquidity buffers, making them particularly vulnerable to interest rate increases or reductions in income (André, 2016).

Looking forward, as governments will start implementing exit strategies for the support measures, the ability of companies and households to repay their debt may be compromised, in particular in those sectors still affected by the pandemic (European Commission, 2021b).

- (iii) **Credit systems:** Bank-based systems have a higher absorption capacity in the short term, because the bank itself can act as a buffer mitigating the shock. However, in the medium to long term, non-performing loans often associated with economic downturns can reduce the flexibility of the economy since they force the banks to set aside more resources than planned, which reduces their capacity to supply new loans (European Commission, 2018c). Capital-market systems are more flexible in their nature; they may be hit harder at the beginning by economic downturns, but they recover faster in general due to a more efficient allocation of resources and the consequent stimulation of aggregate demand. For example, during the GFC, capital markets in the United States outperformed in supplying risk-sharing compared to the Euro Zone, where it appears to intensify shocks rather than tame them, in particular due to peripheral Euro-Area member states, where the unsmoothed part of the impact of the shock is systematically larger compared to core countries (Alcidi et al., 2017).

Also, in contrast to the United States, where cross-regional banks managed to smooth the impact of local downturns, European banks narrowed their cross-border activities. Therefore, in the case of most vulnerable member states, the decline in lending by the domestic banks was not compensated by higher lending by EU-wide banks, resulting a drop in the overall credit supply (European Commission, 2018c).

- (iv) **Non-performing loans** (NPLs) – a large stock of NPLs and a weaker competition in the banking sector adversely affects the absorption capacity of a country.
- (v) **The composition of labour force** can largely influence the absorption capacity of countries since flexible, multi-skilled and mobile workforce can easily shift towards sectors less affected by the shocks. High-skilled workers and self-employed have a stronger capacity to absorb and adapt to shocks (Briguglio et al., 2006). Furthermore, flexible working time arrangements, short-time work schemes, technical unemployment, and other measures adopted by the governments have succeeded to tame large layoffs since the outbreak of the pandemic. The SURE instrument has also played a role to protect jobs, while the increase in unemployment rate during the pandemic was clearly milder than during the financial crisis.
- (vi) **The level of income inequality**: a more unequal economy is less resilient since high-income households have a lower propensity to consume. Thus, the shock on aggregate demand might be greater since low-income earners do not have savings or access to credit.
- (vii) **Poverty and social exclusion**: an economy is more resilient when the benefits of economic growth are broadly shared and reach all segments of population (IMF, 2019).

C. Ability to recover after a shock

- (i) **The quality of institutions and economic structures**: higher-quality institutions, i.e., more effective government, better control of corruption, etc. reduce economic fragility and boost growth. Institutions largely influence the economic performances of a country since they shape the structure of economic incentives in society. For example, product-market institutions that foster competition and create a business-friendly environment by facilitating a speedy entry of new actors and exit of inefficient companies allow for a better allocation of resources in the recovery process. Substantial literature suggests that better institutions are likely to tame the economic volatility and severe output losses (Acemoglu et al., 2003). Also, high-quality institutions also tend to reduce the probability of crises (ECB, 2016).
- (ii) **The labour productivity** allows countries to rebound quickly to pre-crisis GDP level.
- (iii) **Worker security**: economies with overly protected labour markets may experience a weaker recovery in the employment rate after being hit by a shock.
- (iv) An economy with an **ageing population** has a lower capacity to recover after a shock since its labour force participation rate is falling and working-age people have to pay higher taxes to support the elderly, while public deficits strain under the burden of higher expenditures associated with health and retirement programs. The increase in the elderly population has been raising pressures on pensions, healthcare, and other areas of public spending, deteriorating fiscal positions, as older dependents cost the government more on a per capita basis than young non-adult dependents (European

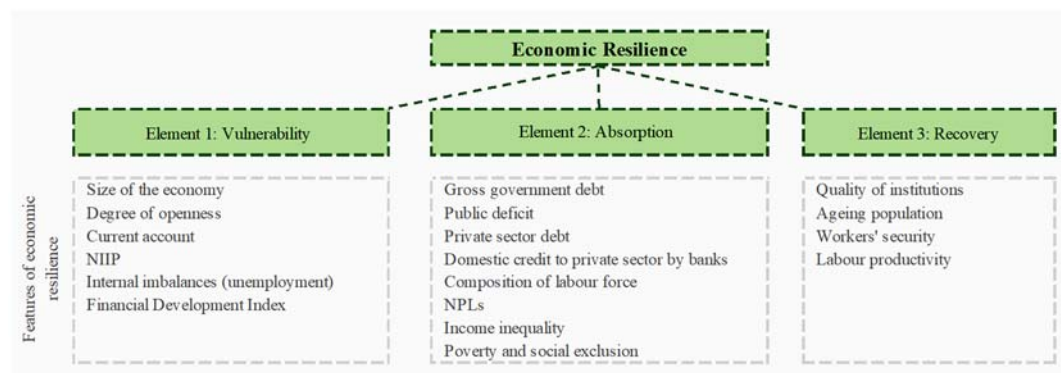
Commission, 2020b). In addition, ageing populations tend to reduce investment since less new capital is required to equip new members of the labour force. However, in the short-run, companies may react to a shortage of labour supply through higher investment efforts, substituting labour with capital in order to compensate for the negative effects of ageing population (Kim et al., 2007).

Data sources of the indicators described above are Eurostat, the European Central Bank, the World Bank, the International Monetary Fund, the OECD, and the Scoreboard of the Macroeconomic Imbalances Procedure Scoreboard.

Comparison of economic resilience across CEE economies

Our purpose is to assess the performance of CEE individual countries according to the three elements of economic resilience mentioned earlier, i.e., vulnerability to shocks, shock absorption capacity and ability to recover after a shock. To achieve this goal, we constructed a composite index for each element. The construction of composite indicators involved stages where subjective judgement had to be made, in particular the selection of indicators and their respective weights. Although readers might raise concerns regarding the weights used, we opted for equal weights, considering that the components have the same importance on the economic resilience phenomenon since a different weights approach could usher in more problems than it purports to solve.

Figure 2. Elements and features of economic resilience



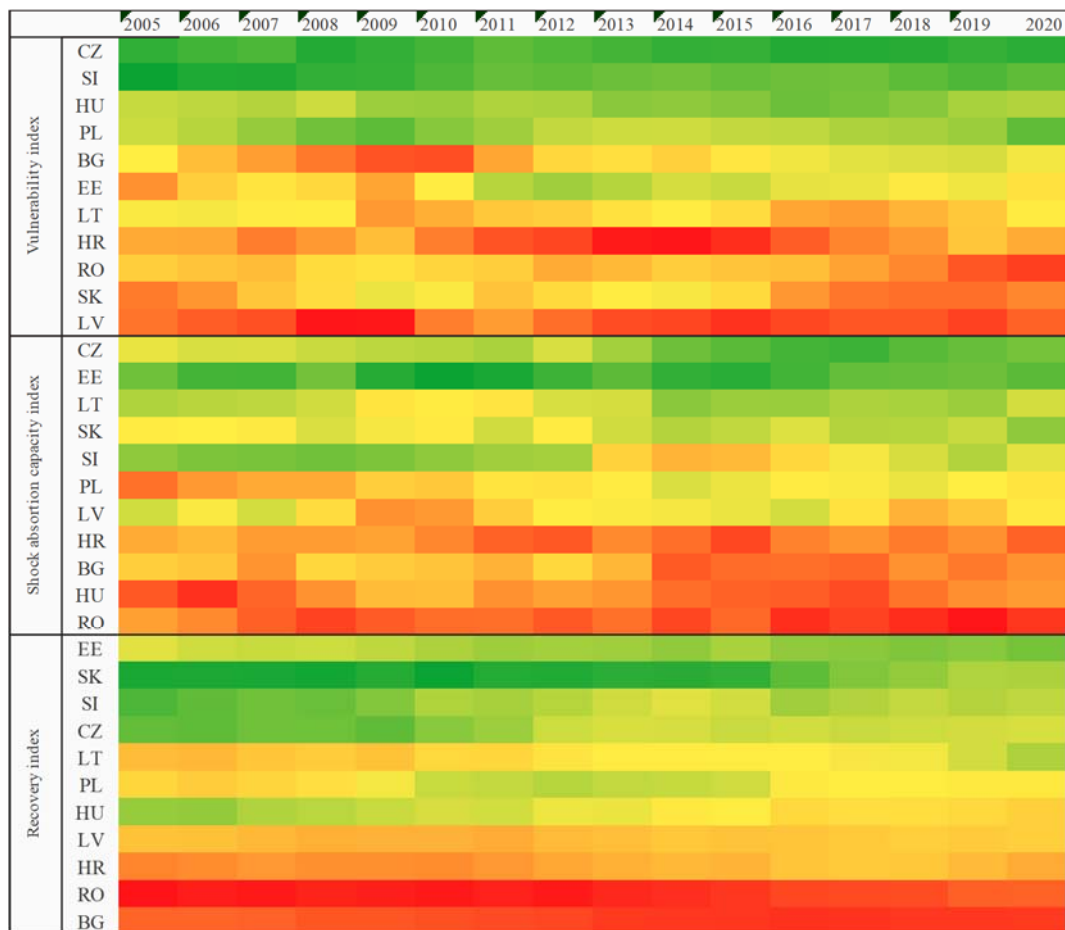
In order to construct the economic resilience composite index, we firstly rescaled (normalized) all variables given the different measurement units in our dataset. Normalization serves the purpose of bringing all indicators into the same unit. There are multiple normalisation methods, but we firstly applied the well-known Z score formula: $z_i = \frac{x - \mu}{\sigma}$, where z_i is the rescaled observation, x represents the actual value, μ represents the mean, while σ is the standard deviation. Standardization of the Z score is one of the most commonly used methods and it converts all indicators to a common scale with a mean of zero and a standard deviation of one. Basically, the calculated z score describes the location of a value in a distribution. As an alternative normalization method, we applied the Min-Max formula: $z_i = \frac{x - x_{min}}{x_{max} - x_{min}}$, where x is the actual value, x_{min} is the minimum value of observation for all eleven countries, and x_{max} is the maximum value. By using

the Min-Max formula, we obtained values between 0 and 1. Although we obtained similar results using both methods, Z score formula is more appropriate given the small size of the sample. Furthermore, z score normalization is better to handle outliers.

4. Results and discussions

The heatmap below brings together the results of our analysis and rank the CEE countries along the resilience outcome (from top more resilient countries to bottom least resilient according to the 2016-2020 average). When analysing the results, it is important to bear in mind that some CEE countries are part of the Euro Area (LV, LT, EE, SK and SI), while other did not adopted yet the euro (CZ, PL, HU, BG, RO and HR⁽⁷⁾). This has implication for the economic resilience principles since flexible nominal exchange rate might partially compensate for weaker policy mix in the short run, and it can influence the adjustment path in response to a shock (World Bank, 2019).

Heatmap. *Economic resilience across CEE countries*



Note: This heatmap summarizes the economic outcomes assessed in this paper. The heatmap is color-coded. The best position in relative terms is coloured in dark green, while the worst position relative to other CEE countries is coloured in strong red.

Economic vulnerability

According to our analysis, the least vulnerable CEE countries are Czech Republic, Slovenia, and Hungary, mainly due to their continuous improvements in external (current account and NIIP) and internal imbalances (unemployment rate). At the opposite side, Romania, Slovakia and Latvia are the most vulnerable in case of a shock. In relative terms, Romania's position has continuously worsened since 2016 mainly due to a large deterioration of current account deficit, an opposite dynamic compared to all other CEE countries (European Commission, 2017b).

Moreover, the persistence of large current account deficits is accompanied by large budget deficits – twin deficits (Marinescu, 2021). A strong relationship between the budget deficit and current account can also be observed in the case of the least vulnerable states in the analysed group, where the current account deficits decreased in line with the fiscal adjustment (CZ, PL, HU, etc.). In 2020, besides Romania (4.9% of GDP), only Slovakia registered a current account deficit (1.8% of GDP), but an improvement was recorded over the last years as a result of expanding production facilities (European Commission, 2020a).

Over the last few years, in most countries (excluding Romania and Slovakia), the net lending position of the economy has led to an adjustment of NIIP – necessary to strengthen confidence in the solvency of the economy (graphs in the Annex). In Romania, firms have limited the general deficit of the economy, while households and Government have stood permanently in a strong net borrowing position. In Slovakia, the current account balance has returned to negative since 2016 but remains moderate. Alongside with non-financial corporations shifting to the position of net-borrower, the NIIP deficit accentuated, being strongly negative. However, the risks associated with it are limited thanks to the large stock of foreign direct investment (FDI) arising from the expansion of the automotive industry and the financial sector (European Commission, 2019).

In the context of the pandemic and its associated constraints, the sectoral composition of the external position has changed in 2020: the growth of private sector savings has been partially offset by the widening of budget deficits – essential to support the private sector during the crisis. However, budget deficits are projected to decline in the coming years, in line with the economic recovery.

NIIP did not see any major changes in 2020 in CEE countries and forecasts suggest improvements for most of them in the upcoming years. CEE member states are generally characterized by large stocks of FDI so that NENDI figures are much more favourable than their NIIPs (NENDI is a subset of NIIP and excludes non-defaultable instruments: FDI equity and equity shares and intracompany cross-border FDI debt) (European Commission, 2021b). Only Croatia and Romania experienced a decline in NIIP in 2020. Romania registered a wider worsening of NIIP, the main drivers being the decline in nominal GDP expressed in euro, but especially the sharp deterioration of the current account – mainly the trade deficit. High current account deficits recorded by Romania even before the pandemic, in contrast to regional developments, signal the persistence of structural competitiveness gaps (Marinescu, 2021).

Absorption capacity

High level of income inequality, poverty rates and social exclusion undermine trust and leads to less resilience, creating a vicious cycle, which at the end of the day makes the rebound more challenging. This is particularly the case in Bulgaria and Romania, and to a lesser extent in Latvia and Lithuania. In Bulgaria, the absorption capacity deteriorated in relative terms during 2014-2017 mainly due to public deficit hikes (5.4% of GDP in 2014) and a large increase of public debt (+ 10 percentage points in 2014 compared to 2013).

Likewise, the absorption capacity of Romania further worsened since 2016 as a consequence of fiscal policy turning pro-cyclical and reversing past consolidation reached in the aftermath of the GFC. Focusing excessively on stimulating consumption through fiscal easing and increasing permanent spending supported a predominantly quantitative economic growth but lacked the qualitative contribution of investments and structural reforms (Marinescu, 2021).

Although in a better position, Slovenia and Latvia recorded also a deterioration, but their situation is slightly different: Slovenia was highly resilient during the GFC, but the recovery was sluggish, while Latvia used to be in a better position compared to other CEE countries before the GFC. On the other hand, significant improvements were recorded by Czech Republic, Estonia, Slovakia and Poland due to their fiscal discipline (both in terms of public deficit and low level of public debt) and efforts to achieve an inclusive growth (improvement in social aspects).

At the outbreak of the health crisis, countries that managed to sustain fiscal discipline in previous years were in a better position to provide financial support to the private sector during the crisis. However, Romania was the only EU member state recording an excessive deficit before the pandemic (4.6% of GDP in 2019) despite the favourable economic context. Thus, Romania had limited budgetary leeway to further support the economic activity in 2020.

With regard to the banking sector, the current context demonstrates the importance of a proactive macro-prudential policy for pre-emptively building up adequate capital and liquidity reserves during periods of economic expansion so as to be used when unfavourable developments occur. In this respect, the banking sector was prepared to manage the medium-high effects generated by the COVID-19 pandemic thanks to the consolidation achieved after the GFC. At the same time, central banks and governments have adopted exceptional support measures to preserve favourable financing conditions, thus supporting the creditworthiness of financial institutions. Key financial soundness indicators of credit institutions remained at adequate levels relative to risks in most CEE countries. Also, NPLs rates, which have dropped considerably over the last years, continued to improve in 2020 in six CEE countries, while remaining moderate in the rest of them. However, the banking sector is expected to face some difficulties as the impact of the pandemic on companies' solvency could materialize, once the support measures of the authorities are withdrawn.

Recovery index

In terms of ability to recover, Estonia, Slovakia, Slovenia and Czech Republic are best placed, while Lithuania has recorded a gradual improvement over the last years. All countries benefit from relatively strong institutions and high labour productivity per person employed.

At the opposite pole, Bulgaria, Romania and Croatia are lagging behind other CEE countries. Although Bulgaria and Romania have a similar starting point in 2005 in terms of labour productivity per person employed (~37% of EU average), Bulgaria is still far behind all other CEE countries, while Romania has managed to increase fast its labour productivity, recording an impressive performance (74.7% in 2020). Bulgaria and Croatia register also the largest share of ageing population, casting doubt on future resilience. Furthermore, Bulgaria, Romania and Croatia have far weaker institutions, in particular in terms of government effectiveness, rule of law and control of corruption.

Data highlights also a temporal dimension of economic resilience. Some of the features mentioned above highlight short-run versus long-run trade-offs, these features having a different impact on economic resilience depending on the time horizon we are looking at (for example the reliance on bank-based system versus capital market system mentioned earlier). Similarly, having a larger government can help economies absorb shocks in the short run through countercyclical spending to provide economic stimulus, while over longer run the government spending risks crowding out more efficient private investment. Some authors argue that large governments in the European Union explain the weaker long-term economic performance compared to the United States for example (Bell et al., 2009).

The current economic conjuncture brings to the fore this trade-off: since the uncertainties are still elevated amid the sanitary conditions, member states decided to extend the on-going support measures, while adopting more targeted ones. Although these measures will boost recovery prospects in short to medium run, they are prone to create imbalances for which there might be needed years to be adjusted. Although it would be a mistake to fully withdraw the policy support prematurely, maintaining them for too long might create distortions, could delay structural changes and would increase budgetary pressures. For this trade-off to be managed effectively, policy makers need timely and reliable data in order to identify the moment of transition and to prepare an exit strategy by gradually withdrawing support measures and restore fiscal buffers. Furthermore, large public sectors are typically associated with strong automatic stabilizers, which are expected to tame the impact of shocks. In addition, economies with stronger automatic stabilizers might be able to better mitigate the rise in income inequality caused by a crisis. However, automatic stabilizers are not cost-free, being associated in the longer run with high government expenditure, and potential negative effects on work incentives, with negative implications for efficiency and growth, which could therefore impede the ability to recover quickly after a shock.

Thus, a dynamic perspective allows for a better distinction of short-term versus medium-term resilience and identification of: (i) countries that have been rather heavily hit but have also been able to quickly recover in the aftermath of the crisis and (ii) countries less affected by shocks but with a low ability to recover. Hence, more resilient economies in the short run are not necessarily the ones better performing in the medium or long term (JRC, 2018).

5. Concluding remarks

This paper focuses on the conceptual aspects associated with economic resilience and its measurement. Implementing economic resilience principles is essential to better withstand adverse shocks and reduce the economic costs associated with financial turmoil, minimizing output losses once an adverse shock hit the economy. To boost economic resilience, member states should implement reforms to cushion shocks and to support economic rebound. In addition, these reforms should be supplemented by measures to foster long-term productivity growth.

Given possible spill-over effects, economic resilience is not only in the interest of national policy makers, thus discussions should continue at European level. At national level, there is no one-fits-all approach to boost the economic resilience, and countries should adapt policies to their country specific issues, while sharing best practices. In medium term, CEE countries should put more emphasis on measures that promote inclusiveness and resilience, and the implementation of the NRRPs must play a paramount role. Backed by their NRRPs, CEE countries should be able to use the ongoing health and economic crisis as an opportunity to bounce forward, i.e., improving their situation compared to the pre-pandemic period.

Data underlines notable differences in the resilience of CEE countries, heterogeneity caused by a combination of economic, social and institutional factors (as highlighted by the heatmap). In all CEE countries, the recovery after the GFC was largely based on private consumption. At the same time, investment was stubbornly low, impeding a more resilient and balanced recovery. The ongoing discussions at the European level underline the importance of a rich-investment recovery, with focus on the green and digital transition.

Although estimates indicate a recovery in global economic resilience in 2021, there will not be a full return to pre-pandemic levels (Swiss Re Institute, 2021). In fact, in many states the real dynamics of the economy are still below pre-pandemic levels. Also, the recovery, even in more resilient economies, appears to be more vulnerable as public debt levels remain high and the fiscal adjustment will slow as economic growth decelerates in 2022. Therefore, deep structural reforms must remain a priority in order to stimulate long-term growth and restore macroeconomic resilience. This will require investment and commitment to facilitate change in various areas, including building sustainable infrastructure, and faster progress on the digital economy.

In the medium run, implementing structural reforms in areas as labour and product market regulation or corporate insolvency regimes would allow for a better allocation of resources (Aiyar et al., 2019). Structural reforms are increasingly important given limited space for monetary and fiscal policies. Labour markets need to become more efficient so that more people have the chance to participate in the workforce and compensate for personal losses from the crisis. At the same time, governments must also act to reduce inequalities and to develop human capital through education and training.

Correcting macroeconomic imbalances is essential to improve the resilience of economies, to better cope with future crises. During the pandemic, the liquidity provision from central banks and fiscal stimulus have been crucial in sustaining aggregate demand and mitigating

the impact of the crisis on economic activity. The policy mix can smooth the business cycle and foster a robust and sustainable recovery in the aftermath of a crisis. Thus, the consolidation of public finances in times of economic boom is essential in order to have adequate room for maneuver in the context of future crises.

Looking forward, the governments' efforts to regain fiscal space should be accompanied by the Next Generation EU program – RRF grants can finance essential reforms and investments without impacting budget deficits. However, it is crucial that the authorities channel these funds towards the most productive and adequate projects, thus stimulating the economic fundamentals that underpin a sustainable recovery.

Disclaimer: The views, opinions, findings, conclusions or recommendations expressed are strictly those of the authors and do not necessarily reflect the official position of the organizations to which the authors are affiliated.

Notes

- (1) In this paper CEE countries cover Bulgaria, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Poland, Romania, Slovak Republic and Slovenia.
- (2) The quality of institutions is measured using the World Bank governance indicators: (i) voice and accountability, (ii) political stability and absence of violence/terrorism, (iii) government effectiveness, (iv) regulatory quality, (v) rule of law, (vi) control of corruption.
- (3) Temporary Support to Mitigate Unemployment Risks in an Emergency.
- (4) Young people neither in employment nor in education or training.
- (5) Export concentration reflects the degree to which a country's exports are concentrated on a small number of products or a small number of trading partners.
- (6) Measured as the ratio of international trade to GDP.
- (7) CZ, PL, HU, RO and HR are floaters, and BG is fixer.

References

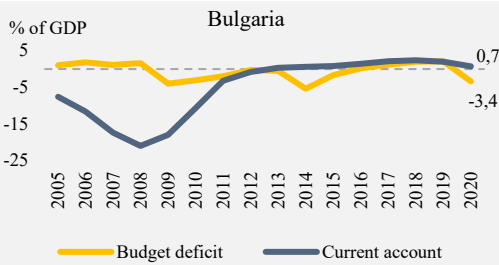
- Acemoglu, D., Johnson, S., Robinson, J. and Thaicharoen, Y., 2003. Institutional causes, macro-economic symptoms: volatility, crises and growth, *Journal of Monetary Economics*, No. 50.
- Aiyar, S., Bluedorn, J., Duval, R., Furceri, D., Garcia-Marcia, D., Ji, Y., Malacrino, D., Qu, H., Siminitz, J. and Zdzienicka, A., 2019. Strengthening the Euro Area: the role of national structural reforms in enhancing resilience, IMF Staff discussion note.
- Alcidi, C., D'Imperio, P. and Thirion, G., 2017. Risk-sharing and consumption smoothing patterns in the US and the Euro Area: a comprehensive comparison, CEPS Working Doc. 2017/04.
- André, C., 2016. Household debt in OECD countries: stylised facts and policy issues, Economics Department Working Papers, No. 1277, <<https://www.oecd-ilibrary.org/docserver/5jm3xgtkk1f2-en.pdf?expires=1642987893&id=id&accname=guest&checksum=8E323A2495E537FBE496F788AE851BD8>>
- Bell, G. and Tawara, N., 2009. The size of governments and U.S. – European differences in economic performance, IMF Working paper.

- Briguglio, L., Cordina, G., Bugeja, S. and Ferrugia, N., 2006. Conceptualizing and measuring economic resilience, in L. Briguglio, G. Cordina, and E.J. Kisanga (Eds.), *Building the economic resilience of small states*, pp. 265-287.
- Briguglio, L., Cordina, G., Farrugia, N. and Vella, S., 2008. Economic vulnerability and resilience. Concepts and measurements, United Nation University, Research Paper No. 2008/55.
- Briguglio, L.P., 2016. Exposure to external shocks and economic resilience of countries: evidence for global indicators, *Journal of Economic Studies*, Vol. 43.
- Cournède, B. and Denk, O., 2015. Finance and economic growth in OECD and G20 countries, Economics Department Working Papers No. 1223, <<https://www.oecd-ilibrary.org/docserver/5js04v8z0m38-en.pdf?expires=1642989654&id=id&accname=guest&checksum=3496008148C1F12524D3F2AEBC102974>>
- Doucouliaos, C. and Ulubasoglu, M., 2006. Economic freedom and economic growth: Does specification make a difference?, *European Journal of Political Economy*, Vol. 22, Issue 1.
- European Central Bank, 2016. Increasing resilience and long-term growth: the importance of sound institutions and economic structures for euro area countries and EMU, Economic Bulletin, Issue 5.
- European Central Bank, 2019. *The European Commission's 2019 assessment of macroeconomic imbalances and progress on reforms*, ECB Economic Bulletin, Issue 2, <https://www.ecb.europa.eu/pub/economic-bulletin/focus/2019/html/ecb.ebbox201902_07~347d73fa31.en.html>
- European Commission, 2016. The macroeconomic imbalance procedure. Rationale, process, application: a compendium, Institutional Paper 039, <https://ec.europa.eu/info/sites/default/files/file_import/ip039_en_2.pdf>
- European Commission, 2017a. Note for the Eurogroup: Economic resilience in EMU, Thematic discussion on growth and jobs, <<https://www.consilium.europa.eu/media/23535/eurogroup-15-september-item1-com-note-economic-resilience-in-emu.pdf>>
- European Commission, 2017b. Country Report Romania, Commission Staff Working Document, SWD(2017) 88 final.
- European Commission, 2018a. Economic resilience in EMU, Quarterly report on Euro Area, Vol. 17, No. 2.
- European Commission, 2018b. Determinants of economic resilience in the euro area: An empirical assessment of policy levers, Quarterly report on Euro Area, Vol. 17, No. 3.
- European Commission, 2018c. Completing the Capital Market Union and its impact on economic resilience in the euro area, Quarterly report on Euro Area, Vol. 17, No. 4.
- European Commission, 2019. Alert Mechanism Report, COM (2019) 651 final, <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019DC0651&from=EN>>
- European Commission, 2020a. Country report Slovakia, SWD (2020), 542 final.
- European Commission, 2020b. European Commission Report on the impact of demographic change, <https://ec.europa.eu/info/sites/default/files/demography_report_2020_n.pdf>
- European Commission, 2021a. The EU recovery after COVID-19: implication for economic governance, COM(2021) 662 final.
- European Commission, 2021b. Alert Mechanism Report, COM (2021) 741 final, <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0745&from=EN>>
- European Commission, 2021c. Report on the European instrument for Temporary Support to mitigate Unemployment Risks in an Emergency (SURE) following the Covid-19 outbreak pursuant to Article 14 of Council Regulation (EU) 2020/672 – SURE: One year on, COM (2021) 596 final.

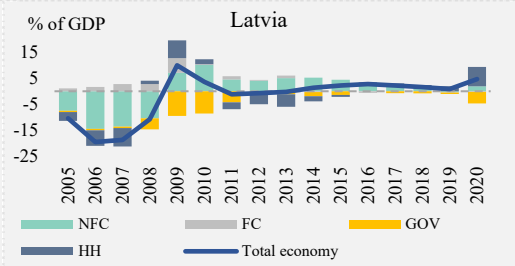
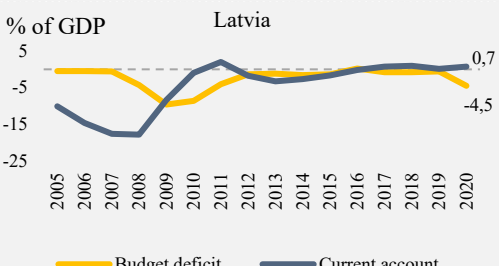
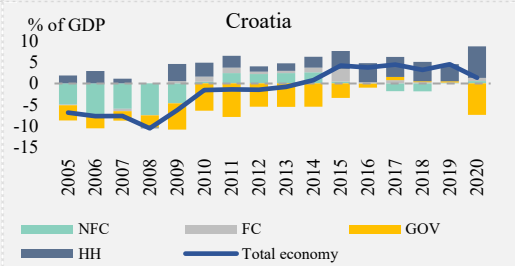
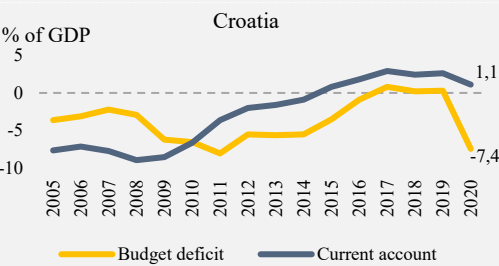
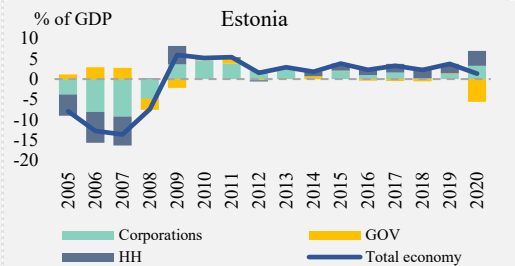
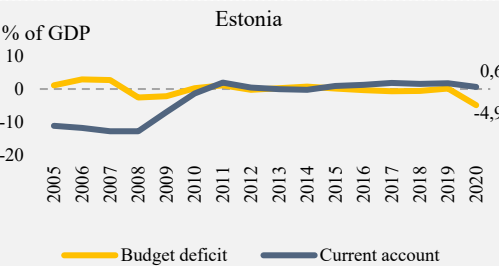
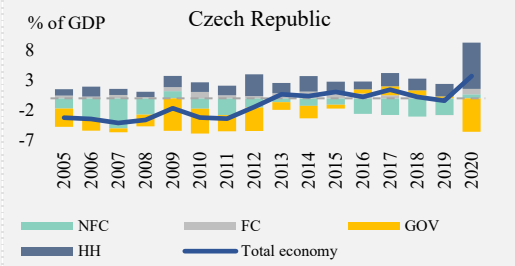
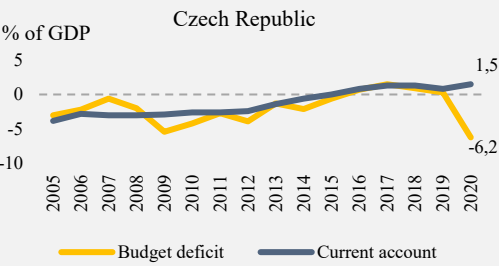
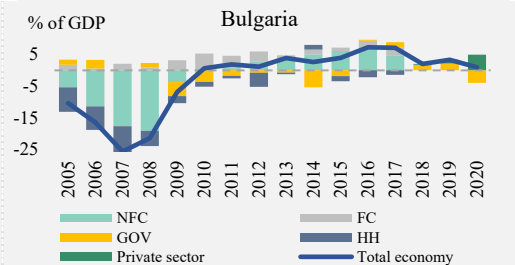
- European Commission, 2021d. Regulation (EU) 2021/241 of the European Parliament and of the Council establishing the Recovery and Resilience Facility, <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241&from=EN>>
- European Fiscal Board, 2021. Annual Report 2021, Brussels.
- G20 Framework Working Group, 2017. Note on Resilient Principles in G20 Economies, <https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/world/G7-G20/G20-Documents/Note-Resilience-Principles-in-Economie.pdf?__blob=publicationFile&v=3>
- Hermansen, M. and Rohn, O., 2016. Economic Resilience: the usefulness of early warning indicators in OECD countries, *OECD Journal: Economic Studies*.
- Hijzen, A. and Martin, S., 2013. The Role of Short-Time Work Schemes during the Global Financial Crisis and Early Recovery: A Cross-Country Analysis, *IZA Journal of Labour Policy*, Vol. 2(1).
- IMF, 2016. A Macroeconomic Perspective on Resilience. Note to the G20, <<http://www.g20.utoronto.ca/2017/2017-Germany-IMF-a-macroeconomic-perspective-on-resilience.pdf>>
- IMF, 2019. Report on strong, sustainable and balanced growth, <<https://www.imf.org/external/np/g20/101119.htm>>
- Joint Research Centre, 2017. Building a scientific narrative towards a more resilient EU Society, European Commission.
- Joint Research Centre, 2018. The resilience of EU Member States to the financial and economic crisis, European Commission.
- Kim, S. and Lee, J.W., 2007. Demographic changes, saving, and current account in East Asia, *Asian Economic Paper* 6(2), pp. 22-53.
- Marinescu, C., 2013. *Costurile de tranzație și performanța economică*, Institutul Național de Cercetări Economice Costin C. Kirițescu, Expert, Bucharest.
- Marinescu, C., 2021. *The Macroeconomic Dashboard: From Financial to Corona Crisis*, <<https://www.themarketforideas.com/the-macroeconomic-dashboard-from-financial-to-corona-crisis-a689/>>
- OECD, 2016a. G20 Policy Paper on Economic Resilience and Structural Policies. Note to the G20.
- OECD, 2016b. Strengthening economic resilience: insights from the post-1970 record of severe recessions and financial crisis, OECD Policy Paper No. 20.
- OECD, 2016c. Economic Policy Reforms. Going for Growth Report.
- OECD, 2017. Resilience in a time of high debt, *OECD Economic Outlook*, Issue 2, <<https://www.oecd.org/economy/outlook/Resilience-in-a-time-of-high-debt-november-2017-OECD-economic-outlook-chapter.pdf>>
- Sondermann, D., 2016. Towards more resilient economies: the role of well-functioning economic structures, ECB Working Paper.
- Swiss Re Institute, 2019. Sigma – Indexing resilience: a primer for insurance markets and economies, No. 5, <https://www.swissre.com/dam/jcr:292e65ba-95e7-432c-93e0-ccefadb87369/sigma5_2019_en.pdf>
- Swiss Re Institute, 2021. Sigma – Resilience Index 2021: a cyclical growth recovery, but less resilient world economy, June, <<https://www.swissre.com/dam/jcr:ca784019-cd41-45fb-81ed-9379f2cd91e3/swiss-re-institute-sigma-resilience-index-update-june-2021.pdf>>
- World Bank, 2019. Including institutions. Boosting resilience in Europe, <https://thedocs.worldbank.org/en/doc/845371573578830218-0080022019/original/EURERNo5_fullreport.pdf>

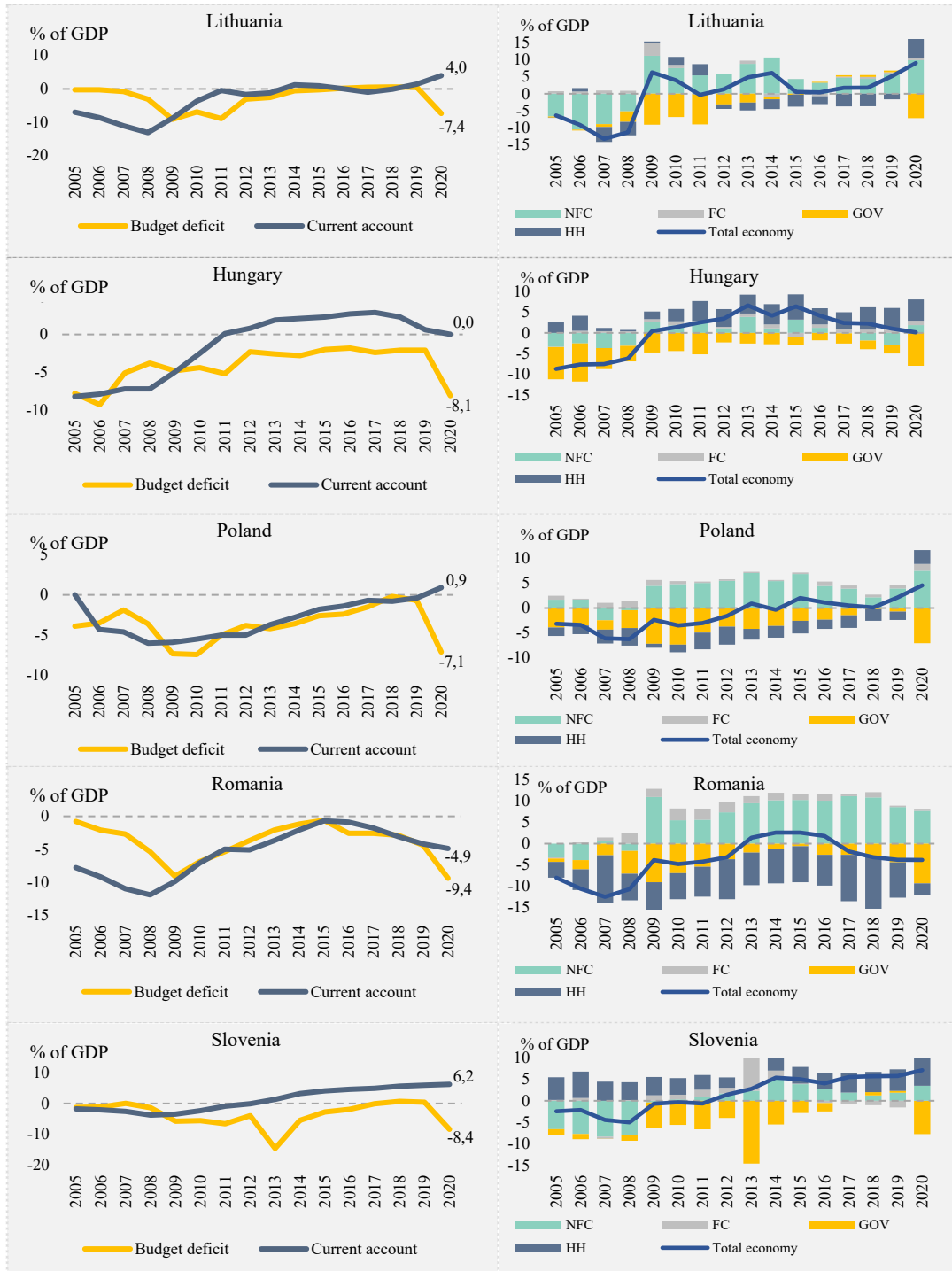
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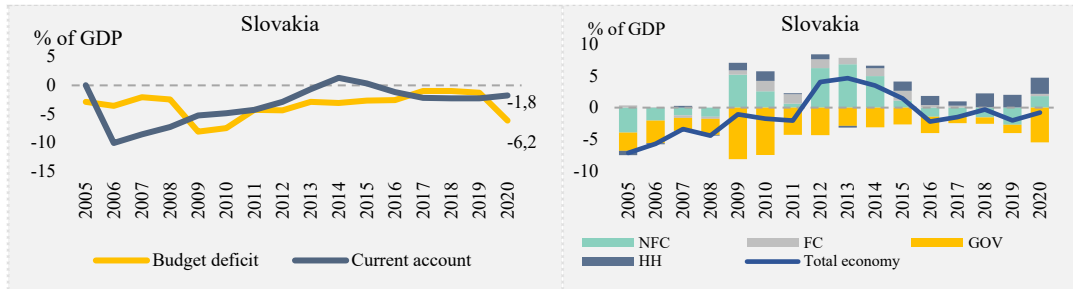
a) Budget deficit and current account balance



b) Net lending/borrowing by sector







Note: Graphs have different scales. NFC, FC, HH and GOV stands for non-financial corporations, financial corporations, household and government. Missing data broken down on private sector in Bulgaria (2017-2018) and corporation sector in Estonia.

Source: AMECO, European Commission Autumn 2021 Forecast, Eurostat.