

# REGIONAL DISPARITIES AND CONVERGENCE<sup>1</sup>

## A. Introduction

**1. Despite significant convergence to its richer peers, Romania has the second lowest GDP per capita in the European Union (EU), and poverty and inequality remain relatively high.**

At the same time, since its accession to the EU in 2007, absolute poverty has declined significantly, and relative poverty and the Gini coefficient have also been reduced—unlike in many of its peers in Central, Southeastern, and Eastern Europe in the EU (CESEE-EU) and EU14 countries.

**2. While convergence at the national level has been impressive, the economic development of regions has been uneven.** Like in many of its CESEE-EU peers, economic progress has been most rapid in the capital, while other regions have tended to lose ground relative to the economic and commercial center. Moreover, demographic developments—amid an ageing population and at times high levels of net emigration—have also been uneven across regions.

**3. This paper analyzes economic developments in Romania's regions over the last two decades.** It takes stock of the convergence process in a number of dimensions, including GDP, broader measures of well-being, and demographics. It then discusses factors that may contribute to economic convergence both within the country and vis-à-vis Western Europe. In doing so, it also provides examples of regional development. The remainder of this paper is organized as follows: Section B summarizes Romania's convergence with the EU14, and Section C outlines regional convergence within Romania. Section D then discusses factors explaining regional convergence, and Section E concludes and offers policy recommendations.

## B. Background: Convergence at the National Level

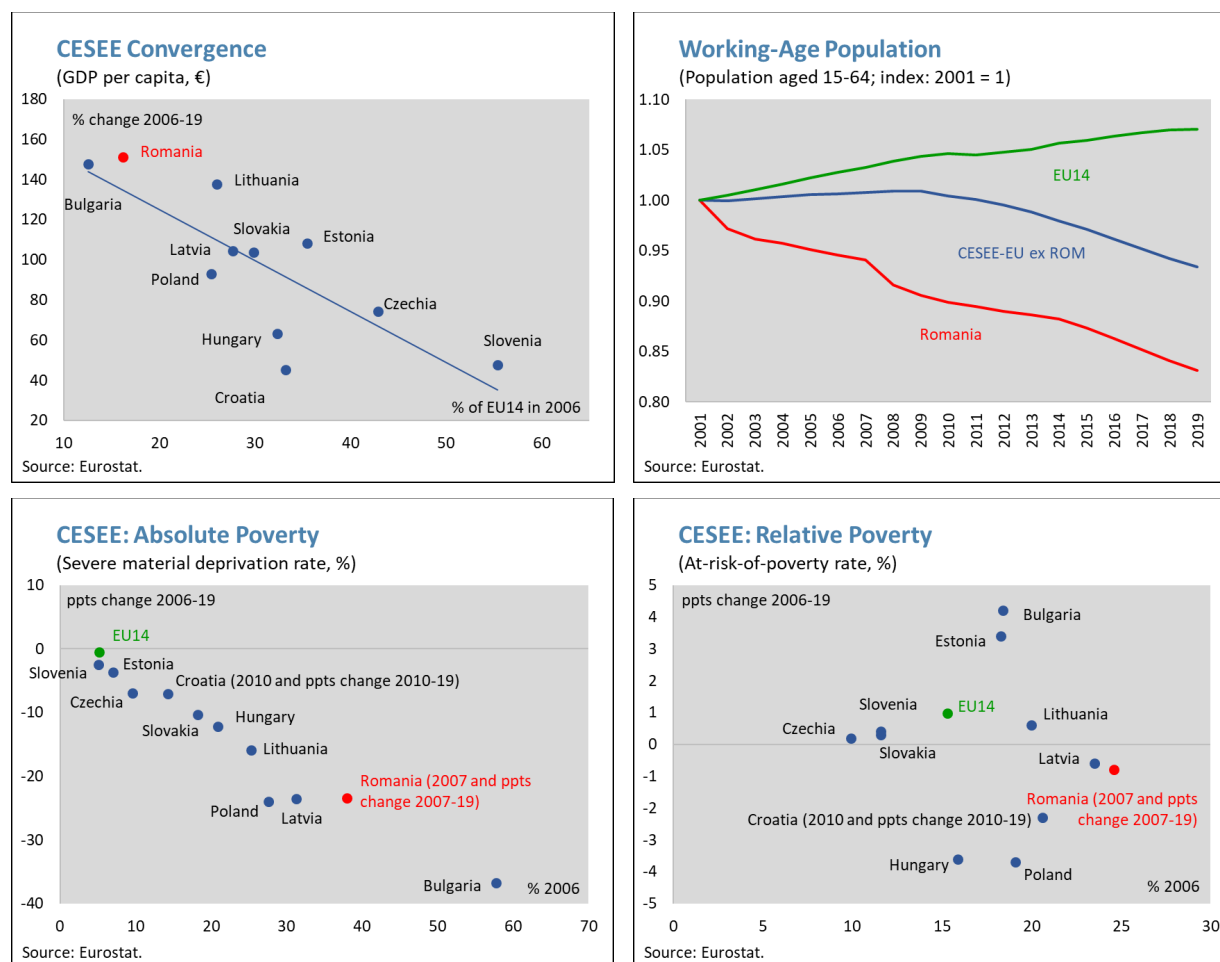
**4. Romania has made impressive gains in converging with Western Europe, but much remains to be done.** With per capita GDP at only 16 percent of the EU14 in 2006 (in euro terms), GDP has since grown rapidly, at an average annual rate of 3.6 percent, resulting in GDP per capita of 32 percent of the EU14 average by 2019.<sup>2</sup> This achievement is broadly in line with the experience of Romania's CESEE-EU peers, and all the more remarkable as the working-age population has declined more sharply than in these peers, by 12 percent over the same period.

**5. At the same time, both absolute and relative poverty have declined.** While the reduction of absolute poverty is to be expected as GDP and income per capita increase, Romania has also managed to reduce relative poverty, if only by a small amount, and its level remains the second

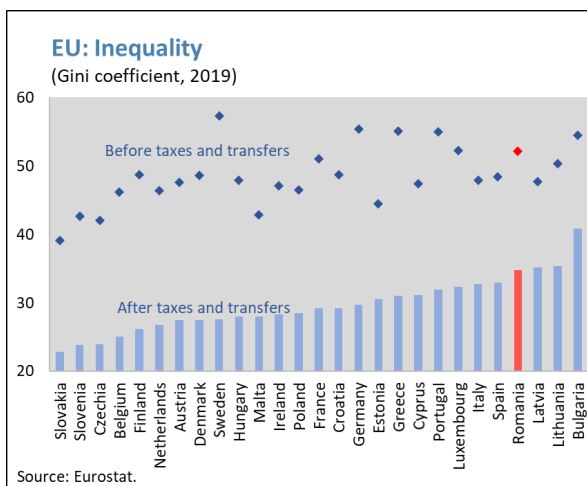
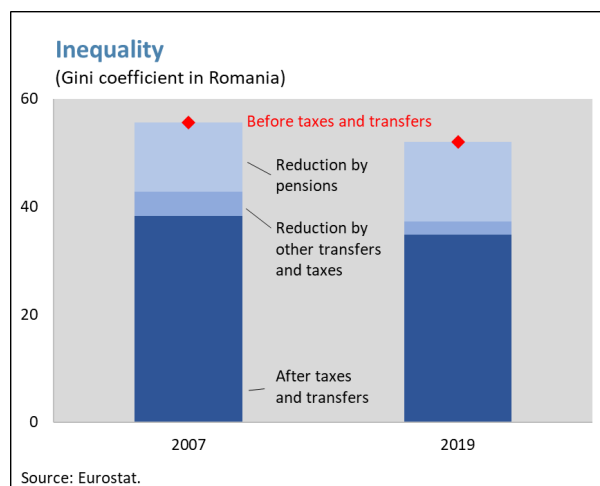
<sup>1</sup> Prepared by Alexander Pitt and Wei Zhao.

<sup>2</sup> EU14 are EU member states in 1995, excluding the United Kingdom. Data for 2020 are available for many indicators used in this paper, but given the impact of the Covid-19 pandemic, 2019 is used here to illustrate undistorted longer-term trends.

highest in the EU. Nonetheless, this reduction was achieved at a time when in the EU14 and several of Romania's CESEE-EU peers relative poverty has increased.

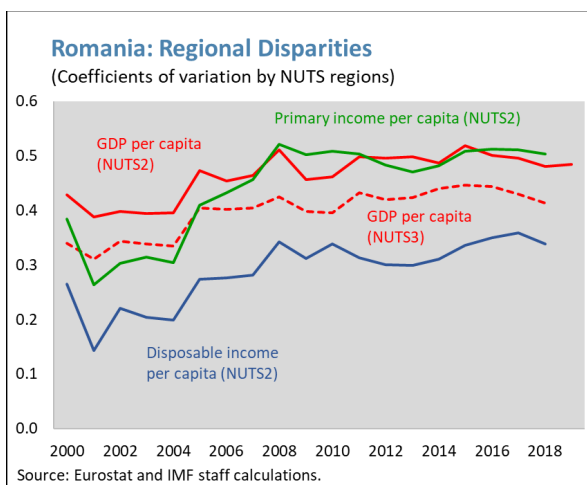
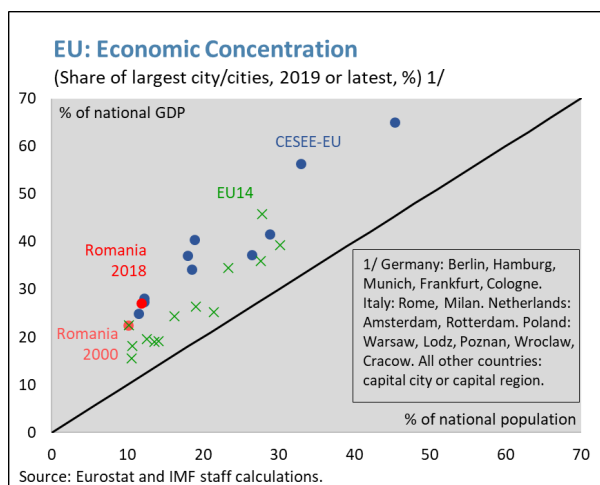


**6. Inequality has also been reduced since EU accession, but remains high.** Relative to 2000, when the Gini coefficient was 29, inequality in Romania is significantly higher now. In 2019, the Gini coefficient stood at 35, and remains in the upper range of EU countries. However, it has declined relative to 2007. Since 2007, the redistributive power of the tax and transfer system has not changed significantly overall—it reduces the Gini coefficient from a level of 52 before taxes and transfers to 35 after taxes and transfers. However, redistribution is now relying more heavily on pensions, which in 2019 provided 86 percent of the reduction in the Gini coefficient from before taxes and transfers, compared to 74 percent in 2007. The increase in inequality since 2000 is likely to a significant extent because of the introduction of a flat income tax in 2005 (Mihaescu and Voinea, 2009), which has reduced the redistributive impact of taxation. The shift in the contributing factors may be attributed partly to a reduction of the flat income tax rate in 2018, combined with successive increases of pensions, albeit from a low base.



## C. Regional Disparities and Convergence

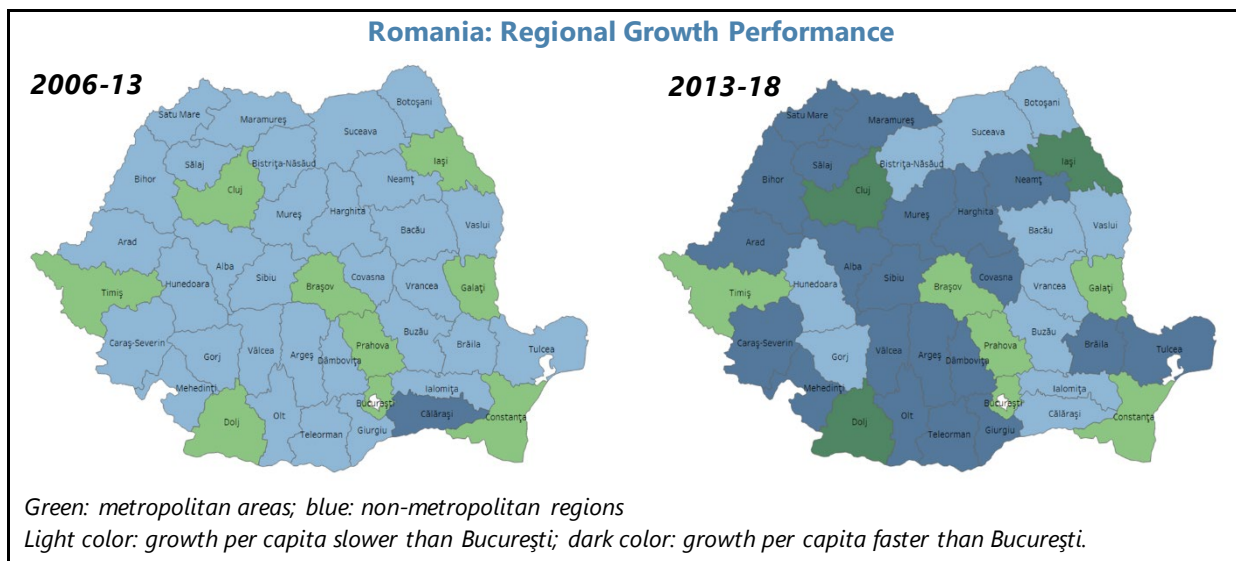
**7. While Romania as a whole is converging gradually toward Western European income levels, regional disparities have widened since the early 2000s.** In particular, the capital region around Bucharest has pulled ahead of the rest of the country (Fina et al, 2021), similar to other CESEE-EU countries (and in some EU14 countries as well; Ilahi et al, forthcoming; IMF 2016a).<sup>3</sup> However, the dynamic has changed over time: prior to EU accession, the regional disparities of GDP per capita, primary income per capita and disposable income per capita rose significantly, while after EU entry, these measures have flattened out, though they remain elevated, and regional disparities remain among the highest in the EU (European Commission, 2020).



**8. More recently, regions outside Bucharest have begun to catch up with the capital.** Prior to 2013, GDP per capita in all but one NUTS3-level regions grew more slowly than in Bucharest, but during 2013–18, most regions grew faster than Bucharest, notwithstanding continued population declines in many of them. As a result, the disparity in GDP and income levels remains high, but

<sup>3</sup> The capital region (or Greater Bucharest) around Bucharest comprises Bucharest and Ilfov.

appears to have started to narrow gradually, at least in the majority of regions. However, the pace is slow—in 2018, the poorest region still had a per-capita GDP of only 47 percent of Romania's average (only 2 percent higher than in 2006), while Bucharest has improved further from 231 to 262 percent of the Romanian average over the same period.



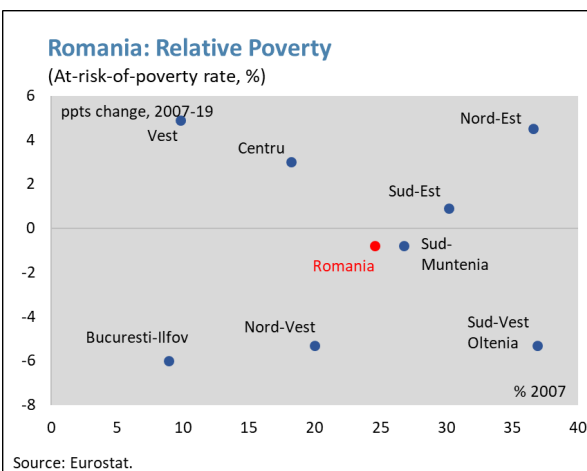
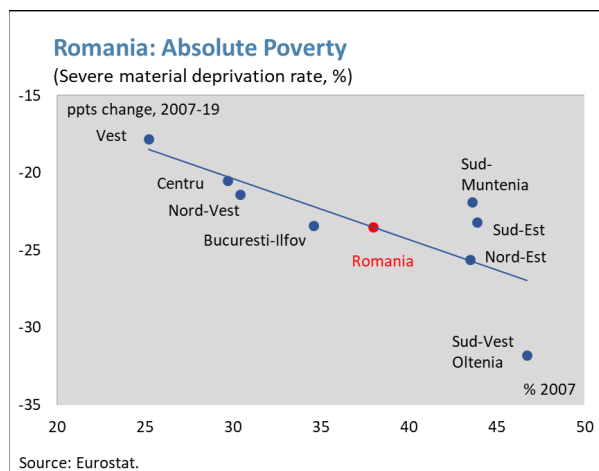
## 9. Regional convergence of poverty levels mirrors that at the national level with

**European peers.** While there has been some convergence of absolute poverty across regions—the severe material deprivation rate fell most in those regions where it was highest in 2007—relative poverty did not systematically change in relation to the initial rate. This is similar to developments across countries in Europe.

## D. Factors Affecting Regional Growth

## 10. Regional growth is likely to be influenced by factors similar to those applying to countries.

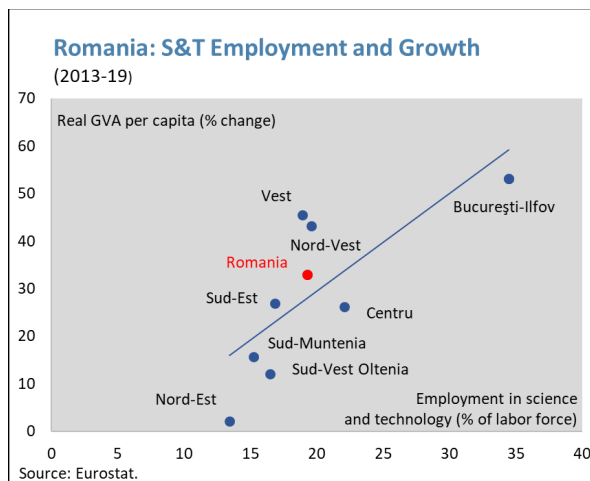
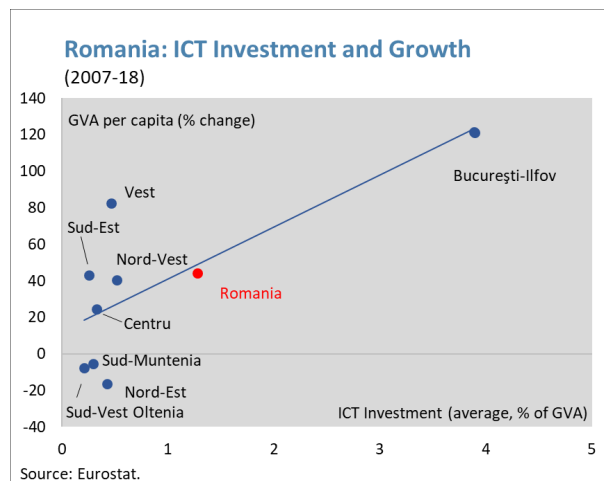
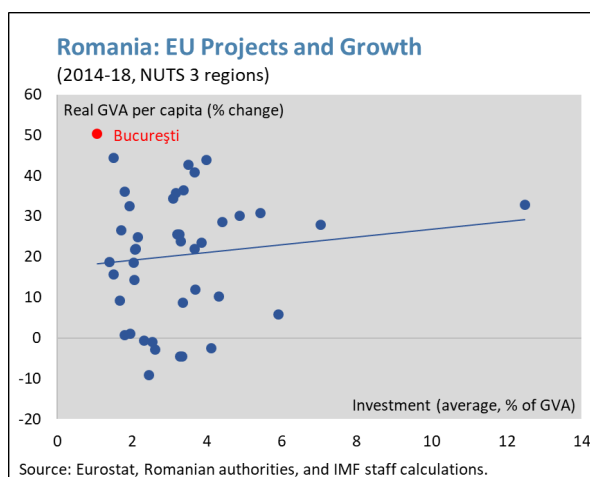
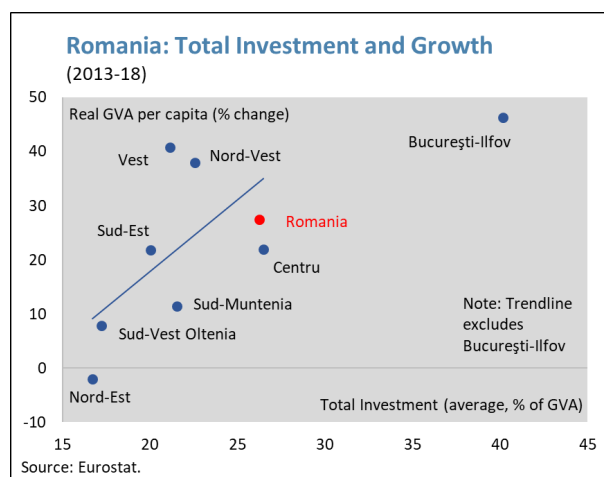
The standard growth literature emphasizes factors such as investment, human capital (as captured by health and education levels), and institutions in driving growth (e.g., Romer 1989; Levine and Renelt 1992; Owen, Videras, and Davis 2009). However, the differences in factors such as health and education



are likely smaller across regions in Romania than internationally, and institutional arrangements more similar. We have therefore concentrated on investment and the impact of migration.

**11. Investment is a key variable in the cross-country growth literature, and is also critical for regional growth performance.** The cross-regional picture of investment *levels* against growth since EU accession is somewhat skewed by the large investments and high growth in Greater Bucharest, but the correlation strengthens in the more recent period 2013–18. However, investment of EU cohesion funds does not appear to have a clear impact on growth, possibly because some of the investments are not economic but social or environmental, where the immediate impact on economic growth may be less (though they may have a positive effect in the longer term, e.g., by raising health or education levels, or increase sustainability).

**12. Specific types of investment may have an additional effect.** Investment in ICT, though small overall, may also boost growth. This link is reinforced by the strong correlation between employment in science and technology (S&T) sectors—which tend to be IT-intensive—and growth.



**13. Migration is also related to economic performance** (Box 1). Emigrants tend to be of working age, and their departure leaves behind a population with a higher dependency ratio,

### Box 1. Demography and Migration

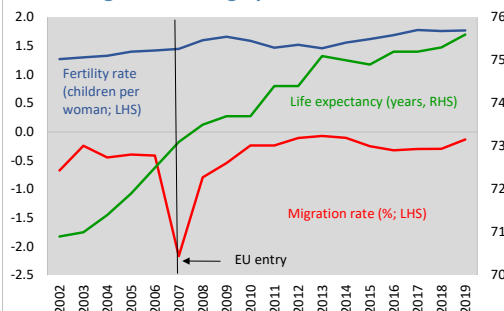
Demographic developments—arising both from changes in fertility and mortality as well as migration patterns—can have a profound effect on the economy and welfare. An ageing and shrinking population is generally associated with lower growth (European Commission 2018, IMF 2019)<sup>1</sup>, while remittances of emigrants help reduce poverty and inequality (Ciupureanu and Roman 2016; Pal et al 2021), and boost investment (Léon-Ledesma and Piracha 2004, Mereuta 2006).

**Romania's population is shrinking and getting older overall, but demographics are differentiated across regions.** The decline of Romania's population is the result of a fertility rate below replacement level and rising life expectancy, and continued net emigration (Box Figure 1). However, while prior to EU accession the population in all regions declined, in recent years some regions—mainly metropolitan areas including, but not only, Greater Bucharest—have begun to experience increases in their populations, mainly through net immigration from other parts of Romania. This suggests that economic catch-up in regions may go hand in hand with more favorable population dynamics.

**Migration is linked to economic performance.** Migration patterns suggest that relative poverty is related to subsequent net outward migration (Box Figure 2). Higher outward migration in turn is correlated with a lower working-age population (Box Figure 3)—though the causality could run both ways: if regions with lower working-age population are more deprived, emigration could be higher, or higher emigration could result in a lower working-age population. And lastly, higher gross value added per capita is associated with a smaller decline in the working-age population (Box Figure 4). This can lead to a downward spiral, where limited economic perspectives lead to outward migration, which tends to reduce the working-age population and in turn reduces the economic potential and growth *per capita* of a region.

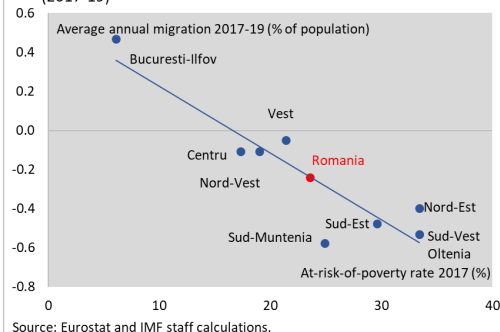
<sup>1</sup> Bloom et al (2008) argue that this is compensated for as youth dependency falls and female labor force participation rises.

Box Figure 1: Demographic Factors



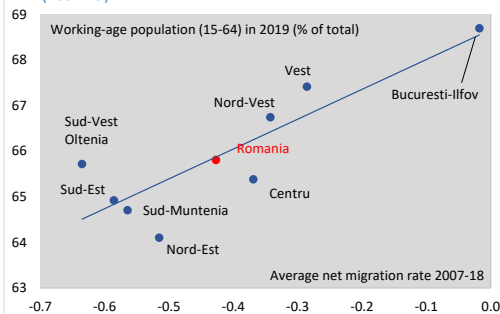
Source: Eurostat.

Box Figure 2: Poverty and Migration (2017-19)

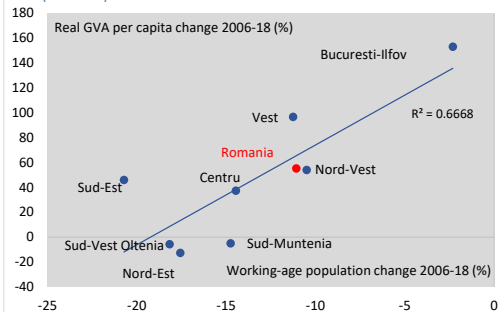


Source: Eurostat and IMF staff calculations.

Box Figure 3: Working-Age Population (2007-19)



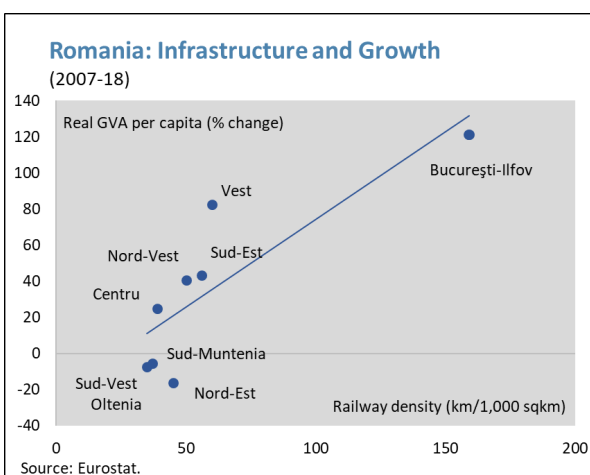
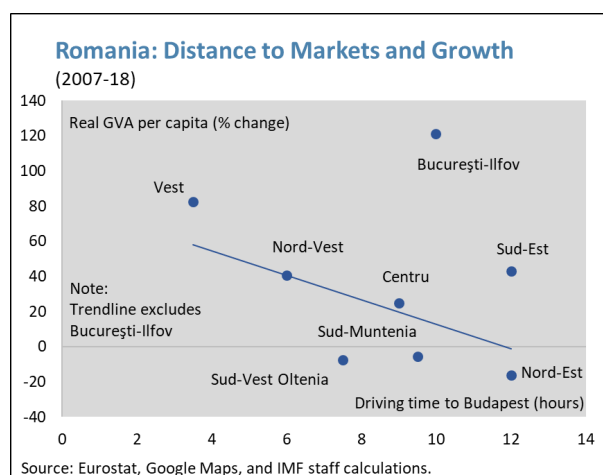
Box Figure 4: Population and GVA (2006-18)



reducing per-capita output. Moreover, to the extent that emigrants are more skilled than the average population, productivity may also be lowered (IMF 2016b). On the other hand, remittances could boost investment and returning migrants could raise productivity (World Bank 2018).

#### 14. In addition, spatial variables also likely affect regional growth.<sup>4</sup>

- **Proximity to markets.** In 2020, 57 percent of Romanian goods exports went to Western European markets (and a further 14 percent to the Central European Visegrad countries), and while service exports play an increasing role, the ease of shipping goods and the time it takes them to reach their markets should affect investment and growth. At least for regions other than Greater Bucharest, the effective distance (driving time to Budapest, from where the distance to markets further afield is the same for all vehicles) appears related to growth performance.<sup>5, 6</sup>
- **Infrastructure more broadly.** The density of the intra-regional rail network serves as a proxy for broader infrastructure availability, as well as an indicator for transport connectivity—with rail connections feeding into wider transport networks and markets. Regions with higher railway density (measured as kilometers of rail lines per 1,000 square kilometers of area) have tended to grow faster than those with looser rail networks.



#### 15. A case study illustrates the interplay between the growth factors outlined above

(Box 2). Cluj-Napoca has over the past 18 years developed into 'Romania's Silicon Valley'. Its success stems from a combination of factors, including a long tradition of higher education, good connectivity, active policies to attract investment and promote innovation, and 'soft' factors, such as culture.

<sup>4</sup> For a study including spatial variables, see also Sandu (2022).

<sup>5</sup> Some exports are shipped by sea; hence proximity to Constanta, Romania's main port, could be an alternative.

<sup>6</sup> The effective distance can be shortened by improved and hence faster connections, e.g., highways. In recent years, Romania has added 677 km of new highways, more than tripling the length of the network, mainly in the Western and Central regions, and between Bucharest and the Black Sea.

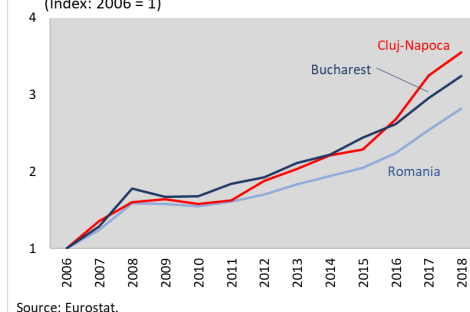
## Box 2. Cluj-Napoca

### Cluj-Napoca is the largest city in the Nord-Vest region

(and the 2<sup>nd</sup> largest in Romania), with about 425,000 inhabitants (17 percent of the region's total inhabitants, and 59 percent of the county's), including 100,000 students.<sup>1</sup> The population has been increasing in recent years, including due to immigrants from EU14 countries, and the economy of Cluj County has grown faster than any other in Romania since 2007 (Box Figure 1). It is Romania's foremost IT hub, with over 800 IT companies and 16,000 software engineers, and supplies 78 percent of Romania's IT exports.

Box Figure 1: Nominal GVA

(Index: 2006 = 1)



Source: Eurostat.

### Several interlocking factors have contributed to driving Cluj's growth:

- *Education:* The city has a longstanding education tradition, with its first university founded in 1581. Today, Cluj-Napoca has 11 universities and colleges, from which about 1,000 IT students graduate every year. It also has 200 research units and laboratories, concentrated in the ICT and high-tech manufacturing sectors.
- *Investment:* The local authorities have made significant efforts to attract private investment. To this end, they have provided public infrastructure and developed technology and innovation parks, both with own resources as well as EU funds. The authorities have also not only focused on one sector—ICT—but also sought to promote investments in manufacturing, as well as medical technology.
- *Partnerships:* There is a large start-up scene, developed through partnerships between the city, universities and private enterprises.
- *Governance and Innovation:* While there have been corruption scandals involving high-ranking city officials, the administration is promoting innovative approaches to governance, including through raising citizen participation. In 2020, Cluj-Napoca was a runner-up to receive the European Capital of Innovation Award 2020, which is awarded to the European cities that best promote innovation in their communities.
- *Connectivity:* Cluj-Napoca has an international airport, and is well-connected to Central Europe and Bucharest by road and rail (though a highway shortcut to Hungary is not yet completed, and there is no through highway to Bucharest yet).
- *Culture and quality of life:* Cluj-Napoca has a multicultural and multilingual community, and a diverse and growing cultural scene, supported by universities specialized in art, design, and music, as well as several festivals, which, together with employment opportunities, attracts immigrants, both from within and outside Romania.

The strong performance of Cluj-Napoca is likely the result of a combination of these factors, and a self-reinforcing positive economic, demographic, and cultural dynamic that has developed over time.

<sup>1</sup> "Region" denotes Eurostat's NUTS 2 level, "county" the NUTS 3 level.

## E. Conclusions and Policy Recommendations

**16. Romania has made great strides in converging toward more advanced EU member states, but progress has been uneven.** While per capita GDP in Greater Bucharest approaches that

of advanced EU countries, many regions, especially rural areas, have been unable to catch up, and in many instances have fallen further behind Bucharest. Only in recent years has growth in the majority of regions begun to outpace that of Bucharest, but the process of intra-Romanian convergence remains slow. Moreover, regional catch-up is strongest in secondary cities and bypasses many rural areas (Surd et al, 2011).

**17. The obstacles to regional growth are numerous, and many of them also act on the national level.** These include policy instability, administrative shortcomings including corruption, inadequate infrastructure, low or mismatched education levels, a welfare and tax system and labor market that discourage labor force participation, especially of women, and unproductive state-owned enterprises (De Rosa and Kim, 2018; Belinga et al, 2020, IMF 2017). Addressing these at the national level is critical to continue the catch-up process of Romania as a whole with Western Europe, and would also promote regional growth. For example, improving education across the country, but especially in poorer regions, would provide a more productive labor force that would also encourage investment outside of Bucharest and other cities (IMF 2016c).

**18. The operation of transfers to regions could also be strengthened to support greater equality.** Equalization transfers are formula-based and inversely proportional to income, but some investment allocations (including through the National Program for Local Development—PNDL) are discretionary and subject to political influence. Greater transparency in this area—combined with administrative support for less developed regions—would likely increase the efficiency of investment.

**19. At the same time, some national-level policies are more directly linked to regional development, especially public administration and provision of infrastructure** (IMF 2016d). Strengthening public administration, especially at the local level, would also support the ability of sub-national authorities to promote investment, and more broadly respond to idiosyncratic regional needs (Ibinceanu et al, 2021). This could also include further steps toward decentralization to create administrative units at the NUTS2 level, as an administrative layer between the central government and county-level administration.<sup>7</sup> Improving the ability of regional and local authorities to access EU funds, perhaps with central-government support, could also unlock significant resources—and help raise Romania’s absorption of EU funds. With regard to infrastructure, while national-level transport axes (such as highways or improved international railway links) are important, it is also critical to ensure that more remote local areas are plugged into those networks. Geography cannot be changed, but better links both within regions and of regions with national and international networks would reduce effective distances, enlarge markets, and improve productivity.

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<sup>7</sup> A corresponding law in 2013 proved controversial and was eventually declared unconstitutional (Sandu 2022).

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