Box 10. Evidence on recent developments and prospects for digitalisation in Romania

The digitalisation of an operational process means to optimise that process by transforming analogue/manual information into digital data that can be subsequently used in a much more effective manner with the help of electronic devices. At firm level, digitalisation can improve staff efficiency, ensuring flexibility in carrying out tasks and easier access to information. From a macroeconomic perspective, digital transformation is aimed at creating the technological infrastructure for transition to a digital economy and society, by developing digital services for all economic agents. The benefits of digitalisation and automation[1] consist in cutting costs, reducing processing times and improving the security of information transfer.

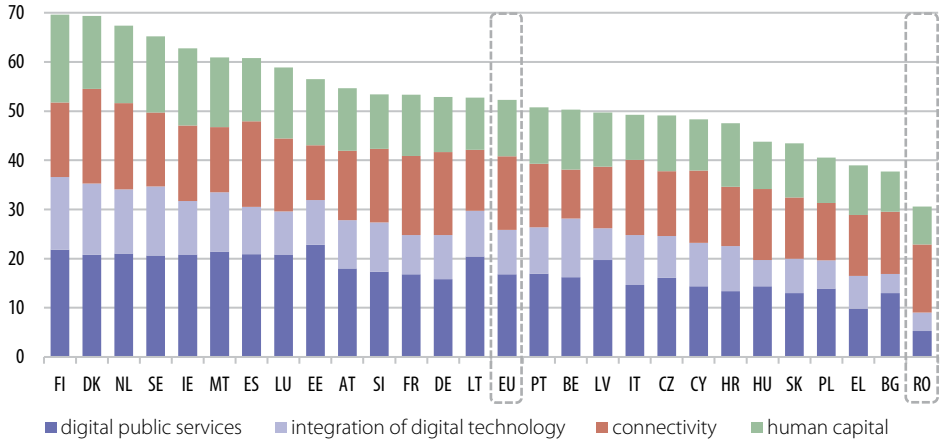

Chart A
Digital Economy and Society Index (DESI) in 2022

Source: DESI 2022, European Commission

At EU level, Romania has a relatively low level of digitalisation, witnessing a modest catching-up process over the past ten years. The Digital Economy and Society Index (DESI) – Chart A, released by the European Commission, measures the progress of European countries in terms of: (i) human capital – access to internet, (ii) connectivity, (iii) integration of digital technology and (iv) digital public services. In both 2021 and 2022, Romania came in last, with a DESI score significantly below the EU average, i.e. 30.6 versus 52.3 in 2022. After the outbreak of the COVID-19 pandemic, considerable additional resources were used to accelerate the digital transformation and all European countries made certain progress, but Romania's headway in this regard was modest. Specifically, as compared to 2015, Romania's DESI index rose by merely 3.7 points in 2022, which is markedly below the average growth of EU countries (+13.4 points). The relative performance of Romania is satisfactory only on connectivity.

Starting 2023, in line with the Digital Decade policy programme 2030, DESI has been included in the report on the State of the Digital Decade and presented for

[1] Digitalisation and automation are often used together, thus being easily mistaken for one another. However, digitalisation is not entirely similar to automation, due to the human interaction that continues to play a decisive part. Automation means the execution of human repetitive tasks using robots/equipment.

the purpose of monitoring the progress of each EU Member State. The results for Romania further show the fast progress in connectivity, while large gaps are recorded on infrastructure (in terms of 5G coverage) and online services (bureaucratic barriers in the interactions between public and private bodies)[2].

In order to accelerate digitalisation at national level, multiple actions are taken into consideration, of which the most relevant are: (i) raise grants particularly under the NRRP, with a view to developing advanced digital technologies for SMEs (artificial intelligence, blockchain, data cloud, internet of things, cybersecurity), (ii) implement the 2021-2027 government's strategy for businesses' digitalisation, creating skills training opportunities for staff and addressing cyber threats.

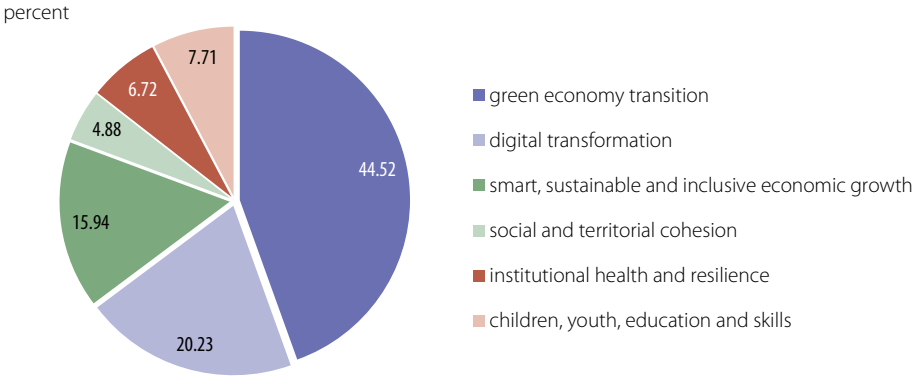

Chart B
Primary contributions of NRRP funds to the RRF* policy pillars

*) the values correspond to the NRRP version available under the Recovery and Resilience Scoreboard section on the European Commission's website (ec.europa.eu) in May 2024

Source: European Commission

A decisive role play investments under Component 7 (Digital transformation), the 2nd pillar of the NRRP, with a budget of approximately EUR 1.8 billion (the equivalent of 6.4 percent of total disbursements in amount of about EUR 28.5 billion). Approximately 70 percent of these funds are earmarked for developing the government cloud architecture, e-health and telemedicine, digitalisation of the judiciary, as well as the electronic ID card and digital signature. Thus, the NRRP funds contributing to the digital transformation pillar under the Recovery and Resilience Facility (RRF) made a cumulative primary contribution of about EUR 5.8 billion, the equivalent of 20.2 percent of total initially envisaged funds – Chart B. In the updated version of the plan (including the REPowerEU chapter), the allocation to digital transition grew to 21.8 percent, albeit reflecting favourable denominator effects (downward reassessment of total NRRP amounts) and not an increase in allocations for digital objectives. However, the prospects for meeting the digital transformation objectives are conditional on fulfilling strict milestones and targets in the implementation of NRRP projects.

Digitalisation is hindered by many barriers, especially in what concerns the SMEs. Deficiencies in reaching the digital transformation potential have been identified

[2] Regarding 5G coverage, despite the progress seen over the past years, Romania still lags considerably behind the EU average, i.e. approximately 27 percent in 2022 as against 80 percent.

on both demand and supply sides. Firms are facing problems related to digital transformation awareness and ways of developing their activity once new technologies are implemented. Nevertheless, most managers plan to continue their business expansion strategies, such as the organic growth and digitalisation – EIB (2023), Deloitte (2023). According to MKOR's Business Sentiment Study, Digitalisation of SMEs in Romania – 2023, although the SMEs have the lowest level of digitalisation in the EU, they showed the keenest interest in software applications. Demand-side aspects can, however, be influenced by the lack of SMEs' financial and technical capabilities to implement digitalisation solutions, which can be correlated, *inter alia*, with the financial health and productivity of companies in Romania – NBR (2023). As for supply, despite the considerable increase in recent years, there is an ongoing gap in the development of products and services to facilitate SME digitalisation. In this regard, worth mentioning is the high importance of start-ups for technology development – Ernst&Young (2022).

In quantitative terms, according to the "Digital Challengers Romania" study, the digital economy (IT, communications, media, auxiliary services, purchases of digital equipment – computers, smartphones, IT infrastructure, software, including cloud-based) is assessed to have a large growth potential to approximately EUR 30 billion (2025 turnover), which is double as compared to 2021 – McKinsey& Company (2022). As a share of GDP, the digital economy would thus grow from 6 percent in 2021 to 8 percent in 2025[3]. The prospects are based, *inter alia*, on the remarkable reallocation of resources, supported by decarbonisation efforts.

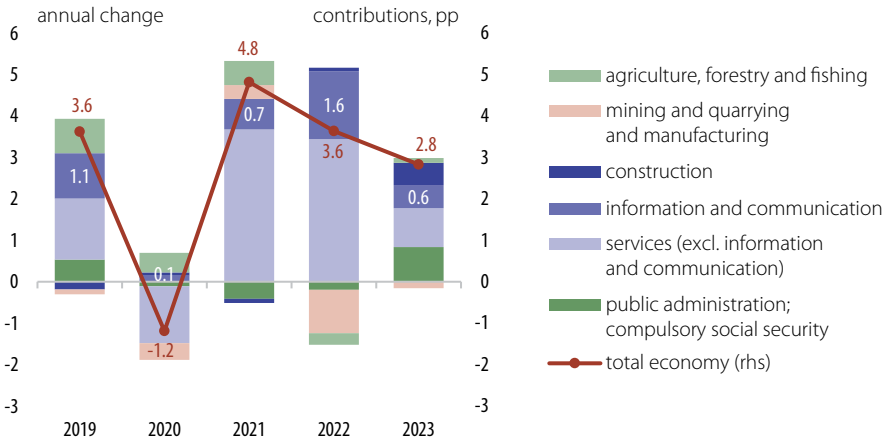

Chart C
Sectoral contributions to the growth of productivity (GVA/employee) in the economy

Source: Eurostat, NBR calculations

The prospects for the growing importance of "information and communication"[4] are conditional on the continuation of the upward trend, albeit on the wane over the past years, in productivity in the economy (Chart C). In fact, this sector is the only one making positive contributions to productivity dynamics in the economy

3 As a share in nominal GDP in 2025, European Commission's Spring 2024 Economic Forecast.

4 Sector corresponding to J58-J63 NACE codes. It includes publishing activities, motion picture, video and television programme production, programming and broadcasting activities, telecommunications, computer programming, consultancy and related activities and information service activities.

as a whole starting with 2010. Due to the multiple shocks over the past years, the sector showed resilience and adaptability, contributing to additional rises in productivity[5]. Specifically, in 2021-2023, the sector made successive contributions to productivity growth in the economy, which were larger than the long-term average (by approximately 0.4 percentage points in 2000-2019). Although the information and communication sector is important, due to its contribution to productivity dynamics, an essential part plays the IT subcomponent, in particular, which is an element supporting the digitalisation of all economic sectors. To this end, given the economic recovery in 2021, it is worth noting the contribution of retail and wholesale trade and accommodation and food services, some activities (e.g., online trade) benefiting from digitalisation and automation. Moreover, in 2023, "public administration; compulsory social security" made a large contribution, especially due to the reduction in the number of employees.

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National Bank of Romania – *Financial Stability Report*, December 2023

5 Due to higher GVA dynamics than those of the number of employees in 2020-2022 and the GVA growth overlapping the reduction of labour during 2023.