EUROBANK

Athens, April 3rd, 2024

The Economic Analysis and Research Unit of Eurobank has issued a study titled "**Infrastructure Pillar: Investments in Infrastructure - Reconstruction and Expansion of the Productive Capacities of the Greek Economy**." The authors of the study are Dr. Theodoros Stamatiou, Senior Economist, and Dr. Stylianos Gogos, Research Economist.

Summary of the Study

From the first major infrastructure projects in Greece in the last quarter of the 19th century, the twenty-year economic reconstruction-expansion of the 1950s and 1960s, to the modernization of infrastructure in the 1990s and 2000s, investments in infrastructure have played a dynamic role in the growth of the Greek economy. Experience has shown that investments in infrastructure generate significant benefits for the economy and constitute a necessary - albeit not sufficient - condition for creating a resilient and sustainable growth model. According to the literature, the multiplier effect on the economy from investments in infrastructure is significantly greater in the long term than in the short term. Accumulated capital primarily yields product over time but also creates economies of scale and scope for other activities. This result is important for the current needs of the Greek economy, which mainly focus on expanding its production possibilities frontier. During the construction period of infrastructure projects, benefits are generated in the form of increased demand and employment in sectors directly and indirectly related to construction activity. However, delays and imperfections in project implementation may lead to a smaller or even negative multiplier effect. Investments in infrastructure boost the trade of goods and services, lead to the dissemination and integration of cutting-edge technologies into the productive fabric, produce benefits for regions, fortify the economy and society against major and unforeseen crises (in energy, food, pharmaceuticals, and military equipment), highlight the country's geographical advantages, and ultimately improve the quality of life for citizens in both major urban centers and rural areas. Once infrastructure projects are completed and made available to the public, resources are required for their maintenance and, occasionally, for their future upgrade. This ensures their smooth operation. In cases where these investments are not made or are inadequate, infrastructure projects deteriorate and become obsolete, resulting in their use becoming costly and inefficient. Additionally, when delays in project delivery occur frequently or when projects are consistently characterized by poor quality, expectations are cultivated that this will also happen in the future, creating uncertainty regarding the expected benefits from the use of the infrastructure.

Based on official data, it is evidenced that resources directed towards infrastructure during the debt crisis decreased or, in some sectors, remained stagnant, resulting in the shrinkage of the capital stock and the potential output of the economy. Excluding investments from institutional sectors of households (mainly residences) and financial corporations, the decrease in the fixed capital of the Greek economy from 2011 to 2023 amounted to €40.2 billion at current prices, with 24.0% of it (€9.6 billion) coming from the institutional sector of the general government. Considering that the lion's share of the general government investments belongs to infrastructure projects, the aforementioned decline in public capital

primarily reflects the contraction of infrastructure capital, a source of negative externalities. Based on a numerical exercise, it is estimated that: first, public investments should exceed 3.3% of GDP annually, so that general government capital enters an upward trajectory, and second, public investments should increase at an average annual rate of 4.4% so that the losses of public capital during the debt crisis are recovered within 10 years. Additionally, private investments in infrastructure should also increase to recover the relevant losses.

A significant challenge in the effort to strengthen infrastructure during the current period is the acute shortage of construction workers. The sub-sector of infrastructure needs to compete with other construction sub-sectors for attracting workers, especially during a period when many large infrastructure projects are underway across Greece. In road construction, railway lines, and public projects, employment decreased from 33.8 thousand individuals in 2009 to 16.9 thousand individuals in 2020 (-16.9 thousand individuals).

Moreover, in the post-pandemic period, following the war in Ukraine and the consequent energy crisis, construction costs in terms of materials have significantly increased. Although there are no detailed data on construction costs in infrastructure, using the construction cost index for new residential buildings from ELSTAT as an approximation, a cumulative increase was recorded in the fourth quarter of 2023 compared to the fourth quarter of 2019 by 21.0% (25.9% for materials and 12.9% for labor costs).

The framework for transforming the country's growth model is provided by the "Greece 2.0" program and the Pissarides Report, focusing on short-term actions financed by the Recovery Fund and long-term plans to boost sustainable development, respectively. These texts also refer to infrastructure, with an emphasis on improving transportation infrastructure. The Pissarides Report recognizes the need to strengthen Greece's transportation infrastructure, focusing mainly on improving road and rail transportation and port infrastructure.

Empirical analysis of investments in construction excluding residences in Greece reveals significant short-term and long-term relationships with selected macroeconomic variables. Foreign direct investments positively correlate with investments in construction, while the 10YR GGB spread over Bunds is negatively correlated, indicating the importance of external financing and country risk. Government expenditure and its interaction with foreign direct investments has a small but statistically significant impact, indicating the need for coherent economic policies. The analysis highlights the need for further examination and continuous monitoring of the macroeconomic conditions affecting the investments in this sector.

The review of financing opportunities offered by the EU for the period 2021-2027 reveals a particular emphasis on investments in infrastructure and urban development, with the Multiannual Financial Framework and the NextGenerationEU initiative playing a central role. EU initiatives enhance the sustainability of the economy and digital development, with Greece benefiting significantly from these initiatives for its growth. The contribution of the banking system to the country's recovery effort was significant and is expected to continue in the next period, either autonomously or as a complementary tool to European financial initiatives, promoting sustainable development.

The main policy proposals of our study are summarized as follows:

- Investments in Physical and Digital Infrastructure: Priority should be given to strengthening physical infrastructure (railways, road networks, ports, airports) while simultaneously expanding and upgrading digital infrastructure. Focus should be given also on maintaining and upgrading existing infrastructure to ensure optimal operation.

- Facilitation of Foreign Investments: Creating a favorable and transparent environment for foreign investments in infrastructure through incentives and reduction of bureaucracy.

- Enhancement of Connectivity: Focus on projects that improve connectivity between urban and regional centers, as well as between Greece and other countries, to increase the country's competitiveness.

- Public-Private Sector Partnerships: Encouragement of public-private sector partnerships (PPPs) for the implementation and financing of major infrastructure projects, with clear terms and distributed risks.

- Modernization of the Legal Framework: Revision and modernization of the legal framework governing infrastructure investments to facilitate faster project implementation and resolution of any disputes.

- Strong Fiscal Management and Transparency: Strengthening fiscal management and advocating transparency are imperative, aiming to reduce country risk and enhance investment confidence. Additionally, steady monitoring of macroeconomic data will ensure immediate adaptation to economic changes, enhancing economic resilience.

- Utilization of RRF Loan Funds: Strategic focus on leveraging resources available through the RRF. Selected initiatives should encourage private investment, promote employment, and contribute to the country's growth, while being compatible with national and European sustainability and resilience goals.

- Design of Resilient Infrastructure to Address Climate Crisis: The importance of infrastructure for the functioning of the economy is critical, necessitating a plan for infrastructure that addresses the challenges of the climate crisis. Recognizing and strengthening infrastructure threatened by weather phenomena, as well as designing new projects to prevent future problems such as desertification and water supply.

The focus on these policy proposals should provide the basis for dynamic and sustainable economic development, simultaneously improving the quality of life for citizens and Greece's competitiveness.