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3.2. Income inequality and productivity

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3.2.1. Introduction

Over the past two decades, income inequality has emerged as one of the most challenging socio-economic issues, with a multiplicity of linkages affecting various facets of economic activity and overall macroeconomic performance (Stiglitz, 2012; Atkinson, Piketty and Saez (2011)). There is a widespread consensus that inequality not only erodes social cohesion, but also hampers economic progress (OECD, 2017). Numerous contributions to the literature on economic inequality shed light on the social, economic, and political implications of a fragmented society, contending that reducing inequality and championing initiatives for shared prosperity are not merely preferable but imperative for achieving sustainable economic development.

This assertion finds further support in the United Nations Sustainable Development Goals (UNDESA, 2015), a set of top-priority objectives aimed towards the eradication of poverty in all its forms, with a pronounced focus on diminishing inequalities within and between countries. Prosperity is intrinsically linked to productivity (the output per worker), ultimately resulting in an enhanced standard of living. However, the surge in income inequality restricts access to essential resources and opportunities, thereby impacting well-being and corroding social cohesion. This state of affairs becomes apparent in cases where an increasing segment of the population encounters obstacles when seeking access to fundamental necessities such as education, healthcare, and other indispensable services (Missos, 2021a). In the absence of an effective system of social protection, disadvantaged groups often face numerous barriers that impede their ability to improve their socioeconomic status.

To a significant degree, the connection between inequality and productivity is especially conspicuous in the context of various social policies, whether at the national or regional level, which are designed to assist low- and middle-income households. Consequently, the well-established relationship between productivity and inequality has been thoroughly documented. Policy measures that emphasize the enhancement of aggregate demand through investments (OECD, 2016, ch. 2) are deemed essential for elevating productivity and supporting living standards, especially of the most disadvantaged groups.

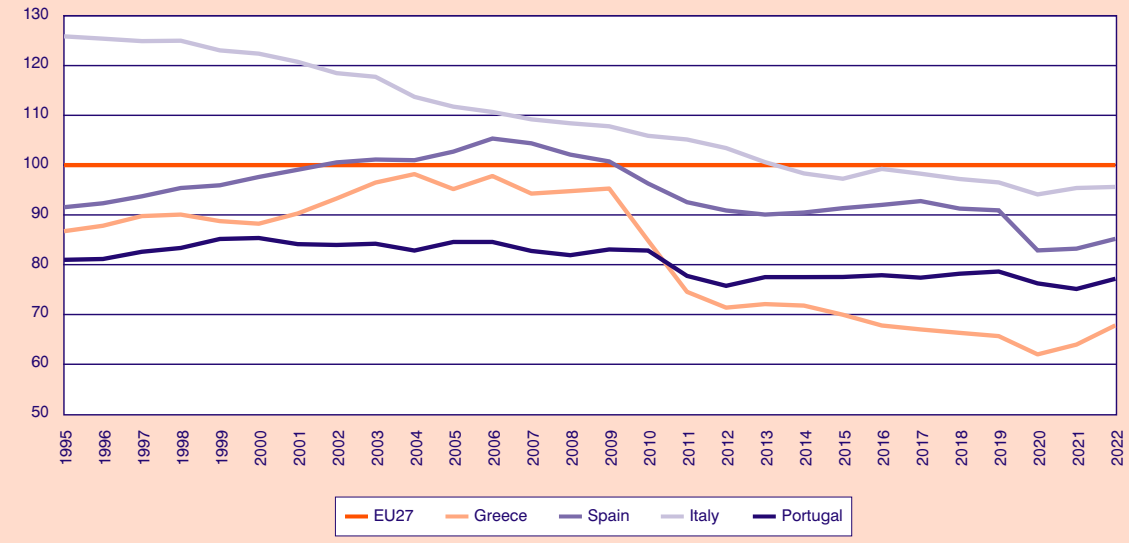
3.2.2. Greece's economy diverges from the EU average

Inequality among the European Union (EU) countries has, for the most part, shown an upward trajectory. The EU is a region of great diversity, with significant disparities in income levels among its member states and highly varied production structures. Furthermore, southern European countries have exhibited a pronounced and persistent decline in relative income levels, a trend that became more pronounced after the year 2009. Figure 3.2.1 simplifies this concept, offering a visual representation of the extent of disparity among EU countries and serving as a valuable indicator for grasping the evolving pattern of inequality.

When we examine the GDP per capita in Greece in comparison to the EU27 average (indexed as "100" in Figure 3.2.1), we can observe that the period of EU convergence halted or decelerated significantly after the economic downturn in 2009. Figure 3.2.1 illustrates the extended trends in GDP per capita in PPS (Purchasing Power Standards), expressed as percentages of the EU27[1] average. It becomes evident that certain countries experienced more severe economic contractions than others, underscoring the notable disparities among member states.

1. According to the European Price Statistics publication (Eurostat, 2008, chapter 5), purchasing power parities (PPS) determine the exchange rate that equates the purchasing power of two different currencies. Country PPSs are indicators used to eliminate price level differences between countries by comparing the quantities of currency units required to purchase a basket of common goods and services. The unit of measurement of these PPS indicators is called the Purchasing Power *Standard*, which is a hypothetical currency used as a common unit of account for all EU27 countries, based on the cost of living. Thus, due to different price levels, the euro currency does not correspond to the same quantity of goods in all EU27 countries, and the PPS indicators allow more accurate and meaningful economic comparisons between countries. In Figures 3.2.1, 3.2.3 and 3.2.4, all measurements are shown in PPS.

FIGURE 3.2.1
GDP per capita, in PPS, as percentage of EU27 (100), major countries of southern Europe, 1995-2022



Source: Eurostat, Survey of Income and Living Conditions.

As all the prominent countries in Southern Europe experienced a decline and divergence, Greece's GDP per capita fell to approximately 70% of the EU27 average. During this period, the gap between Greece and the EU27 has consistently expanded, while its GDP per capita, measured in purchasing power, has remained at a persistently low level for over a decade. Consequently, Greece confronts substantial hurdles in its pursuit of sustained growth and narrowing the economic disparity with its European counterparts. This endeavor is particularly vital because regions or countries with a real GDP per capita below 75% of the EU27 average are eligible for assistance from the EU structural funds.

3.2.3. The Greek system of social protection suffers from chronic inefficiencies

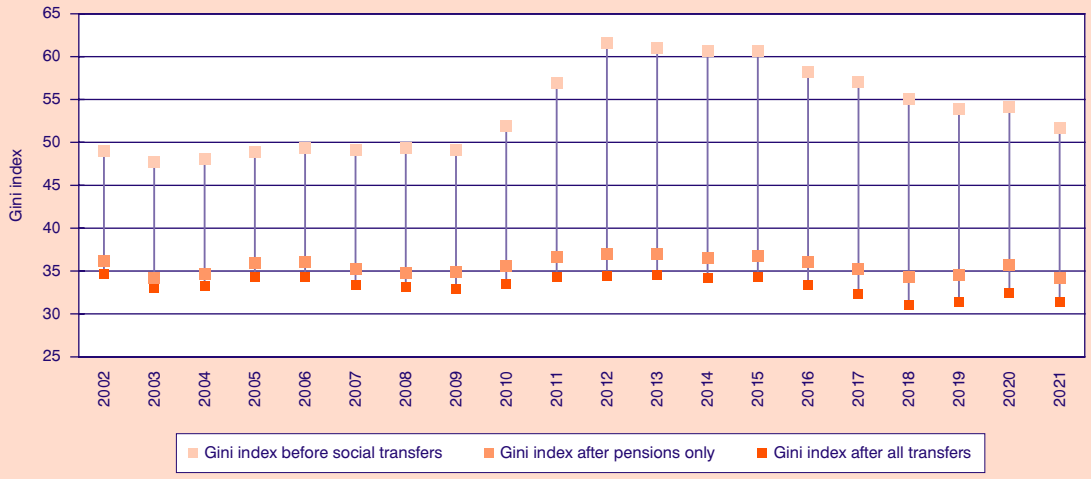
Within country inequality analysis reveals a persistent issue linked to the historical physiognomy of Greece's social protection system. Enhancing the effectiveness of social protection may be a very complex task. From this standpoint, Greece's social welfare system grapples with several complexities as it struggles to increase income towards marginalized parts of the population (Missos, 2021a). However, its operation is inefficient since it perpetuates inequality and hampers the promotion of overall well-being. Achieving a more equitable social protection system in Greece continues to be a pressing and ongoing challenge.

Figure 3.2.2 illustrates three distinct Gini income inequality indices for the period between 2002 to 2021. The Gini index serves as a concise metric for quantifying income inequality. In the context presented here, it is computed based on the dispersion of disposable income. The Gini index ranges from 0, signifying absolute equality (where all individuals possess the same income), to 100, representing the exact opposite, which is maximum inequality (where all income is owned by a single individual). An increasing Gini indicates that a relatively smaller segment of the population holds a larger proportion of the total income. Consequently, this increase is directly associated with poverty and social exclusion.

As with all other countries of the EU, social transfers in Greece –along with other redistributive polices– contribute significantly towards reducing the unequal allocation of income. By providing financial support and essential services for health, education, etc. to those with lower earnings or in need of assistance, social transfers contribute towards mitigating the effects of inequality and promoting social stability.

Since 2010, there has been a sharp rise in the Gini index before accounting for any social transfers. This evidence indicates that the role of pensions in income redistribution has become more prominent. Between

FIGURE 3.2.2
Gini before and after social transfers, 2002-2021, Greece



Source: Eurostat.

2002 and 2009, pensions contributed to a reduction in the Gini index by 13.6 points. However, from 2010 to 2021, this contribution increased to more than 21 points, significantly surpassing the EU27 average (15.4 percentage points). The documented upward trajectory of the Gini index before social transfers suggests that income earned through market activities, such as wages, dividends, rents, and profits, has been tending towards a more unequal distribution.

The social welfare system can play a vital role in mitigating the inequality originating from market forces, and its effectiveness hinges on its ability to address recipients' needs through evidence-based adjustments. Consequently, as income inequality continues growing over the years, the role of social protection becomes pivotal in bridging these gaps and ensuring access to essential services to foster social cohesion. A comprehensive approach that integrates social protection with growth policies, education, and opportunities in the labor market can lead to more sustainable outcomes.

Conversely, other types of social transfers, such as family and unemployment benefits, appear to have a limited impact on curbing inequality. For instance, the risk of poverty is notably higher for single-parent households in Greece when compared to other household categories (Missos, 2021b). This highlights the urgent need for a more targeted and specialized approach to social benefits, specifically tailored to address the unique challenges faced by single-parent households, particularly those associated with raising children.

Nevertheless, when the entire population is taken into account, the effectiveness of non-pension social transfers in reducing inequality has been gradually improving. Its relative performance, however, remains relatively modest. To illustrate, from 2002 to 2009, these transfers had an estimated impact of 1.6 points, while from 2010 to 2021, the impact increased by 2.7 points –yet still falls far short of the EU27 average. These findings clearly underscore the significant room for reforms aimed at enhancing the efficiency of the social protection system to mitigate income inequality effectively and ensure that social protection benefits can reach and support those groups most in need. It's worth noting that pensions represent a substantial portion of social benefits, indicating that the Greek social welfare system has been primarily structured to cater to the needs of the elderly population, with comparatively less emphasis on other socio-economic groups.

3.2.4. Firms by size and household income: Are they positively related to productivity?

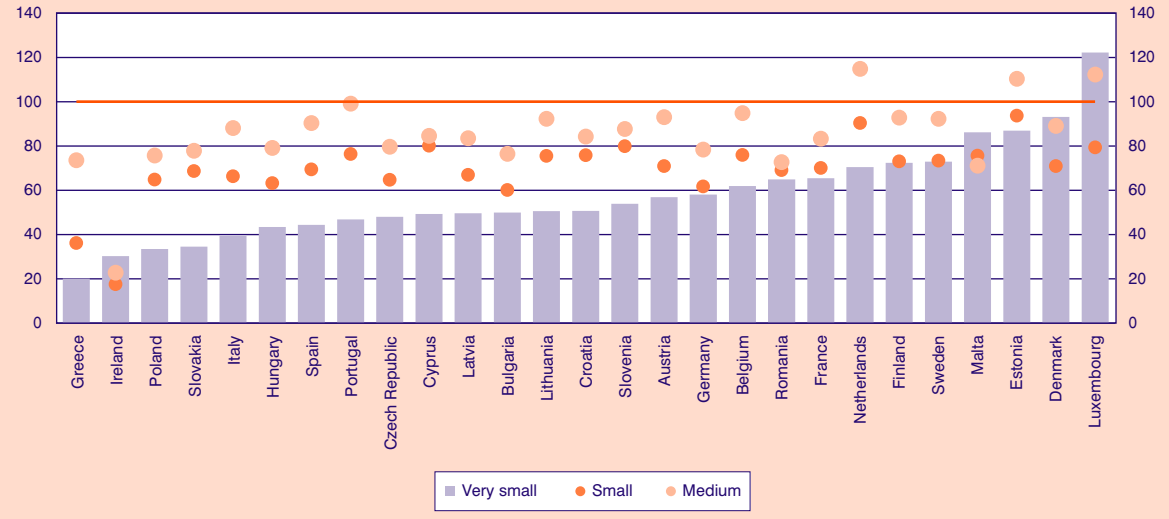
The widespread acknowledgment of the intricate relationship between productivity and inequality underscores the significance of advancing education, leveraging cutting-edge technologies, and cultivating exclusive skills and specialized knowledge. These factors play an important role in expanding the spectrum of capabilities and pushing the boundaries of the labor force's potential (UNDESA, 2015, p.95-96; Hanson and Rose, 2010). In this context, the availability of more and better-quality job opportunities is deemed a fun-

damental catalyst for inclusive growth. However, this is contingent on the technological advancements introduced being labor-augmenting, i.e., providing avenues for individuals to join the workforce (OECD, 2018). The effective absorption and application of these new technological developments are critical as they open up possibilities for increased wages, enhanced benefits, and improved working conditions for employees.

Regarding the number of enterprises, the entrepreneurial landscape in Greece broadly follows the established pattern within the EU27. Based on the latest available Structural Business Statistics, as of 2021, very small enterprises (those with fewer than 9 employees) in Greece constitute a significant 92.7% of all enterprises. This figure aligns closely with the EU27 average, which stands at approximately 93.1%. These statistics underscore the crucial role played by small-scale enterprises in the socioeconomic fabric of Europe. Small and medium-sized enterprises (SMEs) are widely recognized as key drivers of growth, innovation, and employment generation. They have the capacity to rapidly absorb and provide jobs for a substantial portion of the total workforce. However, it's worth noting that the percentage of employees working in very small enterprises in Greece is significantly higher, accounting for 40.1% of overall employment. This figure surpasses the EU27 average, which hovers around 28.5%. This disparity highlights the pronounced importance of small-scale entrepreneurial activities in shaping income distribution. It constitutes a vital factor that warrants careful consideration in the formulation of policies aimed at fostering economic development.

Figure 3.2.3 illustrates the extent to which SMEs' productivity, defined as gross value added per employee, deviates from that of large enterprises within the EU27 countries, benchmarked against a value of 100. This divergence is a common occurrence, as large enterprises often enjoy more accessible financial resources, advanced technologies, and a wealth of human capital. All the findings presented in Figure 3.2.3 are based on five-year averages spanning the period from 2017 to 2021. While various methodologies are available, SMEs are categorized into three groups: very small (0-9 employees), small (10-49 employees), and medium (50-249 employees). The orange horizontal line represents the productivity level of large enterprises (those with more than 250 employees).[2] This concept conveys the productivity gap observed between SMEs and large enterprises, taking into account the specific economic conditions prevailing in each country.

FIGURE 3.2.3
Comparing the productivity between SMEs and large enterprises (100), average 2017-2021, EU27



Source: Structural Business Statistics, <https://single-market-economy.ec.europa.eu/smes/sme-strategy/sme-performance-review_en>.

2. From 2008-2014 and from 2015-2022, the average productivity levels of large-scale enterprises, measured in PPS as the ratio between gross value added and number of employees, shows a significant increase of variability among the EU27. More specifically, the coefficient of variation (CV) –the ratio of standard deviation to the mean– between the respective periods has almost doubled, indicating a greater dispersion of productivity performance.

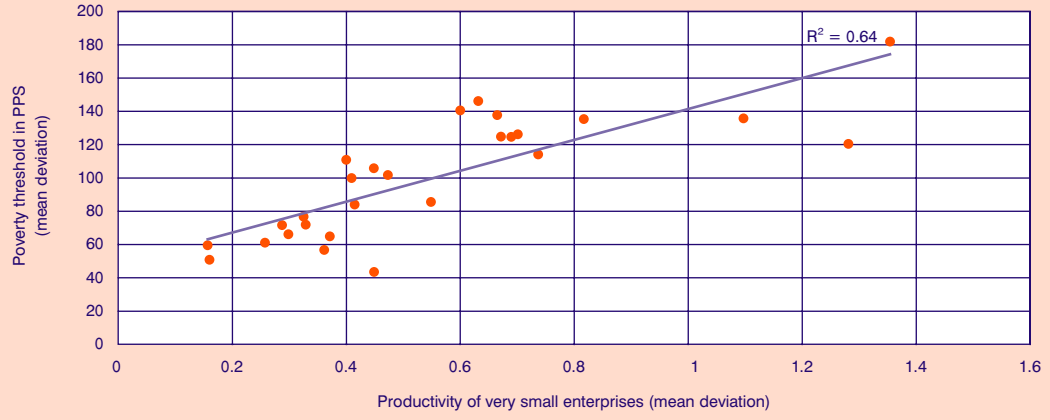
An examination of SME productivity relative to that of large enterprises (as depicted in Figure 3.2.3) reveals that very small businesses in Greece appear to perform significantly below the corresponding entities in any other EU27 country. Furthermore, small-sized enterprises in Greece occupy the second-lowest tier, outperforming only Ireland, while medium-sized enterprises rank as the third lowest, trailing behind Romania and Malta. This striking underperformance of SMEs in Greece reflects the intricate relationship between employment levels and the creation of added value. This dynamic is shaped by a diverse array of technical approaches, underpinned by a fusion of knowledge-based methodologies and highly advanced skills. For very small-sized enterprises, even marginal improvements in their productivity levels can have a substantial impact on overall income, given their notably high share of total employment. In light of this, policies and initiatives aimed at enhancing skills, fostering technology adoption, boosting innovation capacity, and improving the overall business infrastructure can play a pivotal role in elevating SME productivity. However, the efficacy of such policy responses hinges significantly on the specific sectoral composition of the country's production structure and the concentration of either low or high value-added activities within it.

Figure 3.2.4 illustrates the correlation between productivity in very small enterprises and the poverty threshold, denoted in Purchase Power Standard (PPS). To minimize sporadic fluctuations, all measurements are represented as five-year averages (2017-2021) of mean deviations. The poverty threshold is determined as 60% of the median disposable income, signifying the dividing line below which an individual is categorized as "poor." Moreover, the vertical axis enables a comparison of poverty thresholds across the EU27 countries. Evidently, as Figure 3.2.4 demonstrates, there exists a positive correlation between these two variables among the EU27 countries. This positive correlation underscores the significance of very small entrepreneurial endeavors in contributing to social well-being, thereby emphasizing the need for further exploration of this issue. The performance of small enterprises is intrinsically linked to enhancing living conditions and has the potential to elevate the standards of individuals facing poverty.

In the sense that heightened productivity creates new employment opportunities, the ability of small enterprises to facilitate job creation and income generation contributes to the reduction of unemployment rates, enabling individuals to partake in activities aimed at enhancing their quality of life. Additionally, small-scale entrepreneurship should be regarded as a tool for bolstering economic empowerment, fostering self-reliance, and elevating social standing, all of which have positive ripple effects on the overall well-being of local communities. Cultivating an environment conducive to the thriving of SMEs may, in turn, exert a favorable impact on poverty and inequality reduction, particularly if it leads to a narrowing of the income gap between high- and low-paying activities, even if it comes at the expense of the former.

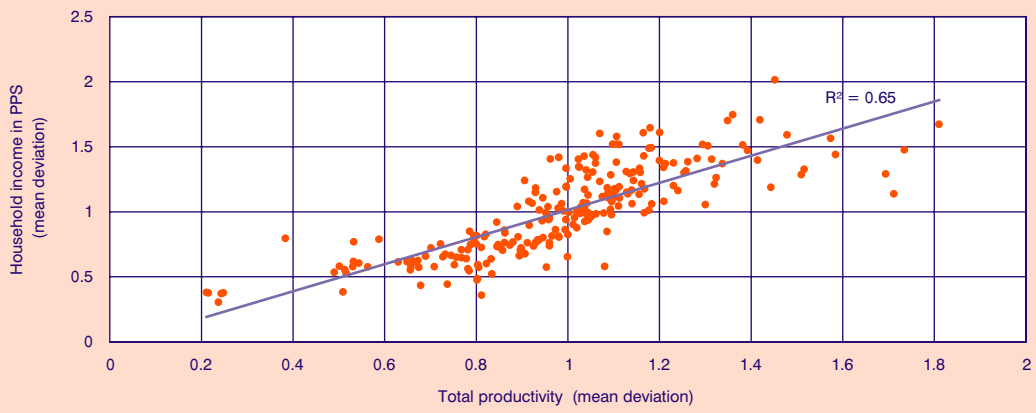
In a similar vein, Figure 3.2.5 presents the connection between overall productivity (measured as gross val-

FIGURE 3.2.4
Correlation between very small productivity and the poverty threshold (EU27) in PPS, 2017-2021 average



Source: Eurostat and author's calculations.

FIGURE 3.2.5
Correlation between total productivity and household income (EU regions) in PPS, 2017-2021 average



Source: Eurostat and author's calculations.

ue added over the number of employees) and household income (in PPS) across all regions (NUTS2) of the EU27 (refer to the Methodological Note). Over the period spanning from 2017 to 2021, various regions within Greece experienced significant fluctuations in poverty rates, displaying noteworthy deviations from the national average. Regions such as Dytiki Ellada (26.1%), Anatoliki Makedonia (25.5%), Thraki, and Dytiki Makedonia (23.7%) consistently demonstrated poverty rates that surpassed the national average.

Enhanced productivity contributes to increased earnings, which can subsequently stimulate investments in the creation of new job opportunities. Productivity improvements at the regional level may also generate positive spillover effects by boosting demand for local goods, thereby amplifying the impacts of heightened productivity. To a certain extent, income levels are intertwined with productivity, with the latter playing a pivotal role in bolstering per capita household income. Nevertheless, it's important to note that productivity alone does not guarantee an equitable distribution of income, though it is a necessary prerequisite for fostering future sustainable development.

3.2.5. Policy implications

Addressing economic disparities and promoting productivity and inclusive growth in Greece remains a priority. Government actions are faced with a twin challenge of pursuing a wide range of policies that reduce inequalities while supporting productivity. Producing products of higher quality and complexity is essential. Among others:

- Policies that focus on improving access to training for the acquisition of relevant skills are needed to enhance productivity and potentially reduce disparities.
- Labour market reforms ought to be directed towards promoting fair and inclusive employment, enhancing a framework of continuous social dialogue between employers and employees to ensure that workers in the Union earn adequate wages (principle 6 of the European Pillar of Social Rights).
- Robust social protection is necessary to provide adequate coverage of the social security and services that are essential for advancing social cohesion, directed to small-scale entrepreneurs.
- As long as the conditions for repayment are met, easing the access to affordable finance and supporting small-scale entrepreneurship should be a policy priority. Financial inclusion through particular schemes may enable small firms to invest in new technologies and innovative techniques.
- Specialised initiatives that would facilitate technology transfer and collaborations with other firms, even abroad, can enlarge the network and create linkages for export promotion.

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