CHAPTER 7

Simulation of the Policies Implementation up to 2030

7.1 Introduction

After overcoming the crisis of the Covid-19 pandemic (hoping that this will happen within 2020 and that there will not be a second wave of the pandemic’s impact which would be catastrophic—see Chapter 8), the Greek economy is expected to enter a new phase, as a rare opportunity arises. It is about the coexistence of: (a) social discipline and tendency for progress; (b) reform logic; and (c) fiscal and monetary support, factors that create a positive combination—perhaps unique in the last 200 years of existence of the Modern Greek state.

In the previous six chapters, a series of actions were presented, the implementation of which is expected to significantly stimulate the economic activity of the Greek economy and will lead it to a sustainable growth path. The implementation of these policies in conjunction with the allocation of European funds to support the economy due to the crisis of the Covid-19 pandemic should be the strategic weapons of Greece in order to achieve satisfactory economic recovery and sustainable economic growth and growth by 2030.

The structure of the chapter is as follows: Initially (Sect. 7.2), the dynamic inclusive and sustainable growth model for the Greek economy is presented, which is a summary of the policies presented in the previous six chapters. Next (Sect. 7.3), the relationship between structural changes and growth multipliers for the Greek economy is described and in
Sect. 7.4 the need for a change in the production pattern is presented, so that the economy would not be vulnerable to external shocks. The next Sect. (7.5) describes the funds expected to flow into the Greek economy from the European Union (EU), the management of which is a critical issue for stimulating economic activity. Finally, Sect. 7.6 presents the performance of the economy after implementing the reform agenda and acquiring European funds.

7.2 THE DYNAMIC INCLUSIVE AND SUSTAINABLE GROWTH MODEL

In general, policies for implementing an inclusive growth and development program are based on the framework for strong, sustainable, balanced, and inclusive growth as it has been adopted and developed since 2009 by the G20. The main goals are to achieve strong, sustainable, and balanced growth with the end result being the creation of Sustainable Development Goals (SDGs) by 2030 (United Nations Development Program [UNDP]). The Covid-19 pandemic is considered to not violate any of the requirements of the dynamic, inclusive, and sustainable growth model. On the contrary, it makes it imperative to implement similar policies in the medium-term.

This program, and the subsequent policies, is based on the monitoring of a series of indicators in three areas of social activity: Growth and Development, Inclusion, and Intergenerational Justice and Sustainability (Fig. 7.1).

These policies can be divided into two important categories:

- domestic policy support and
- support for systematic issues with a global dimension (participation in monetary associations, stability of the financial system, etc.).

This book focuses exclusively on domestic policy support considering that systemic issues are, at least for the time being, outside the realm of politics. Domestic policy support extends to a wide range of key individual policies involving six pillars. These are policies for immediate action and policies that focus on the five pillars of the inclusive growth and development policy for the Greek economy, as analyzed in the previous six chapters. Figure 7.2 summarizes the overall image regarding the sectors of action in order to achieve satisfactory and sustainable growth in the Greek economy.
Fig. 7.1 Inclusive growth and development key performance indicators (Source: World Economic Forum [2017])
**Inclusive growth and development policy on the short, medium, and long-term horizon (Source: Authors’ own creation)**

| Pillar 1 - Policies for Immediate Action and Medium-Term Growth |
|---------------------------------------------------------------|
| Output Gap                                                   |
| Revitalizing the Financial Sector                            |
| Effective Public Management and Reforms                      |
| Effective Public Sectoral Fiscal and Monetary Policy         |

| Pillar 2 - Policies for Social Sustainability Policies |
|------------------------------------------------------|
| Ending Risk Poverty                                  |
| Ensure Healthy Life and Well Being                   |
| Climate Action                                      |
| Promoting Life on Land and Life Below Water          |

| Pillar 3 - Policies for Sustainable Governance          |
|--------------------------------------------------------|
| Institutional Changes                                  |
| Effective Management of Public Sector                  |
| Tax Fraud Elimination                                 |
| Anti-Corruption Policies                               |

| Pillar 4 - Policies for Enhanced Inclusivity            |
|--------------------------------------------------------|
| Income and Wealth Distribution                         |
| Social Security                                       |
| Strategic Plan on Corruption                          |
| Public Infrastructure                                  |

| Pillar 5 - Policies for Pro-Growth Social Behavior     |
|--------------------------------------------------------|
| Nudges Policies                                       |
| Export Promotion                                      |
| Corporate Innovation                                  |
| Expectations                                          |

| Pillar 6 - Policies for Dynamic Economic Growth        |
|--------------------------------------------------------|
| Private Investment Promotion                           |
| Export Promotion                                       |
| Enhancing of Entrepreneurship and Innovation           |
| Public Infrastructure                                  |
| Attracting Talents                                     |

Fig. 7.2 Inclusive growth and development policy on the short, medium, and long-term horizon (Source: Authors’ own creation)
The implementation of structural reforms in the above sectors is expected to lead to a significant increase in productivity in the Greek economy. Productivity in the Greek economy, as measured by total factor productivity (TFP), experienced a phase of rapid growth between 1995 and 2007, well above that of the Eurozone. However, since the outbreak of the crisis in 2008 and until 2013, it has fallen significantly to the level of 1996, and in recent years has shown some signs of improvement, given the significant reform effort achieved during the years of the crisis and the implementation of the fiscal adjustment programs. The deterioration in productivity in the Greek economy was much larger than in Eurozone, while at the same time it lasted a longer period. At the same time, the emergence of the Covid-19 pandemic is expected to significantly delay the realization of the gains deriving from the effort of recent years, since the effects of the pandemic crisis led to a decrease in the productivity of the economy.

These trends should be reversed. But, in order to be reversed, productive investment and a satisfactory growth rate in the economy are needed. The implementation of the policy measures included in this book and compiled in Fig. 7.2 is expected to contribute to this direction.

### 7.3 Structural Changes and Developmental Multipliers

In the Greek economy, it appears that periods of high (low) potential growth coincide with periods of high (low) TFP growth (Malliaropoulos, 2017). Looking at the period from 1966 to 2015, Malliaropoulos (2017) concludes that there is a high correlation between TFP growth and capital accumulation, of the order of 0.62. The logic behind this relationship is that when potential growth is low, there is a large pool of unused which provides initial space so as to enlarge the economy. However, at the same time, capital stock continues to decline due to negative net investment. In order to get the economy out of this situation, structural reforms are needed that will facilitate the growth in capital stock. Then the growth of capital stock combined with the fact that structural reforms begin to pay off, increasing the TFP.

The structural changes that took place during the period 2010–2019 in the Greek economy will have a total contribution to the gross domestic product (GDP) of the Greek economy of 13.4% over a decade. Organisation for Economic Co-operation and Development (OECD) estimates
show that over the next decade, the reforms introduced since 2010 in conjunction with the reforms included in the third economic adjustment program will significantly boost the output of the economy, significantly compensating for the loss of potential production due to the crisis (Petrakis & Kostis, in press).

The significant effect of the reforms on GDP seems to emerge, ceteris paribus, after 5 years from the time of their implementation. This means that significant benefits are expected to emerge from the overall reforms carried out in previous years in the Greek economy.

However, as Petrakis and Kostis (in press) note, what is important is not to carry out numerous structural reforms, but effective structural reforms in the sense of reforms that significantly improve TFP and ultimately stimulate economic activity. In other words, small-scale structural reforms but in specific sectors of economic activity (such as in industry and in manufacturing and in the upstream sectors of energy, transport, and communications, which output is used as an intermediate input into downstream industries) can have the same or even higher effects on investment growth than more multi-dimensional structural reforms in the economy as a whole. The reason why this may be the case is the effects on TFP and thus the increased productivity of the sectors of economic activity.

In fact, for the Greek economy, the correlation between the reform responsiveness rate and the TFP change in the period from 2011 to 2018 is perfectly negative, of the order of $-1$. This means that when the reform responsiveness rate in Greece increases, the less the negative size of TFP decreases, that is, the better the TFP. In the context of this relationship, the great importance of the reform effort to improve TFP is highlighted (Petrakis & Kostis, in press).

In addition, as noted by Petrakis and Kostis (in press), the multiplier linking TFP to the GDP of the Greek economy shows that an increase in TFP by 0.1 points is expected to increase cumulatively the GDP of the economy by 3% in 2020, 6% in 2021, 8% in 2022, 9% in 2023, 10% in 2024, 11% by 2027, and 12% by 2030. The corresponding multipliers for other economies, such as those of Germany, Ireland, and Portugal are slightly lower, highlighting the great importance of structural changes in stimulating economic activity through the TFP channel in Greece. It is also noted that for Greece there is an increase in the multiplier over the years, reaching its maximum level after the seventh year.
7.4 The Need to Change the Production Model

Greek economy is mainly based on the production of only a few sectors (tourism, shipping) and this makes it particularly vulnerable to external shocks (see Chapter 10 in Petrakis and Kostis [in press]). It is imperative to change the production model of the economy so that there is a greater degree of diversification of production and therefore the risk managed by the economy.

The role of diversification is also important for the economy as a whole as diversification of investment and production is essential for economic growth (Petrakis, Valsamis, & Kafka, 2016; Petrakis, in press). This perception has been largely analyzed by the economic literature. Nobel laureate Simon S. Kuznets (1971) argues that the economic growth of a country can be defined as a long-term increase in the ability to provide more and more diversified economic goods to its population. This argument is further reinforced by the view of Grossman and Helpman (1992) who argue that the growth of an economy requires the production of an ever-increasing quantity, quality, and variety of goods and services.

An economy is being diversified when its income derives from different sources that are not directly related to each other (Shayah, 2015). If the income of a country depends only on the production of a single product, fluctuations in the price of that product can also lead to fluctuations in the standard of living. Imbs and Wacziarg (2003) present the pattern of sectoral differentiation during development, showing that countries first diversify, i.e., economic activity spreads more evenly between sectors, but, relatively late in the development process, some start to specialize again. In other words, sectoral diversification first increases, but there is a level of per capita income beyond which the sectoral distribution of economic activity begins to concentrate again.

Furthermore, economic growth and structural change depend on the type of products in trade (Hausmann & Klinger, 2006; Hwang, 2006). Therefore, through export diversification, an economy can evolve toward the production and export of advanced products that can contribute greatly toward sustainable economic growth, the achievement of macroeconomic objectives, a satisfactory balance of payments, stable export revenues and lower unemployment and income redistribution. That is why Romer (1990) recognizes diversification as a factor that contributes and exerts an influence on improving the efficiency of other factors of
production. In addition, Acemoglu and Zilibotti (1997) claim that diversification can increase income by extending the chances of investment risk spreading to a wider portfolio.

A typical example of an external shock with a significant blow to the economic production of Greece is the current pandemic of Covid-19. The impact of Covid-19 is also significant in specific areas of activity of the economy. The sector with the biggest problems due to the presence of the pandemic in Greece is tourism. Greece has one of the highest dependencies on tourism worldwide, as according to the OECD annual report published on March 4, 2020 (OECD, 2020), Greece is the 6th most dependent economy in terms of the industry’s contribution to GDP and the 4th most dependent economy in terms of the contribution to employment among the 35 member states that the organization monitors for this sector (Petrakis & Kostis, in press). The very high dependence of the Greek economy on the tourism industry obviously makes the Greek economy particularly vulnerable to any adverse circumstances that may affect tourism activity. Such a conjuncture is undoubtedly the emergence of the Covid-19 pandemic. One of the most important economic effects of the appearance of Covid-19 on the Greek economy is the fact that international travel receipts for the Greek economy are expected to decrease as a result of the fear of travelers, but also the strict policies implemented by the various countries to prevent the phenomenon from spreading.

Due to the Covid-19 pandemic, the biggest reduction in value added is expected (Petrakis & Kostis, in press) for the hotels and catering industry, as, while before the crisis it was expected in 2020 the added value of the sector to increase by 4.5%, after the crisis it is expected to eventually decrease by 16.6%. A significant reduction in value added is expected for the arts, entertainment and recreation sector, since before the crisis it was expected in 2020 the value added of the sector to increase by 2.7%, but after the emergence of the industry is expected to eventually decrease by 16.1% (based on data of May 2020). Significantly negative (and also with a change of sign from positive to negative) are expected to be the new changes in added values for sectors such as trade, other services, transport and communication, manufacturing and construction.

Therefore, the sectoral policy of dealing with the pandemic in the Greek economy now requires greater analysis. In other words, the trade-off dilemma on economic policy should emerge: whether the sectors
that produce the most GDP should be strengthened (so that the recession is shorter in 2020 and the recovery is longer in 2021) or have the most employment (so that there are smaller losses in human capital). The result of trade-off is influenced by the financial cost/effect ratio of each industry’s support.

On a point of view, the sectors that should be supported are the ones with a high value of life (high employment) and a high effect from the support in relation to the required budgetary costs.

From the above it can be concluded that support should give priority to the hotel and catering industry, manufacturing, construction, but attention should be paid to real estate management, transport and logistics services, and professional services.

Figure 7.3 present the percentage change in gross value added (GVA) expected from 2019 to 2020 and from 2020 to 2021 per sector of activity.

Figure 7.4 presents an indicator per sector of economic activity which is derived as the product of the change in the GVA of each branch from

Fig. 7.3 Percentage change of GVA From 2019 to 2020 and from 2020 to 2021 per sector of activity (Note In parentheses, the percentage contribution of each sector to the total added value of the Greek economy for 2019 is presented. The sectors are presented based in the gross value added from higher to lower. Source Oxford Economics [2020a] and authors’ calculations)
Fig. 7.4  Rate of change of value added per sector of activity (Note In parentheses, the percentage contribution of each sector to the total added value of the Greek economy for 2019 is presented. The sectors are presented based on the effects of the Covid-19 pandemic from 2019 to 2020 from negative to positive. Source Oxford Economics [2020a] and authors’ calculations)

2019 to 2020 and from 2020 to 2021 by the percentage contribution of each sector to the total value added of the Greek economy for 2019.

Figure 7.5 shows the sectors of economic activity of the Greek economy, based on the level of employment.

Figure 7.6 shows an indicator which is derived as the product of the change in GVA of each sector from 2019 to 2020 and from 2020 to 2021 by the level of employment of each sector for 2018.

Based on the above, a composite Pandemic Risk Index is being developed that focuses on the six main sectors. This index is derived as the product of the extent to which GDP is affected and the extent to which employment is affected by Covid-19. The index of Fig. 7.7$^2$ is constructed when “employment” is valued at 35% and “GVA“ is valued at 65%. The reverse holds true for Fig. 7.8.

Thus, if we want to distribute 100 units of fiscal and liquidity support and we are looking for a distribution key, then the sum of the “risk” indicator and the participation of each sector to this indicator could be the “distribution key of the support” (Tables 7.1 and 7.2).
Based on these findings, redesign interventions may need to be made because if there are supports in the sectors of Table 7.3, there will be “rescue” results in the economy, i.e., GDP, is likely to be decisive and possibly low cost. The decrease in real estate prices creates some positive conditions.

Finally, Table 7.3 shows the weighting of the sectors when employment and GDP contribute 50–50 to the formation of the weighting. Also, 10% of the weighting concerns all other industries.

Changes in the production model are therefore needed to increase the “risk diversification of the production model,” reducing the possibility of systemic crises to cause acute recessions or, if impossible, to lead to a rapid recovery.

In particular, as far as the manufacturing sector is concerned, greater emphasis should be placed on the fact that it is an industry that accounts (directly and indirectly) for about 1/3 of total employment in the economy (Foundation for Economic and Industrial Research [IOBE],
Fig. 7.6  Index of change of GVA in terms of employment (Note In parentheses, the percentage contribution of each sector to the total added value of the Greek economy for 2019 is presented first and after the vertical line the employment of the sector to thousands of people for the year 2018. Source Oxford Economics [2020a], Hellenic Statistical Authority [2020], and authors’ calculations)

Fig. 7.7  Pandemic risk index In 6 sectors of the Greek economy in terms of GDP (Note The index is derived as the product of the indicators in Fig. 7.4 [with a weighting of 65%] and 7.6 [with a weighting of 35%] for these sectors [for employment the logarithm is taken into account]. Source Oxford Economics [2020a], Hellenic Statistical Authority [2020], and authors’ calculations)
Fig. 7.8 Pandemic risk index in 6 sectors of the Greek economy in terms of employment (Note The index is derived as the product of the indicators in charts 7.4 [with a weighting of 35%] and 7.6 [with a weighting of 65%] for these sectors [for employment the logarithm is taken into account]. Source: Oxford Economics [2020a], Hellenic Statistical Authority [2020], and authors’ calculations)

Table 7.1 Contribution of the 6 sectors based on Fig. 7.7 in terms of GVA

| Sector                                      | 2020–2021 (%) | 2019–2020 (%) |
|---------------------------------------------|---------------|---------------|
| Real estate management (20.7%/4.9)           | 30.1          | 26.9          |
| Transport services and storage (6.3%/184.7)  | 17.4          | 25.9          |
| Construction (4.2%/151.6)                   | 21.4          | 17.9          |
| Professional services (3.2%/214.5)          | 15.8          | 15.7          |
| Manufacturing (8.5%/357.8)                  | 11.3          | 9.2           |
| Hotels and catering (7.4%/361.7)            | 4.0           | 4.5           |

*Note* Percentages derive as the weighting of each branch in the sum of the index of Fig. 7.7  
*Source* Oxford Economics (2020a), Hellenic Statistical Authority (2020), and authors’ calculations

Table 7.2 Contribution of the 6 sectors based on Fig. 7.8 in terms of employment

| Sector                                      | 2020–2021 (%) | 2019–2020 (%) |
|---------------------------------------------|---------------|---------------|
| Hotels and catering (7.4%/361.7)            | 30.2          | 27.0          |
| Manufacturing (8.5%/357.8)                  | 15.8          | 15.7          |
| Construction (4.2%/151.6)                   | 17.5          | 26.1          |
| Transport services and storage (6.3%/184.7) | 21.5          | 18.0          |
| Professional services (3.2%/214.5)          | 11.5          | 9.3           |
| Real estate management (20.7%/4.9)          | 3.5           | 3.9           |

*Note* Percentages derive as the weighting of each branch in the sum of the index of Fig. 7.8  
*Source* Oxford Economics (2020a), Hellenic Statistical Authority (2020), and authors’ calculations
Table 7.3  Contribution of sectors when the weighting of the index is 50% based on GVA and 50% based on employment

| Sector                                                   | 2020–2021 (%) | 2019–2020 (%) |
|----------------------------------------------------------|---------------|---------------|
| Hotels and catering (7.4%/361.7)                         | 27.9          | 25.6          |
| Manufacturing (8.5%/357.8)                               | 14.7          | 14.9          |
| Construction (4.2%/151.6)                                | 16.2          | 24.7          |
| Transport services and storage (6.3%/184.7)              | 19.9          | 17.1          |
| Professional services (3.2%/214.5)                       | 10.6          | 8.8           |
| Other sectors                                            | 7.3           | 5.0           |
| Real estate management (20.7%/4.9)                       | 3.4           | 3.9           |

*Source*  Oxford Economics (2020a), Hellenic Statistical Authority (2020), and authors’ calculations

target to increase manufacturing participation to 20% at European level. Manufacturing has a GDP multiplier of 2.8 and employment multiplier of 3.5, benefiting both services and trade and creating a vital ecosystem of small and medium-sized enterprises (Hellenic Federation of Enterprises [SEV], 2020). Manufacturing accounts for 44% of total exports, pays wages that are on average noticeably higher than the rest of the economy, contributes more than its share to the state’s revenues. Increasing manufacturing participation in GDP, then, has multiplier benefits. Increasing the participation of the manufacturing sector in economic production will also generate significant employment growth, providing significant inclusivity issues for the economy. Moreover, the contraction of manufacturing and the inability of this sector to respond to the challenges created in the modern globalized environment is one of the factors that have contributed to the crisis of 2008 for the Greek economy (Argeitis & Nikolaidi, 2014).

Also, the Greek economy can support the increase in the importance of other sectors in GDP as it presents comparative advantages in a number of sectors, such as metals, food, pharmaceutical industry, green energy, mineral wealth, and some sectors of high technology.

In order to change the production pattern, however, a series of actions are needed that relate to a series of reforms such as those described in Fig. 7.2 that are expected to facilitate business activity in most sectors of the economy. Strategic planning is also required for the formulation of a structured industrial policy and for the digital transformation of the economy.
7.5 Management of European Funds

On May 27, 2020, the European Commission presented a recovery package containing a strengthened long-term EU budget for the period 2021–2027, as well as the new instrument to be used, the “Next Generation EU.” Through this instrument European Commission will use its strong credit rating to raise EUR 750 billion in financial markets (Verwey, Langedijk, & Kuenzel, 2020).

There are two fundamental issues concerning how the Greek economy will “handle” the power of “Next Generation EU.” The first one concerns the amount of the Greek share. The second concerns the way funds are distributed over time and between sectors.

With regard to the amount of the Greek share, 32 to 33.4 billion euros are expected from the official version for the shares of all countries as resulting from the Commission Staff Working Document (European Commission, 2020), and which below we call the European Growth I scenario. However, there are discussions mentioning that there is a more “realistic” allocation of amounts and uses the “criteria” allocation as it assumes, they will actually take effect. In this case the amount expected to receive the Greek economy appears reduced by 11.5 billion euros. Thus, the share of support as a percentage of GDP is reduced from 17.9% to 11.7%.

In order to calculate the impact of this funding on the Greek economy, there are three points that require labeling:

1. Based on the Commission Staff working Document, the case is made for distribution of sizes such as Table 7.4.

However, this table does not specify which sector is the recipient of these funds. If it is the public sector that receives the funds, as nominally mentioned in the Commission Staff Working Document, then two sizes should be affected: debt and/or deficit. In fact, they will be significantly affected.

2. The second issue concerns the possibility of these funds being absorbed by the Greek side.

3. The main political assumption by which the Next Generation EU had been known was that it would directly strengthen the private sector of the economies in order not to burden the indicators of public finances, which is not shown in the assumptions used by the Commission.
| Table 7.4   | Hypotheses of european growth I scenario (BN euros) |
|------------|---------------------------------------------------|

|                | 2021  | 2022  | 2023  | 2024  | 2025  | 2026  | 2027  | Total |
|----------------|--------|--------|--------|--------|--------|--------|--------|-------|
| Loans 35.7%    |        |        |        |        |        |        |        |       |
| Public sector 100% |Investment 100% |4.55   |3.50   |2.10   |1.54   |−−−    |−−−    |−−−    |11.69 |
| Consumption 0% |−−−    |−−−    |−−−    |−−−    |−−−    |−−−    |−−−    |−−−    |       |
| Private sector 0% |Investment 0% |−−    |−−    |−−    |−−    |−−    |−−    |−−    |−−    |
| Consumption 0% |−−    |−−    |−−    |−−    |−−    |−−    |−−    |−−    |−−    |
| Subsidies 64.3% |        |        |        |        |        |        |        |       |
| Public sector 100% |Investment 100% |8.45  |6.50  |3.90  |2.86  |−−−    |−−−    |−−−    |21.71 |
| Consumption 0% |−−−    |−−−    |−−−    |−−−    |−−−    |−−−    |−−−    |−−−    |       |
| Private sector 0% |Investment 0% |−−    |−−    |−−    |−−    |−−    |−−    |−−    |−−    |
| Consumption 0% |−−    |−−    |−−    |−−    |−−    |−−    |−−    |−−    |−−    |
| Total           |13.00  |10.00  |6.00   |4.40   |−−−    |−−−    |−−−    |33.40  |

*Note* Rows and columns are presented in which the content is presented with dashes, for compatibility reasons with Table 7.5

*Source* Authors’ own estimations based on European Commission (2020)
European Growth I scenario is an approach based on the assumptions of the European Commission (2020) text (27/5/2020—Identifying Europe’s recovery needs) on the basis of which a euro area GDP growth of 1.75% in 2021 and 2022, and 2.25% by 2024 should be expected. European Growth II scenario is an alternative approach to how EU inputs will be allocated based mainly on the text of Oxford Economics (2020b), which for the Eurozone is expected to range from +6.2% to +7.4% in 2021 and +1% in 2024.

The two scenarios, although based on different assumptions, present fairly similar estimates for the Greek economy for the next five years, as all figures move in the same directions with relatively small variations in the intensity of change. So, what we see in both scenarios is a boost in economic growth for as long as funding lasts, based on improving all the key factors that shape GDP, increasing the government deficit and debt, and increasing government revenue and expenditure.

European Growth II Scenario is based on the assumptions in Table 7.5.

In addition to the money from the next Generation EU, it is expected to flow to the Greek economy about 20 billion euros that the country

| Hypotheses of european growth II scenario (BN euros) |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Loans                           | 2021  | 2022  | 2023  | 2024  | 2025  | 2026  | 2027  | Total  |
| Public sector                   |       |       |       |       |       |       |       |        |
| 1/3                             | 0.63  | 0.63  | 0.75  | 0.50  | 0.50  | 0.50  | 0.50  | 4.00   |
| 3/4                             | 0.63  | 0.63  | 0.75  | 0.50  | 0.50  | 0.50  | 0.50  | 4.00   |
| Private sector                  |       |       |       |       |       |       |       |        |
| 1/4                             | 0.28  | 0.28  | 0.33  | 0.22  | 0.22  | 0.22  | 0.22  | 1.78   |
| 1/2                             | 0.14  | 0.14  | 0.17  | 0.11  | 0.11  | 0.11  | 0.11  | 0.89   |
| Subsidies                       |       |       |       |       |       |       |       |        |
| Public sector                   |       |       |       |       |       |       |       |        |
| 2/3                             | 0.42  | 0.42  | 0.50  | 0.33  | 0.33  | 0.33  | 0.33  | 2.67   |
| 1/4                             | 0.42  | 0.42  | 0.50  | 0.33  | 0.33  | 0.33  | 0.33  | 2.67   |
| Private sector                  |       |       |       |       |       |       |       |        |
| 3/4                             | 1.67  | 1.67  | 2.00  | 1.33  | 1.33  | 1.33  | 1.33  | 10.67  |
| 2/3                             | 0.83  | 0.83  | 1.00  | 0.67  | 0.67  | 0.67  | 0.67  | 5.33   |
| Total                           | 5.00  | 5.00  | 6.00  | 4.00  | 4.00  | 4.00  | 4.00  | 32.00  |

Source Authors’ own estimations based on Oxford Economics (2020b)
is estimated to be entitled to from the new National Strategic Reference Framework (NSRF [2021–2027]) and another 7–8 billion euros that are attributable to the Greek economy from the existing three tools decided by the EU and activated within 2020 (Support to Mitigate Unemployment Risks in an Emergency [SURE], European Investment Bank [EIB] Fund, and European Stability Mechanism [ESM] Pandemic Crisis Support).

Regarding the NSRF 2021–2027 money, the distribution of the money is expected to be approximately that described in Table 7.6.

NSRF 2021–2027 provides for the allocation of resources in the following areas based on the objectives of government policy:

- competitive economy and digital transition (there will be resources committed at a rate of 20.3%);
- environment, energy and civil protection (with resources of 26.1%);
- transport and broadband networks (15.3%);
- employment, education and social protection (including health and education infrastructure) (31.9%); and
- spatial interventions and urban development (5.4%).

| Table 7.6 | The expected development of NSRF 2021–2027 for the greek economy |
|-----------|------------------------------------------------------------------|
|           | 2021  | 2022  | 2023  | 2024  | 2025  | 2026  | 2027  | Total  |
| Competitive economy and digital transition | 0.53  | 0.55  | 0.57  | 0.58  | 0.59  | 0.62  | 0.62  | 4.06   |
| Environment, energy, and civil protection | 0.68  | 0.71  | 0.73  | 0.75  | 0.76  | 0.79  | 0.80  | 5.22   |
| Transport and broadband networks         | 0.40  | 0.41  | 0.43  | 0.44  | 0.45  | 0.46  | 0.47  | 3.06   |
| Employment, education, and social protection (including health and education infrastructure) | 0.83  | 0.86  | 0.89  | 0.91  | 0.93  | 0.97  | 0.98  | 6.38   |
| Spatial interventions and urban development | 0.14  | 0.15  | 0.15  | 0.15  | 0.16  | 0.16  | 0.17  | 1.08   |
| Total                                 | 2.60  | 2.71  | 2.80  | 2.86  | 2.93  | 3.03  | 3.07  | 20     |

Note How the money will be allocated each year is based on the NSRF’s development for the whole of EU-27. Dividing the amounts into sectors was realised based on To Vima (2020).

Source Author’s calculations
7.6 The Performance of the Economy After Implementing the Reform Agenda and Acquiring European Funds

The expected development of GDP for four different scenarios for the Greek economy is presented. There are:

- **Normal Scenario**: Basically, it concerns the estimates for the development of the Greek economy under normal conditions. It is based on estimates from April 2020 by the Oxford Economics Global Economic Model\(^3\) (including the crisis of the Covid-19 pandemic). The Normal Scenario includes a development of the TFP which since its construction (it is an endogenous variable of the Oxford Economics Global Economic Model and is therefore calculated through other variables of the model) does not incorporate the increased effects of the structural changes that will affect the period 2020–2030. For a detailed description of the scenario and its estimates see Petrakis and Kostis (in press [Chapters 11 and 12]).

- **Optimal Scenario**: It is about the reinforcement of the Normal Scenario through the implementation of the structural reform program described in Chapters 1–6. This is done through the integration of an upgraded TFP into the Normal Scenario, which causes GDP growth in order to create an Optimal Pro-growth path for the Greek economy in the period 2020–2030. At the same time as the increase of TFP, the optimal scenario includes an increase in government spending by 3 billion euros in 2020 to stimulate the Greek economy in the face of the crisis of the Covid-19 pandemic. For a detailed description of the scenario and its estimates see Petrakis and Kostis (in press [Chapters 11 and 12]).

- **European Growth I Scenario**: This is the reinforcement of normal scenario through the implementation of the next Generation EU in the Greek economy, as described in Table 7.4. Essentially the European Growth I scenario is an approach based on the assumptions of the European Commission text (27/5/2020—Identifying Europe’s recovery needs) on the basis of which a euro area GDP growth of 1.75% in 2021 and 2022 and 2.25% by 2024 should be expected.

- **European Growth II Scenario**: the European Growth II scenario is an alternative approach to how EU inputs will be allocated based mainly on the text of Oxford Economics (28/5/2020—Recovery
Fund to boost Europe’s fiscal response) based on which for the Eurozone is expected from +6.2% to +7.4% in 2021 and +1% in 2024. The method of its application was described in Table 7.5. This scenario foresees increases in government spending of 6 billion in 2021, 6 billion in 2022, 5 billion in 2023, 4 billion in 2024, and 3 billion in 2025, resulting in 75% from government subsidies and 25% from an increase in the deficit. This government expenditure is divided by 60% into public investment and 40% into public consumption each year.

Figure 7.9 presents the performance of the four scenarios in terms of GDP growth and Fig. 7.10 presents the real GDP level estimates.

From all of the above it is apparent that the Development Policy scenario to be chosen must be a combination of effective management of funds by the EU and implementation of a comprehensive structural reform program. This simultaneous implementation of the two policies creates a unique opportunity for the development of Greece that rarely had in the 200 years of its modern existence! European funds are
expected to significantly stimulate economic activity in the short- and medium-term, while the implementation of the structural reform program is expected to lead to a sustainable and inclusive growth of the Greek economy.

Consequently, provided that a reform growth strategy is implemented in the Greek economy and at the same time a key of allocation of sectors is developed as, one version of it, is presented in Table 7.7, then we can have an effective development plan for the Greek Economy of the next decade based on four points:

- social discipline and willingness for safe progress (result of successful epidemiological policy),
- reform economic policy,
- fiscal and monetary easing and strengthening, and
- prior fiscal discipline and recovery of credibility.
Table 7.7  The distribution of 32 billion euros in the Greek economy (BN euros)

| Sectors                     | Public/Private sector | Loans/Subsidies | 2021 | 2022 | 2023 | 2024 |
|-----------------------------|-----------------------|-----------------|------|------|------|------|
|                             |                       |                 | Investment | Consumption | Investment | Consumption | Investment | Consumption | Investment | Consumption |
| Hotels and Catering         | Public sector         | Loans           | 0.07 | 0.05 | 0.07 | 0.05 | 0.09 | 0.06 | 0.06 | 0.04 |
|                             |                       | Subsidies       | 0.14 | 0.1  | 0.14 | 0.1  | 0.17 | 0.11 | 0.11 | 0.08 |
|                             | Private sector        | Loans           | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 | 0.01 |
|                             |                       | Subsidies       | 0.05 | 0.03 | 0.05 | 0.03 | 0.06 | 0.04 | 0.04 | 0.03 |
| Manufacturing               | Public sector         | Loans           | 0.08 | 0.05 | 0.08 | 0.05 | 0.09 | 0.06 | 0.06 | 0.04 |
|                             |                       | Subsidies       | 0.15 | 0.1  | 0.15 | 0.1  | 0.18 | 0.12 | 0.12 | 0.08 |
|                             | Private sector        | Loans           | 0.03 | 0.02 | 0.03 | 0.02 | 0.03 | 0.02 | 0.02 | 0.01 |
|                             |                       | Subsidies       | 0.05 | 0.03 | 0.05 | 0.03 | 0.06 | 0.04 | 0.04 | 0.03 |
| Construction                | Public sector         | Loans           | 0.03 | 0.02 | 0.03 | 0.02 | 0.04 | 0.03 | 0.03 | 0.02 |
|                             |                       | Subsidies       | 0.07 | 0.05 | 0.07 | 0.05 | 0.08 | 0.06 | 0.05 | 0.04 |
|                             | Private sector        | Loans           | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|                             |                       | Subsidies       | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 | 0.01 |
| Transport and logistics     | Public sector         | Loans           | 0.05 | 0.03 | 0.05 | 0.03 | 0.05 | 0.04 | 0.04 | 0.02 |
| services                    |                       | Subsidies       | 0.09 | 0.06 | 0.09 | 0.06 | 0.11 | 0.07 | 0.07 | 0.05 |
|                             | Private sector        | Loans           | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 |
|                             |                       | Subsidies       | 0.03 | 0.02 | 0.03 | 0.02 | 0.04 | 0.02 | 0.02 | 0.02 |
| Professional Services       | Public sector         | Loans           | 0.04 | 0.03 | 0.04 | 0.03 | 0.05 | 0.03 | 0.03 | 0.02 |
| Sectors                  | Public/Private sectors | Loans/Subsidies | 2021  | 2022  | 2023  | 2024  | 2025  | 2026  | 2027  | Total  | Grand Total |
|--------------------------|------------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|--------|-------------|
|                          |                        | Investment     |       |       |       |       |       |       |       |        |             |
|                          |                        | Consumption    |       |       |       |       |       |       |       |        |             |
| Real estate management   | Public sector          | Loans          | 0.08  | 0.08  | 0.09  | 0.06  | 0.06  | 0.06  | 0.5   | 0.3    | 0.8         |
|                          |                        | Subsidies      | 0.05  | 0.05  | 0.06  | 0.04  | 0.04  | 0.04  | 0.3   | 0.2    | 0.5         |
|                          | Private sector         | Loans          | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.2   | 0.1    | 0.3         |
|                          |                        | Subsidies      | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.1   | 0.1    | 0.3         |
| Other sectors            | Public sector          | Loans          | 0.16  | 0.16  | 0.19  | 0.13  | 0.12  | 0.08  | 1     | 0.6    | 1.5         |
|                          |                        | Subsidies      | 0.11  | 0.11  | 0.12  | 0.08  | 0.08  | 0.08  | 0.5   | 0.3    | 0.8         |
|                          | Private sector         | Loans          | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.2   | 0.1    | 0.3         |
|                          |                        | Subsidies      | 0.02  | 0.02  | 0.02  | 0.01  | 0.01  | 0.01  | 0.1   | 0.1    | 0.3         |
| Total                    |                        |                | 3.0   | 3.0   | 3.6   | 2.4   | 2.4   | 1.6   |        |        |             |
| Grand Total              |                        |                | 5.0   | 5.0   | 6.0   | 4.0   |        |        |        |        |             |

(continued)
Table 7.7 (continued)

| Sectors                  | Public/Private Loans/Subsidies sectors | 2025      | 2026      | 2027      | Total     | Grand Total |
|--------------------------|---------------------------------------|-----------|-----------|-----------|-----------|-------------|
|                          | Investment Consumption                | Consumption | Investment Consumption | Consumption | Investment Consumption |                     |
| Private sector           | Loans                                 | 0.01      | 0.1       | 0.1       | 0.1       | 0.1         |                      |
| Private sector           | Subsidies                             | 0.02      | 0.2       | 0.2       | 0.2       | 0.2         |                      |
| Public sector            | Loans                                 | 0.04      | 0.02      | 0.02      | 0.02      | 0.02        | 0.3         |
| Public sector            | Subsidies                             | 0.07      | 0.05      | 0.05      | 0.05      | 0.05        | 0.6         |
| Private sector           | Loans                                 | 0.01      | 0.1       | 0.1       | 0.1       | 0.1         | 0.2         |
| Private sector           | Subsidies                             | 0.02      | 0.2       | 0.2       | 0.2       | 0.2         | 0.3         |
| Professional Services    | Loans                                 | 0.03      | 0.02      | 0.02      | 0.02      | 0.02        | 0.3         |
| Professional Services    | Subsidies                             | 0.06      | 0.04      | 0.04      | 0.04      | 0.04        | 0.5         |
| Private sector           | Loans                                 | 0.01      | 0.01      | 0.01      | 0.01      | 0.01        | 0.1         |
| Private sector           | Subsidies                             | 0.02      | 0.02      | 0.02      | 0.02      | 0.02        | 0.2         |
| Real estate management   | Loans                                 | 0.06      | 0.06      | 0.04      | 0.04      | 0.04        | 0.5         |
| Real estate management   | Subsidies                             | 0.12      | 0.08      | 0.08      | 0.08      | 0.08        | 1           |
| Private sector           | Loans                                 | 0.02      | 0.02      | 0.02      | 0.02      | 0.02        | 0.3         |
| Private sector           | Subsidies                             | 0.04      | 0.03      | 0.03      | 0.03      | 0.03        | 0.6         |
| Other sectors            | Loans                                 | 0.32      | 0.32      | 0.22      | 0.22      | 0.22        | 0.6         |
| Other sectors            | Subsidies                             | 0.65      | 0.65      | 0.44      | 0.44      | 0.44        | 1.4         |
| Private sector           | Loans                                 | 0.11      | 0.11      | 0.07      | 0.07      | 0.07        | 0.3         |
| Private sector           | Subsidies                             | 0.22      | 0.22      | 0.15      | 0.15      | 0.15        | 0.6         |
| Total                    | 2.4                                  | 1.6       | 2.4       | 1.6       | 19.1      | 32.0        |
| Grand Total              | 4.0                                  | 4.0       | 4.0       | 4.0       | 32.0      |             |

Note: Each sector receives money based on the percentage of each sector in the total value added of the economy (weighting 50%) and on the employment of each sector in the total employment of the economy (weighting 50%). The weighting between the public and private sectors is 75% and 25%. The balance between loans and subsidies is 33.3% and 66.7%. The weighting between investment and consumption is 50% and 50%.

Source: Oxford Economics (2020a) and author’s estimations based on Oxford Economics (2020b)
Notes

1. The SDGs were adopted by all United Nations Member States in 2015.
2. Please note that due to technical peculiarities related to the issue of homogenization of macro and micro data trade is not being contained as a separate sector.
3. The Oxford Global Economic Model (GEM) is the most widely used international macroeconomic model, with users such as the International Monetary Fund, the World Bank, the Asian Development Bank and a large number of blue-chip companies. The original specifications of the model are provided by Oxford Economics, which was founded in 1981 in collaboration with the Oxford University College of Economics. The research team of UOA under P.E. Petrakis has been collaborating with Oxford Economics since 2016.

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