CHAPTER 9

Growth in the Greek Economy

9.1 Introduction

The economic reality in Greece appears to be the “image” of an idiosyncratic production model. It is a reality that should be judged more as a result of an evolutionary process where even the knowledge acquired itself plays an important role in shaping it.

The way the political system operates, the presence of pressure groups and elites (economic centers of concentrated economic power), political influence and alliances (diverse governments and political forces) and the external factor in various forms such as the International Monetary Fund (IMF) with the influence of the United States, the European Commission, influenced from bureaucracy in Brussels and the big players in the Eurozone (France, Germany), the European Central Bank (ECB) (which expresses monetary policy in the EZ) and the European Stability Mechanism (ESM), which is an important European institutional player, have played a significant role in shaping this economic reality.

This chapter seeks to describe the evolution of the fundamental figures of the Greek economy and, through this analysis, present a clear picture of how the Greek economy has been driven to the situation at the end of 2019.

The structure of the chapter is the following: Sect. 9.2 shows the economic development in the Greek economy by 2019, with a main reference to the GDP growth rates achieved since 2000. Section 9.3 presents
the internal and external balances of the economy, followed Sect. 9.4 with the evolution of structural reforms, Sect. 9.5 with developments in competitiveness issues, and Sect. 9.6 with developments in investment and foreign direct investment, Sect. 9.7 presents the banking system and creditless recovery, Sect. 9.8 presents issues related to the level of liquidity of the economy and the credit system, Sect. 9.9 concerns entrepreneurship and privatization, Sect. 9.10 deals with the issue of public debt and finally Sect. 9.11 presents the issue of over-taxation of the economy. Finally, Sect. 9.12 presents the transmission channels of CID-19 as well as its short- and medium-long-term effects on the economic system.

9.2 The Economic Evolution

The crisis in the Greek economy started substantially in 2006 and relates to (a) the “fall” of post-Olympic Games prosperity, (b) the entry into the EU of neighboring countries which have served as “poles of attraction” for Greek production capacity, (c) the globalization and weak position of Greece on the international curve of income elasticity of exportable goods, and (d) after 2010 the debt crisis and the “sudden stop” of international capital flows to the Greek economy (as well as to the European economy in general). The Covid-19 crisis at the beginning of 2020 created the conditions for a new depression similar to 2011. Figure 9.1 shows the phases of the evolution of the Greek economy from 2000 to 2019, through the rate of change in real GDP.

The recovery from the deep recession of 2007–2011 started in 2012 and lasted until 2014 (2012, 2013 and 2014). From 2015 (2015–2017), stagnation prevailed, with signs of recovery again after 2017, only to have again a severe recession in 2020 with Covid-19.

This long-term development freeze has resulted in Greece being further drawn away from the average economic performance of the European Union. As an example, GDP per capita in Greece was 63.7% in 2010 and 52.4% in 2020, in proportion to the GDP per capita in the euro area.

This deterioration is observed while at the same time the ratio of public debt as a percentage of GDP has also worsened (the public debt in Greece in proportion to the euro area’s public debt was 174% in 2010 and 201% in 2018). At the same time, there is stagnation with signs of backward indications in the institutional sector of the operation of the economy and society (Kaufmann, Kraay, & Mastruzzi, 2010).
At the same time, the three-year period of 2015–2018 was characterized by the fact that the normal process of leaving the second Memorandum of Understanding was marked by the political choices made. If we compare the forecast for GDP growth at the end of 2014 for the period 2015–2019 with the one achieved, an estimate of the GDP losses caused by the reversal of the normal end of the program could be obtained. This estimate is based on figures from the beginning of 2015 and is a reflection of the costs incurred by the government at the time (based on data at the beginning of 2015) in its decision to refuse to keep the economy evolve smoothly. If the differences that have been observed could be turned into billions of euros, it can be seen that the cost of the political turmoil in 2015 alone amounts, in terms of GDP loss for the years 2015–2017, to around EUR 10 billion.
9.3 Internal and External Balances

Greece’s fiscal deficit already in 2008, before the economic crisis of 2011 reached the country, was two-digit as a percentage of GDP (10.2%) (Eurostat). In 2009, when Europe and the US plunged into recession and the signs were seen everywhere for the risks threatening Greece, the deficit was increased to 15.1% of GDP. Subsequently, in the context of the collapse of the real economy (especially in the period 2010–2012), the deficit fell each year (the 2013 figures are inflated by the one-off costs of bank recapitalization, which exceeded 10% of GDP). The primary balance became positive in 2013. Three years later, despite the renewed slippage in the recession caused by the conflict with the Eurozone and the IMF in the first half of 2015, Greece recorded a fiscal surplus (0.5% of GDP), something it continued to do in the coming years until 2018.

However, Greece’s over-indebtedness is a major burden on its Net International Investment position (NIIP), which is to reflect the cumulative changes in foreign assets and liabilities and shows accurately the competitiveness levels of the Greek economy.

At the beginning of 2018, our country’s net investment position was negative by EUR 250.5 billion, a level which is historically high. In particular, foreign liabilities amounted to EUR 449.4 billion, while foreign assets amounted to EUR 198.9 billion. Obviously, foreign liabilities have fallen since the beginning of 2016 when they had reached EUR 483.1 billion, mainly due to the reduction in the eurosystem’s funding of domestic financial institutions. Over the same period, the private sector’s net assets have fallen by around EUR 44 billion. This decrease partly reflects the gradual return of deposits to the domestic banking system, but is mainly due to the disinvestment of the banking system from South-east European countries.

It should be stressed that Greece’s net investment position has been deteriorating systematically over the last 20 years and from −35.3% of GDP in 1999 it reached −140.9% of GDP at the beginning of 2018. This rate is expected to increase significantly with the Covid-19 crisis. This shows that the Greek economy has accumulated far more liabilities vis-à-vis the foreign countries than the assets it has from abroad. Reversing this situation will require a rapid repayment of public debt and a productivity growth reflected in the growth of Greek investments outside Greece.

However, NIIP is not a figure that can be used to judge the economic governance of a country. A country that has very large inflows of foreign
investment would have a serious deterioration in its balance without, of course, this being a bad thing. It depends on the nature, purpose of these funds, etc. On the contrary, if it was to deteriorate due to their outflow, this could be a serious negative event because it would express a crisis of confidence in the country. Surely, in Greece, the capital controls applied have stabilized the situation because they did not allow the country to increase its liabilities significantly.

The relative stabilization (or slight deterioration) of the NIIP is also linked to the evolution of the balances of Target 2 which essentially reflects the balance of capital inflows and outflows between eurozone countries. Greece’s position in the Target 2 balance has improved in relation to the major crisis of 2015. However, the emergence of capital controls has played a major role here in shaping the image, which have prevented internal Greek confidence crises from translating into capital outflows through the creation of a crisis of confidence in the euro.

9.4 The Evolution of Structural Reforms

Since 2010, the Greek economy has made a very important effort to address its fiscal problems and low competitiveness. To this end, it has implemented a very important set of structural reforms within the framework of the fiscal adjustment programs. In fact, between 2011 and 2014 the Greek economy carried out most structural reforms compared to the rest of the European Union (OECD, 2015).

The changes in tax policy (Greece belonged to the developed countries, which have further reformed its tax system as shown by the OECD report [2016] “Tax Policy reforms in the OECD”) and expenditure cuts—in particular, pensions and wages of public sector—reduced the structural fiscal deficit by almost 14 percentage points of GDP. The size of the adjustment was about twice that of the other European countries facing sudden interruptions in their exit to markets. Labor market reforms were also important, with the decentralization of the wage bargaining system, the reduction of the minimum wage and the simplification of restrictions on recruitments and redundancies. In addition, reforms to reduce the regulatory burden and improve the business climate have been launched—relatively late—under the second fiscal adjustment program of 2012 and included a reduction in barriers to competition in the tourism and retail sector, facilitate the process of licensing enterprises in certain sectors and partial deregulating some restricted professions.
However, this very important effort from the Greek economy has not transformed directly into progress for the Greek economy. Some of the reasons, which illustrate the system’s weakness in dealing with the crisis, for which this has happened—and which need to be addressed—are as follows (Daude, 2016):

- The mix of structural reforms was unbalanced. The emphasis on front-loaded fiscal adjustment has drastically reduced demand and contributed to a deep recession. Moreover, fiscal multipliers and the increase in government bond yields and borrowing costs have been undervalued. At the same time, the wider climate of uncertainty and delays surrounding the restructuring of public debt created significant obstacles to the image perceived by managers of international funds for the Greek economy (Daude, 2016).
- Structural reform implementation has been and remains a challenging task for the Greek economy. During the first fiscal adjustment program for 2010, structural reforms carried out were related to the fiscal aspects of the economy and the labor market and not to the product market. The result of this specificity is evident when one compares the structural reforms carried out in Greece compared to Ireland and Portugal where the adjustment programs were similar to that of Greece, although much less stringent.
- The implementation of structural reforms was weak and fragmented making structural reforms less effective.
- Enrichment of the structural reform framework would offer the chance long-term success.

However, after 2015, the reform and development effort in the Greek economy has been interrupted concerning all structural competitive indicators. An interpretation of this development is that (a) significant results have been achieved over the period 2011–2015, with great social effort resulting in subsequent rest. Moreover, the reform fatigue has been an almost pan-European phenomenon during this period (but competing European countries need it less), (b) the Greek economy has faced the political resistance of established power centers and although it appeared that the reform effort has gone far, political staff have been acting in a way that has prevented competitive improvement (over-regulation, non-friendliness to entrepreneurship, public sector expansion, etc.).
It has prevailed to consider the Greek crisis of 2011 as a debt crisis, but at its root is it a classic case of a competitiveness crisis (Dianeosis, 2016). One of the factors that lead to reduced competitiveness in the Greek economy was the inefficient implementation of structural reforms before the crisis, a situation which began in 2001 when, due to social reactions, the government abandoned the planned pension system reform. Since then and until Greece entered the eras of the Memorandums, few reforms have been implemented, most of which were, rather, minor (Tsakloglou, Economidis, Pagoulatos, Triantopoulos, & Apostolis Filippopoulos, 2016).

The result of this situation was a significant deterioration in the competitiveness of the Greek economy, which is evident from the observation of the evolution and of the Real Effective Exchange Rate (REER) of the economy, as well as from the evolution of real unit labor costs (Figs. 9.2 and 9.3).

Both indicators presented in Figs. 9.2 and 9.3 are linked to a reduction in competitiveness when they increase and increase in competitiveness when they decrease. Thus, there has been a significant decrease in competitiveness between 2000 and 2010, and the very serious reform actions accompanying the implementation of the fiscal adjustment programs

![Fig. 9.2](image-url)  
**Fig. 9.2** Real Effective Exchange Rate, monthly data (deflator: consumer price prices—42 trading partners) (2010 = 100) (Source Eurostat database [2020] and authors’ creation)
Fig. 9.3 Real unit labour costs: total economy (ratio of compensation per employee to nominal GDP per person employed) (Source AMECO database and authors’ creation)

after 2010 (see Chapter 11) have led to a significant improvement in competitiveness.

This is also evident from the observation of the evolution of the Greek economy’s score in the Global Competitiveness Index, which is being developed by the World Economic Forum (Fig. 9.4).

Greece experienced a deterioration of the index up to 2012, while at the same time there was a satisfactory improvement by 2014 and relative stability by 2017. The progress of the ranking of the Greek economy among the countries in the report is similar. However, the gap in competitiveness relative to the average of the euro area countries is particularly large. For example, for the years 2017–2018, the Greek economy ranks 87 as among 140 countries, while the average for the euro area countries is 35.

9.6 Investments and FDI

The long-term decline in investment has affected the competitiveness of the Greek economy, at a time when the money and capital markets were distinguished of high liquidity and low-interest rates. At the same time, the fiscal deficits that have accompanied the beginning of the crisis in the Greek economy have led to the need for investment in the economy. Given that the investment gap in the Greek economy exceeded 10% of the annual GDP in 2018, its cumulative dynamic was expected to lead
to an even greater reduction in the country’s competitiveness, which has led, among other things, to technological backwardness in a time of rapid development and diffusion of technology.

The three potential sources of investment financing are the State, European and private resources. Of these, the State cannot finance major projects due to a lack of fiscal space. In fact, it showed an annual decrease in investment of 1.5 billion euros on average over the period 2010–2016 compared to 2000–2008 and it has been difficult to co-finance due to structural deficiencies. The state of public investment over the last two years does not change the overall picture. Net inflows of foreign direct investment (net FDI) in Greece amounted to 31 billion euros in 2002–2018 (Bank of Greece). Over the last decade, these reached 18.78 billion euros, with provisional figures showing that they have exceeded 3.6 billion euros in 2018. Net FDI in the Greek economy has been on a non-linear path since 2002, which was the year of the introduction of the euro. At the same time, FDI in Greece from 2006 to 2018 amounts to an average of not more than 7% of the total gross fixed capital formation,
contributing to a lesser extent than it would have been expected in an economy belonging to a global reserve currency area.

The further analysis of net FDI in Greece for the years 2002–2018 shows that the vast majority is directed to services and single-digit rates are for the primary and secondary sectors of the economy, respectively. The secondary sector in particular accounts for 8.8% of the total, with manufacturing accounting for 2.6% of the total net FDI. In practice, this means that manufacturing in Greece is not an objective for foreign capital seeking alternative opportunities for placement in services, and very often through portfolio acquisition, without this reducing their necessity. The small contribution of FDI to the Greek economy and the even smaller one in the manufacturing sector reflect not only the problem of systemic inability to attract investments, but also the lack of confidence of foreign investors in the country’s productive capacities.

According to the Hellenic Federation of Enterprises (SEV) calculations (Manifava, 2015), a minimum investment shock of 100 billion euros would be needed till 2022 to balance the economic divestment that occurred during the crisis.

Indicative of the decline in investment in Greece is Fig. 9.5 which presents the investment gap in the Greek economy. Figure 9.6 shows, respectively, the case of the euro area investment gap. The amount of the investment gap is calculated as the difference in investments made in relation to the assumption of a sustainable trend in investment growth of 20 to 22% of the GDP.

In Greece the investment gap appears to be around 16.8 billion to 20.7 billion euros for 2019, while for the Eurozone there is no investment gap.

9.7 The Banking System and the Credit-Less Recovery

It is well known that in Greece, banking intermediation (compared to a market-based economy) plays an important role even in relation to the other countries of the European Union and/or the euro area. Obviously, the structure of the Greek private sector (small and very small productive units without access to capital markets) largely justifies the very high dependence on bank financing. Thus, when the banking system is deteriorated, the Greek economy is deteriorated even more.
Fig. 9.5 Investment gap in Greece: Investments in billions of euros (Source Oxford Economics [2020] and authors’ calculations and creation)

Fig. 9.6 Investment gap in the Eurozone: Investments in billions of euros (Source Oxford Economics [2020] and authors’ calculations and creation)
However, given the disproportionate importance of bank financing for Greek companies (the ratio of loan financing to total liabilities of non-financial corporations in Greece is 85%, while for the Eurozone it is 62%), as well as the particular issues relating to the domestic banking system (outflow of deposits abroad, problem of confidence under the regime of restrictions on capital controls, non-performing loans) describe a creditless recovery.

The deleveraging process, which in the euro area appears to be completed, has not developed a corresponding dynamic in the Greek economy. To a large extent, this is due to the contraction of the Greek GDP by 25% between 2009 and 2015. If one could remove the effects of the decline in Greek production, the degree of deleveraging of the Greek economy would be a strong reminder of the corresponding path in the euro area economy.

In other words, the (in absolute terms) reduction in the debt burden of the Greek economy is accompanied by a corresponding reduction in production (and/or household income). Their relative burden therefore remains high, making it difficult to finance the private sector of the economy. This situation also defines the background of a “creditless recovery” (see Chapter 12).

International literature presents examples of creditless recoveries in economies that have returned to positive growth without the support of bank financing. More specifically, about 20% of cases of rebound of economies to positive growth after some form of crisis over the last 5 decades concern cases where bank financing did not return to pre-crisis levels (in real terms) for at least three years after the lowest point of the business activity (Darvas, 2013). However, the vast majority of creditless recoveries are characterized by lower growth rates than cases of recovery with strengthened bank financing.

In fact, when the recovery follows more severe economic activity crises and/or a banking crisis (such as the recent downturn following the global financial crisis), then the return to positive growth is much more likely not to be followed by a strengthening of bank financing (Bijsterbosch & Dahlhaus, 2011).

However, the vast majority of these cases concern developing economies. On the contrary, the developed world is rarely experiencing a recovery of economic momentum after a crisis without corresponding strengthening of bank financing.
Finally, it should be noted that in restoring positive economic growth rates without the contribution of the banking sector, the adjustment of competitiveness that should take place is much greater (Balfoussia & Malliaropoulos, 2015). It is no coincidence, therefore, that the recovery of sectors of the economy which rely more on external financing (bank lending and/or issuance of securities on the markets) is experiencing lower levels of growth in the case of creditless recoveries (Abiad, Dell’Ariccia, & Li, 2011).

Especially in the case of euro area member states, where there can be no depreciation of the domestic currency, improving competitiveness is tantamount to a greater need for the painful process of “internal devaluation” that has been applied for several years by the Greek economy as well, which as expected, but also as it was proven, is extremely painful.

### 9.8 Liquidity and Credit System

The Greek economy passed through the years of the crisis and at least until 2018, a period of extremely low liquidity. The only sources of liquidity after the crisis, due to the interruption of inflows from abroad, were the fiscal adjustment program and the European Central Bank with liquidity injections into the banking system. However, liquidity was drained by the Greek economy. The main source of economic liquidity reduction is the need to repay the ELA and to deleverage the private sector. The main well-known expressions of the deteriorating liquidity situation of the economy are the continuing decline in financial balances to the private sector, along with the relatively increasing difficulty of the private sector in meeting its tax obligations (see Petrakis, 2020a).

However, the liquidity of the economy has been further squeezed by two concrete actions. The first relates to the repos of public institutions in the general public sector, estimated at 14 billion euros in 2018. This operation relates to the intention to control the Local Governments, the Legal Entities of Public Law, etc., and to create a ‘safety pillow’ which would allow some form of access to markets.

It should also be pointed out that for about one year after summer 2012, banks’ liabilities toward the ECB were reduced in parallel with the evolution in the available liquidity of the domestic private sector. Since mid-2013, however, the reduction in the liabilities of Greek banks toward the Eurosystem has become more pronounced, which have been halted only in mid-2014 (with the first signs of political uncertainty), just to
be reversed by the acceleration of the election of the President of the Republic and the anticipation of political developments in December of the same year. The faster repayment of Eurosystem liabilities has made it difficult to reactivate the domestic financial system to finance the (healthy) private sector of the Greek economy.

The same development, however, appeared to be repeated in the years 2015–2017. After the peak of the Greek crisis and for about 6 months (until December 2015, when the recapitalization effort of the domestic financial sector was successfully completed), the reduction in ELA liabilities has had a full impact on the reduction of private sector liquidity. But then the repayment of bank liabilities to the ECB and the Bank of Greece became stronger, leading, cumulatively, to a reduction of around 80 billion. During the same period, the private sector’s liquidity available fell by around 30 billion.

The 2015 crisis (capital controls, etc.) and the extension of the 2nd negotiation of the third Memorandum of Understanding have seriously damaged the credibility of the Greek economy. As a result, the recovery rate of deposits has been extremely slow.

If we compare the course of deposits to the first crisis of confidence 2012–2014 with its current 2015–2017 period, we see two parallel but different levels of developments in their return process. Only after the end of the second review of the MoU (June 2017) did the deposits, in particular by private individuals, started returning, aided by the proceeds of the very good tourist season. Nevertheless, the crisis of confidence has remained.

The slow evolution of deposits is linked to (a) the increase in tax obligations, (b) domestic deposits (around 12 billion euros), and (c) to consumer behavior which shows signs of recovery. The consumer recovery in turn is due to (a) a specific expectation of “better days”, and (b) a “fear” of savings accounts (fear of bail in).

Figure 9.7 shows the evolution of total deposits and liabilities for the Greek economy, from January 2001 to January 2020. The significant return of deposits achieved between June 2019 and January 2020 is evident, following the huge drop in deposits in summer 2015.
Entrepreneurship
Development and Privatizations

The economic crisis (2008–2018) dramatically changed the conditions of entrepreneurship. Businesses are obliged to adapt to these conditions. They are all too often forced to reduce their production costs, review their corporate strategy, change their investment strategy, and restructure their activities. Therefore, in this complex environment, which is characterized by rapid developments, as well as high uncertainty, the most important issue is how business units in the Greek economy will survive.

In Greece, the share of the population aged 18–64 in 2017 in early stages of entrepreneurial activity (including self-employment) fell to 4.8% (around 320 thousand people) from 5.7% (around 380 thousand) in 2016 and from 6.7% in 2015 (Tsakanikas, Stavraki, & Valavanioti, 2018). This performance is one of the country’s lowest performance over time (2003–2017: 6.9%), while it is below the average of the countries of innovation (2017: 9.2%), i.e., of most of the developed countries in the world, to which Greece belongs. It therefore, appears that despite the stabilization of the economy, the intense uncertainties remained strong and affected business activity (Foundation for Economic and Industrial Research (IOBE), 2018).
However, the contraction of new entrepreneurship may be due to two reasons (Tsakanikas, Giotopououlos, Stavraki, & Valavanioti, 2017). One reason is that small-medium-sized business dynamism is not conducive to political control, while small-scale entrepreneurship, just like large entrepreneurship, being state-dependant, are offered for a “protection” policy. The second is that the economic policy may have a problem with small entrepreneurship due to its inability to monitor taxation. Two are considered to be the main points of this “disapproval”: over-taxation of new and small entrepreneurship and its problematic relation with the production of innovation in its production sites (research centers and innovation).

Privatization in the Greek economy was low in 2015 and 2016 and increased in 2017 and 2018. For the period of 2011–2017, privatization revenues in Greece totaled 5.1 billion euros.

Thus, two key issues have emerged regarding privatization: (a) the revenue from its development was particularly low up to and including 2018, due to the political turmoil and the resulting stagnation, and (b) the restructuring of the economy, which was expected through privatization, did not proceed.

9.10 THE ISSUE OF DEBT

The Greek economic crisis started as a sovereign debt crisis in 2009. However, despite the implementation of austerity and a brave “haircut”, public debt stood at around 176.6% of Greek GDP in 2019 (IMF, 2019).

Figure 9.8 shows the evolution of the total debt of the Greek economy since 1980.

The total debt of the Greek economy (public and private) reached a high record of around €632 billion in 2011 (of which about 58% was public and 42% was private debt), as until then it followed a sustained increase mainly due to the large accumulation of public debt. After an attempt to drastically reduce it in 2012 (PSI), there is some stability in its evolution.

The IMF in its methodology for “Analysis of sovereign debt sustainability” addresses parameters such as average debt maturity, short-term debt ratio, creditor quality and others. The quality of creditors—in the case of Greece available to finance it with huge amounts and on exceptionally favorable terms—has perhaps been decisive in the IMF to describe the Greek debt as viable in 2014, although the majority of economists
took a different view. However, it has later proved that the future sustainability of the debt is critically dependent on the future management of the economy.

What one concludes by noting the evolution and management of debt in the Greek economy up to and including 2018 is that it is not about debt sustainability, but about the sustainability of the economy. As debt sustainability is linked to high primary surpluses and a number of hypotheses/assumptions about future growth rates, debt refinancing costs, future primary surpluses, and the desired debt level target, it is the development of economic activity that is important.

### 9.11 The Overburden of Taxation

According to all indications, the Greeks are the most burdened tax people in the OECD in 2018. While regarding tax revenue as a percentage of GDP Greece ranks 6th among OECD economies, when the shadow economy is taken into account, tax revenues as a percentage of GDP increase from 38.56 to 49.12%. Figure 9.9 shows tax revenues as a percentage of GDP (where the tax burden is borne by the consistent
Fig. 9.9 Total tax burden as a percentage of GDP taking into account the shadow economy (2018) (Note It is assumed that every economy has a population of 100 citizens and that some of them [equal to the share of the shadow economy] work in the shadow economy. In order to calculate the amount of tax revenue as a percentage of GDP to take account of the shadow economy, the proportion of tax revenue is divided by the number of people employed in the formal economy. Source OECD [2019] and authors’ calculations and creation)

taxpayer alone) in relation to tax revenues as a percentage of GDP when the shadow economy is taken into account.

Obviously, Greek society may appear to pay lower taxes as a percentage of GDP than economies such as France, Sweden, Finland, Belgium, and Italy, but one has to bear in mind that what Greek society enjoys (institutions, infrastructure, etc.) of the taxes it pays.

For this reason, Fig. 9.10 shows that tax revenues as a percentage of GDP when taking into account shadow economy and citizens’ satisfaction with public services related to the health care system, the education system, schools, and the judicial system and courts (OECD, 2019). This shows the real tax burden on citizens.
It is noted that Greeks are the most burdened people by their tax system compared to all the countries in question.

The main feature of the two-year period 2016–2017 is over-taxation. The government has concentrated as much resources and liquidity from the private sector and the middle class as possible on public funds. In 2016 and 2017, a further €8.17 billion of primary budget surpluses were collected.

9.12 **The Covid-19 Recession**

The effects of Covid-19, as has happened in earlier pandemics (see Petrakis, 2020b, Chapter 20), pass through four main channels:
• Impact on the supply side. One way in which the virus damages the economy is to stop the supply of labor, goods, and services. People are sick, schools are closed, and parents stop working, staying at home to take care of their children. Thus, quarantine can force workers to work from their home or even entire factories to suspend their operations. The strict restrictive measures introduced in China and Italy have aggravated this effect through the channel of supply.

The restrictions on people’s movement create a negative shock to labor supply (in fact they create an increase in unemployment). It is assumed that these conditions will last for at least one or two quarters in China and in other countries with large outbreaks (Italy, Germany, France, and Spain) depending always on the situations observed.

Thus, an additional channel for the transmission of the effects of the coronavirus spread in the Greek economy is the disruption to global value chains. Although the participation of Greek companies in global value chains is still limited, the reduction, or even interruption in some cases, of the supply of intermediate and capital goods is estimated to have a negative effect on their production capacity. In addition, the production of goods and services in particular may be adversely affected by the extensive employee abstention from their duties in the framework of preventive measures regarding the dispersal of the coronavirus.

• Impact on demand. On the demand side, people buy less goods from shops than usual, transport trips are decreased, and people do not resort to restaurants thus reducing food consumption from outside. Public health measures also limit economic activity.

An important channel is the decline in the external demand for Greek goods and services, due to the decline in world trade and the deterioration of the economic climate internationally. In fact, the effects on ocean sea shipping will probably be particularly negative, where revenue dynamics are mainly determined by the evolution of freight rates which largely reflects fluctuations in international trade. More serious, however, is estimated to be the impact on travel receipts, given the imposed travel restrictions and the generally vulnerable climate in this sector.

In addition to external demand, the spread of the coronavirus is expected to affect domestic demand as well. Private consumption is
expected to decrease due to a deterioration in consumer confidence, preventive measures to prevent the dispersion of the coronavirus and the compression of household disposable income as a result of the decline in economic activity in general. In particular, transport, trade, catering and services related to tourism, the arts, entertainment and entertainment will be most affected. Also, the increase in uncertainty and the deterioration of the investment environment should have a deterrent effect on new investment projects and risk-taking.

- **Uncertainty.** Businesses are subject to an increased risk due to weak aggregate demand, while the pandemic is causing adverse effects. Uncertainty is likely to remain and contribute to the slowdown in productivity growth along with delayed investment decisions by companies.
- **International and domestic financial markets.** Another important channel for transmission is the deterioration in international and domestic financial conditions. In particular, the increase in uncertainty fuels significant turbulence in international financial markets, leading to a deterioration in the conditions for financing economies and a reconsideration of investment positions worldwide, with possible negative consequences for ongoing investment projects and the liquidity of the Greek economy in general. In addition, the increase in financing costs due to the re-pricing of risks internationally leads to a deterioration in the conditions and in increased costs for raising new financing for banks, businesses and households, as well as the Greek State.

In conclusion, the Greek economy is expected to be affected by the reduction of exports, the reduction of travel receipts, the reduction of shipping receipts, the reduction of consumer and business confidence, the reduction in the international price of oil and the reduction in production and employment as a result of the preventive measures to reduce the spread of the coronavirus.

Figure 9.11 shows the annual decrease in GDP growth in real terms in the Greek economy. This is an exceptionally large recession of $-5.9\%$, while before the onset of the pandemic, growth of $2.26\%$ was expected.
Fig. 9.11  The effects of Covid-19 on key macro-economic figures (Notes (1))

The case “Before the Covid-19” presents estimates based on the figures of January 2020 of Oxford Economics’ Global Economic Model. (2) The case “After the Covid-19” presents estimates based on the April 2020 data of the Global Economic Model of Oxford Economics. A detailed presentation of these estimates is set out in Chapters 11 and 12, where the April 2020 estimates are presented as the Normal scenario. Source Oxford Economics [2020] and authors’ calculations and creation.

There is no doubt that such a deep recession for 2020 is extremely important for the Greek economy, which is, of course, comparable to that of 2011 for Greece.

Figure 9.11 also shows the corresponding developments concerning debt, current account balance, and unemployment rate. Due to the short- and medium-term and external nature of the crisis while the GDP reduction is very large, the effects on other figures are not on the trend of 2011.

Government debt is expected to increase by EUR 10.3 billion in 2020, while it was expected to be decreased by EUR 1.1 billion. The current account balance is expected to increase the deficit by EUR 1.63 billion in 2020, while it was expected to decrease by EUR 0.24 billion. Finally, the unemployment rate is expected after the onset of Covid-19 at 20.6% in 2020, while prior to the onset of Covid-19 it was expected at 16.2%.

Figure 9.12 shows the corresponding changes in GDP and the key factors that determine it. In absolute terms, GDP is therefore expected to fall by EUR 11.57 billion in 2020, while it was expected to increase
The effects of the emergence of Covid-19 on GDP and its determinants (bn euros) (Notes) (1) The case “Before the Covid-19” presents estimates based on the figures of January 2020 of Oxford Economics’ Global Economic Model. (2) The case “After the Covid-19” presents estimates based on the April 2020 data of the Global Economic Model of Oxford Economics. A detailed presentation of these estimates is set out in Chapters 11 and 12, where the April 2020 estimates are presented as the Normal scenario. Source Oxford Economics [2020] and authors’ calculations and creation.

by EUR 4.4 billion. Analysis of the changes in the impact of the determinants on GDP shows that the main negative effects are derived from private consumption, which is expected to decrease by EUR 7.58 billion (while expected to increase by EUR 2.3 billion), investments that are expected to decrease by EUR 0.72 billion (while expected to increase by EUR 1.81 billion), exports of goods and services expected to decrease by EUR 4.32 billion (while expected to increase by EUR 3.35 billion) and stockbuilding expected to decrease by EUR 3.76 billion (while expected to decrease by EUR 0.45 billion). Only government consumption and imports improve the situation for 2020, as government consumption is expected to increase by EUR 0.79 billion (while expected to increase by EUR 0.28 billion) and imports are expected to decrease by EUR 4.03 billion (while it was expected to increase by EUR 2.89 billion).

The implementation of an economic recovery program can be carried out in two phases: The first, covering the two years 2020–2021, where the main emphasis will be on policies addressing supply and increasing
demand, and thus reducing the enlarged production gap, while the second period 2022–2030 will be a period of implementation of a broader program of structural change, enlargement and diversification of supply opportunities.

It should be noted that this will create favorable conditions for implementing a structural development program, even if there are epidemiological disturbances (albeit assumed to be of lesser importance). This point is particularly emphasized because the implementation of structural change programs is particularly facilitated when it is based on a basis of a strong recovery in demand and growth, as is expected to happen after the end of the epidemiological phenomena.

It is also stressed that the experience of ten years of implementation and economic rebalancing, together with the coordinated social response of civil society to the effects of the crisis, has created a favorable background of social behavior for a stable and systematic implementation of a structural change program which includes decisions on productive restructuring and institutional efficiency.

**Notes**

1. The period is approximated by the entry into the EMU and the introduction of the euro.
2. Product markets have a significant impact on hypothetical dynamic growth. Intervention on these markets usually uses measures such as easing the administrative entry restriction and reducing the administrative burden. These conditions improve the allocation of resources between product and service sectors and within these sectors. Some of the effects of these measures are immediate, but generally, their positive impact extends over time.

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