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Greece and the Euro: A Mundellian Tragedy

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Contents

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ABSTRACT

This paper analyzes the process of destabilization, crisis and adjustment in the Greek economy since the accession of the country to the European Union and, subsequently, the euro area. It reviews four policy cycles of the past 40 years, the four acts of the Greek tragedy, and discusses alternative ways forward, following the sudden stop and the great depression of the 2010s. It concludes that despite the significant constraints implied by continued participation in the euro area, namely a stark Mundellian conflict between internal and external balance, exiting the euro area risks further destabilizing the economy and bringing about a return of the problems of the 1980s. The current challenge for Greece is to seek to remain and prosper in the euro area. This would require a policy mix based on supply side reforms which would allow for a sustained recovery without the reemergence of external imbalances.

Keywords:

Greece, Euro Area, fiscal policy, monetary policy, competitiveness, current account

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1. Introduction

Greece has been making international financial and political headlines for almost ten years. Following the sudden stop in international lending in early 2010, triggered by the international financial crisis but largely due to Greece's persistent macroeconomic imbalances, a real tragedy has unfolded. The Greek crisis rocked the euro area (EA) to its core. Greece had to be bailed out and adopt an externally imposed adjustment program, which in turn led to the deepest and longest depression of its post-war history. The crisis subsequently spread to other economies of the periphery of the euro area. Between 2007 and 2016, Greek real GDP per capita fell by almost a quarter. The unemployment rate quadrupled. It peaked at 27.9% of the labor force in July 2013, from 7.3% in May 2008, and has only been falling extremely slowly since. Millions of Greeks had to face the specter of impoverishment and hundreds of thousands of educated and skilled Greeks migrated to other countries of the EU and the rest of the world, as real wages and pensions in Greece were cut substantially and adequately paying jobs have become hard to find.

It is the main thesis of this paper that this tragedy has evolved in four acts since the accession of Greece to the European Union (EU) in 1981. The imbalances that emerged as a result of the macroeconomic policies of the 1980s, and the inadequacy of the adjustment efforts undertaken by successive Greek governments in the decades that followed, were the key factors that contributed to the final act of the tragedy. The final outcome also bears the stamp of the 'troika' of the International Monetary Fund (IMF), the EC Commission and the European Central Bank (ECB), which designed the successive post-2010 economic adjustment programs. The inherent weaknesses of the euro area, and in particular the fact that it is far from an optimal currency area, also played a significant part in the Greek crisis.

The Mundellian character of the critical two final acts of the Greek tragedy is based on the stark dilemma of a small open economy with low international competitiveness, such as Greece, in a regime of free capital mobility and irrevocably fixed exchange rates, such as the euro area. Such an economy, as first suggested by the analysis of Mundell (1963), faces a dilemma between internal and external balance, given that it has only one stabilization policy instrument, fiscal policy, with which to seek two conflicting goals. An expansionary fiscal policy moves it towards full employment at the expense of a widening current account deficit. A contractionary fiscal policy can correct the current account deficit, but at the expense of unemployment and recession. Devaluation, which could help resolve such a dilemma, is not an option. This Mundellian dilemma was not faced only by Greece, but by all the economies of the EA periphery, such as Spain, Portugal and Ireland. After all, the accumulation of current account deficits that led to the crisis was not confined to Greece. It characterized the rest of the euro area periphery as well, suggesting that some of the problems that plagued Greece were due to systemic weaknesses in the design of the euro area. However, it remains a fact that Greece had deeper and more serious macroeconomic imbalances than the rest of the euro area periphery.

The question that arises, in view of the completion of the fourth act of the Greek tragedy in 2018, is whether Greece can change course. Can the country adopt policies that will lead to a sustainable recovery of its economy, without returning to unsustainable current account deficits? Will this require an exit from the euro area or can it be achieved within its confines? The answers to these questions, based on a consistent and in-depth data-based analysis of the preceding four acts, constitute the main set of conclusions of this paper.

2. Greece and the Euro: A Synopsis

Greece joined the European Union (EU), then called the European Economic Community (EEC), in 1981, following an application in June 1975, shortly after the restoration of democracy. The accession was initiated by the then Prime Minister, and later President of the Republic, Constantine Karamanlis, who saw it as a way of consolidating the newly restored democratic freedoms, as well as ensuring and furthering the social and economic progress of Greece.[1]

For many years since 1950, Greece's macroeconomic performance had been among the most impressive in Europe and the rest of the world. High rates of economic growth had lifted a war-ravaged economy out of poverty, in an environment of low inflation, low unemployment, and absence of external crises. This lasted until the early 1970s, but was then driven to a gradual halt. During the 1980s, after Greece joined the EU, these trends were reversed as Greece experienced persistent stagflation.

This reversal of fortunes, which coincided with EU entry and a change of government in 1981, largely occurred because the Greek authorities appeared determined to follow an idiosyncratic economic policy, completely at odds with the EU and the rest of the industrialized world. During the 1980s, a decade of fiscal and monetary discipline and cooperation for the rest of the EU, Greece engaged in an unprecedented fiscal and monetary expansion, which resulted in the rapid accumulation of a huge government debt, a sustained average annual inflation rate of about 20% and a significant deterioration in its international competitiveness. As a result, the unemployment rate more than doubled, while Greece also faced periodic balance of payments crises.[2]

During the 1990s Greece attempted to change course and adapt to the requirements of the Maastricht Treaty on European Union. However, it did so half-heartedly, as the policy mix that it adopted was inadequate and lopsided. With the exception of the first part of the decade, it was primarily based on monetary rather than fiscal tightening, while structural reforms were few and in between. Greece managed to become part of the euro area (EA) in 2001, two years after the original eleven members, but, as a result of the inadequate and lopsided adjustment, the problems of low international competitiveness and fiscal weakness loomed large.[3]

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[1] As Karamanlis himself emphasized in his speech during the signing ceremony of the treaty on Greece's accession to the EC in 1979, "Greece is entering Europe with the certainty that, within the framework of European solidarity, national independence is strengthened for all parties, democratic freedoms are safeguarded , economic growth is accelerated and, with the cooperation of all parties, social and economic progress will be the common fruit of our efforts." Karamanlis (1979). The European Economic Community (EEC) was renamed the European Union (EU) in 1992, following the ratification of the Maastricht Treaty. In the remainder of this paper we shall for the most part use the term European Union (EU), even when we refer to the pre-1992 EEC.

[2] For analyses of the Greek stagflation of the 1980s see Alogoskoufis and Christodoulakis (1991); Alogoskoufis and Philippopoulos (1992); Alogoskoufis (1995). Alogoskoufis (1993) and Papademos (1993) focused on how Greece could adapt so as to participate in the planned Economic and Monetary Union in the EU, from the perspective of the early 1990s.

[3] See OECD (2001) for an assessment of the inadequate and lopsided adjustment that took place during the 1990s. Bryant et al. (2001) also contain a number of interesting papers on the state and prospects of the Greek economy before participation in the euro area. Bosworth and Kollintzas (2001) focus on productivity and growth, Garganas and Tavlas (2001) focus on monetary policy and inflation, and Tsaveas (1991) focuses on competitiveness and the balance of payments.

From the moment that Greece became a member of the euro area it enjoyed a significant economic boom. This was mainly due to the rapid reduction in real interest rates following the elimination of the devaluation premium. In addition, the boom was reinforced by another round of fiscal expansion and wage increases in excess of productivity, which further boosted aggregate demand. As the boom also implied a significant deterioration in Greece's current account and an unprecedented accumulation of external debt, Greece was caught in a Mundellian trap. Fiscal tightening in order to deal with external imbalances would kill the boom, while fiscal relaxation maintained the boom at the expense of large external imbalances. Having given up the option of using an expansionary monetary and exchange rate policy to simultaneously address both problems through a devaluation, Greece saw its external imbalances worsen much more than in the other economies of the euro area periphery.

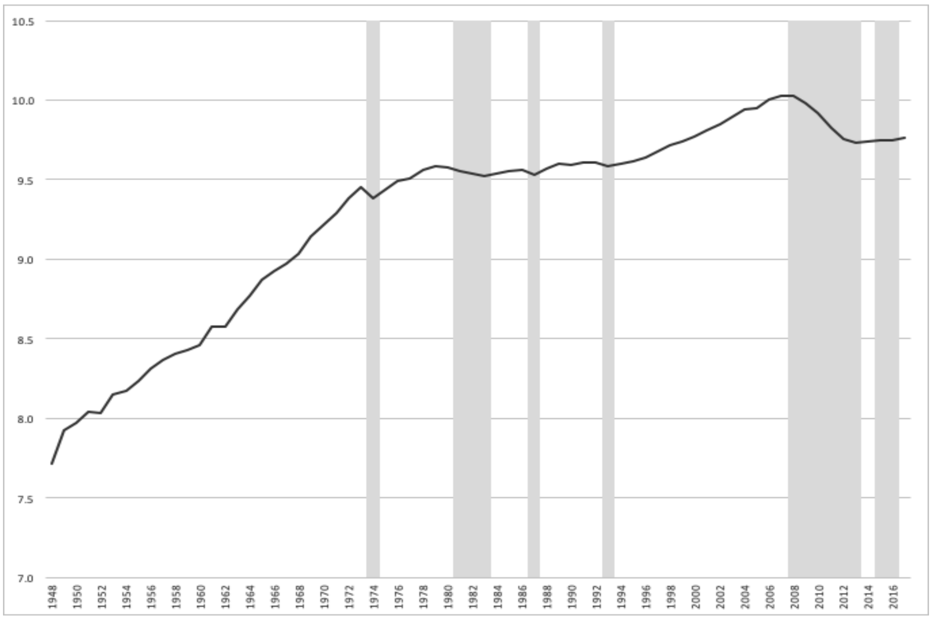
The international financial and economic crisis of 2008 provided the trigger for a re-evaluation of the sustainability of Greece's external position. It eventually led to a 'sudden stop' in international lending in early 2010. Since then, Greece had to be bailed out by its euro area partners and adopt an externally imposed adjustment program, which led to possibly the deepest and longest peacetime depression in its history as an independent state. This has been the fourth act in the Greek tragedy of the last four decades, an act that has also shaken the very core of the euro area.[4]

Some facts will help illustrate the main economic dimensions of this tragedy. In the 30 years before Greece entered the EU, the real per capita income of Greece rose fivefold, from €2.9 thousand constant euros of 2010 in 1950, to €14.5 thousand in 1990. The annual growth rate of real per capita output was approximately 5.5%. In the subsequent 30 years, after Greece had become a member of the European Union, the real per capita income of Greece rose by only 1.4 times. From €14.5 thousand (constant euros of 2010) in 1980, to €20.3 thousand in 2010. The annual growth rate of real per capita output fell to approximately 1.1%. This slowdown was much larger and abrupt than would have been expected on the basis of convergence to lower steady state growth. In the ten years since the international crisis of 2008, the real per capita income of Greece has been falling. In 2016, at the deepest point in the recession, it had fallen to €17.1 thousand, almost 25% lower than its peak level of 2007, ten years earlier. Figure 1 depicts these trends. Similar trends can be detected in other related measures, such as per capita private consumption or average labor productivity.[5]

[4] The international literature on the Greek economy has grown exponentially since the sovereign debt crisis of 2010. Krugman (2010), Arghyrou and Tsoukalas (2011), Alogoskoufis (2012), Ardagna and Caselli (2014), Galenianos (2015), Orphanides (2015), Ioannides and Pissarides (2015) and Gourinchas et al (2017) were among the first to analyze the origins and implications of the Greek crisis. Zettelmeyer et al (2013) concentrated on the debt restructuring of 2012. Reinhart and Trebesch (2015) focused on a historical comparison of the 2010 crisis with previous Greek defaults, since the 19th century. Meghir et al (2017) is an important recent collection, which contains papers analyzing a number of aspects of the Greek economy relevant to the crisis and the austerity program. Most chapters also contain interesting proposals for reform. See, among others, the introduction by the editors in Meghir et al (2017a) and Angeletos and Dellas (2017), Arkolakis et al (2017), Haliassos et al (2017), Lyberaki et al (2017), Skreta (2017) and Flevotomou et al (2017).

[5] The source of all data presented in this paper, unless indicated otherwise, is the Annual Macroeconomic Data Bank (AMECO) of the European Commission (November 2018).

Figure 1: GDP per Capita in Greece, 1948-2017 (thousand 2010 euros, log scale)



It is clear that on purely economic grounds, participation in the EU and, subsequently the EA, did not fulfill the expectations of those who believed it would have an overall positive impact on the Greek economy. This was the case even before the crisis of 2010. In fact, Greece entered into a prolonged period of slow growth immediately after accession to the EU in 1981, although EU accession can be seen as only one of the reasons for the slowdown in economic growth. It was only after the creation of the euro that Greece enjoyed a sustained rebound in economic growth. However, this was at the expense of a significant deterioration of the current account and the rapid accumulation of external debt. The international financial crisis and recession of 2008, and the policies that were adopted after the 2010 sovereign debt crisis, led to Greece's longest and deepest post war depression.

What are the reasons behind these adverse macroeconomic developments following EU and EA accession? Are these adverse developments the inevitable outcome of integration into the EU and the EA, or the result of Greek post-accession economic policy choices? Could these developments be somehow avoided? Was entry into the euro area premature? Should there be a "Grexit"? Finally, what are the current prospects of the Greek economy within the euro area, in which it has been participating since 2001?

As I argue in the rest of the paper, part of the problems that arose immediately after joining the EU were due to the inherent structural weaknesses of the post-war Greek economy and the implications of EU accession itself. Yet, this is not the most significant part. Many, if not most, of the problems arose because of the economic policies that Greece followed after EU accession in 1981, and in particular its macroeconomic and structural policies.

With regard to accession to the euro area (EA) itself, in 2001, membership was almost certainly premature, as Greece entered the EA with relatively low international competitiveness and before the required fiscal and structural adjustment of the Greek economy was complete. As a result, after joining the EA, Greece had no way of addressing the central macroeconomic policy dilemma between, on the one hand, high growth and employment and, on the other hand, external balance. The economy was constrained by low international competitiveness and fiscal imbalances and it had given up the tools of monetary and exchange rate policy.

This Mundellian conflict between internal and external balance, characteristic of economies with low international competitiveness which operate under fixed exchange rates and free capital mobility, has been the main macroeconomic problem faced by Greece since it entered the euro area. The option of a one-off devaluation, which exists in regimes of fixed but adjustable exchange rates, does not exist in a single currency regime such as the EA. Hence, the only remaining instrument for stabilizing the economy is fiscal policy.

However, under fixed exchange rates and free capital mobility, fiscal policy cannot solve the problem of the conflict between internal and external balance, even in the short run. According to the Mundell-Fleming model, the most widely accepted short-term analytical model of international macroeconomics, under free international capital mobility, a fiscal expansion results in an increase in aggregate domestic demand, causing an increase in GDP growth and a reduction of unemployment, but also results in a widening of the current account deficit. On the other hand, a fiscal contraction leads to a reduction in the current account deficit, but to the detriment of growth and employment, by reducing domestic demand and creating a recession.[6]

This conflict between the objectives of internal and external balance is the main weakness of fiscal policy as a tool for stabilizing the economy in open economies that participate in a single currency regime with free capital mobility, such as the euro area.[7]

In the case of Greece, the significant and sharp decline in real interest rates that accompanied EA membership, owing to the elimination of country risk and the risk of devaluation, led almost immediately to a significant increase in domestic investment and a reduction in national savings. As a result, growth accelerated, due to the increase in domestic demand, but there was also a significant widening of the current account deficit, due to the rise of investment relative to savings.[8]

In addition, in the case of Greece, both fiscal and income policies were relaxed significantly after euro area accession in 2001. This relaxation provided more fuel to the economic boom

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[6] See Mundell (1963), Fleming (1962) for the origins of this view, which has since become the mainstream of short run open economy macroeconomics. The Mundell-Fleming model is the key short run macro model used in most major textbooks on international economics(Caves et al (2007), Feenstra and Taylor (2014), and Krugman et al (2017)), and also the basis of more sophisticated open economy "new-keynesian" dynamic stochastic general equilibrium (DSGE) models used by academic researchers, international organizations, national finance ministries and central banks. See Uribe and Schmitt-Grohe (2017) for a review of such open economy DSGE models.

[7] Of course, there are additional weaknesses of fiscal policy. As changes in fiscal policy require time consuming political agreements, parliamentary votes and partisan discussions, fiscal policy is characterized by much longer recognition, design and implementation lags than monetary policy. As a result, it is a rather inflexible and blunt instrument for stabilizing the economy.

[8] The rise in current account deficits as a result of the lower real interest rates that followed euro area entry was not confined to Greece. It occurred in the rest of the economies of the periphery of the euro area as well. See Blanchard and Giavazzi (2002). Almost all of these economies faced a serious external debt crisis after 2010. For analyses that focus on the wider dimensions of the euro area crisis see, among others, Lane (2012), O'Rourke and Taylor (2013), Baldwin and Giavazzi (2015, 2016), Orphanides (2015, 2017 a,b), Brunnenmeier et al (2016), Kang and Shambaugh (2016), Papademos (2016), Stiglitz (2016), Wyplosz (2016), Mody (2018) and Alogoskoufis and Jacque (2019). These wider systemic dimensions of the euro area crisis are briefly discussed in section 6 of the present paper.

and the current account deficit. Initiatives such as increases in wages and pensions, tax cuts, increases in military procurement, and the staging of the Olympic Games led to a further deterioration of the fiscal problem and exacerbated the problems of international competitiveness and the balance of payments. In any case, there is no doubt that fiscal and incomes policies following accession to the euro area placed too much emphasis on the objective of stimulating domestic demand, in order to boost growth and employment, and too little emphasis on improvements in international competitiveness and the correction of external imbalances.

On the other hand, following the crisis of 2010 and the adoption of the externally imposed adjustment program, the emphasis of macroeconomic policy shifted almost exclusively towards tackling external imbalances, without any concern for domestic incomes, growth, and employment. As a result of this abrupt policy reversal, there was a disastrous recession for the Greek economy, where each percentage point of improvement in the current account in relation to GDP would cost about two and a half percentage points of GDP in terms of a decline in total domestic output, and around one and half percentage points of the labor force, in terms of a rise in unemployment. Thus, the cost in terms of lost output and jobs has been exorbitant.

The main conclusion from this analysis is that, in order for Greece to recover after its major crisis and remain in the euro area, it should adopt a different mix of macroeconomic and structural policies, relative to the past four decades, including the eight year adjustment program of the 2010s.

This new policy mix should be based on supply side reforms and concentrate on four main priorities: First, a revenue neutral tax reform that would encourage savings and investment. Second, a restoration of the ability of the financial system to use the increased savings in order to finance a recovering economy. Third, structural reforms that would create opportunities and incentives for foreign direct investment in sectors producing internationally tradable goods and services. Finally, a reform of the public sector through a shift in emphasis from public production and procurement of goods and services, to public regulation, even in socially sensitive sectors such as health, education and social security. This would help reduce public expenditure, increase economic efficiency, free up resources for social protection and private investment, and allow Greece to effectively reduce its gigantic public debt. In addition, a number of institutional and political reforms would be required in order to make this new policy mix sustainable and thus credible.

The rest of the paper contains the full analysis that leads to these conclusions.

3. The Restoration of Democracy and EU Accession

Accession of Greece to the EU was achieved thanks to the vision, perseverance and efforts of the then Prime Minister, and later President of the Republic, Constantine Karamanlis. He was seeking the consolidation of the newly restored democratic freedoms but also the conditions that would guarantee the further social and economic progress of Greece. Accession was completed after a relatively short preparation period, despite opposition from the left, and the reservations of a number of key European governments.[9]

3.1 The Social and Political Climate of Post-1974 Greece

In order to understand the evolution of Greek institutions and the macroeconomic policy choices of Greece in the last four decades, it is imperative to comprehend the prevailing Greek social, economic and political attitudes since the restoration of democracy in 1974.

Post-1974 social and political attitudes and institutions have tended to favor the redistribution of income through taxation, a significant role for labor unions in wage setting, a dominant role for the state in sectors such as electricity, telecoms, water and sewage, banking, education and health, and policy discretion rather than strict policy rules. Public attitudes reflected a deeply rooted mistrust of market institutions, especially private corporations. These attitudes encouraged the emergence of powerful labor unions in the public sector, banking and agriculture and the capture of the state by the ruling political parties. As a result, and also because the Greek private sector mostly consists of self-employed professionals and small family based enterprises (SMEs), the Greek social, political and economic system became significantly more ``corporatist'' in the post-1974 period, reflecting the political dominance of powerful public sector, small business and agricultural interests.

This was in juxtaposition to the period between the end of the civil war and the coup of 1967, when Greece had a much more centralised and rules-based social, political and economic regime. This relatively authoritarian, yet democratic, political regime was put in place after the end of the civil war in 1949. It emphasized law and order, western style free enterprise, fiscal 'orthodoxy' but also a significant social and economic role for the state.[10]

After 1967, the seven year-long dictatorship undermined both the ideological foundations and the political legitimacy of the post-war regime. The restoration of democracy could not but reflect new political and economic priorities. It led to the emergence of corporatist left-of-center political attitudes, even more favorable to extensive state intervention, through a larger public sector, redistributive tax, social and labor policies and discretionary rather than rules-based macroeconomic policies. Such political attitudes permeated all political parties,

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[9] The issue of EU membership became the subject of intense political controversy after the restoration of democracy. The then rising opposition party, the Panhellenic Socialist Movement (PASOK), led by Andreas Papandreou, was firmly opposed to EU membership from the start. The Communist Party of Greece was also firmly opposed to membership, while the Euro-Communist Party of Greece (which later evolved into the current governing party, SYRIZA) was negative, but somewhat more ambivalent. Many key European leaders, such as Chancellor Helmut Schmidt of West Germany, were also initially opposed, although the French President, Vallery Giscard d'Estaing, was a key early supporter of Greece's EU participation.

[10] As emphasized by Koliopoulos and Veremis (2002), p. 197, 'The state had a considerably enhanced role in the post-war era. By assuming the entire burden of reconstruction and the allocation of massive foreign aid on the one hand, and the promotion of nationalist orthodoxy on the other, it increased its role in society. State planning, involving regulation of prices, the exchange rate and investment, and the extension of credit to the private sector, made the state the motor of the much-sought-after economic growth.'

both left and right-of-center, although, in such an ideological environment, parties of the left obviously held a distinct political advantage.[11]

The political party that dominated Greek politics in the thirty years between EU entry in 1981 and the Greek crisis of 2010 was the Panhellenic Socialist Movement (PASOK), a left-of-center party founded by Andreas Papandreou. It remained in power for over twenty years during this period, vis-a-vis only eight years for New Democracy (ND), the right-of-center party founded by Constantine Karamanlis. Thus, the policy choices of PASOK and the party's dominance in the shaping of Greek institutions and the state bureaucracy following accession to the EU cannot be overemphasized.[12]

In any case, the restoration of democracy marked the beginning of the end of the deep social divisions that were created during the occupation and the civil war of the late 1940s and its aftermath. It also marked the beginning of a process of emancipation of social groups associated with the left, as well as labor and agricultural unions, which had in large part remained at the margins of society and politics for at least a quarter of a century. It was also seen as the opportunity to satisfy social demands for a less centralized political system, redistribution of political power among the country's regions and social groups, redistribution of income and wealth, and convergence to the democratic freedoms associated with the more developed economies of Western Europe.

Following a referendum in 1974, the monarchy was abolished, and Greece became a Republic. In 1975 a new constitution was adopted, which, in the economic and social field, had very little relation to the previous democratic Constitution of 1952. The priorities of fiscal, income, credit and monetary policy, the role of trade unions, as well as the nature and the breadth of state economic activity changed radically, reflecting the new ideological and political attitudes.

The demands of the middle and lower middle classes for a state that would actively play the role of protector and guarantor of their newly restored democratic freedoms and their living standards have since been one of the main drivers of Greek politics. These forces, through

[11] Diamandouros (1986) has argued that the dictatorship never acquired political legitimacy or significant support. After the restoration of democracy 'The entire party system had moved to the left, reflecting the political atmosphere of the time.' (Kalyvas (2015), p. 120). It is characteristic that in the late 1970s, the head of the Confederation of Greek Industries 'accused' the then right-of-center government of Constantine Karamanlis of `socialmania', because of the nationalization of the second largest banking group, the ailing Olympic Airways and the largest shipyard. In addition, public sector unions came to be dominated by parties of the left and became much more militant. In the 45 years since 1974, left-of-center parties (PASOK, SYRIZA and others) dominated in government. They led governments for 26 years (58% of the time), and participated in coalition governments for another 5 years (11% of the time). The right-of-center party of ND formed governments for 14 years (31% of the time), of which 6 were before EU accession, and only 8 after EU accession. Of the 39 years since accession to the EU, Greece has had left-of-center governments for 26 years (67% of the time), coalition governments with a minority participation of parties of the left for another 5 years (13% of the time) and right-of-center governments for only 8 years (20% of the time). Even more significant is the fact that even right-of-centre governments, being at a political disadvantage given the left-leaning attitudes of the electorate, often followed policies that mimicked the policies of the left. Appendix A lists Greek governments since the restoration of democracy in 1974, along with election dates and incoming Prime Ministers.

[12] As noted by Sotiropoulos (1993), p. 44-45, 'In modern Greece, we have come to expect that as soon as a political party decisively wins the general elections it acquires full control over the state, and remains unchallenged in storming the bureaucracy with its own party personnel and in formulating and passing administrative legislation in parliament. The major theme ... is the imbalance of strength between political parties and the state in Greece, after the transition to democracy.'

the emergence of the politically dominant PASOK, quickly led to the questioning and eventually the change of a very large part of the institutional structure that had characterized the economics and politics of the first twenty five years since the end of the civil war. Although the dominance of PASOK itself ended in the elections of 2012, many of the characteristics of the party were transferred to SYRIZA, the new dominant left-of-center party that emerged after the 2010 crisis.

It is within this political and ideological context that one must understand the economic policy choices of Greece in the last four decades, the weakness of its institutions and the continuing resistance of the electorate to concepts such as rules based economic and social policies, fiscal consolidation, and market-based reforms.[13]

3.2 The Greek Economy before EU Accession

As already mentioned, after the Second World War and the civil war Greece had managed to create the conditions for a long period of sustained rapid economic growth.

In the 30 years before Greece joined the EU (then EC), real per capita income rose fivefold. For many years since 1950, Greece's macroeconomic performance had been among the most impressive in Europe and the rest of the world. This lasted until the early 1970s. While Greece recovered relatively quickly from the first oil crisis of the 1970s, after the second oil crisis and accession to the EU, it entered a period of persistent stagflation from which it took many years to recover.

In the initial post-war effort to rebuild its economy, Greece had the advantage of considerable financial assistance through the Marshall Plan, a US initiative that benefited almost all the economies of Western Europe. In addition, a key decision for Greece was to participate in all the post-war international economic institutions of the western world.

Greece was a founding member of the International Monetary Fund and the World Bank, the General Agreement on Tariffs and Trade (GATT), and the Organization for European Economic Cooperation, which has grown into the Organization for Economic Co-operation and Development (OECD). In the early 1960s Greece even signed an association agreement with the newly established European Economic Community (EEC).

However, due to its geographic location, tariff protection until the mid-1970s, and the seven year dictatorship of 1967-1974, the Greek economy of the late 1970s was relatively unprepared for full participation in the much more efficient and competitive European Union economy.

[13] Evidence that the Greek electorate is still leaning to the left is provided by a recent survey conducted under the auspices of the *Dianeosis* institute, presented in Georgakopoulos (2017). Asked to place themselves in the political/ideological spectrum 41.4% of respondents place themselves right of centre (Liberalism (17.9%), Neoliberalism (9.6%), Conservatism (5.6%) and Nationalism (8.3%)). On the other hand, 46.1% associate themselves with values of the left (Social Democracy (19.7%), Ecology/Greens (8.1%), Socialism (12.7%) and Communism (5.6%)). Of the remaining 12.6%, 9.7% reply 'none of the above', and 2.9% 'don't know'. In addition, only 33.3% believe that the word 'capitalism' represents something positive, while the corresponding percentage for the word 'socialism' is 62.1%.

The growth miracle of the 1950s and 1960s had taken place under protective tariffs and restrictions on capital movements, which constituted a shield for the then “infant” Greek industry, and particularly manufacturing. Industrial production expanded in the early postwar decades in order to serve the domestic market through import substitution, but Greek manufacturing never really managed to penetrate the more competitive markets of the economies of western Europe. This was despite the fact that government interference in labor relations, and the suppression of the Communist Party of Greece since the end of the civil war, resulted in a rather weak trade union movement.

In addition, due to geopolitical constraints, Greek industry never had a chance to penetrate the markets of neighboring economies such as Albania, Yugoslavia, Bulgaria, Romania and Turkey. This was a major disadvantage, as the gravity model suggests that trade is much easier with neighboring economies. Moreover, during the period of the dictatorship, Greece had been politically isolated from the rest of Europe, which also resulted in its relative economic isolation.

The only two sectors that became internationally competitive were shipping and the tourism industry, reflecting deep rooted comparative advantages of Greece, due to its geography, history and climate. Earnings from these two sectors contributed significantly to the balance of payments throughout the post-war period. Two other factors that contributed positively to the current account were emigrant remittances until the 1970s and EU transfers, since 1981.

In any case, the international competitiveness of Greek manufacturing remained low even during the period of high growth. Moreover, the oil shocks of the 1970s further weakened the position of Greek industry. A similar result followed from the abolition of protective tariffs, which was a condition for Greece's participation in the EU, as well as the increased militancy of trade unions following the restoration of democracy.[14]

As a result, the Greek economy which joined the EU in 1981 was an economy with problems of international competitiveness, which had been further exacerbated by the oil crises, the reduction of tariff protection and increased trade union militancy. On the other hand, by the end of the 1970s, the fiscal situation was not particularly worrying as public debt was at a very low level compared to GDP.

3.3 Economic Policy in the Run Up to EU Accession

The economic policy of the 1975-1979 period was shaped by three main forces. The social pressure for redistribution of income and wealth, the prevalence of social and political perceptions that contributed to the expansion of state economic activity and the adjustments and preparations for Greece’s entry into the EU.

These forces influenced almost all economic policy choices in the period up to accession in 1981 and beyond.

[14] See Giannitsis (1993) for a discussion of how Greek industry was affected by world market integration through Greece’s entry into the EU.

As a result of the policy of that period, there was a rapid recovery of the Greek economy from the recession of 1974, unemployment remained at very low levels, there was a modest fall in inflation from its high of 25% in 1974, and significant surpluses in the current account. Until 1980, the budget deficit remained low, below 3% of GDP, while there was a significant improvement in wages and pensions in real terms.

However, the second oil crisis that erupted in 1979 led to a new episode of stagflation. Growth rates declined sharply, from 7.2% in 1978, to 3.3% in 1979, to 0.7% in 1980. In 1981 there was another recession following that of 1974. Inflation almost doubled, from 13.2% in 1978 to 22.5% in 1980 and 23.2% in 1981. Unemployment also doubled from 1.9% of the labor force in 1978 to 4% in 1981. Finally, the deficit of the general government, in the electoral year 1981, more than tripled to 9% of GDP, from just 2.6% in 1980.

Thus, 1981, the year of EU accession, was also a year of significant destabilization of the Greek economy, due to the second international oil crisis and the domestic electoral cycle.

As suggested by the OECD, in its periodic review of the Greek economy following EU entry, Greece ought to have prioritized the improvement in its international competitiveness.

"If the growth of the economy is to be sustained over the medium term it will need to be based on a substantial and continuing rise in the volume of exports of goods and services and the development of genuinely competitive import-substitution industries. An improvement in competitiveness is an essential condition in this respect." (OECD (1982) p. 56).

Towards the end of the year, in the elections of October 1981, the Panhellenic Socialist Movement (PASOK) of Andreas Papandreou was swept into power promising 'change'. A party that was initially opposed to EU membership, was called upon by the voters to manage the fortunes of Greece immediately after EU accession.[15]

4. The Greek Economy since EU Accession

There is little doubt that the Greek economy was relatively unprepared for participation in the much more efficient and competitive EU economy in the early 1980s.

The economic miracle of the 1950s and the 1960s, when annual GDP growth rates exceeded 7% on average, had taken place under protective tariffs. Although tariffs had been on a downward trend, due to the GATT rounds of trade liberalization, they had provided a relative shelter for the emerging Greek industry. The maintenance of low inflation, at an average annual rate of 2.5%, from the mid-1950s to 1972, during the period when Greece participated in the Bretton Woods System of fixed exchange rates, also contributed to a stable economic and financial climate. This helped boost confidence, savings, investment and growth.

From the 1950s to the 1970s, manufacturing had expanded in order to service the domestic market, but never became successful in international markets. The international competitiveness of Greek industry remained low throughout this period. Furthermore, the oil shocks of the 1970s weakened the competitive position of the energy intensive Greek

[15] Appendix A reviews political developments in Greece, listing elections, governing parties and incoming prime ministers from 1974 till 2019.

industry, and the subsequent removal of protective tariffs, a precondition for EEC participation, weakened it even further.

Yet, in addition to external developments, the deterioration of the performance of the Greek economy since EU accession was mainly due to domestic reasons such as the change in the priorities of macroeconomic and structural policy following EU entry.

We highlight four separate domestic policy cycles in Greece since accession to the EU. They roughly correspond to the 1980s, the 1990s, the 2000s and the 2010s.

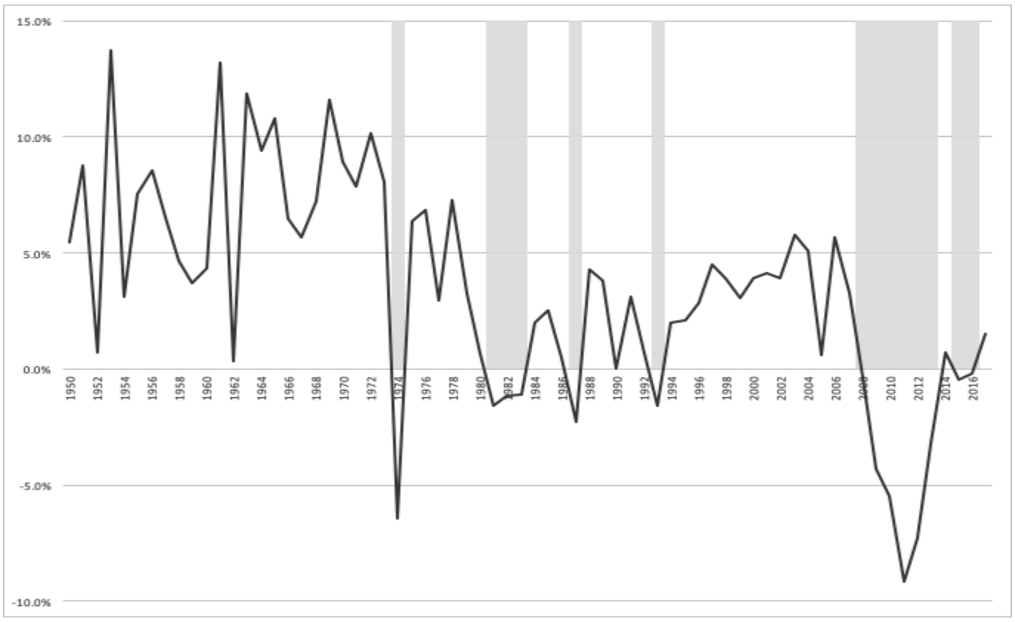
The key macroeconomic developments with regard to growth, inflation, unemployment and the current account are presented in figures 2 to 5.

4.1 The 1980s: Stagflation and Destabilization

In sharp contrast to the recommendations of international organizations, such as the OECD, the first policy cycle, that of the 1980s, in the immediate aftermath of the second oil shock and EU accession, dealt an additional and very significant negative blow to the competitiveness of Greek industry. In addition, it eventually saddled the Greek economy with high government debt and a much larger public sector than before. These problems have constituted a significant burden ever since.

The administration of Andreas Papandreou, which was swept into power in 1981 did not reverse EU accession itself, but attempted a so-called 'third way to socialism', within the European Union. Its initiatives resulted in exorbitant labor cost increases in the early 1980s, an expansion of the public sector, higher taxation, high inflation and the explosion of government debt. These constituted severe, domestically induced, adverse shocks to the Greek economy. They contributed to economic stagnation and the rise in both inflation and unemployment, a key characteristic of the 1980s.

Figure 2: Annual Growth Rate of Real GDP in Greece: 1950-2017



The average annual GDP growth rate in the 1980s fell to a miserly 0.8%, whereas the average annual inflation rate jumped to 19.5%, from 12.3% in the 1970s, and only 4.3% in the 1950s and the 1960s. The unemployment rate rose from 1.9% in 1979 to 7.2% in 1984, and remained at this higher level throughout the decade. The current account moved from a surplus of 2% of GDP in 1980 to a deficit of 3.1% of GDP in 1985, prompting the adoption of a short lived stabilization program. Meanwhile, the general government debt to GDP ratio kept growing rapidly throughout the 1980s, from 22.7% in 1980 to 72.5% in 1990.

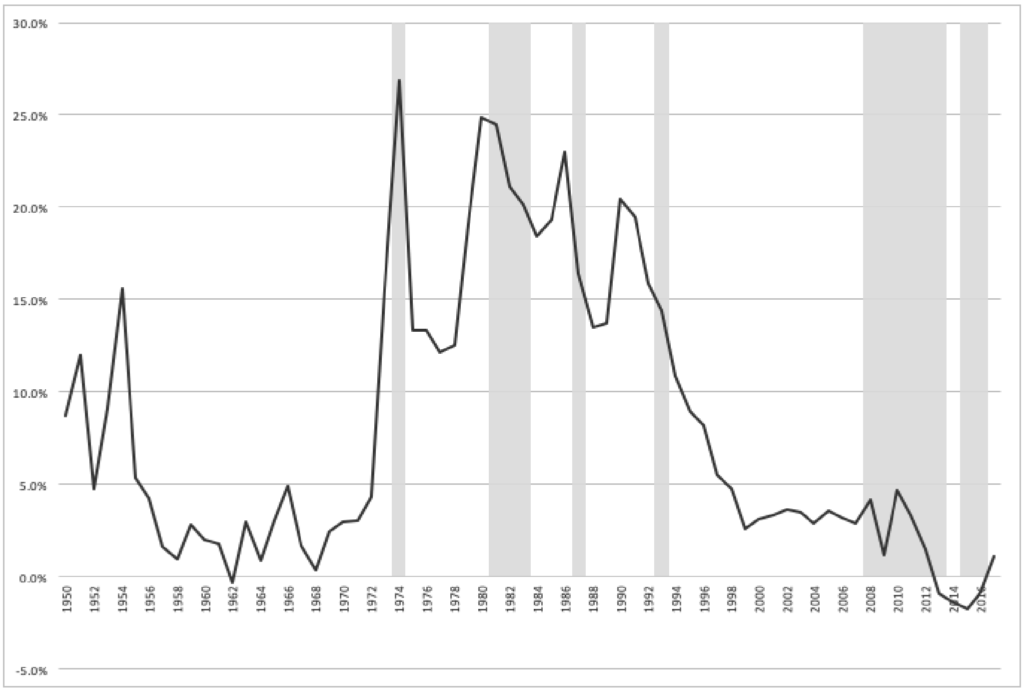
The emergency stabilization program of the mid-1980s was too little too late, as it was both one sided and temporary. It was one sided, in that it only concentrated on containing unit labor costs, in order to reverse the rise in the current account deficit, and temporary, as it was abandoned after only two years. A prolonged electoral cycle again destabilized the Greek economy in the late 1980s.

The OECD, in its periodic report on the Greek economy at the end of the 1980s, highlighted both the fiscal destabilization and the reduction in international competitiveness that occurred.

“Since the beginning of the 1980s there has been an unprecedented trend deterioration in the financial position of the public sector, witnessed by a rapid increase in borrowing requirements and debt.” (OECD (1990), p. 39).

“Excessively-rising real wages in relation to low productivity growth, and the lack of motivation of workers, notably in the public sector, signal problems in the functioning of the Greek labour market. There are important aspects of the wage formation process that explain why real wage gains do not adequately reflect exogenous productivity developments either at the aggregate level or between different skills. Institutional features and labour legislation have combined to weaken the responsiveness of employment to labour demand changes.” (OECD (1990), p. 62)

Figure 3: Annual Consumer Price Inflation: 1950-2017



4.2 The 1990s: The Lopsided Adjustment

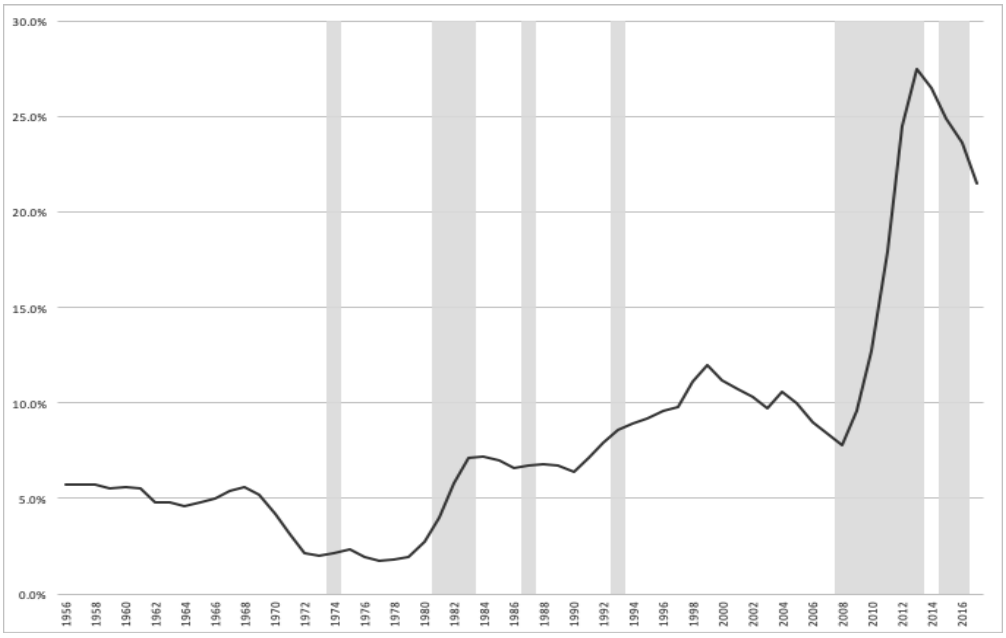
It was only in the early 1990s that Greece started to seriously tackle the much wider policy-induced imbalances that had weakened its economy during the 1980s.

Attempts were made to contain inflation and the rise in the public sector and government debt, to introduce privatizations and market friendly structural reforms, and also to align Greece with the economic priorities of the EU, such as the single market, the European Monetary System (EMS), and the planned monetary union (EMU).[16]

As can be seen from Figures 2-5, the annual GDP growth rate picked up to an average of 3.3% in the second part of the 1990s, and the annual inflation rate fell to an average of 6%. Unemployment continued rising modestly. The weak recovery was accompanied by an increase in the current account deficit to 5.1% of GDP in the second part of the decade from only 0.9% in the first part of the decade.

The reform and convergence programs of the 1990s, the second economic policy cycle in our narrative, were lopsided, unbalanced, not appropriately targeted, and clearly not sufficiently ambitious. The government debt to GDP ratio rose in the early 1990s, as unrecorded debts from the 1980s were incorporated into the official debt figures, but was then stabilized. However, the pace of introduction of fiscal adjustment and growth oriented structural reforms was quite slow and uneven. In addition, the reform and convergence programs were saddled with frequent policy reversals around the time of elections.[17]

Figure 4: The Unemployment Rate: 1956-2017



The adjustment relied mostly on monetary tightening, which resulted in a gradual reduction of inflation and inflationary expectations. Yet, this was not accompanied by a sufficient fiscal adjustment. Hence the adjustment was lopsided. The adjustment of the primary deficit of the

[16] Alogoskoufis (1993) and Papademos (1993) analyze the policy options for Greece from the perspective of the early 1990s, in view of the plans for EMU.
[17] Fiscal developments are analyzed in detail in section 4.

general government mostly took place in the first half of the 1990s, and was subsequently partly reversed. Adjustment of the headline deficit of the general government continued into the second part of the 1990s but this was mainly due to the falling inflationary expectations, which brought about rapid declines in interest rates and, hence, interest payments on government debt.

Despite the lopsided nature of the adjustment, Greece had partially changed course from the policies of the 1980s. It eventually scraped through in order to participate in the euro area with only a two-year delay relative to the initial 11 members.

The Greek economy remained an economy with low international competitiveness and significant fiscal imbalances, but it had managed to tame inflation, as can be seen from figure 3. As can be seen from figure 8, it also managed to put a lid on the growth of the general government to debt to GDP ratio, an important burden since the 1980s.

At the end of the 1990, and after Greece had secured participation in the euro area, the OECD, in an otherwise optimistic report, does once again raise a number of concerns.

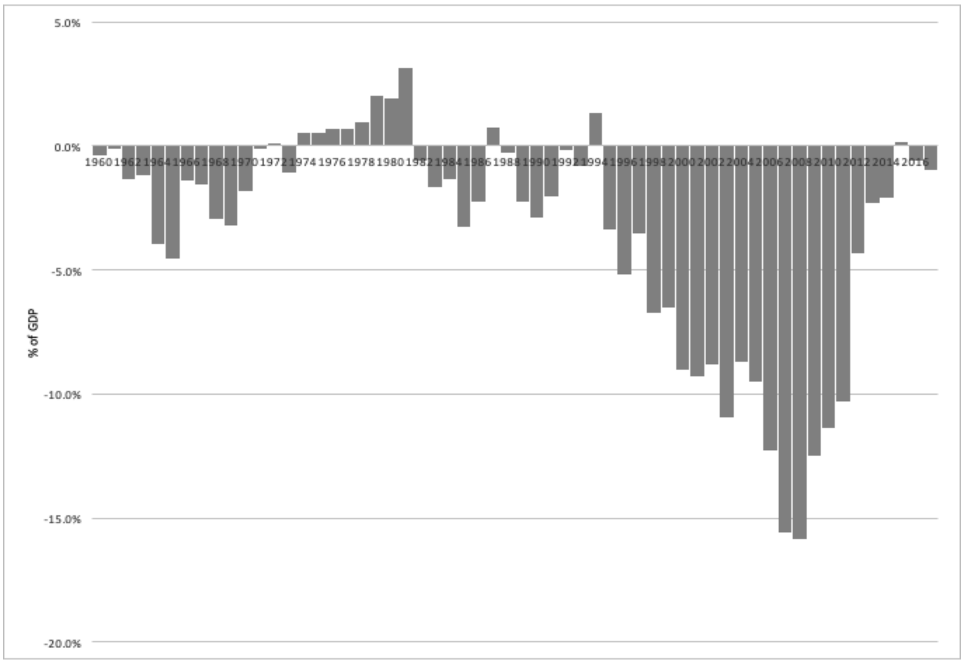
“While the growth and inflation performance has improved considerably, major policy challenges lie ahead. Furthermore, following this extraordinary effort, monetary policy had to ease in 2000 prior to joining EMU, thus fuelling demand. With rapid growth projected to continue in 2001 and 2002, underlying inflationary pressures could rise. Fiscal policy should thus tighten and tax cuts only be implemented if accompanied by spending cuts. There has been expenditure slippage in recent years, largely due to the failure to implement wide-ranging health, pension and administrative reforms. In all three areas deep reforms are needed not only to improve the efficiency of the public sector but also to keep a sufficient primary surplus to ensure a rapid reduction in debt. Structural reform has also been slow in many other areas.” (OECD (2001), p. 17-18).

4.3 The 2000s: Euro area Participation, Macroeconomic Euphoria and External Debt

Greece’s macroeconomic policy changed course again after the country had secured its full participation in the euro area. This is the third policy cycle in our narrative. It was marked by the macroeconomic euphoria created by accession to the euro area and the reduction of nominal and real interest rates. In addition, immediately after accession, and despite the warnings of international organizations such as the IMF and the OECD, fiscal deficits started increasing again. The electoral cycle returned with a vengeance, while the government encouraged wage and pension increases and initiated tax cuts and expensive public sector expenditure programs, such as large-scale increases in military procurement and the Olympic Games of 2004.

Euro area participation resulted in a significant fall in not only nominal, but real interest rates as well. As Greece was now operating in a low interest rate environment, households, firms and the government could now borrow at very low rates, which induced them to raise investment and reduce savings. This resulted in an increase in aggregate demand, growth and employment, but also a rapid deterioration of the current account. The significant surplus of

Figure 5: The Current Account: 1960-2017



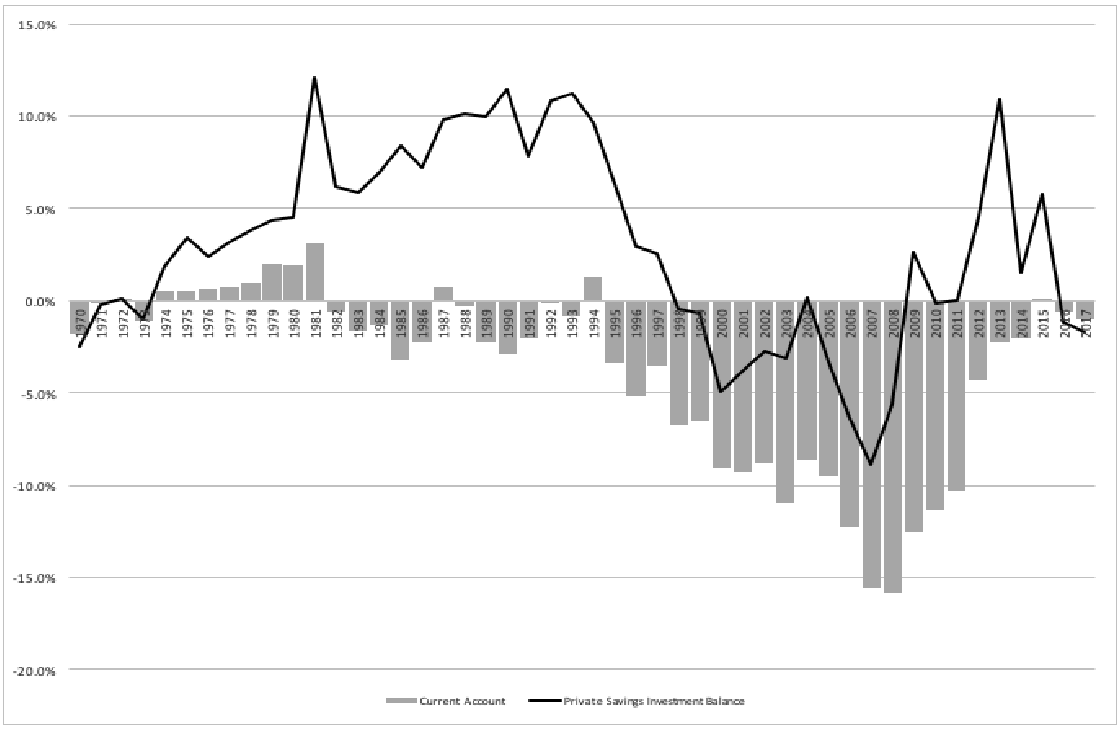
private savings over investment, which in the past had helped keep the current account deficit small, even in the presence of deficits of the general government, was gradually transformed into a significant deficit. This is documented in figure 6 on the current account deficit and the private savings-investment imbalance. The evolution of aggregate investment itself is depicted in Figure 7.[18]

The higher investment and consumption since 1998 also boosted aggregate demand and resulted in relatively high economic growth rates and a fall in unemployment. As can be seen from figures 1 and 2, GDP growth rose to an average of 4.0% per annum between 1998 and 2007. Like most other economies, Greece was affected by the deep international recession of 2008-2009, and growth rates became negative during those two years. Unemployment was on a falling trend, from 12% of the labor force in 1999 to 7.8% in 2008. Inflation also remained low at around 3.0%, although slightly higher than the EA average.

However, the higher investment and consumption also resulted in an explosion of current account deficits, as shown in figures 5 and 6. Greece's already high public debt, previously mainly domestic, was quickly transformed into external debt. The Greek state could now borrow at low interest rates from abroad while Greek banks used their substantial stocks of government bonds as collateral to borrow from banks in the rest of the EU. These collateralized loans from abroad allowed Greek banks to meet the increased, and more lucrative, demand for credit by domestic households and firms. Domestic credit expanded extremely rapidly fuelling the boom and the current account deficits.

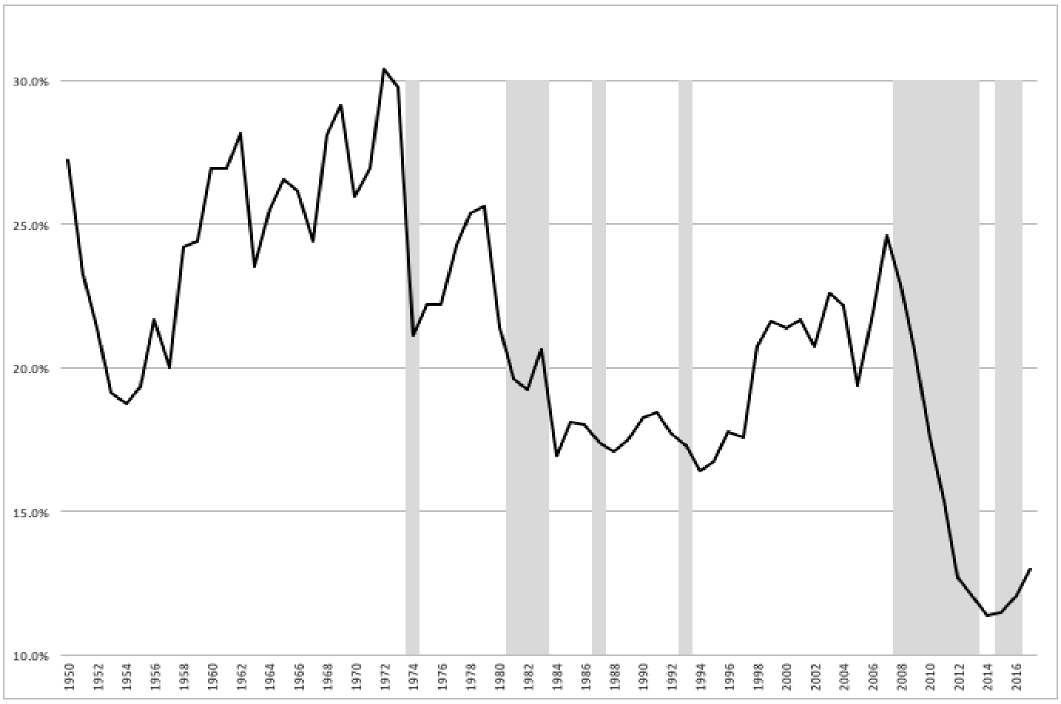
[18] The private savings investment balance in figure 6 is equal to the difference between the current account balance and the balance of the general government. It measures the contribution of the private sector to the current account. Gross Fixed Capital Formation in figure 7 is at 2010 prices as a percentage of GDP at 2010 prices. Source: European Commission, *Annual Macroeconomic Data Bank*, November 2018, and OECD, *Annual Statistics*, 2018.

Figure 6: Private Savings Investment Balance and the Current Account (% of GDP, 1970-2017)



Total credit through the financial system rose from 81.5% of GDP in 1999 to 131.3% in 2009. Total credit to the private sector rose from 34.2% of GDP in 1999 to 105.1% in 2009. Total domestic credit to the general government, including stocks of government bonds, fell from 47.2% of GDP in 1999 to only 26.2% in 2009. It is obvious from the above that Greek banks were using previously held government bonds as collateral in order to borrow from European and other international banks, in order to finance the increased borrowing of the domestic private sector.

Figure 7: Gross Fixed Capital Formation, % of GDP: 1950-2017



Thus, the explosion of credit facilitated, sustained and financed both the increased current account deficit and the internationalization of Greek government debt. The current account deficit displays a marked upward trend since 1995. From 0.9% of GDP during 1990-95, the average current account deficit rises to 5.1% of GDP during 1995-99, 9.3% of GDP during 2000-2004 and 13.1% of GDP during 2005-09. Government debt, two thirds of which was previously held by domestic banks, was rapidly transformed into foreign debt.

As in a number of other countries of the EA periphery, the dangers from the evolution of the current account deficit were largely ignored for many years, because of the false sense of security resulting from participation in the euro area, the recovery in the rate of economic growth and the fall in unemployment without a rise in inflation. A stabilization program after the Olympic games, during 2005-2006, eventually proved too little too late, as it was discontinued due to the political instability that resulted after the elections of 2007, which returned the government with a marginal parliamentary majority, and the international economic and financial crisis of 2008-09.

4.4 The 2010s: The "Sudden Stop" and the Great Depression

The international financial crisis of 2008-09 provided the spark to international investors for the reassessment of Greece's ability to service the external debt that had been accumulating during the previous ten years.[19]

The international financial crisis initially resulted in a modest widening of Greek bond spreads. The situation reached crisis proportions because of the widening of the fiscal deficit during 2009, a revision of the fiscal accounts in late 2009, and domestic political disputes during the electoral 2009, which further destabilized the economy. These allowed for Greece to be portrayed as a perpetrator and not a victim of the international financial crisis. Spreads on Greek 10 year bonds over German bonds widened significantly in the first few months of 2010. In these conditions, and given that the European Central Bank was unable to act as lender of last resort to EU governments in the initial phases of the euro area crisis, Greece experienced a "sudden stop" to international lending. In April 2010, it had to seek official assistance from its EU partners.

The adjustment program that was adopted after the eruption of the 2010 crisis defines the fourth macroeconomic policy cycle in our narrative. It was a hastily designed program of steep fiscal consolidation, reductions in nominal wages and a catalog of structural reforms, many of which recommended in the past by international organizations such as the IMF, the OECD, the European Commission and the European Central Bank. Its implementation resulted in the longest and deepest recession in Greece's postwar history.

As can be deduced from figures 2-6, Greek GDP fell by an annual average of almost 5% in the five years between 2010 and 2014. The average unemployment rate more that doubled, to almost 22%, from 9% in 2005-2009. Average inflation and the current account deficit were halved, to 1.5% and 6% of GDP respectively. Because of the unexpectedly deep and long recession, the total balance of the general government remained slightly higher than in the

[19] Appendix B contains a brief chronology of the Greek crisis.

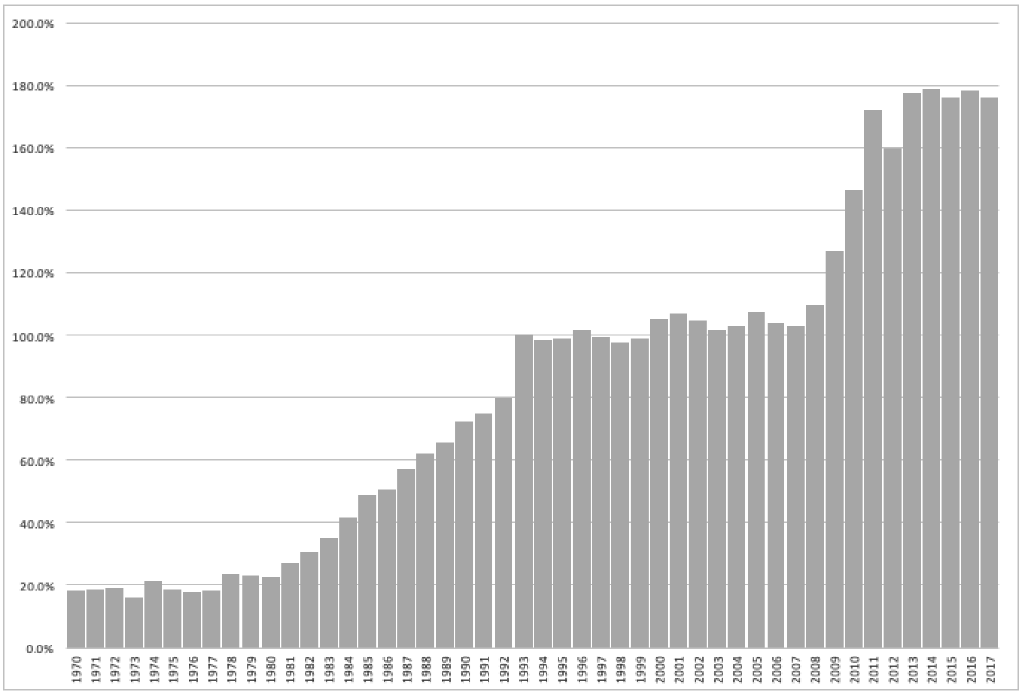
previous five years, at 9.4% of GDP, while average government debt, despite a significant haircut in 2012, shop up to 167% of GDP, from 110% of GDP in the previous five years.

The reduction in the current account deficit was achieved at an exorbitant economic and social cost.

Whereas previous economic policy cycles can be directly attributed to internal Greek politics and the choices of the Greek political system, this fourth cycle, and its spectacular failures, cannot be considered as a purely Greek responsibility. The 'troika' of the EU Commission, the ECB and the International Monetary Fund were directly involved in both the design of the program and its implementation. Failures of the program are as much their own responsibility, as they are the responsibility of post-2010 Greek governments, who never truly embraced the program given the opposition of the Greek electorate.

We next turn to a more detailed examination of each of the four policy cycles. We shall concentrate on fiscal, monetary, financial and competitiveness developments during each of the four policy cycles, as well as on the weaknesses of the euro area itself. In the end, we shall bring our conclusions together to discuss the prospects and policy options of the Greek economy.

Figure 8: General Government Gross Debt, % of GDP: 1970-2017



5. Cycles of Fiscal Relaxation and Incomplete Adjustment

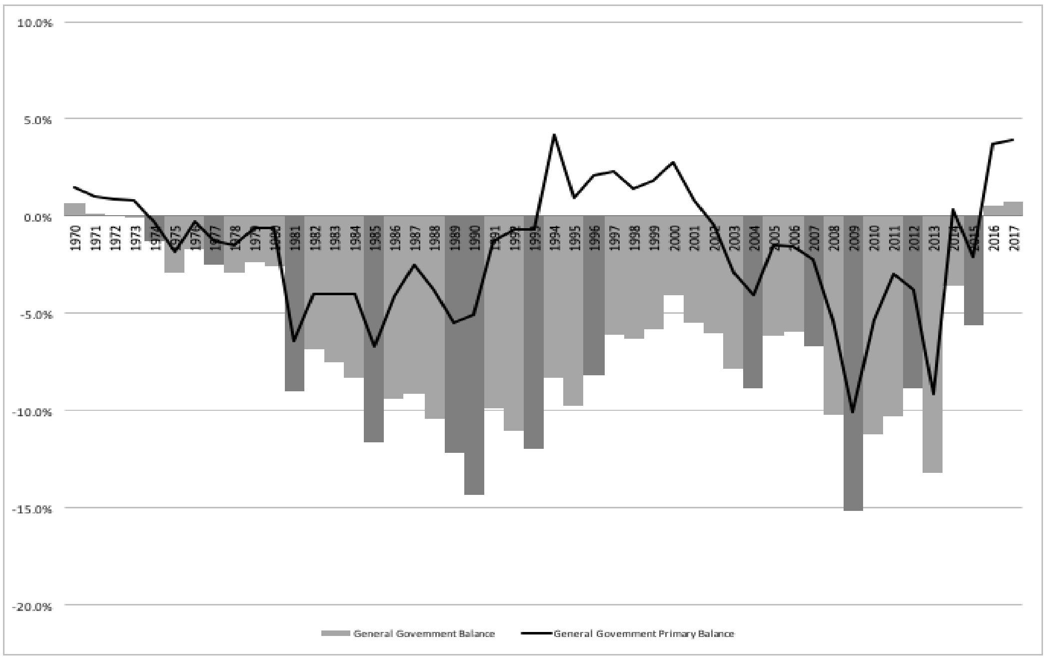
At the time of EU accession in 1981, the budget deficit rose as a result of both the international recession induced by the second oil shock and the domestic electoral cycle. This proved to be the beginning of a painful cycle of fiscal destabilization which has been haunting the Greek economy ever since.

Fiscal deficits remained high throughout the 1980s. The government of Andreas Papandreou, which remained in power during the 1980s, followed policies that caused a further expansion of the public sector and used the budget to redistribute income towards public sector employees and pensioners and increase all kinds of social expenditures and transfers. These sustained deficits resulted in an explosion of government debt throughout the decade, as shown in Figure 8.[20]

5.1 The Destabilization of Public Finances in the 1980s

Figure 9 depicts the evolution of the budget balance of the general government for the period 1970-2017. Until Greece's accession to the EU deficits of the general government seemed to have been under control. However, after accession they reached unprecedented levels for a peacetime period.[21]

Figure 9: General and Primary Government Balance, % of GDP: 1970-2017



As can be seen from Figure 9, the deficits in the 1980s rose throughout the decade, but mainly during the election years 1981, 1985 and 1989-90. This electoral rise in the fiscal deficit is a pattern that continued in the subsequent policy cycles and continues until the present day.[22]

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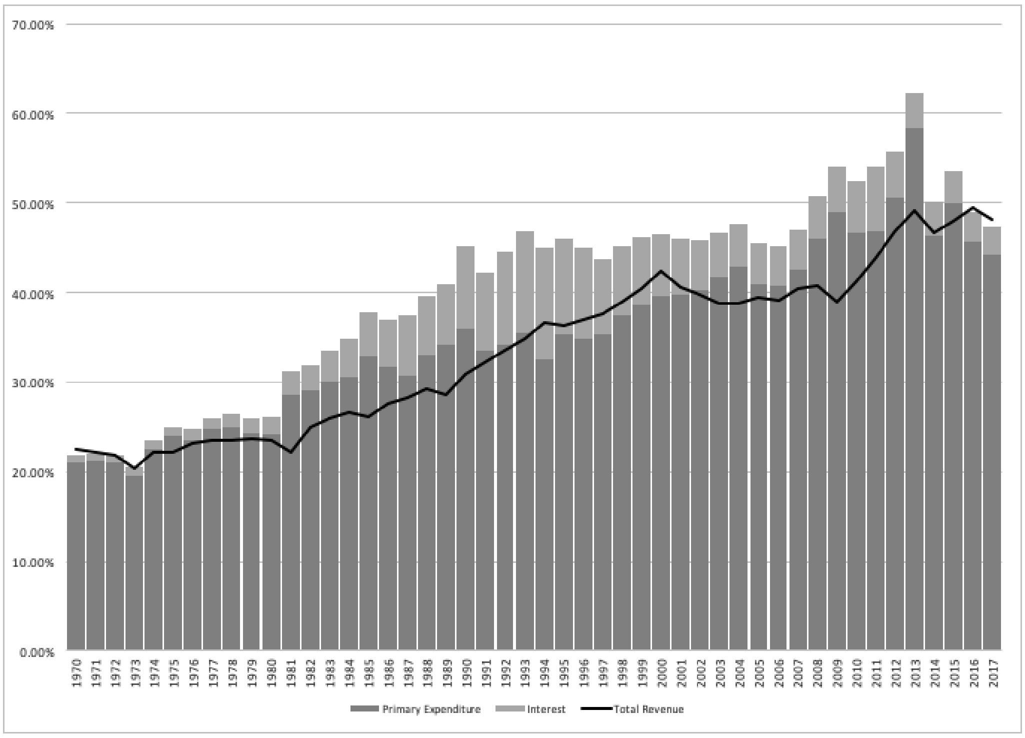
[20] Figure 8 depicts Gross Debt of the General Government as a percentage of GDP. Source: European Commission, *Annual Macroeconomic Data Bank*, November 2018.

[21] Figure 9 depicts Total and Primary Balance of the General Government as a per- centage of GDP. A positive number indicates a surplus. The Primary Balance is Total Revenue minus Primary Expenditure, which excludes interest payments on government debt, and the Total Balance is Total Revenue minus Total Expenditure, which includes interest payments. Darker bars indicate election years. Source: European Commission, *Annual Macroeconomic Data Bank*, November 2018.

[22] See Alogoskoufis (1995, 2013) and Lockwood et al (2001) for economic and econometric investigations of this electoral cycle in budget deficits in Greece.

The sustained rise in the deficit of the general government during the 1980s led to the complete destabilization of public finances. This was originally due to the surge in current primary spending. However, as it subsequently led to a gradual increase in government debt, it eventually brought about a surge in interest payments too. As a result, total expenditure of the general government rose from 26.1% of GDP in 1980 to 40.9% of GDP in 1989. This was an unprecedented rise of 14.8 percentage points of GDP. The revenues of the general government could not of course follow this trend. Despite a large increase in the tax burden, total government revenues rose by just 5.2 percentage points of GDP, from 23.5% of GDP in 1980 to 28.7% in 1989. Thus, the main reason for the high budget deficits in the period 1980-1989 was the rise in total government expenditure by 3 times as much as the rise in government revenue. The trends in government expenditure and revenue as a percentage of GDP are depicted in Figure 10.[23]

Figure 10: Expenditure and Revenue of the General Government, % of GDP: 1970-2017



The persistent rise of the general government deficit throughout the 1980s resulted in an explosion of the debt of the general government. As can be seen from Figure 8, the debt of the general government shot up, from 22.7% of GDP in 1980 to 72.5% in 1990. In addition, because not all deficits and debts were properly recorded at the time, additional debts that had arisen in the 1980s had to be added to official government debt in the early 1990s.

It is also worth noting, that the shortfall of government revenue relative to expenditure contributed to the loosening of monetary policy. The government was financing a significant part of the annual deficit through borrowing from the Bank of Greece, which contributed to

[23] Figure 10 depicts Expenditure and Revenue of the General Government as a percentage of GDP. It also depicts Primary Expenditure, which excludes interest payments on government debt. Total Expenditure is the sum of Primary Expenditure and interest payments. Source: European Commission, *Annual Macroeconomic Data Bank*, November 2018.

monetary growth, the depreciation of the exchange rate and inflation. This thread is taken up in section 5 on monetary policy.[24]

5.2 Weak Fiscal Adjustment and Euro area Entry

Fiscal and more general macroeconomic conditions in 1989 and 1990 were particularly critical. Recorded fiscal deficits were out of control, unrecorded deficits and debts had accumulated throughout the public sector, the social security system was on the brink of collapse, foreign exchange reserves had fallen dramatically and inflation was following an accelerating upward trend.

The outgoing government of Andreas Papandreou proceeded in a pre-election change of the electoral system towards proportional representation, so as to limit the parliamentary consequences of its electoral defeat. This led to three consecutive inconclusive elections and interim governments, despite large electoral majorities by ND. It was only in April 1990 that a stable new government could be formed, with Constantine Mitsotakis as Prime Minister. However, because of the electoral system, this new government had the smallest possible parliamentary majority (one deputy), despite the significant margin of its electoral win.

The election of the Mitsotakis government in 1990 marked the beginning of a systematic effort to tackle the imbalances and distortions of the Greek economy that had developed during the 1980s.

Part of this effort was a program to tackle fiscal deficits, which had risen even further during the prolonged electoral period. In addition, at the end of 1991, Greece co-signed the Maastricht Treaty, which provided for the transformation of the EEC into the European Union and the Economic and Monetary Union (EMU) with the creation of a single currency.

Fiscal deficits were reduced significantly between 1990 and 1992, and the large primary deficit was transformed into a small primary surplus. However, because of the fiscal adjustment and other structural reforms, the Mitsotakis government soon became unpopular. Early election were forced in October 1993, and Andreas Papandreou was returned with a large parliamentary majority. Following that election, PASOK remained in government continuously for more than ten years, until the spring of 2004.[25]

The move towards the single currency required the submission by all countries of convergence programs that would meet particular budgetary and monetary criteria. Among the fiscal criteria, two stood out. Deficits of the general government were required to fall below 3% of GDP for all countries wishing to participate in EMU, while the general government debt was required to fall below 60% of GDP, or display a downwards trend towards this target.

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[24] See Alogoskoufis and Christodoulakis (1991) for an analysis of this link between fiscal deficits, the demand for seigniorage by the government and inflation in the case of Greece.

[25] One of the reasons for the comfortable parliamentary majorities of PASOK during this decade was the fact that the Mitsotakis government had again changed the electoral system back to a system that favored the party which won an electoral majority in national elections. This change backfired for the Mitsotakis government, as it soon lost its electoral support due to the unpopularity of its reform agenda.

Greece was initially a long way from these fiscal targets. The general government deficit at the end of 1991 stood at 9.9% of GDP, more than three times the Maastricht target, while government debt stood at 75% of GDP, compared to the 60% required by the treaty. Like all other EU countries Greece was required to submit a Convergence Program, detailing how it intended to achieve the required criteria.

The first Convergence Program of the Greek Economy was drafted by the Mitsotakis government, and was approved by the EU in March 1993. It envisaged a gradual adjustment of fiscal deficits, inflation and nominal interest rates, so that Greece could achieve a timely accession to EMU. The program was revised in September 1994 by the new government of Andreas Papandreou, that emerged from the October 1993 elections. Although the revised program did not contain major changes of direction, it envisaged a more gradual fiscal and structural adjustment and lower rates of economic growth. It was on the basis of this revised program that Greece achieved accession to the Euro area in January 2001, having missed the first deadline for participation in 1999.

Fiscal adjustment in the 1990s resulted in a fall of the deficit of the general government from 14.3% of GDP in 1990 to 5.8% of GDP in 1999. This decrease was due to both a significant reduction in the primary deficit of the general government, chiefly in the first part of the 1990s, and a fall of interest payments on general government debt, as nominal interest rates fell towards the end of the 1990s, following the reduction in inflation.

In 1990, the primary deficit, i.e., the deficit excluding interest payments, stood at 5.1% of GDP. This deficit declined rapidly in the 1990-94 period, the first part of the decade. By 1994 it had already been transformed into a primary surplus of 4.2% of GDP, marking an improvement of more than 9 percentage points of GDP. More than three fifths of this improvement in the first part of the decade was due to the increase in general government revenues, from 30.9% of GDP in 1990 to 36.7% in 1994. The remainder, slightly less that two fifths, was due to a reduction in primary expenditure of the general government, from 36.0% of GDP in 1990 to 32.5% in 1994.

The further adjustment of the primary balance was not pursued after 1994. As a result, the primary balance gradually deteriorated again. In 1999, the primary surplus had declined to only 1.8% of GDP, as primary expenditure had crept back up to 38.6% percent of GDP, higher than at the start of the decade. Thus, for the decade as a whole, the adjustment of the primary deficit was only equal to 6.8 percentage points of GDP, all of it due to increases in government revenue, which rose by almost ten percentage points of GDP.

How did Greece then manage to satisfy the fiscal criteria that were set out in the Maastricht Treaty? To the extent that it did satisfy these criteria, this was due to the additional contribution made by the reduction of nominal interest rates in the second part of the decade. This was a result of the fall of inflation and inflationary expectations and the fall of the inflation and devaluation premium on interest rates, as euro area entry was approaching. As we shall demonstrate below, when we discuss monetary and exchange rate policy, inflationary expectations and expectations of a devaluation had kept nominal interest rates on Greek government debt high since the beginnings of the financial liberalization of the late 1980s. These expectations were reversed towards the end of the 1990s. As a result, interest payments on Greek government debt fell from 9.2% of GDP in 1990, to 7.6% in 1999, having risen to a high of 12.5% of GDP in 1994, in the aftermath of the crisis in the European Monetary System. This reduction of nominal interest rates contributed significantly to the reduction of the deficit of the general government in the second half of the 1990s, and allowed for Greece's entry into the euro area in the year 2000.

It is important to emphasise that the reduction of the deficit of the general government in the second part of the 1990s was not due to the further adjustment of the primary balance of the general government, but to a reduction in nominal interest rates, due to lower inflation and devaluation expectations because of monetary tightening.

It is also important to note that despite the fall of the government deficit and the creation of small primary surpluses, the general government debt to GDP ratio rose during the 1990s. It was equal to 72.5% of GDP in 1990, and ended up to 98.9% of GDP in 1999. This was partly due to the gradual incorporation into government debt of the "hidden", or "unrecorded" debts and deficits of the 1980s, during 1990-1993, but is also an additional indication of how weak was the fiscal adjustment of the 1990s.

This increase in the government debt to GDP ratio did not preclude Greece's entry into the euro area, as it was deemed that the stabilization of the government debt to GDP ratio in the few years before euro area entry constituted sufficient progress on the debt criterion.

In conclusion, Greece entered the euro area following a decade of very weak and lopsided fiscal adjustment. The small fiscal adjustment that was achieved was mainly based on increases in government revenue and the reduction of interest payments on government debt, which came about as a result of the reduction of inflation and devaluation expectations. This caused a reduction in nominal interest rates. The inexorable rise in primary government expenditure continued, albeit at a slower pace, while government debt was also actually higher relative to GDP at the end of the 1990s. Thus, upon entering the euro area Greece continued to be characterized by significant fiscal imbalances.

5.3 Euro area Entry and"Euro Euphoria"

As if the inadequate fiscal adjustment of the 1990s was not enough of a problem, fiscal policy was relaxed immediately following euro area entry.

The small primary surpluses that had been created in the 1990s began to gradually become even smaller. By 2002 Greece again had a primary deficit of 0.5% of GDP. By the election year of 2004, the primary deficit had widened to 4.0% of GDP. This was the result of both a further expansion of primary expenditure of the general government and a reduction in government revenue, due to tax cuts undertaken by the second Simitis government, in power between 2000 and 2004.[26]

Primary government expenditure rose from 38.6% of GDP in 1999, to 42.8% of GDP in 2004. Government revenue fell from 40.4% of GDP in 1999 to 38.8% of GDP in 2004. Thus, in the first five years since Greece was deemed to have marginally satisfied the Maastricht fiscal criteria, a significant further fiscal relaxation had occurred, both through the expenditure and the revenue side. General government debt rose from 98.9% of GDP in 1999 to 102.9% of

[26] Constantine Simitis succeeded Andreas Papandreou as Prime Minister, after the latter's prolonged illness, in early 1996. He called and won early parliamentary elections in September 1996 and remained in office until March 2004.

GDP in 2004. This fiscal relaxation occurred during a period of high growth, and cannot be justified on the grounds of a countercyclical fiscal policy.[27]

Following the election of a new ND government under Costas Karamanlis in March 2004, and the conclusion of the Olympic Games in the same year, a two year stabilization program partly reversed these trends. The primary deficit of the general government was reduced from 4% of GDP in 2004 to 1.5% in both 2005 and 2006. The general government deficit was reduced from 8.8% of GDP in 2004 to 5.9% of GDP in 2006. The adjustment was gradual and limited due to concerns that a larger fiscal adjustment might induce a deep recession.[28]

A deep recession was eventually caused by the international financial crisis of 2007-09. Combined with the domestic electoral and political cycle the recession resulted in a significant further deterioration of the fiscal balance. The combination of a pause in the fiscal adjustment and the operation of 'automatic fiscal' stabilizers during the deep international recession of 2008-09 caused the 2009 general government deficit to eventually rise to 15.1% of GDP.[29]

This made international headlines, as, following the elections of 2009, the newly elected government of George Papandreou accused the previous government of Costas Karamanlis of consciously under-predicting the extent of the 2009 fiscal deficit. While continuing a policy of fiscal expansion for the remainder of 2009, instead of immediately initiating a fiscal adjustment program, the incoming government then proceeded to a retroactive revision of the fiscal accounts for the previous three years.

The announcements concerning the fiscal deficit, the retroactive revisions of the fiscal accounts and the reluctance of the Papandreou government to tackle the deficit in its first budget, resulted in an almost total loss of credibility for Greece in the already jittery international financial markets. All these factors paved the way for the 'sudden stop' in international lending in April 2010.

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[27] A large part of these adverse fiscal developments was only revealed in 2004, after *Eurostat*, the statistical arm of the EU Commission, with the cooperation of the new Greek government of Costas Karamanlis, significantly revised the fiscal accounts of Greece for the period 2000-2004. This 'fiscal audit' revealed significant deficiencies in Greece's fiscal accounts, especially the accounts of public organisations such as hospitals, social security funds, local authorities and the accounts for military procurement. An EU supervised program to correct these deficiencies, and a tightening of Eurostat's statistical rules, were only partly successful, as problems with Greece's fiscal accounts reemerged during the international financial crisis, towards the end of the decade. These problems, which have existed in various forms since the 1980s, have contributed to a general mistrust of Greek statistics.

[28] This is another key indication that after euro area entry Greek governments were constrained by the Mundellian dilemma.

[29] Costas Karamanlis had called and won an early parliamentary election in September 2007, citing the need for a mandate for further fiscal adjustment. However, his parliamentary majority was thin, while the opposition threatened to overturn the government in early 2010, at the end of the term of the President of the Republic. Election of a new President required a parliamentary majority of three fifths, which the government could not command. If parliament failed to vote for a new President of the Republic, it would have been dissolved in the middle of its four year term and new elections called. This, and the onset of the financial crisis, caused the second Karamanlis government of 2007 to postpone its plans for further fiscal adjustment and eventually call early elections itself in October 2009, in anticipation of the certain dissolution of parliament in March 2010.

5.4 The Sudden Stop and the "Austerity Program"

The 'sudden stop' in international lending, in the early part of 2010, was followed by an internationally imposed macroeconomic adjustment program, as one of the preconditions for the bailout of Greece. A 'troika', consisting of representatives of the EU Commission, the European Central Bank (ECB) and the International Monetary Fund (IMF), designed and administered this economic adjustment program. Its three main elements was a front loaded fiscal adjustment, nominal wage reductions ('internal devaluation') and a list of structural reforms in order to improve aggregate productivity and competitiveness. The first two elements were supposed to quickly correct fiscal imbalances and problems of international competitiveness, while the third element was supposed to increase Greek productivity and international competitiveness in the medium term.

The multiyear economic adjustment program, although draconian on paper, proved much less effective than envisaged by its designers. In the first two years, between 2010 and 2011, the general government deficit was reduced to 10.3% of GDP, and the primary deficit to 3.0% of GDP. These were the levels that characterized 2008, the year before the 'annus horribilis' 2009. In addition, because the recession and deflation turned out to be much deeper than anticipated in the program, the general government debt to GDP ratio rose from 126.7% of GDP in 2009 to 172.1% of GDP in 2011. By the end of 2011, real GDP per capita had fallen by almost 18.5% since its peak in 2007, while the unemployment rate had risen to 21.2%, compared to 8.4% at the end of 2008.

The fiscal adjustment program was clearly not working. The troika revised it in the direction of even more fiscal austerity and a significant haircut to Greece's sovereign debt was engineered, through the, so-called, Private Sector Involvement (PSI). Yet, progress on the fiscal front was slow and the recession intensified.

Between 2010 and 2014, successive rounds of fiscal austerity were implemented by three successive governments, under the umbrella of two successive economic adjustment programs, summarized in respective 'memoranda' between Greece and the "troika". The 2014 fiscal deficit was reduced to 3.6% of GDP and the primary deficit was transformed to a small surplus of 0.3% of GDP. Yet the government debt to GDP ratio had risen to 178.9% of GDP, unemployment to 25.9% and, since the end of 2007, Greece had suffered a cumulated loss of real output per head equal to 25%.[30]

The real economic and social cost of the first two economic adjustment programs was clearly too high given its effects on the deficit and debt of the general government.

Early elections took place in January 2015, which resulted in the new SYRIZA led government of Alexis Tsipras. A new round of austerity was agreed with the new government in mid-2015,

[30] The recession caused by fiscal adjustment was much deeper than anticipated by the 'troika' in their successive plans. The IMF, in its October 2012 *World Economic Outlook*, on the basis of research later published in Blanchard and Leigh (2013, 2014), attributed this to the underestimation of the fiscal multipliers, i.e., the percentage change in output caused by a given change in government expenditure and taxes as a percentage of GDP. "Actual fiscal multipliers were larger than forecasters assumed" (IMF (2012), p. 43). Alesina et al (2019), p. 157, dispute this interpretation for the case of Greece, and attribute the depth of the recession to the sheer magnitude of the fiscal adjustment that was required. They argue that "the failure of the Greek plans was not due to the technical problem of underestimation of multipliers, but to a much deeper political and economic failure of the Troika and the Greek authorities to handle the crisis, as well as to the size of the plans."

after the new government had unsuccessfully tried to resist implementing austerity for six months, at great cost for the already weakened Greek economy. This third economic adjustment program was detailed in the third 'memorandum' between Greece and the 'troika'.[31]

Fiscal adjustment continued into 2018. By the end of 2017, the general government balance had moved into a small surplus of 0.7% of GDP and the primary surplus had risen to 3.9% of GDP. The government debt to GDP ratio had fallen slightly, to 176.1% of GDP, while GDP growth turned slightly positive in 2017. The economic adjustment program was officially terminated in August 2018, although Greece remains under a regime of enhanced surveillance by the euro area institutions.

6. Monetary Policy Cycles, Inflation and International Competitiveness

The four fiscal cycles of expansion and contraction, highlighted in the previous section, were accompanied by corresponding cycles in monetary and incomes policy, inflation and international competitiveness. Again the drivers of these cycles were political and economic developments which first led to destabilization and then to adjustment.

6.1 The Inflationary Incomes, Monetary and Exchange Rate Policy of the 1980s

In addition to the fiscal destabilization, a second reason for the deterioration of the performance of the Greek economy after 1981 was the combination of the incomes, monetary and exchange rate policies adopted by the governments of Andreas Papandreou in the 1980s. Following the second international oil shock, these policies led to a vicious wage and price spiral, which initially led to a significant loss of international competitiveness and subsequently contributed to the persistence of high inflation. Two brief stabilization attempts in 1983 and 1985 proved to be too little too late and were soon abandoned for electoral reasons.

In 1982, the newly elected Papandreou government legislated an increase in the minimum wage by about 45%, in addition to a pre-election increase of 23%, initiated by the outgoing government of George Rallis during 1981. Minimum wages rose by 47%, in addition to an increase of 25% in 1981. It should be noted that inflation, due to the second oil shock and the relatively accommodating monetary and exchange rate policy, had already reached 24.5% in 1981. Yet, the nominal wage rises in 1982 were much higher than the rate of inflation. In addition, a system of automatic indexation of wages was introduced, called ATA, from its Greek initials. ATA resulted in automatic increases in wages and salaries every four months and contributed to the rigidity of real wages.[32]

[31] The term 'troika' was replaced by the term 'institutions' in this third memorandum of 2015.

[32] It is well known that wage indexation leads to the rigidity of real wages rather than nominal wages. See Gray (1976).

This incomes policy temporarily raised real wages but, as labor productivity was declining, it also led to significant losses of competitiveness. In 1982, average nominal earnings increased by 27.5%, and real earnings by 5.3%. Between 1980 and 1982, Greece's real effective exchange rate against the EU-15, based on relative unit labor costs, appreciated by almost 28%.

This unwarranted real wage increase and real exchange rate appreciation led to rise in unemployment, a delay in the recovery of the Greek economy from the second oil shock, the persistence of high inflation and a rise in the current account deficit, despite the decline in investment and growth rates. These effects were reinforced by tax increases on business profits, which took effect at the same time. It was probably the main reason why Greece had to resort to two consecutive stabilization programs and devaluations of the drachma in 1983 and 1985.

Because of these adverse side-effects, the incomes policy of the early 1980s brought about its own reversal. In the years that followed incomes policy had a negative impact on increases in real earnings, reversing the gains of the early 1980s. While in the decade 1970-1979 real earnings increased on average by 5.0% per annum, in the 1980-1989 period their average annual growth rate fell to 0.2%. Neither large increases in nominal wages nor automatic wage indexation led to corresponding increases in real wages, as a restrictive incomes policy had to be adopted in the 1986-87 period, because of the negative developments to labor productivity, the loss of competitiveness and a current account crisis.

The wage price spiral of the first half of the 1980s, which is depicted in figure 11, was also sustained as a result of the expansionary monetary and exchange rate policy that accompanied it. Monetary and exchange rate policy contributed to the persistence of high inflation throughout the 1980s. As can be seen from figure 11, average annual wage and price inflation exceeded 21% in the first half of the 1980s, and decelerated slightly in the second half, following the 1985 devaluation and the restrictive incomes policy of the 1986-87 period.[33]

Note that, due to the fact that Greek inflation was almost double the inflation rate of the OECD economies, the real exchange rate (based on unit labor costs) was appreciating by an average of 3.0% per year. This was despite the continuous depreciations of the drachma implied by the *crawling peg* rule. The crawling peg policy rule was first adopted after 1975 and the collapse of the Bretton Woods system of fixed exchange rates. In the absence of free capital mobility, the exchange rate was determined on a daily basis by the Bank of Greece, with a view of adjusting the nominal effective exchange rate in order to partly counter the inflation differences between Greece and its partners in the OECD. Discrete devaluations were also used occasionally, such as the ones in 1983 and 1985. The implications of this exchange rate policy for the nominal effective exchange rate are depicted in Figure 12. As can be easily deduced, the policy became ever more accommodative in the first half of the 1980s and the second devaluation of 1985.[34]

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[33] In figure 11, wage inflation is the annual percentage change of annual earnings per employee, while price inflation is the annual percentage change of the Consumer Price Index, 2010=100. Shaded bars indicate years of recession. Source: European Commission, *Annual Macroeconomic Data Bank*, November 2018.

[34] In figure 12, the Greek inflation differential from the OECD is the difference between the annual percentage change of the Consumer Price Index in Greece and the OECD countries respectively, 2010=100. The rate of depreciation of the exchange rate is the annual percentage change of the effective exchange rate vis-a-vis 24

Figure 11: Wage and Price Inflation (% per year): 1961-2017

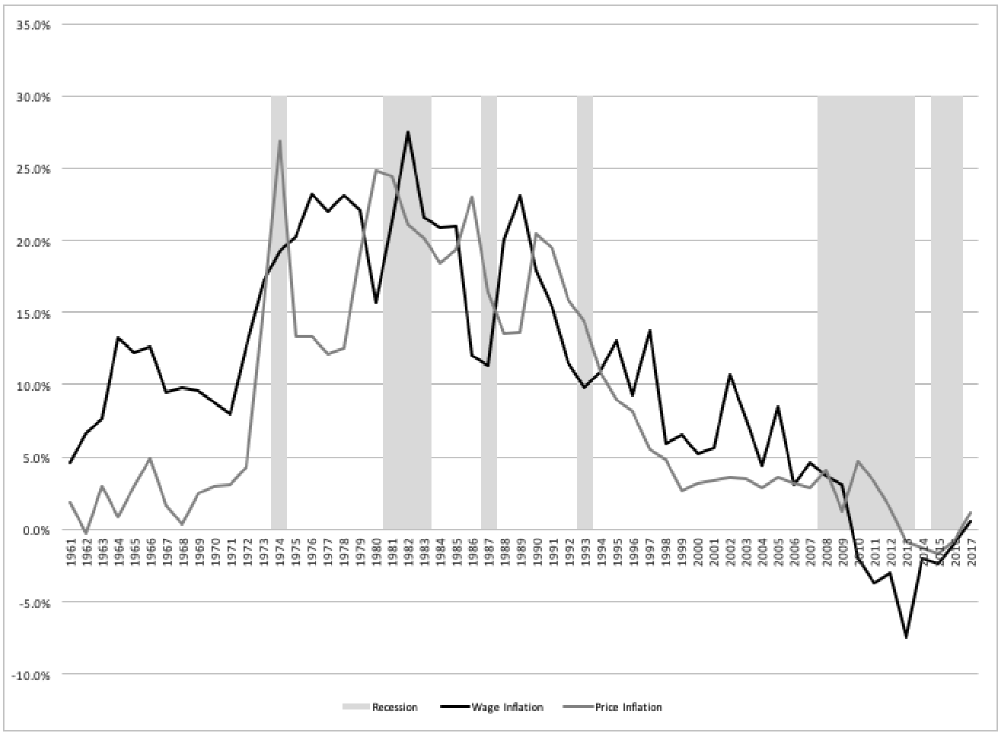
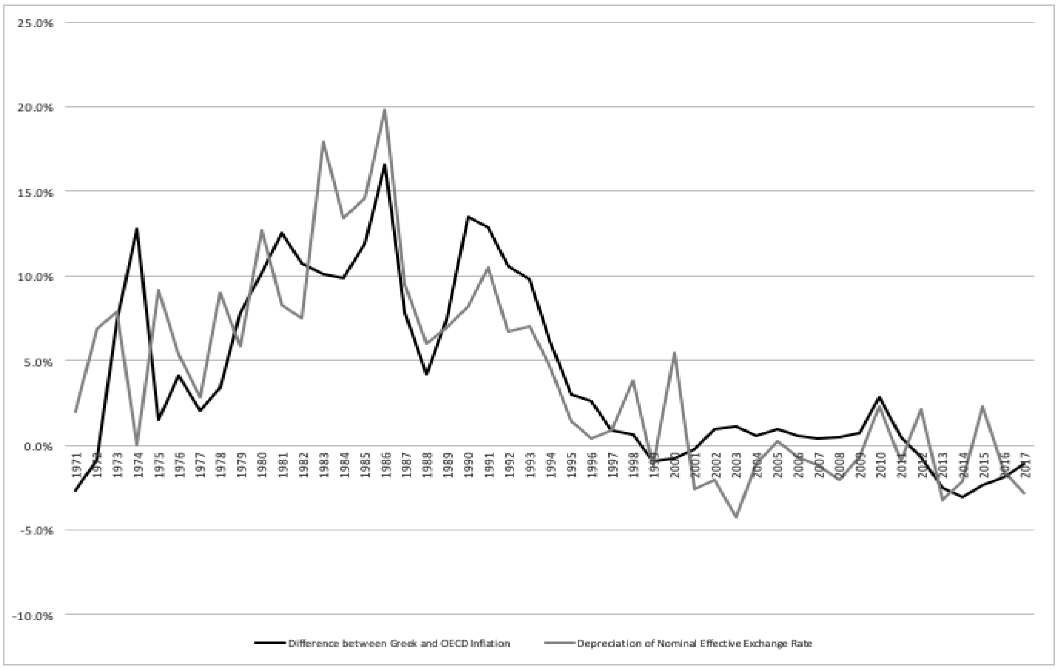


Figure 12: Greek Inflation Differential from the OECD and Depreciation Rate of the Effective Exchange Rate, % per year, 1971-2017



The exchange rate policy of the 1980s contributed to the persistence of inflation through the inflationary expectations of wage and price setters. Yet, it was not sufficiently

industrial economies. Source: European Commission, *Annual Macroeconomic Data Bank* and OECD, *Annual Statistics*, November 2018.

accommodative, so as to halt the loss of competitiveness from the higher Greek inflation. Thus, while the wage price spiral and inflation were sustained through the crawling peg exchange rate policy, the loss of competitiveness was not averted.[35]

6.2. The Monetary Tightening of the 1990s, Disinflation and Euro area Entry

Beyond fiscal tightening, the second element of the policy reversal of the 1990s was the tightening of monetary and exchange policy. This was in accordance with the requirements of the Maastricht Treaty in order to achieve nominal convergence and address the problem of high inflation.

Following the abandonment of the short-lived stabilization program of 1986-1987 by the government of Andreas Papandreou, inflationary pressures reappeared in 1988. The Bank of Greece and the new government of Constantine Mitsotakis, which took office in April 1990, launched a new anti-inflationary strategy. This was based on the gradual reduction of the rate of depreciation of the drachma significantly below the discrepancy between Greek and OECD inflation. In this way, they sought to gradually reduce inflationary expectations and address the vicious wage-price spiral. This policy gradually became tighter and eventually contributed to the reduction of inflation. The peak of the annual inflation rate was at 23.9%, in November 1990. Since then, inflation entered a downwards path. The annual inflation rate on a monthly basis is depicted in Figure 13. The rise of the 1970s, the sustained inflation of the 1980s and the disinflation of the 1990s can be clearly discerned.[36]

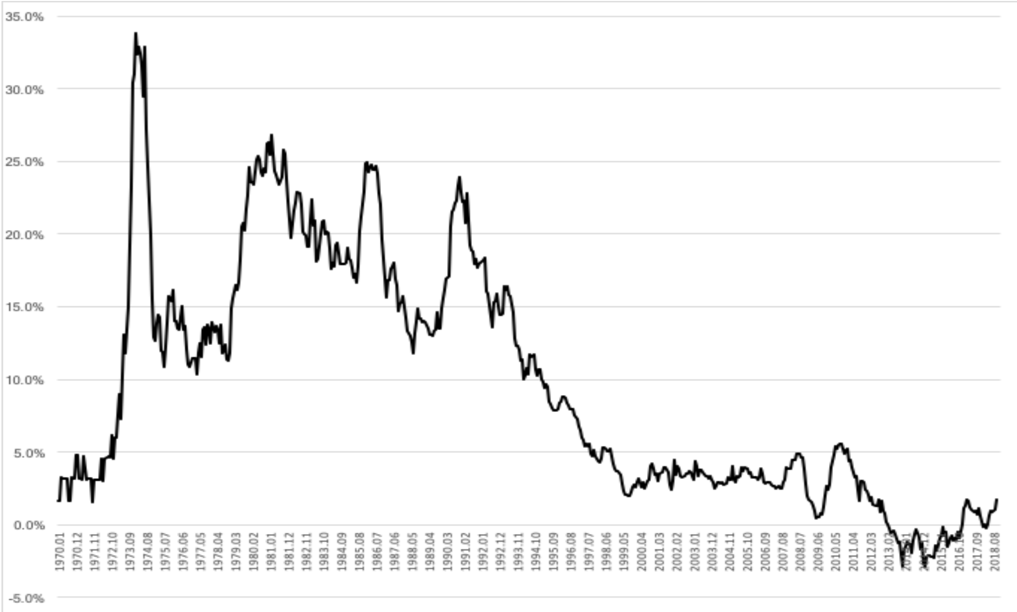
The reduction of inflation was driven by a change in both incomes, monetary and exchange rate policy. The new policy was dubbed the “hard drachma” policy. The policy gradually became more credible due to the fiscal adjustment of the early 1990s, the gradual discontinuation of the monetary financing of budget deficits by the Bank of Greece and the rise of nominal interest rates following the liberalization of the financial system in the late 1980s.

Direct funding of the general government from the central bank gradually stopped between 1990 and 1993, as envisaged in the Maastricht Treaty. In the period up to 1994, restrictions on interest rates on loans and deposits, as well as capital controls, were abolished, in the context of financial liberalization. This initially resulted in higher interest rates due to the high inflationary expectations and persistent expectations of an unannounced depreciation of the drachma. When these expectations eventually adjusted, both nominal and real interest rates declined. The political independence of the Bank of Greece was introduced in 1997, as required by the Maastricht Treaty. The role of the private sector in the financial system was also strengthened in order to increase its effectiveness. Some smaller state-owned banks were fully privatized, and new private banks were created.

[35] See Alogoskoufis and Smith (1991) and Alogoskoufis (1992) for theoretical and empirical analyses of the link between exchange rate regimes and inflation persistence. Alogoskoufis and Philippopoulos (1992), Alogoskoufis (1995) and Alogoskoufis et al (1998) provide econometric evidence on how this mechanism worked in the case of Greece.

[36] In figure 13, inflation is the annual percentage change of the monthly Consumer Price Index, 2010=100. Source: OECD, *Monthly Economic Indicators*, 2019.

Figure 13: The Inflation of the 1980s and the Disinflation of the 1990s % per year, monthly data, 1970-2018



However, there were instances in which the decline of inflation was interrupted. The first was the 1992-93 period, when inflation temporarily rose as a result of the rise in indirect taxes aimed at boosting public revenues and strengthening fiscal adjustment. This was pre-planned and temporary. The second period was the second half of 1994, due to the relaxation of monetary policy following the elections of October 1993 and the change in government. This relaxation led to a currency crisis in the summer of 1994 which prompted a prolonged increase in short-term interest rates. The post election monetary loosening was also accompanied by high increases in nominal wages. In the end, both monetary and exchange rate policy were tightened back and inflation returned to its downward course. Inflation rose temporarily in two other instances. First, in the brief 1996 election period, due to large wage increases in the public sector with spillover effects for the private sector as well. Second, in the period following the temporary devaluation of the drachma in March 1998.

The devaluation of March 1998 took place after another prolonged crisis of confidence in the hard drachma policy, which forced the Bank of Greece to keep short-term interest rates at exorbitantly high levels for about 6 months. The devaluation contributed to an easing of the pressures and allowed the drachma to be introduced into the exchange rate mechanism (ERM) of the European Monetary System (EMS). According to the Maastricht Treaty, participation in the ERM for two years was one of the criteria for acceptance into the euro area.[37]

The fall in inflation generated a corresponding fall in both short term and long term interest rates as well as a frantic rise in stock prices. Both were based on the growing realization, towards the end of the 1990s, that Greece would eventually participate in EMU and thus tackle inflation once and for all. This created growing and self-fulfilling expectations of a virtuous disinflationary cycle.

[37] See Giavazzi and Giovannini (1989) and Eichengreen (2008) for detailed analyses of operation of the European Monetary System.

Greece was finally accepted for membership of the euro area in June 2000, two years after the selection of the initial 11 countries and the creation of the euro in non-physical form, but before the creation of the euro in physical form, which took place in January 2001.

Once in the euro area, Greece lost its monetary autonomy and its monetary policy was decided in Frankfurt, the headquarters of the European Central Bank (ECB). Inflation remained low and Greek long term interest rates converged rapidly to the interest rates of the other member states as devaluation expectations also disappeared.

6.3 The Euro, Monetary and Financial Euphoria and External Debt Accumulation

The liberalization of the financial system played an important role in macroeconomic developments in the first decade after Greece joined the euro area. However, it also contributed decisively to the persistent widening of the current account deficit, which emerged as the main underlying cause of the 2010 crisis.

Following the reduction of real interest rates, private sector savings fell and private investment rose. This contributed to a significant widening of the current account deficit. Bank credit also exploded, in order to finance the gap between the reduced savings and increased investment of the private sector.

The evolution of real interest rates and total bank credit relative to GDP is depicted in figures 14 and 15.[38]

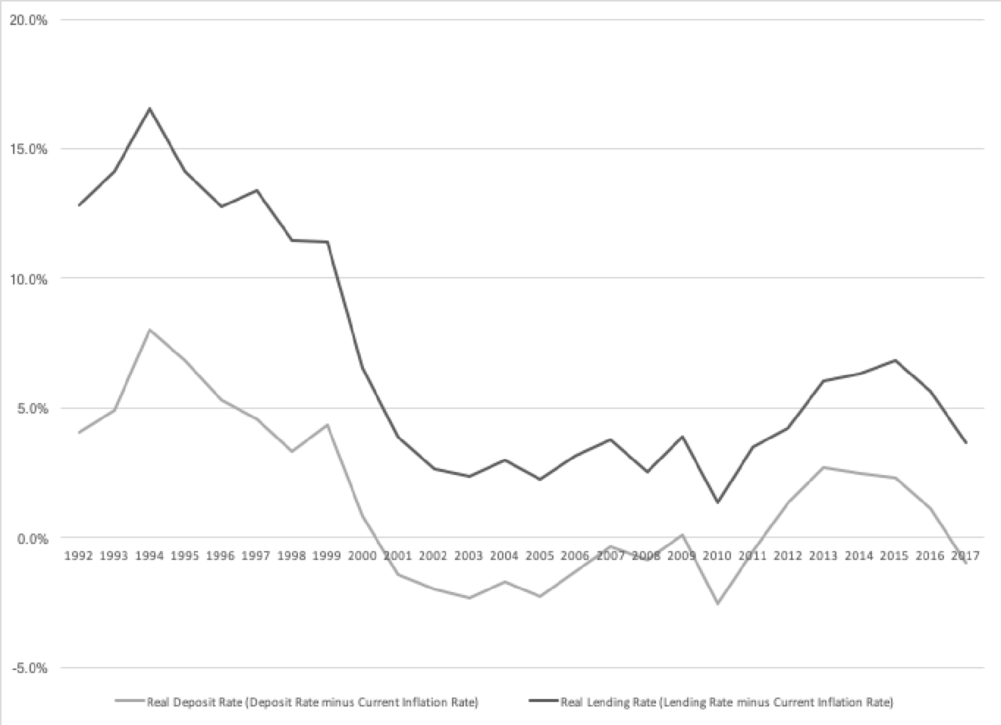
As can be seen from figure 14, real lending rates fell from 13.4% in 1997 to 2.7% in 2002. They fell by more than ten (10) percentage points, to almost a fifth of their 1997 level. Real deposit rates fell from 4.6% in 1997 to -2,0% in 2002. They fell by almost seven (7) percentage points and became significantly negative. As a result, aggregate investment boomed and private sector savings collapsed.

As can be seen from Figure 15, total bank credit grew from 81.5% of GDP in 1999 to 131.3% of GDP in 2009. For about ten years it was growing 1.6 times faster than GDP. Total bank credit to the private sector increased at a rate 3 times higher than nominal GDP. It exploded from 34.2% of GDP in 1999 to 105.1% of GDP in 2009. At the same time, bank credit to the general government, i.e., government bonds held by banks and other loans to the general government, fell from 47.2% of GDP in 1999 to 26.2% of GDP in 2009.[39]

The fall in real interest rates, coupled with the liberalization of the domestic financial system, led to a real boom in private sector borrowing. Household loans for house purchases rose fivefold as a percentage of GDP, from 6% in 1999 to 33.1% in 2009. Consumer loans to households also rose fivefold relative to GDP, from 2.8% in 1999 to 15.3% in 2009. Total loans to households rose from 8.8% of GDP in 1999 to 49.7% of GDP in 2009. Total loans to

[38] The data in figures 14 and 15 are from European Commission, *Annual Macroeconomic Data Bank*, November 2018 and the Bank of Greece.
[39] See Halliassos et al (2017) and Louri (2019) for surveys of financial developments and the crisis.

Figure 14: The Evolution of Real Interest Rates, % per year: 1992-2017

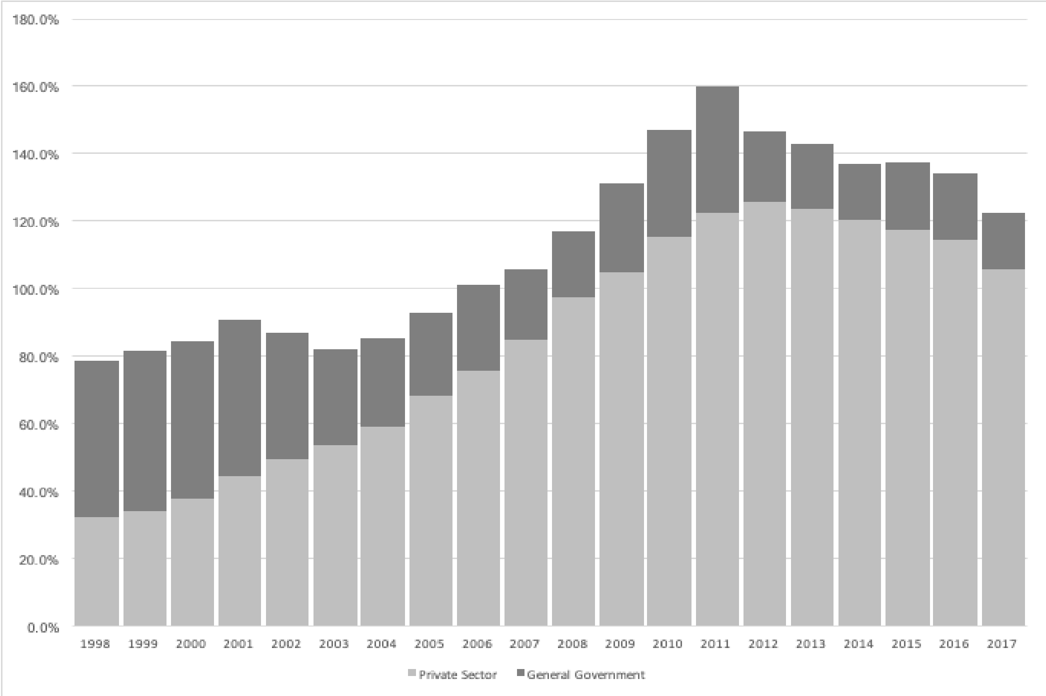


enterprises more than doubled in relation to GDP, from 25.4% in 1999 to 55.4% in 2009.

It is obvious from the evolution of bank credit that Greek financial institutions were using the Greek government bonds in their portfolios as collateral, in order to obtain liquidity from foreign financial institutions, and thus extend additional credit to the domestic private sector. This helped to sustain the rise in the current account deficit, as it facilitated and financed the excess of private sector investment over savings. It also resulted in the internationalization of Greek government debt, making Greece particularly vulnerable when the international financial crisis deteriorated in 2008.

These developments suggest that the significant and prolonged widening of the current account deficit after Greece's accession to the euro area can be explained by two factors. Firstly, the imbalance between private savings and investment caused by the steep reduction in real interest rates, and the financial boom brought about after accession to the euro area. Secondly, by the widening of the general government deficit, due to the fiscal relaxation that followed accession to the euro area. Both imbalances persisted until the financial crisis of 2008, despite the fiscal adjustment program of 2005-2006.

Figure 15: The Evolution of Total Bank Credit, % of GDP: 1992-2017



6.4 The Role of International Competitiveness

An important factor that made it difficult to address the persistent increase of Greece's current account deficit was the inability to resort to a one-off devaluation of the exchange rate. Greece had entered the euro area at a grossly overvalued real exchange rate.

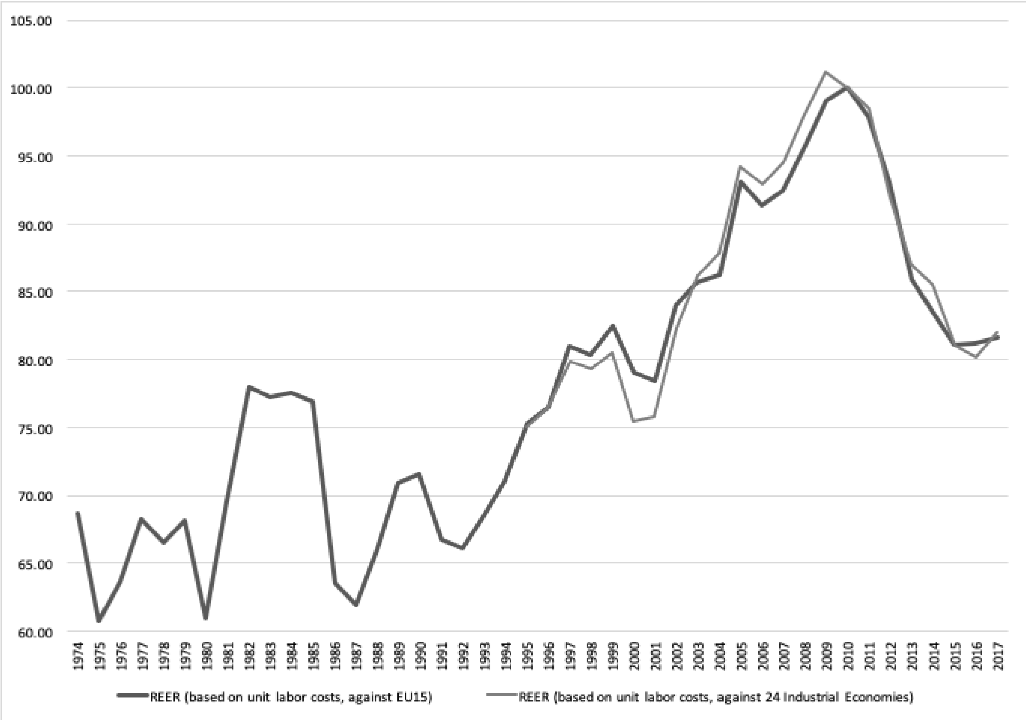
Due to the large wage increases in the five-year period 1981-1985, the real exchange rate had appreciated by about 16% over the previous five-year period 1976-1980. Following the devaluation of 1985, in response to a current account crisis, the real exchange rate depreciated by about 19% over the two-year period 1986-1987 compared to 1984-1985. After 1988, a new round of real appreciations followed, due to the return of real wage increases, Greece's higher inflation rate and, after 1990, the hard drachma policy.

The evolution of Greece's real effective exchange rate vis-a-vis the EU-15 is depicted in figure 16. Between 1987 and 1997, the real exchange rate vis-a-vis the EU-15, on the basis of relative unit labor costs, appreciated by around 31%.[40]

In order for the drachma to be admitted to the exchange rate mechanism of the EMS in 1998, there was a one-off devaluation. However, this was subsequently followed by an appreciation of the drachma. A further small devaluation occurred when the conversion rate of the drachma into euros was determined. Thus, in 2001 there was a real depreciation of about 3%, relative to 1997, on the basis of the relative unit labor costs against the EU-15. However, the real exchange rate remained significantly overvalued compared to 1987. The real appreciation compared to 1987 was equal to 26.6%.

[40] The data source for figure 16 is European Commission, *Annual Macroeconomic Data Bank*, November 2018

Figure 16: The Real Effective Exchange Rate (REER), Based on Unit Labor Costs, 2010=100



Moreover, immediately after joining the euro area, wage increases led to inflation rates which were higher than the inflation rate of the other euro area countries, without any possibility of a further devaluation. Between 2001 and 2009 the real exchange rate had appreciated by a further 26.4%. Thus, at the end of 2009, the real exchange rate vis-a-vis the EU-15, had appreciated by almost 60% compared to 1987.

There is little doubt that the continuous real appreciation of the exchange rate contributed to the sustained savings-investment imbalance and caused the current account deficit to keep rising. After Greece joined the euro area, the inability to resort to a devaluation of the exchange rate meant that it was no longer possible to correct the deficit without a major recession and a significant reduction in nominal wages. Greece was caught in a Mundellian trap.

The macroeconomic euphoria of the period up to 2007 gradually gave way to anxiety during 2008, as the US sub-prime crisis spread internationally and resulted in an international recession. The crunch came in September 2008, with the collapse of Lehman Brothers that marked the worst manifestation of the international financial crisis to that point.

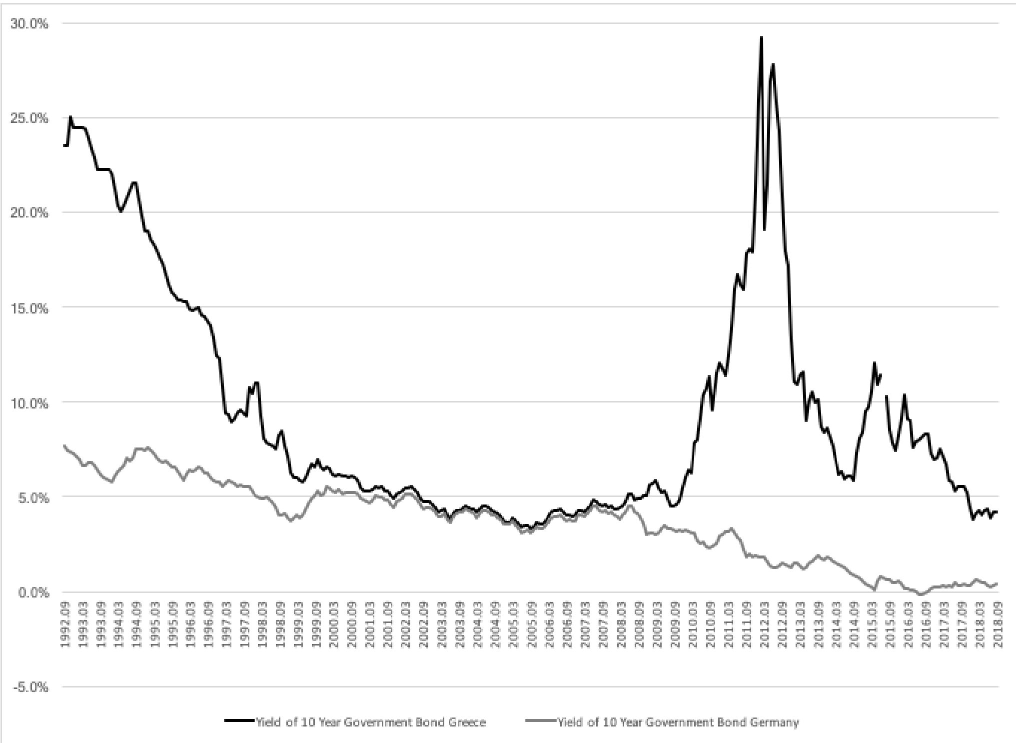
6.5 The Sudden Stop, the Credit Crunch and the Deflationary Spiral

The first manifestation of the effects of the international financial crisis in Greece was a loss of deposits by some of the weaker banks and the rise in interest rate spreads following the Lehman collapse.

It is worth focusing on the evolution of the yield of 10 year government bonds, depicted in figure 17, as long term interest rates are very sensitive to expectations about future inflation, devaluation and default.

One of the most positive developments for Greece before the crisis, was the rapid convergence of interest rates with those of other EU economies, and in particular Germany. At the end of 1992, the spread between the yield of Greek and German 10 year bonds was equal to 17.2%, or 1720 basis points, reflecting the much higher inflation in Greece and expectations of a future devaluation of the drachma. By the time of Greece's accession to the euro area in January 2001, the spread had fallen to 0.55%, or 55 basis points. Greek yields had fallen to almost the same level as Germany's. The reduction of inflationary expectations and the disappearance of the risk of an unanticipated devaluation caused Greek interest rates to converge with German ones.

Figure 17: Annual Percentage Yield of 10 Year Government Bonds, Monthly Data
Greece vs Germany



From January 2001 till December 2007 the interest rate spread fluctuated around an average of 0.30%, or 30 basis points. Spreads started rising slightly in the first half of 2008, but it was only after the collapse of Lehman Brothers that the process gained momentum. By December 2008 the average spread rose to 2.03% or 203 basis points. This was the first indication that bond markets were reassessing the risks associated with Greek bonds. Spreads continued rising in the first few months of 2009, but then the process was reversed, as Greece successfully completed its bond refinancing program for 2009. By September 2009, and in view of a forthcoming general election, held in the beginning of October, spreads had fallen back to 1.30%, or 130 basis points.

After the election and the first policy pronouncements of the new government of George Papandreou spreads started rising again. By December 2009, after the budget voted in by the new government quashed expectations of significant fiscal tightening, they had almost doubled to 2.35%. The rise continued in the first few months of 2010. As can be deduced from figure 17, in March 2010 they had reached 3.14% and after the announcement of the Greek bailout in April the rise accelerated. By September 2010 they had almost tripled to 9.04%, or 904 basis points.

The rise in the spread of government bonds filtered through the rest of the financial system. Both lending and deposit rates started rising after 2010. Credit expansion decelerated and eventually turned into credit contraction and a credit crunch, as Greek banks started bleeding deposits, due to a massive capital flight. What this outcome inevitable? Not necessarily. Capital controls would have averted this capital flight and the credit crunch, but they were not even discussed by the troika at the time.[41]

Following the failure of the first economic adjustment program to meet its targets, and the rising expectations about Grexit, a second economic adjustment program was agreed in July 2011. Yet, the capital flight intensified, as the second program also provided for a partial write-down of Greek debt through the Private Sector Involvement (PSI). This provision, and the eventual write-down, brought about a credit crunch which deepened and prolonged the recession. As can be seen from figure 17, the spread of Greek 10 year government bonds started rising again in the second half of 2011, peaked at 27.4% in February 2012 and remained around 20% until the Draghi "whatever it takes" intervention of July 2012.

The haircut on Greek debt finally 'agreed' with the banks in the context of the PSI was higher than originally expected, further worsening the credit crunch and creating the need for a recapitalization of Greek banks. As can be seen from Figure 15, between 2011 and 2014, total outstanding credit declined by 26%, or from 160% of GDP to 137% of GDP.

The credit crunch worsened in the first six months of 2015, following the election of the Tsipras government and the almost catastrophic attempt to renegotiate the terms of Greece's bailout. Spreads rose again and the capital flight re-emerged. However, after the imposition of capital controls and agreement on the third bailout, credit conditions gradually improved, although the contraction of credit continued into 2017, albeit at a slower pace.

[41] See Rodrik (2011), Chapter 5 on the IMF's insistence on free capital mobility, even for less developed economies and economies in crisis. He argues (p. 90) that, "Since the late 1980s, the IMF had become a strong supporter of freeing up capital markets. The advice that it gave to countries that came under its influence increasingly reflected that preference." Despite the excesses of financial markets, and sovereign debt crises that were the result of cycles of excessive international lending and sudden stops (such as the Latin American crisis of the 1980s, the Asian crisis of the 1990s and the euro area crisis of the 2010s) Greece's official creditors did not contemplate allowing for capital controls in the early stages of the crisis. They only reluctantly agreed to capital controls in June 2015, when the third round of post-crisis capital flight looked like inducing an unruly Grexit. Yet, capital controls should have been used from the start of the crisis, in early 2010. This would have sheltered Greece as it would have averted the collapse of Greece's financial system and the worst aspects of the credit crunch.

7. The Crisis and the Fault Lines of the Euro Area

Our focus so far has been on the problems of the Greek economy. Yet the problems of the Greek economy were not too dissimilar to, although clearly worse than, the problems faced by other economies in the euro area periphery. In addition, the economic adjustment program of Greece was constrained by what was going on in the rest of the euro area. The Greek crisis was thus not due only to the weaknesses of the Greek economy and its macroeconomic policy, but also to fault lines in the euro area itself. It is the purpose of this section to briefly examine these euro area wide issues, and in particular the asymmetries between the core and the periphery.[42]

7.1 The Euro Area as an Optimum Currency Area

The launch of the euro in 1999 and the admission of economies of the periphery like Greece's was politically motivated and never met the acid-tests suggested by the literature on *optimum currency areas*. Nevertheless, such considerations can prove extremely useful in thinking about the main fault lines of the euro area itself and the prospects of countries of the periphery, such as Greece's, within the area.

What are these considerations? The optimum currency area literature poses a seemingly simple question: If we forget about national boundaries and focus purely on economic relations, which is the best constellation of countries that can share a single currency? In answering this question, it considers the benefits and costs from giving up national currencies and national monetary policies and substituting them by a single currency and a single monetary policy.[43]

The literature stresses four potential benefits from the adoption of a single currency. First, the reduction of cross border transaction costs, from the elimination of the need to exchange different currencies. Second, the increase in transparency, that makes prices in different countries easily comparable. Third, the elimination of currency risk, associated with changes in exchange rates. Finally, the switch to a low inflation monetary policy for countries with inflationary monetary policies.[44]

The potential costs from the adoption of a single currency is the cost of the loss of the ability of each country to use monetary and exchange rate policy to tackle the undesirable macroeconomic consequences of shocks that impact the various economies asymmetrically, and, potentially and the loss of the ability of each country to use its monetary policy in

[42] This section of the paper is largely adapted from Alogoskoufis and Jacque (2019).
[43] This question was first posed, and partially answered, by Mundell (1961) who is rightly considered as the originator of this literature. McKinnon (1963) and Kenen (1969) were early major contributors. The literature was revived in the 1980s, as as additional considerations, such as inflation differentials, were added. A survey of the so called 'new' theory of optimum currency areas can be found in Tavlas (1993).
[44] This last argument presupposes that the central bank administering the single currency is politically independent and cares mostly about inflation. This clearly applies to the euro area.

choosing the appropriate inflation tax and the optimal combination of inflation and unemployment according to its own preferences.[45]

A high potential trading volume among the participating countries would result in higher marginal benefits from the reduction of transaction costs and exchange rate uncertainty. This was an argument put forward by both Mundell (1961) and McKinnon (1963), who gave emphasis to the degree of economic integration and openness. Hence, countries that are more economically open, geographically close and economically integrated, will have significant trading volumes among themselves and, therefore, higher marginal benefits from sharing a common currency.[46]

The inflation criterion, also emphasized first by McKinnon (1963) and later by Mundell (1973), is more questionable. Whereas it may be a benefit of a high inflation country, such as Greece in the 1980s, to participate in a low inflation monetary union and borrow its anti-inflationary credibility, it may be a cost for the other participating countries to accept a high inflation economy in a monetary union.[47]

With regard to marginal costs, the original considerations proposed by Mundell (1961) emphasized the degree of cross border factor and, especially, labor mobility. If cross border labor mobility is high, then a country hit asymmetrically by an adverse employment shock will not suffer from persistent unemployment, because the unemployed will migrate to high employment countries in the monetary union. Hence, increased labor mobility can reduce the marginal costs of joining a monetary union from the loss of the domestic monetary policy instruments, such as interest rates and the exchange rate.[48]

Kenen (1969) gave emphasis to the degree of product diversification. His argument was that countries with a relatively diversified product mix were less likely to suffer from the impact of industry specific shocks. Hence, an increased diversification of the average product mix of participating countries will tend to shift the marginal costs of joining a monetary union downwards.

Another important criterion which was first emphasized by Kenen (1969) is the existence of a significant federal budget, that results in automatic transfers towards countries that are hit by an adverse asymmetric shock, from countries that have not been hit by the shock. The higher the fiscal transfers from a high federal budget, the lower the costs of joining a monetary union in the presence of asymmetric shocks. The fact that the EU federal budget is extremely low, around 1% of EU GDP, is a factor that keeps marginal costs at a higher level,

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[45] Given that most macroeconomists accept the Friedman (1968) natural rate hypothesis, that there is no long-run tradeoff between inflation and unemployment, this latter argument does not enjoy much support.

[46] This is a criterion that is obviously satisfied by the EU countries, which are all geographically located in Europe, have eliminated trade barriers and created a single market and have high trading volumes among themselves.

[47] This may be one of the reasons why the Maastricht treaty envisaged convergence of inflation rates and nominal interest rates as a prerequisite for acceptance in the euro area. The inflation tax argument is also a justification for the fiscal criteria, of budget deficits lower than 3% of GDP and government debts tending to 60% of GDP of an applicant.

[48] This also applied in principle to the EU, as the free movement of people is one of the four fundamental freedoms of the Treaties, along with the free movement of goods, services and capital. In practice however, because of both cultural, administrative and tax-benefit considerations, labour markets in the European Union remain segmented.

suggesting that due to the small size of the EU federal budget, the optimal euro area is probably on the low rather than the high side.[49]

Finally other criteria that affect marginal benefits and costs include the homogeneity of national preferences and existence or not of political solidarity among member states in a monetary union.

One cannot, and in any case would not want to use these optimum currency area considerations to determine in an absolute fashion whether the current euro area is an optimum currency area or not. In all probability no single currency area is an optimum currency area, including the United States.

However, as O' Rourke and Taylor (2013), among others, have recently argued, the United States is much closer to the optimum currency area criteria than the euro area.

First and foremost, US markets are much more closely integrated that EA markets, as cross border inter-state trade amounts to 66% of US GDP, whereas cross border inter-country trade amounts to only 17% of EA GDP.

Second, with regard to the asymmetric impact of shocks, there do not seem to major differences between the US and the EA. The average correlation coefficient of GDP growth rates across US states in 0.46 and across EA countries it is 0.50. Macroeconomic asymmetries seem to impact the EA and the US in roughly the same degree.

However, the US is far ahead of the EA with regard to the labor mobility criterion. The average share of people in a US state born outside that state is 42%, while the equivalent share in a EA country is only 14%. On the basis of this criterion, labor mobility is three times larger in the USA than in the EA.

In addition, the US is far ahead on the fiscal federalism criterion, which is related to fiscal transfers and the effectiveness of automatic stabilizers in the presence of shocks that affect states and countries asymmetrically. In the US about 30% of a state income shock is offset through federal fiscal transfers. In the EA, the relevant percentage is only 0.5%. Thus, the low level of the EA federal budget relative to the US has major implications for the ability of the EA to address shocks with an asymmetric impact through transfers from countries not affected by the relevant shock.

Given that macroeconomic and financial asymmetries seem to have increased following the creation of the euro, as we shall show below, these considerations suggest the direction of the reforms that would take the euro area closer to an optimum currency area.

[49] This so-called fiscal federalism criterion was investigated by Sala-i-Martin and Sachs (1991), who pointed to the large automatic transfers across US states, due to the large US federal budget of more than 20% of GDP, and the federal tax benefit system. In effect a federal budget acts as an automatic stabilizer in the presence of shocks that have asymmetric effects, mitigating their impact. A small federal budget, of the order of 1% of GDP, such as the EU budget, is clearly an ineffective automatic stabilizer. Darby and Melitz (2008) have documented the positive impact of automatic stabilizers in the OECD economies, while Bargain et al (2013) demonstrate that a bigger EU federal budget would have mitigated the adverse effects of the euro area crisis for the economies of the periphery, by absorbing about 10-15% of the shock.

7.2 The Euro Area Crisis: Core vs Periphery and the Policy Response

One of the main characteristics of the first ten years of the euro area was the development of significant external imbalances between the 'core' economies of central and northern Europe (Germany and smaller economies like the Netherlands, Belgium, Austria and Finland) and the economies of the 'periphery' (Spain, Ireland, Greece and Portugal). France and Italy were in between, with France displaying more similarities with the 'core' and Italy more similarities with the 'periphery'.

These external imbalances, resulted in the fast and excessive rise in international indebtedness of the private and public sector of the countries in the periphery of the euro area, much like as in the case of Greece.

The proximate cause of the external imbalances was the precipitous fall in nominal and real interest rates in the periphery, starting in 1995, as these interest rates converged with those of the core countries. Thus, Greece was not the only country that experienced significant external imbalances after euro area entry.

For a long time the risks of low interest rates and the consequent widening of external imbalances were underestimated. Many even considered the fall in interest rates as highly beneficial and an indication of a successful financial integration.[50]

A significant problem was that much of the additional investment in the periphery was directed to non-tradable sectors, such as public investment and real estate, including housing. Hence, the increase in external debt did not lead to an increase of the export capabilities of the economies of the European periphery.

Worse still, capital flows contributed to house price bubbles that eventually would inevitably burst, leading to losses for lenders, chiefly banks, who had extended the loans. Due to the doom-loop between national banks and national governments, which made national governments eventually responsible for bailing out banks, the bursting of these house price bubbles eventually led to a rise in government deficits and debts even in countries such as in Ireland and Spain, which did not have the significant fiscal imbalances of Greece and, to a lesser extent, Portugal.

The inflows also contributed to the increase of wages and costs, which resulted in losses of competitiveness that further contributed to the deficits in the current account. All the economies of the periphery - Greece, Ireland, Portugal and Spain - had inflation rates above the euro area average. Instead, all of the core states, except the Netherlands and Luxembourg, had inflation rates below the average of the euro area, and particularly Germany.

Hence, the economies of the periphery were not investing sufficiently in sectors which would help service their growing external debt, and, in addition, they were continuously losing international competitiveness, which undermined even their existing export capacity.

In addition, the influx of foreign capital, contributed to the financing of budget deficits, which, especially in Greece and Portugal, rose after these economies joined the euro area. However,

[50] See for example Blanchard and Giavazzi (2002) for an early examination of this view.

the large accumulated deficits in the current account in Spain were not accompanied by higher corresponding public deficits.

The cumulation of current account imbalances resulted in a corresponding cumulation of financial imbalances. These were transmitted to the economies of the core, who were financing the current account deficits of the periphery, but also higher investment in the core countries.

The 'sudden stop' became a crisis rather than a manageable temporary problem since EA members could not devalue and the ECB could not bail out governments, as was the case in the US crisis of 2008-09.

A confidence crisis ensued, first about the countries of the periphery, but later also about some of the core countries, regarding their ability to service their public and private external debts. This was exacerbated by the unsuccessful efforts to address the debt problem.

The proximate causes of the crisis – imbalances and lack of crisis management mechanisms – tell us that there are really three sorts of underlying causes:

A. Macroeconomic and financial asymmetries and policy failures

B. Lack of institutions to absorb shocks at the EA level

C. Crisis mismanagement

Some of these failures involved unanticipated events. Others were a failure to implement the provisions agreed in the Maastricht Treaty. Others, such as the inability of the ECB to act as a lender of last resort in the initial phases of the crisis, or the lack of appropriate institutions to tackle the asymmetric impact of major shocks are more fundamental and call for major Euro area reforms.

7.3 Reforming the Euro Area

A result of the major asymmetries and other economic and governance problems of the euro area is the fact that adjustment efforts since the crisis have shifted the burden exclusively towards the weaker economies in the periphery of the euro area, which suffered deep recessions, a significant rise in unemployment, continuous tax rises and exorbitant social costs for young workers and old age pensioners.

Although financial market integration and effective regulation of financial markets have taken a priority since the 2010 crisis, the euro area remains a single currency area with significant real and financial asymmetries, segregated national fiscal systems, weak coordination of fiscal policies and a virtually non-existent federal budget. At the same time, the European Central Bank (ECB) remains the only major central bank in the industrialized world which cannot function properly as a lender of last resort to governments and commercial banks. In addition, labor markets in the euro area remain fragmented, contributing to major differences in unemployment rates, which are exacerbated by the notoriously low degree of labor mobility in Europe.

Hence, not only does the euro area not satisfy the main criterion suggested by optimum currency area considerations, namely the absence of asymmetries and asymmetric shocks, it furthermore lacks the other two main criteria for macroeconomic stabilization, namely integrated labor markets and a federal budget that would act as an automatic stabilizer in the case of asymmetric macroeconomic developments. Furthermore, its response to major financial crises the Euro area is hampered by the lack of an effective lender of last resort, the creation of the European Stability Mechanism (ESM) notwithstanding.

All this suggests the need for further and much more ambitious reforms of the euro area, which however lie outside the scope of this paper, which is focused on Greece.[51]

8. The Way Forward for Greece

We next turn to the options for Greece following the conclusion of the third bailout and the externally imposed adjustment programs in 2018?

The Mundellian conflict between internal and external balance that has beset Greece, and other economies of the EA periphery, since euro area entry is still a major constraint. Greece does not have the option to speed up the recovery of its economy through a domestic fiscal expansion, as this would result in a widening of the current account deficit, and would in all probability conflict with euro area fiscal rules.

In any case, despite the great recession and the internal devaluation, competitiveness has not recovered sufficiently so as to bring about significant current account surpluses. This is unlike some of the other economies of the periphery such as Ireland and Spain. Greece is still suffering from a weak current account position, and a recovery induced by a domestic fiscal expansion would make its external position worse.

8.1 Is Grexit a Solution or a Return to the Problems of the Past?

Is an orderly exit from the euro area a solution to this Mundellian dilemma for Greece? In my view the answer is a resounding no. 'Grexit' could prove catastrophic for Greece.

The first main problem with exiting the euro area is the one associated with the transition. Even a well designed transition to a national currency can prove disorderly and extremely destabilizing. It is one thing to move from a weak currency to a strong currency, as happened in the late 1990s with the creation of the euro area, and another thing to attempt the opposite. Expectations of consumers and investors and capital inflows helped facilitate the transition in the first case, as everybody wanted a stronger currency. However, in the case of a transition to a weaker currency, expectations and capital movements are likely to prove extremely destabilizing. Nobody wants to exchange a strong low inflation currency with a weak inflationary currency. Hence, the moment that Grexit expectations take hold, capital

[51] See Baldwin and Giavazzi (2016), Wyplosz (2016), Benassy-Quere et al. (2018), Pisani-Ferry (2018) and Alogoskoufis and Jacque (2019) for discussions of appropriate EA reforms.

flight will in all probability accelerate and bring about a total collapse of the financial system, which will of course totally destabilize the transition.

Even if the transition could be managed relatively effectively, which is doubtful, what would happen under a regime of national monetary sovereignty. In all probability, Greece would revert to a regime akin to the policies of the 1980s, extensively examined in the previous sections, with high inflation and a stagnant economy. Such an outcome would be clearly inferior to remaining in the euro area, which at least guarantees low inflation.

For an economy such as Greece's, which has in the past abused the degrees of freedom afforded to it by monetary sovereignty, trying to escape from the Mundellian trap may mean entering into a stagflationary trap, as happened during the 1980s. Thus, 'Grexit' may prove to be a return to the problems of the past, and especially the first act of the Greek tragedy, that of the 1980s, instead of a solution of the current predicament of Greece.

8.2 A New Policy Mix in the Context of the Euro Area

Remaining in the euro area is the best and, probably, the only realistic option for Greece. However, a new policy mix will be required following the conclusion of the economic adjustment program, if the weak recovery of the economy since 2017 is to gather strength and , more importantly, prove sustainable.

Such a new policy mix should facilitate the recovery of the economy without simultaneously causing a deterioration of Greece's current account and international competitiveness. The recovery should in fact be based on a further improvement in international competitiveness, that would help maintain the balance between national savings and domestic investment in the medium run, in the face of a recovering economy. This policy mix should therefore focus on the improvement of international competitiveness, through a combination of wage moderation and a rise in productivity growth, and the rise in aggregate savings, so that the increased investment which is a prerequisite for the recovery, can be financed through domestic savings and not borrowing from abroad.

There are four main priorities for such a new policy mix.

First, a revenue neutral tax reform, that would encourage both savings and investment. More emphasis should be placed on taxing consumption and less emphasis on the taxation of savings and domestic assets which are the outlet for savings. This should simultaneously boost both savings and investment, and hence the recovery, without causing a widening of the current account deficit.

Second, a restoration of the ability of the domestic financial system to finance a recovering economy. This should be based on strengthening the balance sheets of Greek banks, through, among others, dealing with the problem of non-performing loans (NPLs), so as to facilitate the channeling of the increased national savings through the domestic financial system.

Third, structural reforms that would create opportunities for foreign direct investment in sectors producing internationally tradable goods and services. Foreign direct investment is not associated with the risks that accompany foreign debt, and can also serve as an instrument through which technical progress and increased productivity can boost an export led recovery.

Finally, a retrenchment of the public sector, through a shift in emphasis from public production and procurement of goods and services, to public regulation, even in sectors such as health, education and social security. This would help reduce public expenditure, free up resources for social protection and increase economic efficiency. Such a retrenchment of the public sector is the most effective way in which Greece can meet the fiscal obligations it has already undertaken in order to gradually reduce its gigantic public debt.

For these four priorities to be implemented consistently and credibly, Greece will need to also embark on a number of political and institutional reforms. Weak economic and political institutions are one of the reasons that nations fail, and there is both historical and statistical evidence that such political and institutional weaknesses lie behind many of the economic failures of Greece.[52]

It is not the purpose of this paper to delve deeper into details of particular reforms, as this would be akin to a political program, but it is clear that any new policy initiative for Greece's sustained recovery should respect these four priorities and the underlying institutional reforms that would give them credibility.[53]

9. Conclusions

This paper has analyzed the process of destabilization, crisis and adjustment in the Greek economy, since the accession of the country to the European Union and, subsequently, the euro area. It has reviewed the past and discussed alternative ways forward, following the 'sudden stop' and the policies that led to the great depression of the 2010s.

There have been four distinct 10-year economic policy cycles since Greece's accession to the EU in 1981.

The first cycle, a cycle of destabilization and stagflation, spanned the 1980s. Many of the current problems of the Greek economy, such as its low international competitiveness and the high public debt are the legacy of that decade.

The second cycle, a cycle of incomplete and lopsided adjustment, spanned the 1990s. The fiscal and structural adjustment was insufficient and euro area entry was achieved chiefly because of the significant tightening of monetary policy. As a result, Greece entered the euro area with a low international competitiveness and significant fiscal imbalances.

[52] See Acemoglou et al (2005) and Acemoglou and Robinson (2012) for the role of institutions in promoting long-run growth. A number of recent papers have highlighted the significance of weak institutions for Greece's failures. See, among others, Christodoulakis (2019), Featherstone (2019) and Philippopoulos et al (2019).

[53] Detailed reforms, many of which respect such priorities, are examined in some of the chapters in Meghir et al (2017). See in particular, Flevotomou et al (2017) on tax reform, based on a detailed examination of the Greek tax and welfare system, Haliassos et al (2017), on the financial sector and its reform, Arkolakis et al (2017) on trade adjustment and the introduction by the editors on fiscal reform.

The third cycle, a cycle of euro-euphoria, began in the beginning of the new millennium, following entry into the euro area. It was marked by a low inflation and interest rate environment and an immediate further loosening of fiscal policy. This led to a decade of high growth rates and falling unemployment, while inflation remained low. Unfortunately, the euphoria depended on external borrowing due to Greece's low international competitiveness at the time of euro area entry. The rapid reduction of real interest rates which followed entry caused a widening of the gap between aggregate investment and savings and a sustained deterioration of the current account. Successive Greek governments, trapped in a Mundellian dilemma between internal and external balance, did not use their only remaining instrument, fiscal policy, to address the external imbalances, as this would have triggered a recession and killed the "euphoria". In the end, the accumulation of external debt led to a "sudden stop" in international lending to Greece, triggered by the international financial crisis of 2008-09.

The policy reversal that was imposed on Greece since 2010 has been the fourth policy cycle, the `sudden stop' and the great recession. It was characterized by a front loaded fiscal adjustment program, and nominal and real wage cuts, in an environment of financial repression. It resulted in the longest and deepest recession of Greece's post war history. After three successive rounds of `austerity' over eight years the external imbalances were finally addressed, but at a huge cost in terms of lost output and jobs.

Despite the problems of the euro area itself, manifested by the post-2010 crisis and analyzed in section 6, exiting the euro area would be a risky and unwise option for Greece. It would in all probability bring back all the problems of the past. Thus, it should not even be considered. Greece should push for the completion of the necessary reforms that would cause the euro area to come closer to being an optimum currency area.

On the domestic front, the current challenge for Greece, following the completion of the externally imposed economic adjustment program, is to design and adopt a policy mix which would allow for a modest but sustained recovery within the confines of the evolving euro area, without the reappearance of external imbalances. The policy mix should focus on further improvements in Greece's international competitiveness and a rise in domestic savings, in order to finance the rise in investment which is necessary for a recovery. I suggest that the main elements of such a policy mix must be the following:

First, a revenue neutral tax reform, that would encourage private savings and investment. The current tax system is the result of the strive to increase revenues quickly, and is extremely inefficient, especially with regard to incentives for savings and investment. The tax reform should concentrate on the simplification of the tax code and the switch from taxes on capital to taxes on consumption.

Second, a restoration of the ability of the financial system to use the increased savings in order to finance a recovering economy. The financial system has been decimated in the aftermath of the crisis, non-performing loans have soared, and, despite rounds of recapitalization, Greek banks are still relatively undercapitalized. It is imperative that the problem of NPLs is solved quickly and the banks recapitalized.

Third, structural reforms that would create opportunities and incentives for foreign direct investment in sectors producing internationally tradable goods and services. Foreign direct investment is not associated with the risks that accompany foreign debt, and can also serve as an instrument through which technical progress and increased productivity can boost an export led recovery.

Finally, a retrenchment of the public sector through a shift in emphasis from public production and procurement of goods and services, to public regulation, even in sectors such as health, education and social security. This would help reduce public expenditure, increase economic efficiency and induce higher investment, free up resources for social protection and allow Greece to effectively reduce its gigantic public debt.[54]

For these four priorities to be implemented consistently and credibly, Greece will need to also embark on a number of political and institutional reforms. Weak economic and political institutions are one of the reasons that nations fail, and there is both historical and statistical evidence that political and institutional weaknesses lie behind many of the economic problems of Greece's recent past.

[54] Many, including the IMF and almost all political parties in Greece, have prioritized a significant write-down of Greece's large official government debt. If such a write-down by official creditors could be agreed upon, it would be a welcome addition to the four priorities highlighted above. However, it is no substitute for these priorities.

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Appendix A:

Elections, Governing Parties and Prime Ministers in Greece, 1974-2019

Election Date	Incoming Government and Prime Minister
1974, November	ND (Constantine Karamanlis)
1977, November	ND (Constantine Karamanlis)[1]
1981, October	PASOK (Andreas Papandreou)
1985, June	PASOK (Andreas Papandreou)
1989, June	ND, CLP (Tzannis Tzannetakis)
1989, November	ND, PASOK, CLP (Xenophon Zolotas)[2]
1990, April	ND (Constantine Mitsotakis)
1993, October	PASOK (Andreas Papandreou)[3]
1996, September	PASOK (Costas Simitis)
2000, March	PASOK (Costas Simitis)
2004, March	ND (Costas Karamanlis)
2007, September	ND (Costas Karamanlis)
2009, October	PASOK (George Papandreou)[4]
2012, June	ND, PASOK, DEMAR (Antonis Samaras)[5]
2015, January	SYRIZA, ANEL (Alexis Tsipras)
2015, September	SYRIZA, ANEL (Alexis Tsipras)[6]

Notes on Political Parties: ND (New Democracy, Centre Right party founded by Constantine Karamanlis in 1974), PASOK (Panhellenic Socialist Movement, Socialist party founded by Andreas Papandreou in 1974), CLP (Coalition of the Left and Progress, temporary coalition of the Communist and Euro-Communist parties of Greece), SYRIZA (Coalition of Radical Left, formed in 2004 by former members of the Euro-Communist and Communist parties of Greece), LAOS, (Popular Orthodox Rally, party of the Nationalist Right, formed in 2000 by George Karatzaferis, a former ND deputy), DEMAR (Democratic Left, formed in 2010 by former members of the Euro-Communist Party of Greece), ANEL (Independent Greeks, party of the Nationalist Right, formed in 2012 by Panos Kammenos, a former ND deputy).

[1] In May 1980 Constantine Karamanlis was elected as President of the Republic. George Rallis was elected President of the ND party and was appointed Prime Minister.

[2] Zolotas, a former Governor of the Bank of Greece for many years, was appointed Prime Minister, heading a coalition government of National Unity. An inconclusive election had failed to produce a parliamentary majority for ND, who had won 46.2% of the vote, but was still 3 deputies short of a parliamentary majority.

[3] After a prolonged illness, Andreas Papandreou resigned as President of PASOK and Prime Minister in January 2016. Costas Simitis was elected President of PASOK and was then appointed Prime Minister.

[4] George Papandreou resigned as Prime Minister in November 2011, under pressure from within his own party and a number of key EU governments. Lucas Papademos, a former Governor of the Bank of Greece and former Vice President of the ECB, was appointed Prime Minister in a coalition government of PASOK, ND and LAOS.
[5] DEMAR left the Samaras government in early 2013.
[6] ANEL left the Tsipras government in February 2019.

Appendix B:
A Brief Chronology of the Greek Crisis, 2010-2018

The Run up to the Crisis

2007, February
International Financial Crisis Erupts. The U.S. subprime mortgage market collapses after the housing bubble burst the previous year. The U.S. crisis ultimately triggers a global banking crisis and credit crunch that lasts through 2009.

2008, September 15
Lehman Brothers Collapses. Greek bond yields start rising, but the rise stops in early 2009, as Greece completes its annual bond refinancing program.

2009, October 4
Elections and Change of Government. George Papandreou wins early national elections. Within weeks, his government announces that Greece's budget deficit will exceed 12% of GDP, nearly double the original estimates. The figure is later revised upward to 15.4%. Spreads start rising again, and Greece's bonds are downgraded within weeks.

The Eight Year Greek Crisis

2010, May 2
First Greek Bailout. As Greece is eventually shut out of international bond markets, the International Monetary Fund and the EU agree to provide Greece with 110 billion euros ($146 billion) in loans over three years. In exchange, the Greek government signs the memorandum for the First Economic Adjustment Program, which commits it to austerity measures, including 30 billion euros in spending cuts and tax increases, wage cuts and market friendly reforms.

2010, May 10
ECB Bond Buying and 750 Billion Euro Rescue Package. The European Central Bank (ECB) launches its Securities Market Program. The program allows the ECB to purchase government bonds of struggling sovereigns in the secondary market, in order to boost market confidence and prevent further sovereign debt contagion in the euro area. Finance ministers also agree on rescue measures worth 750 billion euros, or nearly $1 trillion, for struggling euro area economies, through the European Stability Mechanism (ESM).

2011, October 31
A Former Central Banker, Appointed Prime Minister. Papandreou is forced to step down as prime minister, after an unsuccessful attempt to call a referendum, and former Central Banker

Lucas Papademos is appointed to head a coalition government tasked with implementing further austerity measures and structural reforms.

2012, February 21
EU Agrees to Second Greek Bailout. EU Finance ministers approve a second EU-IMF bailout for Greece, worth 130 billion euros ($172 billion). The deal includes a 53.5 percent debt write-down or "haircut", for private bondholders. In exchange, Greece must reduce its debt-to-GDP ratio from 160 percent to 120.5 percent by 2020. Greece and its private creditors complete the debt restructuring on March 9. This is deemed to be the largest such restructuring in history.

March 2, 2012.
EU Adopts Fiscal Compact. In an attempt to strengthen European fiscal coordination, twenty-five EU member states—all but the UK and the Czech Republic—sign a Fiscal Compact treaty mandating stricter budget discipline throughout the union. The agreement includes a balanced budget rule requiring governments to keep deficits below 0.5 percent of GDP and an undefined "automatic correction mechanism" for countries that miss the target.

May 6, 2012 – June 17, 2012
Successive Greek Elections and New Coalition Government. New Elections are called for May 6, 2012. A majority of Greeks vote for fringe parties opposed to the EU-IMF bailout program and further austerity, in a rebuke to the two mainstream parties. New elections are called for June, in which the center-right (ND) emerges as the winner, with 30 percent of the vote, allowing Antonis Samaras, the ND leader, to form a coalition government. Samaras immediately signals Greece's continued commitment to the bailout program, in a U-turn from his pre-election pledges.

September 6, 2012
ECB Unveils Bond-Buying Plan. ECB President Mario Draghi announces an open-ended program to buy the government bonds of struggling euro area states on the secondary market. The policy shift, coming weeks after Draghi's vow to "do whatever it takes to preserve the euro" is aimed at calming volatile markets, and the ECB's strong show of commitment succeeds in bringing down borrowing costs for indebted periphery countries.

November 27, 2012
Euro Area Revises Greek Bailout. EA finance ministers and the IMF agree to a revised aid deal for Greece, including lower interest rates on Greek bailout loans and a debt-buyback program. The new plan allows Greece to cut its debt-to-GDP ratio to 124 percent by 2020, rather than 120 percent, while committing it to bringing its debt levels "substantially below" 110 percent by 2022.

July 17, 2013
Greek Parliament Approves New Austerity Measures. Greece's Parliament approves unpopular new austerity measures, agreed to as a condition of the ongoing EU-IMF bailout.

The legislation include layoffs of some twenty-five thousand public servants, as well as wage cuts, tax reform, and other budget cuts. The approval opens the way for a new tranche of bailout funds worth nearly 7 billion euros ($9 billion), while labor unions call a general strike in protest.

April 10, 2014
Greece Briefly Returns to International Bond Market. Greece briefly returns to international financial markets with its first issue of Eurobonds in four years. The government raises 3 billion euros in five year bonds, with an initial yield of under 5 percent—a low rate seen as a mark of a return to economic normalcy. In another sign of renewed investor confidence, the offer raises 1 billion euros more than expected.

January 22, 2015
ECB Announces Quantitative Easing Program. Faced with deflation and economic stagnation in the EA, the ECB announces a 1.1 trillion euro (more than $1.2 trillion) program of quantitative easing (QE) to spur inflation and growth. Under the program, the ECB will purchase 60 billion euros in financial assets, including sovereign government bonds, each month. However, Greek bonds are not eligible under ECB rules.

January 25, 2015
Early Elections and New Government. The left-wing, anti-austerity SYRIZA party wins a convincing victory in early elections, forced upon the Samaras government, breaking more than forty years of two-party rule. Incoming Prime Minister Alexis Tsipras forms a coalition government, with ANEL, a party of the Nationalist Right, formed in 2012 by Panos Kammenos, a former ND deputy. Tsipras announces a push for a renegotiation of bailout terms, debt cancellation, and renewed public sector spending—setting up a six month showdown with Greece's international creditors.

June 30, 2015
Greek Bailout Expires and Capital Controls Imposed. The Greek government misses its 1.6 billion euro ($1.7 billion) payment to the IMF when its bailout expires on June 30, making it the first developed country to effectively default to the Fund. Negotiations between the Greek government and its official creditors fell apart days before, when Prime Minister Tsipras proposed a referendum on the EU proposals. To stem capital flight, emergency capital controls were imposed, limiting bank withdrawals to 60 euros ($67) per day and calling a bank holiday.

July 5, 2016
Greek Referendum. In a snap referendum, Greeks overwhelmingly rejected the terms of the proposed third bailout.

July 16, 2015
Greek Parliament Supports Terms of a Third Bailout. Prime Minister Tsipras bends to European creditors and presses parliament to approve new austerity measures, despite the referendum

result. The agreement comes after a weekend of talks in which a Greek exit from the euro area (Grexit) was only narrowly averted and opens the way to a third bailout program worth up to 86 billion euros ($94 billion). The ECB resumes some support for Greek banks.

August, 2015
Third Bailout Approved. The Greek parliament adopts a new program of economic reforms as part of a new rescue package from the EU, the country's third since 2010. In exchange for the 86 billion euro bailout, which is to be distributed through 2018, EU creditors require Greece to implement tax reforms, cut public spending, privatize state assets, and reform labor laws, among other measures. While the IMF participated in the previous bailouts, the organization refuses to contribute additional funds until the creditors provide Greece with "significant debt relief."

September, 2015
Snap Elections return Tsipras Government. The compromise between the Tsipras government and the EU causes splits in the ruling SYRIZA party. Tsipras expels his critics, and calls for early elections, which he wins and is returned to power, in a coalition with ANEL.

February, 2017
Greece's Creditors Disagree Over Debt Relief. Tensions over Greece's third bailout grow as the IMF warns that the country's debt is unsustainable and that budget cuts EU creditors demand of Greece will hamper its ability to grow. In a compromise, EU representatives agree to more lenient budget targets, but they decline to consider any debt relief. Meanwhile, the Tsipras government agrees to implement deeper tax and pension reforms, despite domestic pressure over a weakening economy and rising poverty.

August 20, 2018
Greece Exits Final Bailout Program. Greece receives its final loan from European creditors, completing a bailout program begun in 2015, the country's third since 2010. In total, Greece now owes the EU and IMF roughly 290 billion euros ($330 billion), part of a public debt that has climbed to 180 percent of GDP. To finance this debt, Athens commits to running a budget surplus through 2060, accepts continued EU financial supervision, and imposes additional austerity measures. EU officials hail the bailout as a success, pointing to Greece's return to growth. Unemployment, too, has fallen, though, at roughly 20 percent, it remains the EU's highest. The IMF, however, maintains that the Greek economy, which has shrunk by 25 percent since the beginning of the crisis, will likely require further debt relief in the not too distant future.

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