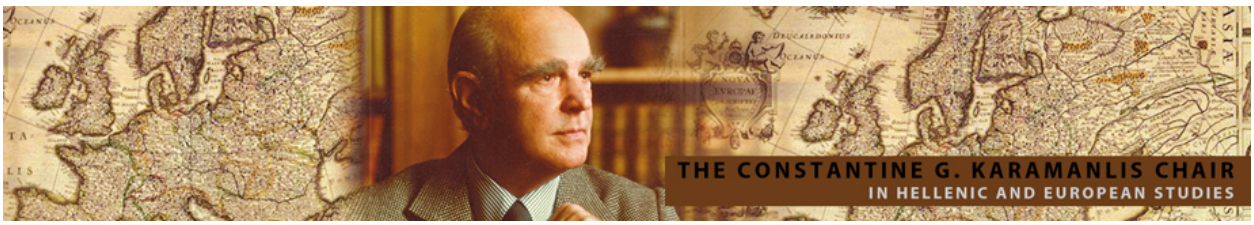

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Economic and Financial Asymmetries in the Euro Area

George Alogoskoufis and Laurent Jacque

April 2019

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Economic and Financial Asymmetries in the Euro Area

George Alogoskoufis* and Laurent Jacque**

April 2019

Abstract

This paper provides a perspective on the euro area (EA), focusing on macroeconomic and financial asymmetries among its member states and the need for major and fundamental reforms. After surveying the evolution of EU macroeconomic and monetary cooperation and developments since the creation of the euro, and particularly the euro area crisis, we argue that the euro area is in need of fundamental fiscal, financial and labor market reforms. In addition to reforms currently discussed, a common EA budget of moderate size would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation as it could be targeted to euro area wide unemployment and health insurance. It would also help in the avoidance of future crises if the scope of the ECB to act as a lender of last resort in times of crisis was expanded and officially recognized.

Keywords: Euro Area, monetary policy, fiscal policy, current account, asymmetries, reform *JEL Classification*: E6, F3

* Fletcher School, Tufts University and Athens University of Economics and Business. ** Fletcher School, Tufts University. This paper has benefited from the comments of participants in seminars at Harvard, MIT and the Tufts/LSE conference on 'Greece and the Euro'.

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This paper provides a perspective on the Euro area (EA), focusing on macroeconomic and financial asymmetries between the periphery and the core.

We start by briefly surveying the evolution of monetary cooperation in the European Union (EU) since the collapse of the Bretton Woods System, the 'snake' and the creation of the European Monetary System (EMS), the adoption of the Euro and the post-2010 crisis. This survey is suggestive of the deepening of monetary integration in Europe, but also hints at a number of macroeconomic and financial asymmetries within the group of the original 12 Euro area (EA-12) members from the 1970s, if not before, until the creation of the euro.

We identify four sub-periods in the evolution of monetary cooperation in the European Union. First, the period from the collapse of the Bretton Woods system of fixed parities in 1973, to the emergence of the EMS in 1979. Second, the period of operation of the EMS, until the creation of the euro in 1999. Third, the first ten years of the euro area, before the crisis of 2009-2010. Finally, we survey the period since 2010, when the euro crisis broke out, and discuss the response to the crisis.

In each successive sub-period monetary integration was becoming gradually deeper, evolving from the 'snake' of the 1970s, to the EMS of the 1980s, the tighter EMS of the 1990s, with infrequent reallignments, and, eventually with the creation of the euro.

We then focus on documenting the main macroeconomic and financial asymmetries in the euro area. For this purpose, the three largest euro area economies of Germany, France and Italy, which jointly comprise about two thirds of the euro area, are treated individually. The rest of the EA-12 economies are aggregated within two groups. The smaller economies in central and northern Europe, consisting of the Netherlands, Belgium, Austria and Finland, which we label the 'core', and the economies of the 'periphery', defined as Spain, Greece, Portugal and Ireland. It turns out that the economies of the 'core' have similar characteristics to Germany, while France and Italy share both 'core' and 'periphery' characteristics, with France being closer to the 'core', including Germany, and Italy closer to the 'periphery'.[1]

[1]We list the countries in each group in descending order of economic size, as measured by their PPP adjusted real GDP in 2001. This is the year for which we calculate the weights that go into the construction of the group aggregates. These weights are the ones used in the Area Wide Model (AWM) database of the European Central Bank. See Fagan et al. (2005) for more details.

All periods were characterized by significant macroeconomic and financial asymmetries among member states in the core and the periphery, but also by different degrees of monetary integration.

We document these asymmetries, focusing on the evolution of macroeconomic aggregates such as GDP per capita, its growth rate, unemployment rates, inflation rates and current account balances. We also document financial asymmetries by focussing on the evolution of short and long term interest rates, nominal and real exchange rates, fiscal balances and government debt.

With the deepening of monetary cooperation, in the evolution from the snake to the euro, some of these asymmetries were addressed, while others were not. When the euro was created, very little was done to address the remaining asymmetries, essentially shifting the burden of adjustment to individual euro area members and their fiscal systems. As a result, while asymmetries in inflation rates, and nominal interest rates and exchange rates were addressed by the creation of the euro, real, financial and external asymmetries widened after the creation of the euro, both before and after the euro area crisis.

In the first ten years of the euro, the remaining asymmetries resulted in the build up of significant external imbalances, and, eventually contributed to the eruption of the euro area crisis. The main financial asymmetric shock appears to have been the creation of the euro itself, which initially brought about the convergence of nominal and real interest rates between the periphery and the core. This convergence resulted in a widening of savings and investment imbalances in the periphery, which up until then had relatively high nominal and real interest rates, the widening of external imbalances, the buildup of external debt by the countries of the periphery, and eventually a euro area financial crisis. This process was exacerbated by the 'home' bias of banks in the countries of the euro area.

The euro area crisis was essentially an external debt crisis in an economic and monetary union with a single currency, but major economic and governance problem areas, such as major differences in the product mix, fragmented national labor markets, different fiscal systems, imperfect financial integration, lack of effective cross border financial regulation, an extremely low federal budget and lack of a lender of last resort to banks and sovereign governments. In this respect, the euro area crisis of the 2010s was at the end of the day no different than other regional financial crises involving indebted economies, such as the Latin American crisis of the 1980s and the Asian crisis of the 1990s.

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.[2]

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, in 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.

In the final section of the paper we propose a number of such reforms at the level of the euro area, which in conjunction with reform efforts at the national level in the countries of the periphery, would help address the main fault lines of the single European currency and allow the euro area to become

[2]The rise in current account deficits as a result of the lower real interest rates that followed euro area entry occurred in almost all of the economies of the periphery of the euro area. See Blanchard and Giavazzi (2002). Almost all of these economies faced a serious external debt crisis after 2010. The literature that focuses on the euro area crisis and its aftermath has expanded exponentially. See, among others, Lane (2012); O'Rourke and Taylor (2013); Baldwin and Giavazzi (2015, 2016); Orphanides (2015, 2017a,b); Brunnermeier et al. (2016); Kang and Shambaugh (2016); Papademos (2016); Stiglitz (2016); Wyplosz (2016); Benassy-Quere et al. (2018); De Grauwe and Ji (2018); Mody (2018); Pisani-Ferry (2018).

a area of prosperity for all its members.

We argue that the euro area is in urgent need of significant fiscal, financial and labor market reforms. In this we agree with among others Benassy-Quere et al. (2018). However, we also argue for the introduction of a moderate common EA budget, focused on a EA system of unemployment insurance. This would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation. A significant part of the fragmentation of labor markets in Europe is the result of the lack of a cross border system of unemployment and health insurance. This could be addressed in a reform that would allow for a moderate EA budget as we propose.

This proposal goes against the arguments of those opposing a transfer union, chiefly the countries that are net contributors to the EU budget. We feel that these objections are misplaced. The EU and, in particular, the EA are already transfer unions, through the operation of the single market and the monetary union. They encourage significant economic transfers from weaker and less competitive sectors and economies, to stronger and more competitive ones, as suggested by the macroeconomic performance of the core and the periphery following the creation of the Euro area. A fiscal transfer union, which would partly correct the effects of such transfers through fiscal redistribution is a logical counterpart of the single market and the monetary union. The transfers we suggest are modest, but certainly higher than the current EU ceiling of 1% of GDP. They would be concentrated in one cyclically sensitive key area which is unemployment insurance.[3]

The objections of net contributors to a moderate increase in the EU budget could in principle be overcome by an appropriate rules based fiscal reform that would address moral hazard and other coordination problems.

The rest of the paper is thus as follows: In section 1 we survey the evolution of post war monetary cooperation in Europe, and document the gradual deepening of monetary cooperation among member states. In section 2 we survey the evolution of the euro from the period of euphoria between 1999 and 2007, to the post-2008 period of crisis. In section 3 we discuss optimum

[3]The current EU budget remains capped at below 1% of EU GDP, versus a federal budget of more that 20% of GDP in the other major single currency area of the industrialised world, the USA. The EA budget we have in mind could be capped at a maximum of 3% of EA GDP.

currency area considerations for the euro area. In section 4 we document the main macroeconomic and financial asymmetries between the 'core' and the 'periphery' countries of the euro area. Until the mid-1980s these asymmetries related to different levels of GDP per capita and growth rates, different inflation rates, different fiscal and external positions and differences in financial markets. Since the evolution of the European Monetary System to a greater DM area, with the abandonment of frequent realignments, and especially since the creation of the euro, some asymmetries, such as inflation asymmetries were addressed, but most of the others were not. In fact, external asymmetries became much worse as the creation of the euro resulted in a widening of external imbalances between the periphery and the core. This became the proximate cause of the euro area crisis. Since the euro area crisis external imbalances have been partly addressed, but this was at the expense of growth and employment mainly in the periphery, but also the rest of the EA, with the exception of Germany and some of the small core economies. We attribute these imbalances to the macroeconomic policy mix after the crisis, the absence of automatic fiscal stabilisers at the EA level and the inadequacies of the ECBs program of quantitative easing. In section 5 we put forward our proposals for reform, compare them with some of the proposals already being discussed and argue that muddling through is not a credible option. The final section summarises our conclusions.

1 The Evolution of Post War Monetary Cooperation in Europe

In this section we survey the evolution of monetary cooperation in Europe. The countries of the European Union were key members of the Bretton Woods system of fixed but adjustable exchange rates that was adopted in the aftermath of World War II.

Since the abandonment of the Bretton Woods system in the early 1970s, one can identify four stages in the evolution of monetary cooperation in the European Union. First, the period from the collapse of the Bretton Woods system of fixed parities in 1973, to the emergence of the European Monetary System in 1979. Second, the period of operation of the European Monetary System, until the creation of the euro in 1999. Third, the first ten years of the euro area, before the crisis of 2009-2010. Finally, the period since 2010,

when the euro area crisis broke out.

1.1 From Bretton Woods to the European Monetary System

The countries of the European Union were key members of the Bretton Woods system of fixed but adjustable exchange rates that was adopted in the aftermath of World War II.

The Bretton Woods system departed from the interwar gold exchange standard in at least three respects: First, it provided for pegged exchange rates, which were however adjustable in cases of a 'fundamental disequilibrium'. Second, it permitted controls to limit international capital flows. Third, a new institution, the International Monetary Fund (IMF) was created, to monitor national economic policies and extend balance of payments financing to countries that required it.

The system was meant to address the three main weaknesses of the interwar monetary system, such as the high volatility of exchange rates, disruptive capital flows and the absence of an effective mechanism of international adjustment.

The Bretton Woods system became fully operational in 1958, with the removal of exchange controls for current-account transactions. Although the United States continued to run current-account surpluses, foreign direct investment by US multinationals in Europe, as well as other capital outflows, produced an overall deficit in the US balance of payments. As a result dollar and gold outflows intensified.

Starting from 1960, efforts to address perceived deficiencies in the operation of the system assumed the form of perfecting interventions in the private gold market through the organization of the Gold Pool and the establishment of various formal liquidity-increasing techniques, such as the General Arrangements to Borrow (GAB), currency swaps among central banks, and special drawing rights (SDRs).

However, the US focus on national economic priorities, the growing ineffectiveness of capital controls after the restoration of convertibility for current account transactions, and the inadequacy of measures to contain the dollar glut marked the beginnings of the end of the Bretton Woods system.

As speculative pressures were mounting, central banks stopped buying or selling gold in the open market in 1968 and the Gold Pool was dissolved.

Only foreign central banks could then buy gold from the US Treasury. This effectively changed the Bretton Woods system from a de facto gold standard anchored through a fixed dollar price of gold into a dollar standard.

With a dollar standard, the inflation rates of the other countries in the Bretton Woods system had to move in line with the inflation rate in the United States. Given the fixed exchange rate to the dollar and the overall expansionary monetary policy in the United States since 1964, other countries essentially had to inflate along with the United States.

Speculative pressures against the dollar gradually increased. Despite efforts of save the system, when confronted with monetizing further massive dollar inflows in March 1973, the other industrial economies decided to let their currencies float, effectively ending the Bretton Woods system.

Soon, the economies of the European Economic Community (EEC) realized that floating exchange rates implied major problems for intra-European trade and the operation of their evolving common community policies. Since the late 1960s, following the completion of the Customs Union ahead of schedule, the economies of the European Community (EC) had been seeking to create an institutional framework within which they could stabilize their currencies against one another.[4]

In 1970, a study group of high level officials, chaired by the prime minister of Luxembourg Pierre Werner, was tasked with the study of further steps towards monetary integration in the EC. The Werner report, which resulted from this group, described a process through which monetary union could be created by 1980. It recommended creating a central authority to guide and harmonize national economic policies, concentrating fiscal functions at the Community level and accelerating the integration of factor and commodity markets. Instead of a central bank and a common currency it proposed a 'European System of National Central Banks', and a progressive hardening of exchange rate commitments.[5]

Although the Werner Report was officially adopted, subsequent events precluded its application. Yet it provided the basis for the response of the EC to the collapse of the Bretton Woods system in 1973. Since the Smithsonian agreement of 1971, EC countries had sought to limit the fluctuations of their bilateral exchange rates in a range of $\pm$ 4 1/2% in an arrangement known as

[4]In this paper, when we refer to the countries of the European Union (EU), we use the term European Community (EC) for the period before 1992, as this was the official name of the current EU.

[5]See Werner et al. (1970).

the 'snake'. They maintained this arrangement even after 1973. Denmark, Ireland and the UK, soon to be members of the EC, also participated in the snake.

However, due to divergent monetary policies and inflation rates between the economies of Germany, France and Italy, the snake was soon under pressure, despite the fact that it provided for short-term and very short-term financing facilities for weaker currencies. Inflation rates in the three large EU economies are depicted in Figure 1. Both France and Italy experienced much higher inflation rates than Germany during the 1970s.[6]

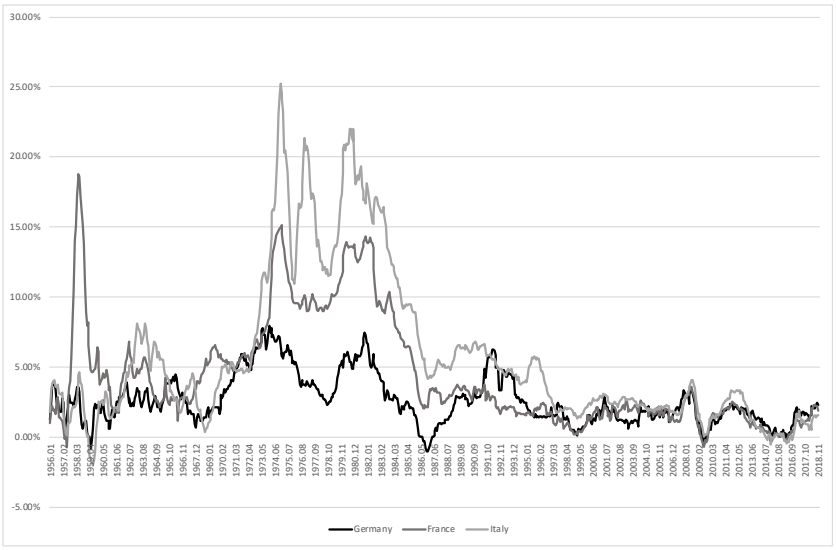

Figure 1: Annual Inflation Rates in Germany, France and Italy, 1956-2018

Italy withdrew from the snake in early 1973. In January 1974 France was forced out and adopted floating until July 1975, when it rejoined. It left the snake again in March 1976, due to the incompatibility of the German and French response to the oil crisis. In October 1976 there was an agreement

[6]Figure 1 depicts annual inflation rates (% per year), based on monthly data for the Consumer Price Index. Source: OECD, *Main Economic Indicators*.

on exchange rate changes, the so-called 'Frankfurt realignment'. Further realignments followed.

In the end the snake failed to provide the hoped for exchange rate stability, with the exception of short periods. Part of the reason was the first oil shock and its asymmetric financial consequences in Europe. A second asymmetry was related to the differing approaches within the EC with regard to the appropriate policy response to the oil shock.

1.2 From the European Monetary System to the Euro

The European Monetary System (EMS) was created in 1978 as a replacement for the snake, some years after the demise of the Bretton Woods system of fixed exchange rates. The objective was the same as the snake: to ensure relatively stable exchange rates in the EC. This stability was considered as a prerequisite for the effective functioning of the Community, especially with reference to free intra-Community trade, the Common Agricultural Policy (CAP), and other common policies.[7]

The initiative for the creation of the EMS belonged to France, was agreed upon by Germany, and arrangements were concluded in two European Councils in Bremen in July 1978 and in Brussels in December of the same year.

1.2.1 The Structure of the European Monetary System

The European Monetary System was designed as a symmetric system, unlike the Bretton Woods system which was explicitly based on the US dollar. Its structure was defined by four elements:

First, a common unit of account, the European Currency Unit (ECU). The ECU was defined as a weighted average of the Communitiess national currencies. For each national currency a central rate was set against the ECU. For any two currencies, the ratio of their central rates against the ECU provided their central bilateral exchange rate, and the total of bilateral central rates defined the parity grid of the system.

[7]The Treaty of Rome had already acknowledged that the exchange rate of member countries was a matter of 'common interest'. Furthermore, as already discussed, even before the collapse of the Bretton Woods and in view of the incipient instability of the dollar in the late 1960s, the European Council had authorized the Werner report on moving ahead with economic and monetary union (EMU). See Werner et al. (1970).

Second, a mechanism was created for limiting fluctuations in nominal exchange rates among the participating currencies, the Exchange Rate Mechanism (ERM). For currencies participating in the ERM, national central banks undertook to maintain market rates against any other currency in the system within predetermined limits relative to the bilateral central rates. These limits, until 1993, were $\pm$ 2.25%. For some currencies, wider limits were allowed, i.e., a range of $\pm$ 6% for the italian lira. Exchange market interventions had to take place when a bilateral rate reached the band limit. These were called *marginal interventions*. Marginal interventions had to take place through the central bank of the depreciating currency, but the central bank of the appreciating currency undertook to provide the central bank of the weaker currency with unlimited credit, after the latter had used all of its foreign exchange reserves in that currency. *Intra-marginal interventions* also took place, by the central bank of the depreciating currency. These were not compulsory, and required the approval of the central bank whose currency was used in the interventions. Many central banks engaged in intra-marginal interventions, in order to stop their currency from reaching the lower limit of the exchange rate band. There was also a divergence indicator, which did not play an essential role in the operation of the system.

Third, a mechanism was foreseen for financing the required foreign exchange market interventions and current account deficits, the financing facilities. These were divided into three types: 1.The Very Short Term Financing Facility, 2. The Short Term Monetary Support, and, 3. The Medium Term Financial Assistance. The management of the first two belonged to the jurisdiction of national central banks, while the third was under the jurisdiction of the Council of Ministers. The Short Term Monetary Support provided short-term credits for financing deficits in the balance of payments, while the Very Short Term Financing Facility was aimed at financing interventions within the Exchange Rate Mechanism.

Finally, the system allowed for devaluations through the policy of exchange rate realignments. Initially the decision to realign the central parities was unilateral, but later, after 1981, collective decisions were required within the Communitys Monetary Committee and the ECOFIN Council. After 1981, collectively agreed realignments did not cover the full inflation differential between the currency being devalued and the other currencies.

Those four elements were based on the experience of the post war Bretton Woods system of fixed, but adjustable, exchange rates, which collapsed in the early 1970s, the Werner et al. (1970) report, and the European experience

between 1973 and 1978, when the European Economic Community experimented with both flexible exchange rates and systems for limiting exchange rate flexibility, such as the snake.

1.2.2 EMS Asymmetries

The EMS reduced fluctuations in nominal and real exchange rates in Europe, thus contributing to exchange rate stability. However, despite its explicitly symmetrical design, the EMS ended up operating asymmetrically.

Asymmetries emerged because German monetary policy was systematically more restrictive than the monetary policy of the other economies participating in the system and because the DM was an international reserve currency, to a much greater extent than the other currencies of the EC.

The more restrictive monetary policy of the German Bundesbank led to the need for intra-marginal interventions by other central banks. Thus, monetary policy became more restrictive in all the countries that participated in the system. Otherwise, the pressure on weaker currencies became too strong and resulted in the need for downward realignments of their exchange rates (devaluations).

The more restrictive monetary policy of Germany can be seen when one compares German inflation to that of France and Italy, as in Figure 1. Even before the abandonment of the Bretton Woods system of fixed exchange rates, French and Italia inflation was slightly higher than German inflation. After the abandonment of the system in 1973, French and Italian inflation shot up, as both countries loosened their monetary policy, whereas German inflation went down as Germany tightened its own monetary policy. The inflation differentials remained high until the late 1980s.

Because of collective decisions about realignments, devaluations in countries with more expansionary monetary policies and higher inflation than Germany were never equal to the cumulative inflation differential between these economies and Germany. This was especially true for Italy. As a result of the limited realignments the real exchange rate of the Italian lira (IL), shown in Figure 2, appreciated by 36.4% in the first ten years of the EMS, between 1979 and 1988. The real exchange rate of the French franc (FF) appreciated by much less in the same period, 5.2%, both because of the lower inflation differential between France and Germany and the higher nominal realignments secured by France. Thus, through the EMS, Germany was becoming more and more competitive vis-a-vis the EU economies with higher

inflation.[8]

Figure 2: The Real DM-FF and DM-IL Exchange Rates, 1979-1989

The second asymmetry of the system resulted from the international position of the German mark, which was an international reserve currency, unlike other currencies in the EMS. This meant that when there were disturbances in international financial markets affecting the exchange rate of the dollar or the yen versus the DM, there were pressures for realignments in the ERM. This happened because such international financial disturbances caused changes in the DM demand and supply in relation to other European currencies, resulting in significant pressure on the bilateral exchange rates of other EC currencies against the DM.

The ERM faced considerable pressures in periods of significant dollar appreciations or depreciations, such as 1981-1983, or in 1986. These pressures

[8]In figure 2, the real DM exchange rates versus the French Franc and the Italian Lira are based on relative consumer price indexes. They are set equal to 100 in January 1979. Source: OECD, *Main Economic Indicators*.

lead to realignments of central parities.

Between 1986 and 1992, as a result of the gradual tightening of monetary policy in France, Italy and other higher inflation economies, realignments virtually ceased. The EMS eventually became a broad DM zone, where monetary policy was determined effectively by the Bundesbank. The rest of the participating countries had to adapt to this policy in order to avoid real exchange rate appreciations and politically damaging devaluations. Thus, they ended up adapting to the monetary policy of the Bundesbank and 'borrowing' its anti-inflationary reputation. As a result, all EMS countries eventually achieved lower inflation. Figure 1 displays this trend for France and Italy. At the same time, as shown in figure 2, Germany was consolidating its gains in competitiveness, as it continued to have lower inflation than the rest.

All things considered, all three countries came out with something out of this asymmetric system. France and Italy finally converged to lower inflation and Germany gained in competitiveness through the real depreciation of the DM.[9]

1.2.3 The Planned Path towards the Euro

The initiative for the creation of the single currency also belonged to France, which, early in 1988, through a memorandum of the Minister of Finance to his EC colleagues, proposed the march towards the single currency. Italy agreed immediately and Germany had no option but to finally agree as well.

The European Council in Hanover in June 1988 set up an eight-member committee, chaired by Jacques Delors, then President of the European Commission, which would study the matter. The Committee, in April 1989, submitted a report to the Council of Finance Ministers (ECOFIN) proposing a three stage process for creating a single currency.[10]

The first stage envisaged capital account liberalization for the countries participating in the EMS. This was to take place until July 1990. No country would be allowed to maintain capital controls.

The second stage, which began on January 1, 1994, aimed at the greatest possible convergence of fiscal and monetary conditions and policies of EU

[9]See Eichengreen (2008) for a historical account of the operation of the EMS within the context of the international monetary system. Giavazzi and Giovannini (1989) contain a detailed analytical treatment of the EMS. James (2012) traces monetary cooperation in Europe in the post-war period until the creation of the euro.

[10]See Delors (1989) for more details.

member states, as enshrined in the subsequent Maastricht Treaty of 1992, in order to achieve fiscal convergence and price stability, which were deemed necessary and sufficient conditions for monetary integration.

The third stage was the monetary union itself, which would transfer all monetary policy decisions to an independent European Central Bank (ECB).

In late 1991, after an intergovernmental conference (IGC), all EEC member states signed the Treaty on European Union, in Maastricht, The Netherlands.

Under this treaty, the EEC was renamed the European Union (EU), and in addition to the Single Market program, EEC members agreed on a detailed timetable and conditions for adopting the single currency. The deadlines for the introduction of the new currency were adopted by the Madrid European Council in December 1995. This Council also decided that the name for the single currency would be the *euro*.

The timetable stipulated that until January 1, 1994, the EU would complete the single market and all national parliaments would have ratified the Maastricht Treaty. It also provided for the prohibition of monetary financing of budget deficits, the lifting of all restrictions on the movement of capital and preparation for participation in the Exchange Rate Mechanism of the European Monetary System for the countries that were not part of it, as well as the political independence of central banks. When these conditions were satisfied, the second stage of Economic and Monetary Union (EMU) would begin.

The Maastricht Treaty on the European Union also provided for the adoption the so called convergence criteria. These consisted of targets for:

1. reducing budget deficits below 3% of GDP
2. reducing public debt below 60% of GDP
3. reducing inflation sufficiently close to the average of the three countries with the lowest inflation rates
4. reducing short term nominal interest rates sufficiently close to the average of the three countries with the lowest nominal interest rates
5. participation in the ERM of the EMS for at least two years without realignments

Achieving these objectives was considered as a prerequisite for a country to participate in the third stage of EMU. The European Commission and the European Central Bank would report, in special Convergence Reports, whether a country did or did not satisfy these criteria.

1.2.4 The 1992-93 ERM Crisis

The complete abolition of capital controls since the early 1990s made the ERM extremely vulnerable, as demonstrated by the speculative attacks of September 1992 and August 1993. The proximate cause was again related to the main macroeconomic and fiscal asymmetries among the EU economies.

A series of adverse shocks broke down the defense mechanisms of the system, such as the mechanism for coordinating macroeconomic policies and the realignment of exchange rates. In September 1992, the credibility of the ERM was tested, and the system could not stand the pressures. Both the Italian lira and the British pound sterling, which had joined only recently, were ejected from the ERM.

After a year of realignments and periodic crises until late July 1993, and following further pressure on the exchange rates of weaker currencies, the ECOFIN decided to extend the fluctuation margins to $\pm$ 15%, in order to defuse further pressures on central parities.

There were a number of shocks and imbalances that contributed to the 1992-93 ERM crisis, in addition to the chronic macroeconomic asymmetries among European countries.

Firstly, German unification, which transformed Germany from a net creditor to net borrower in the global economy. This also caused an increase in German inflation and led the Bundesbank to tighten monetary policy by raising interest rates.

Second, asymmetries between US and EU monetary policy. In 1992, due to the elections and the recession in the US, the monetary policy of the Fed was relaxed, and the dollar entered into a depreciation path against the DM that caused increased pressures on the ERM.

Thirdly, the political crisis in Italy. This took place at a time when there was a large increase in the fiscal deficit and public debt, which caused a crisis of confidence and speculative pressures on the Italian lira.

Fourth, the negative result of the referendum in Denmark on the ratification of the Maastricht Treaty, the prospect of the French referendum and the ambiguous attitude of politicians in Great Britain. These caused a more general crisis of confidence in the system and in the process of Economic and Monetary Union.

However, following the exit of the lira and sterling from the ERM and the widening of the fluctuation margins for the rest of the participants, the crisis was defused and was gradually contained. The march towards Economic and

Monetary Union gathered pace.

1.2.5 The Final Stage of EMU

The third stage of EMU began on January 1, 1999, by irrevocably fixing the bilateral exchange rates of the currencies of the participating countries and the single currency, the euro.

In May 1998 it was decided which countries would participate in the third stage of EMU. The selection of the 11 countries was based on the five fiscal and monetary convergence criteria of the Maastricht Treaty and convergence reports by the European Commission and the European Central Bank.

As can be seen in Figures 3 and 4, convergence on the fiscal front had been achieved but was anything but sufficient. The average deficit of the original 12 was below the 3% threshold, but some countries were marginally close to that threshold. In addition, government debt as a percentage of GDP was much higher than the 60% target envisaged in the Maastricht treaty and was not converging sufficiently quickly towards that target. Nevertheless, in the haste to include as many countries as possible among the initial group, the fiscal criteria were interpreted somewhat generously.

The third phase was completed on January 1, 2001 with the introduction of the euro in accounting form.

From January 1, 2002 the euro became legal tender, with the introduction of cash in everyday transactions. On this day, the circulation of banknotes and coins and the swift (within two months) withdrawal of national currencies began throughout the euro area.[11]

2 The Euro area Economy: From Euphoria to Crisis

From January 1, 2001 there is a single currency in the euro area economy and, therefore, a single monetary policy for all member states. This is decided upon and implemented by the European Central Bank which aims to ensure price stability.

A central pillar of macroeconomic policy coordination was supposed to be the Stability and Growth Pact (SGP). The pact required all economies

[11]Marsh (2011) contains a detailed account of the political process that led to the creation of the euro.

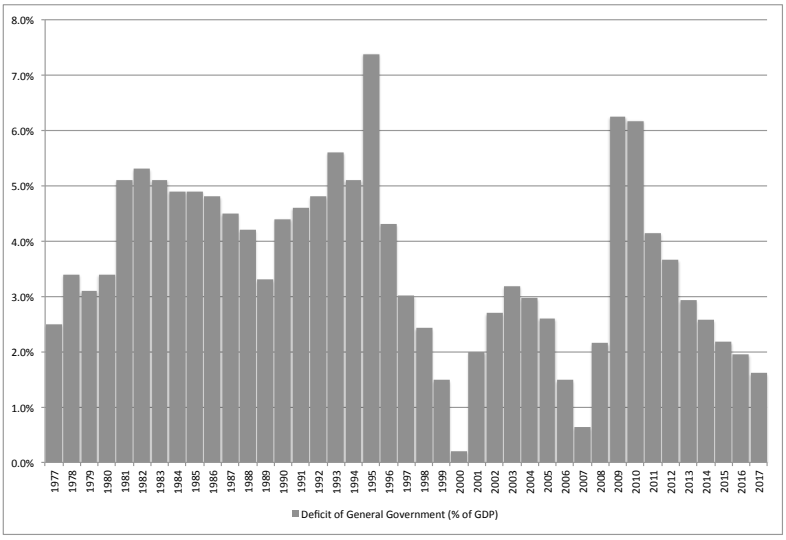

Figure 3: General Government Deficit in the Euro Area of 12 (% of GDP): 1970-2017

in the euro area and the EU to maintain fiscal deficits below 3% of GDP, to pursue budgetary balance over the medium term and to ensure that public debt does not exceed 60% of GDP, or that it tends towards this objective.

The original SGP provided for remedial action for those economies that did not meet their fiscal targets. The SGP was revised in 2005 after several economies, including Germany and France, failed to promptly correct their excessive deficits.

The revised SGP was more flexible regarding the time available for the correction of excessive deficits but at the same time more demanding in terms of maintaining fiscal balance in so called 'good times'.

Countries were required to tend towards fiscal balance (zero budget deficits) during so called 'good times', by reducing their deficits by at least 0.5% of GDP annually. As this provision was not implemented strictly by all countries, the Eurogroup and the ECOFIN Council decided in 2007 to aim for

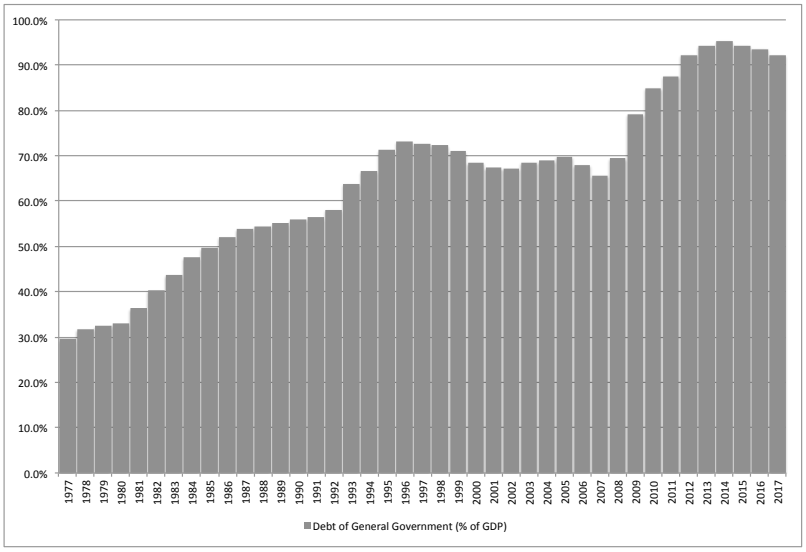

Figure 4: General Government Gross Debt in the Euro Area of 12 (% of GDP): 1970-2017

fiscal balance for all countries by 2010. However, following the international financial crisis of 2008, the European Commission proposed and the ECOFIN Council decided to apply the pact in a more flexible way, as the EA economy entered a recession and the subsequently the euro area crisis threatened the very existence of the euro.

2.1 Macroeconomic Euphoria and External Imbalances

The first nine years of the euro constituted a period of macroeconomic euphoria throughout the EA. In most respects, the creation of the euro area appeared an unmitigated economic success.[12]

[12]In the remainder of this paper we shall concentrate on three groups of countries. First, the euro area of 12 (EA-12), which represents mainly the behavior of the three largest euro area economies (Germany, France and Italy). Second, the group of the smaller economies

Growth rates remained high, with countries in the periphery growing faster than Germany, France, Italy, and the smaller economies of the core. Inflation rates in the periphery converged further towards the low inflation rates of the core and unemployment rates were on a downward path, especially in the periphery. However, these first nine years of the euro saw new asymmetries develop as a result of the introduction of the single currency and the convergence of inflation rates and real interest rates. The new asymmetries appeared in the form of significant current account imbalances between, on the one hand, Germany and the smaller core economies and, on the other hand, Italy and the economies of the periphery. France remained somewhere in between.

2.1.1 Macroeconomic Euphoria

The evolution of real per capita GDP in the euro area of 12 (EA-12) is depicted in figure 5. Between 1999 and 2007, the first nine pre-crisis years of the euro area, real GDP per capita was growing at an average annual rate of about 1.7%. This was the same as in the USA and significantly higher than the average growth rate of 1.4% in Japan.

GDP per capita in the economies of the periphery was rising faster than the EA-12 average, about 2.6% per year. The same applied to the small economies of the core which also experienced higher than average growth rates at 2.0% per year. However, the average annual growth rates in the three largest economies were lower than the EA-12. (Germany, 1.7%, France 1.4%, Italy 1.1%).

Unemployment rates also fell significantly. For the EA-12, the average unemployment rate fell from 9.8% in the 1990s to 8.5% in 2000-2007. Average unemployment rates in the periphery fell even further, from 14.6% in the 1990s to 9.3% during 2000-2007. In the smaller economies of the core average unemployment rates fell from 7.1% in the 1990s to 5.9% in 2000-2007.

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of central and northern Europe (The Netherlands, Belgium, Austria and Finland) which we call the 'core'. Third, the smaller economies of southern and western Europe (Spain, Greece, Portugal and Ireland) which we call the 'periphery'. As will become apparent, many of the macroeconomic features of the small economies of the core are similar to Germany's and the EA-12, while many macroeconomic features of the economies of the periphery resemble those of Italy, but differ from the EA-12 and the core. In most aspects, France is in between these two groups, although closer to Germany and the small economies of the core.

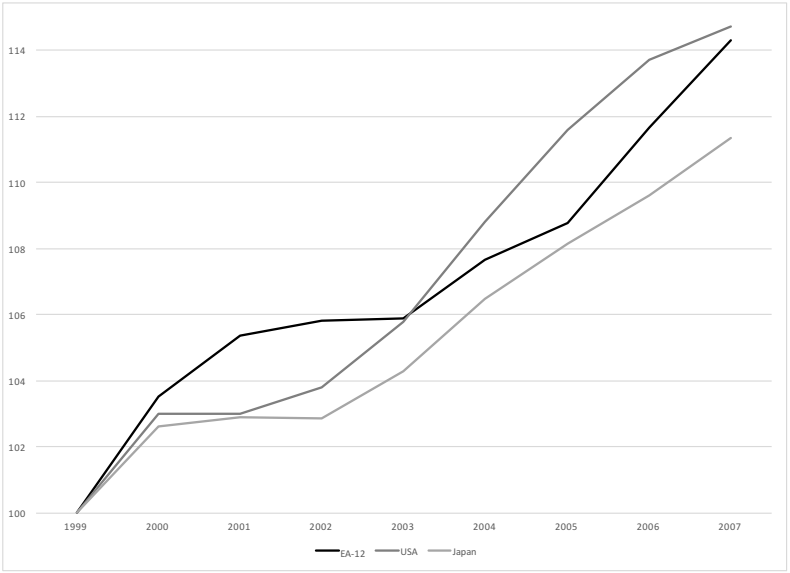

Figure 5: Index of Real GDP per capita in the Euro Area, the USA and Japan (1999=100): 1999-2007

The periphery also experienced the largest benefits in terms of further reductions of inflation. Average annual inflation rates in the economies of the periphery fell from 5.3% in the 1990s to 3.3% in 2000-2007.

There is no doubt that the first nine pre-crisis years of the euro area were a period of macroeconomic euphoria, especially for the economies of the periphery.

The proximate cause of the economic boom in the countries of the periphery of the euro area was the precipitous fall in their real interest rates, as, following the elimination of the devaluation premium, these interest rates converged with those of Germany and the smaller core economies.

2.1.2 Current Account Imbalances between the Periphery and the Core

However, not all was well. One of the main characteristics of the 1999-2007 period was the development of significant external imbalances between the economies of the periphery and Italy on one hand, and the core and Germany on the other. These external imbalances, resulted in the fast and excessive rise in international indebtedness of the countries of the periphery of the euro area, which made them extremely vulnerable in the aftermath of the international financial crisis.

Figure 6 depicts the evolution of the average current account balances of Germany, France, Italy and the groups of smaller economies of the core and the periphery. The participation of the economies of the periphery in the euro area was associated with a significant widening of their current account deficits. On average, following the creation of the euro area, the current account of the EA-12 remained in a small surplus. The surplus rose from 0.1% of GDP in the 1990s to 0.4% of GDP in 2000-2007. However, the economies of the periphery saw their average current account deficit rise from 2.5% of GDP in the 1990s to 6.8% of GDP in 2000-2007. Furthermore the rise was almost continuous throughout the first nine years after the creation of the euro and reached almost 10% of their GDP in 2007. Italy also saw its current account surplus gradually move into deficit. These rising deficits were associated with current account surpluses in the rest of the euro area. The average current account surplus of the small core economies of the north rose from 2.4% of GDP in the 1990s to 4.8% of GDP in 2000-2007, but did not display a further significant trend in the 1999-2007 period. Germany moved from a small current account deficit of 0.6% of GDP in the 1990s to a surplus of 2.9% of GDP in 2000-2007. Italy displayed a similar if less pronounced pattern as the economies of the periphery. From a surplus of 0.6% of GDP in the 1990s it gradually moved to current account deficit averaging 0.7% of GDP in 2007. France displayed a positive but shrinking current account surplus. Thus, the first nine years of the euro area were characterized by widening current account deficits in the periphery and, to a smaller extent, Italy, and significant and rising current account surpluses in Germany and the smaller economies of the core.

The proximate cause of the external imbalances was the same as the proximate cause of the stronger post-euro boom in the periphery. The precipitous fall of real interest rates in the countries of the periphery which converged

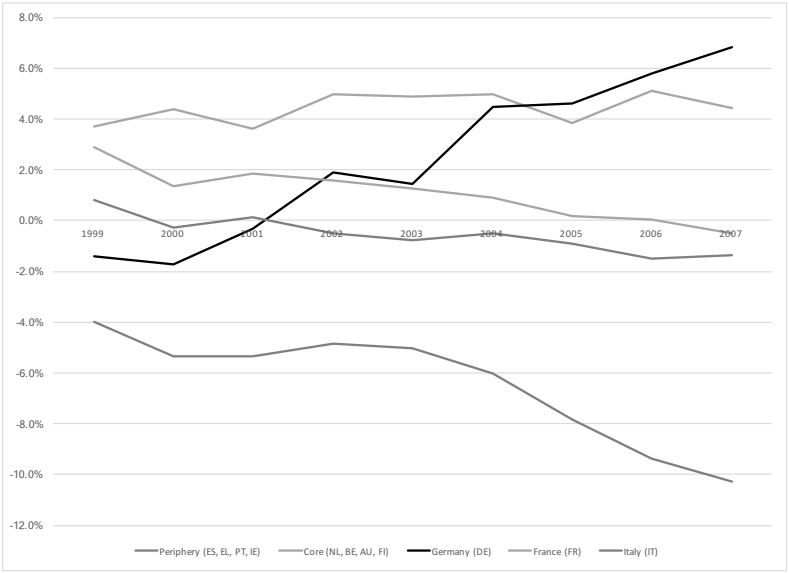

Figure 6: Current Account Balances in the Euro Area (% of GDP): 1999-2007

with those of the core countries.

A sharp drop in real interest rates is expected to lead to an increase in international borrowing, as private savings fall and investment rises. This is exactly what happened in the euro area. In addition, governments found it more attractive and easier to borrow at the lower interest rates that they faced.

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 between the periphery and the core.[13]

A significant problem was that much of the additional investment in the periphery was directed to non-tradable sectors, such as public investment and

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

real estate, including housing. Hence, the increase in external indebtedness was not associated with an increase of the export capacity of the economies of the periphery.

Worse still, capital flows contributed to house price bubbles that eventually would inevitably burst, leading to losses for lenders, chiefly domestic banks, who had extended the loans. Due to the doom-loop between domestic banks and governments, which made governments eventually responsible for bailing out banks, the bursting of these house price bubbles eventually led to a rise in government deficits and debts in countries such as in Ireland and Spain.

The inflows also contributed to the increase of wages and costs, which resulted in continuous losses of competitiveness that further contributed to the widening 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 economies, except the Netherlands and Luxembourg, had inflation rates below the average of the euro area.

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

The influx of foreign capital also contributed to the smooth financing of budget deficits, which, especially in Greece and Portugal, rose again after these economies joined the euro area. However, the large accumulated deficits in the current account in Spain were not accompanied by higher corresponding public deficits.

It also has to be noted that adverse fiscal developments were not simply a problem of the periphery in the early years of the euro area. Even Germany and France experienced public debt accumulation of around 20 percentage points of GDP over this period. Italy's public debt accumulation was higher but of a similar order of magnitude. None of these countries, however, experienced major imbalances in the current account. On the other hand, Finland and Luxembourg had unusually large fiscal surpluses.

We shall examine the current account imbalances between the core and the periphery of the euro area in more detail in the sections that follow, as they are the key to understanding the causes of the euro area crisis.

2.1.3 Financial Imbalances

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 cumulative additional lending of Irish banks amounted to almost four times the country's GDP. For banks in Austria it amounted to 2.5 times GDP. For banks in Spain, Belgium and France cumulative new bank lending was over 100% of GDP.

By 2007, many euro area banks were not only too big to fail, they were also too big to saved. As the euro area was not a banking union, bailing out the banks remained a national responsibility. Banks in Ireland had liabilities equivalent to seven times Irish GDP. Banks in the economies of the euro area core were not in a much better position, with banks having lent more than twice the GDP of the average country. Bank lending was more than three times GDP in Germany, France and the Netherlands. For Luxembourg, the multiple was astronomical.

In retrospect, it is surprising that these imbalances went virtually unnoticed. In a sense, this was the equivalent to the non-realization by the US authorities of the toxic nature of securities based on the soaring subprime mortgage loans.

By 2007, at around its tenth anniversary, the course of the euro area was assessed very positively. However, the euphoria gradually gave its way to anxiety during 2008, and deep anxiety following the collapse of Lehman Brothers in September 2008. Yet, before the eruption of the euro crisis, the mood was one of confidence and the risks were generally underestimated.[14]

[14]It is worth quoting from a short article from the Director General of Economic and Monetary Affairs of the European Commission and the Director of Fiscal Affairs of the IMF in December 2008. They concluded that, 'Most observers deem the euro a resounding success. However, in doing so, they often forget the magnitude of the original challenge. In this short article, we tried to look at the first decade of the euro area going back to its beginnings. The story is not over. Significant challenges lie ahead. As we write the world is living a financial and economic crisis of truly global proportions. For the euro area, the global crisis brings into sharp focus the challenges of maintaining macroeconomic stability and financial stability. ... Participation in the euro area also contributed to insulating participating countries from some adverse effects that the crisis might otherwise have had on their economies.' (Buti and Gaspar (2008)). The closing remarks of a speech given by the President of the ECB, in February 2009, were in the same wave length: 'When we look back over the first ten years of the euro, then we can do this with satisfaction. The sceptical

2.2 The Euro area Crisis

Slowing growth and a growing realization of the risks in store reinforced each other for everyone, but especially for countries that had accumulated large stocks of public and private external debt due to the cumulation of large deficits in the current account.

In late 2008, interest rate spreads (risk premia), which were measured in a few basis points for years, began to climb, and reach up to two or three percentage points for Greece, Ireland, Italy and Portugal.

However, when it became clear in the summer of 2009, that the Lehman shock would not create a second Great Depression, spreads in the euro area fell significantly. Yet, this was not to last.

2.2.1 The Outbreak of the Crisis in the Periphery of the Euro area

Every crisis requires a trigger. For the euro area crisis this was the announcement of the significant widening of the fiscal deficit of Greece in October 2009.

This announcement set in motion a spiral of increases in interest rates, unsuccessful budget fiscal balancing efforts by Greece itself, the deterioration of Greece's credit rating, further interest rate increases, culminating in the Greek bailout of May 2010.

The leaders of the EA decided it was unthinkable for a member country to default and opted for bailing out Greece. In this case, the 'lender of last resort' was not the ECB but the governments of the euro area and the International Monetary Fund, through an ad hoc financial instrument, the European Economic Stability Fund (EFSF). This eventually evolved into the European Stability Mechanism (ESM).

The bailout did not work well and proved insufficient. Markets reacted negatively as analysts concluded that Greece was not a clear path to debt sustainability. The constrained and politically charged design and implementation of the program did nothing to boost confidence in the ability of the

forecasts before its birth have not materialised. The euro is a historic achievement. Its first ten years have been a success. ... We have many challenges to cope with in the years to come. Some are shared with the other important central banks in the world, like responding to the present economic and financial global situation and drawing all the lessons from the present turmoil.' (Trichet (2009)). Many others shared such views at the time.

euro area ability to handle the crisis. The risk premium on Greek bonds continued to rise.

Since early 2010, financial markets began to wonder if the failure of Greece to tackle the crisis could apply to other countries. These doubts - combined with the relentless logic of the debt-interest-rate vortex - was enough to raise the risk premium for other euro area members apart from Greece.

What proved decisive was whether a state's fiscal problems were combined with balance of payments problems. Only countries that borrowed primarily from international markets experienced problems. In fact, the borrowing costs of Portugal and Ireland rose sharply when the Greek bailout was announced.

This was the beginning of a sudden-stop of lending from international financial markets, which affected all countries with significant deficits in the current account. Ireland, Portugal, Spain and Italy. As it turned out, because of the home-bias of European banks, euro area investors were much more wary about lending to other euro area governments than about lending to their own government.

The increase in the risk premium led to the adoption of rescue plans both for Ireland and Portugal, although with very different characteristics than Greece. In the case of Ireland, the imbalance that proved decisive was the situation of Irish banks.

2.2.2 The Doom Loop: From the Periphery to the Core

Both banks and sovereigns are subject to the possibility of a debt vortex. Banks borrow money short term to lend long term. For every euro borrowed short term, the bank makes long-term loans of twelve or more euros - this is the nature of leverage.

Leverage increases profitability but it also increases risks. Such risks materialize in bad times. The Irish banks had loans in 2008 approximately 7.8 times Irish GDP. The banking crisis led Ireland to a bailout in November 2010, which significantly increased its public debt. This was the first example of the doom-loop between bank debt and sovereign debt.

The Irish bailout exacerbated the crisis. It was followed by Portugal in May 2011 and the second Greek bailout in July 2011.

In July 2011, the second Greek package was agreed in principle, but one of its elements inflamed the overall situation. As part of the EA leaders new view that the private sector should bear part of the cost of the bailout,

private holders of Greek government debt would see about half the face value of their holdings disappear, in what was euphemistically called the Private Sector Involvement (PSI).

This was a wake-up call for investors who still found the Maastricht Treaty's no-default clause credible. The markets began to demand higher yields on the government bonds of Belgium, Spain and Italy. Italy in particular, was a deadly threat to the euro area, given the size of its economy and its huge debt. The doom-loop was moving from the periphery towards the core.

2.2.3 Fiscal Adjustment, Recession and Contagion

Budget cuts in the periphery, in the aftermath of the 2010 crisis, exacerbated the problem, as countries in rescue programs or those involved in the debt vortex had no other option but to cut their budget deficits.

The euro area as a whole saw a primary deficit of about €350 billion in 2010 to be reduced to only €10 billion in 2014. This was a massive recessionary shock - equal to four percentage points of the EA economy.

Budget cuts came from both the countries of the periphery and from the core countries that had not faced a debt crisis. This was because the 2009 recession had pushed many other countries over the 3% threshold for the deficit of the general government envisaged in the stability and growth path.

Greece, Ireland, Italy, Portugal and Spain accounted for about 48% of the budget cuts, although they represent only one third of the GDP of the euro area. However, budget cuts in Germany accounted for 32% of the total, and those in France 13% of the total budget cuts in the euro area.

Because budget cuts were mainly tax increases, and to a lesser extent primary expenditure reductions, the negative repercussions on economic activity were even greater. Hence, in 2011, the euro area was again in recession.[15]

Things were plainly going from bad to worse. Each attempt to end the crisis seemed to make matters worse.

By this time, the contagion spread all the way to France. Its debt was downgraded and market yields rose substantially above those of other core EA nations like Germany and the smaller economies of the core. British Prime Minister Gordon Brown unhelpfully suggested that Italy and France might need a bailout.

[15] Alesina et al. (2015) and Callegari et al. (2017) have investigated the impact of this contractionary fiscal mix on the EA economy. See also Alesina et al. (2019).

The Belgian problem domestic banks in trouble due to Greek lending spread to Cyprus. Its banks were severely affected by the Greek debt write down, so the nation asked for a bailout in June 2012 (granted in March 2013).

Needless to say, a crisis that threatened Italy and France was a crisis of global dimensions. This was no longer an issue of Greece and the other smaller economies of the periphery. This had the potential of blowing up the euro area and the EU itself. The world economy was looking at another Lehman-sized shock. With EA leaders manifestly incapable of mastering events, something had to be done.

2.2.4 "Whatever it Takes"

That something was a forceful intervention by ECB President Mario Draghi, in his now famous July 2012 speech. He told markets that the ECB would do whatever it takes to keep the euro area together.

That did the trick. It switched expectations from the 'doom-is-inevitable' view of 2011 and 2012 back to the old 'we-will-get-through' expectations of 2009 and 2010. As the ECB backed that statement with its quantitative easing program, borrowing costs for the affected countries gradually returned to pre-crisis levels

The basic switching mechanism that Draghi triggered is a a direct corollary of the debt-vortex logic. The rush to unload debt is driven by fear. The fear is driven by the suspicion that everyone else will sell a nations debt, thus driving borrowing costs up to the point where the nation actually faces such fiscal difficulties that it is threatened with default. But if there is a buyer-of-last- resort for government debt, with the capacity to buy unlimited amounts of debt, the suspicion dissolves and investors are happy to hold the debt. This is what Mario Draghi did in the summer of 2012. It worked.[16]

2.2.5 Proximate Causes of the Euro area Crisis

The proximate cause of the EA crisis was the rapid unwinding of intra-EA borrowing imbalances between the periphery and the core. The built up of these imbalances occurred in the 2000s, prior to the crisis. Some of this was to private borrowers (especially in Ireland and Spain) and some of it to public borrowers (especially in Greece and Portugal), but in every case

[16] A detailed analysis of the euro area crisis, focusing on external and financial imbalances can be found in Baldwin and Giavazzi (2015).

the difficult debt eventually ended up as government debt. Often private over-indebtedness ends up on governments balance sheets, so that the rise in public debt is more a consequence than a cause of a financial crisis.

The sudden stop became a crisis rather than a 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, external imbalances and lack of crisis management mechanisms, suggest three sorts of underlying causes: 1. Macroeconomic and financial asymmetries and policy failures, 2. Lack of institutions to absorb shocks at the EA level, 3. 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.

3 Optimum Currency Area Considerations for the Euro Area

The launch of the euro in 1999 was a political initiative that never met the acid-test of what economists have come to call an optimum currency area. Nevertheless, the considerations relating to optimum currency areas can prove extremely useful in thinking about reforming the euro area in order to address the main fault lines revealed by the crisis.

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, whose exchange rates can potentially change, and substituting them by a single

currency.[17]

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. Fourth, applicable to countries with inflationary monetary policies, the switch to a low inflation monetary policy.[18]

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, the loss of the ability of each country to use its monetary policy in choosing the appropriate inflation tax, and/or combination of inflation and unemployment, according to its own preferences.[19]

Assuming that the marginal benefit of adding an additional country to a currency area is positive and declining, and that the marginal cost is rising as additional countries are added, the number of countries that constitute an optimal currency area can be theoretically determined as in figure 7, at the point where the marginal benefit of adding a country is equal to the marginal cost.

The higher the position of the marginal benefit curve and the lower the position of the marginal cost curve in Figure 7, the larger is an optimum currency area, in the sense that more countries are included. What determines the position of the marginal benefit and marginal cost curves?

With regard to the position of the marginal benefit curve, a high potential trading volume among the participating countries would result in higher marginal benefits from the reduction of transaction costs and exchange rate

[17]This question was first posed, and partially answered, by Mundell (1961) who is rightly considered as the originator of this literature. McKinnon (1963); Kenen (1969) were early major contributors to this literature. The literature was revived in the 1980s, as additional considerations were added. A survey of the so called 'new' theory of optimum currency areas can be found in Tavlas (1993).

[18]This last argument presupposes that the central bank administering the single currency is politically independent and cares mostly about inflation, which is something that applies to the euro area.

[19]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 is not generally accepted.

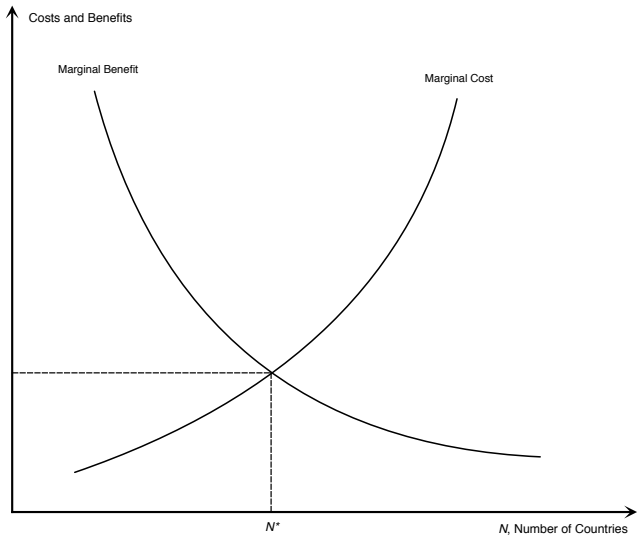

Figure 7: Benefits and Costs from Admitting Additional Countries into a Single Currency Union

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.[20]

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 to participate in a low inflation monetary union,

[20]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. Obviously this criterion is stronger for the economies of the core than the periphery, which are geographically more detached.

and adopt its anti-inflationary credibility, it may be a cost for the other participating countries to accept a high inflation economy in a monetary union. Thus, this argument suggests that the economies of the periphery, with their high inflation legacies, had more to gain from participating in the euro area than the economies of the core.[21]

With regard to the position of the marginal cost curve, 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 the interest rates and the exchange rate.[22]

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 cost curve 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 the marginal cost curve at a higher level, 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.[23]

[21]This may be one of the reasons why the Maastricht treaty envisages 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.

[22]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.

[23]This so-called fiscal federalism criterion was investigated by Sala-i Martin and Sachs

Finally other criteria that affect the position of both the marginal benefit and the marginal cost curve 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, on prima facie grounds, admitting the countries of the periphery into the EA may have been premature, as they did not satisfy some of the important optimum currency area criteria suggested by the literature.

In any case, 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 four 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

(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.

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.

4 Macroeconomic and Financial Asymmetries in the Euro area

In our narrative of both the evolution of monetary cooperation in Europe, and the operation of the euro area, both before and after the crisis, we kept alluding to macroeconomic and financial asymmetries as a root cause of the problems of all cooperative monetary regimes before the creation of the euro, and the operation of the euro area itself. Economic and financial asymmetries play a key role in the optimum currency area literature as well. In this section we concentrate on taking a closer look at the nature of these asymmetries in the case of the euro area.

We concentrate on the original euro area of 12. We consider asymmetries between the large economies of the euro area, which were also founding members of the EEC, the smaller core economies of central and northern Europe, and the smaller economies of the European periphery. The three large euro area economies of Germany, France and Italy account for about two thirds of the GDP of the euro area. Hence, the aggregates for the euro area of 12 (EA-12) mainly reflect these three largest economies. The smaller core economies (The Netherlands, Belgium, Austria and Finland), account for about 15%, and the economies of the periphery (Spain, Greece, Portugal and Ireland) account for 17.5% of the GDP of the EA-12, and are treated as the core and the periphery respectively.[24]

[24]These weights are based on the Area Wide Model (AWM) database of the European Central Bank. They are GDP based, adjusted for PPP, and reflect the PPP adjusted real GDP of each particular economy as a share of the Euro area economy GDP in 2001. See

4.1 Macroeconomic Performance in the Euro Area

Before we focus on such euro area asymmetries it is worth examining the overall macroeconomic performance of the euro area. To put it in perspective, we shall compare it to the macroeconomic performance of the USA, the dollar area, which is roughly the same size as the euro area.

A comparison of macroeconomic performance in the euro area of the original twelve members (EA-12) and the USA suggests that he countries of the EA-12 had higher growth rates of GDP per capita in the 1960s and the 1970s. Since the beginning of the 1980s the US growth rate overtook that of the EA-12. Thus, during the two decades of deepening monetary integration, that resulted in the eventual creation of the euro, the EA-12 was lagging behind the US in terms of growth of real per capita GDP. For the first 8 years, since the creation of the euro, the EA-12 was growing as fast as the USA, albeit at a slightly lower rate than in the previous two decades. Since the financial crisis of 2008-09 the growth performance of the EU12 has been significantly worse than that of the USA. The EA-12 real GDP per capita essentially stagnated, as it grew only at 0.1% on average between 2008 and 2016. Since 2008, the growth rate of real GDP per capita in the USA was 0.5% per year, much higher than in the EA-12.

This worsening of the EA-12 macroeconomic performance is also reflected in unemployment rates. Whereas the countries of the EA-12 had significantly lower unemployment rates in the 1960s and 1970s, unemployment rates have remained persistently higher than in the US since the early 1980s. This is a well documented fact, and has not been reversed by the creation of the Euro area. In fact, EA-12 unemployment rates rose significantly after the 2008-09 financial crisis, as of course also happened in the USA.[25]

Where the euro area seems to have outperformed the USA is in the evolution of inflation and the current account. Whereas average inflation rates in the countries of the EA-12 were higher than in the USA from the 1960s to the end of the 1990s, the creation of the euro area has resulted in a significant improvement in inflation performance, both in absolute terms and in relation to the USA. Average inflation in the EA-12 was about 2% in the 2000-2007 period, versus 2.8% for the USA. Inflation fell even further in the post crisis years of 2010-2016, to 1.3% in the EA-12 and 1.6% in the USA.

Fagan et al. (2005) for more details.

[25]See Blanchard (2006) for a survey of the evolution of European unemployment and alernative explanations.

The divergence in current account balances is even more in the EA's favor. While the USA has been running significant current account deficits since at least the early 1970s, amounting to more than 3% of GDP in the last 15 years, the EA-12 has been running surpluses, which have risen to 1.6% of GDP on average in the years since the crisis,

However, the macroeconomic performance of the EA has been extremely uneven. It is characterized by significant macroeconomic asymmetries between the core and the periphery. It is to such asymmetries that we now turn.

4.2 Macroeconomic Asymmetries

The evolution of real GDP per capita in the EA is depicted in figure 8.[26]

The real GDP per capita and growth asymmetries between the core and the periphery of the EA are striking. Whereas the economies of the core, large and small, have roughly similar levels of GDP per capita and rates of economic growth, the economies of the periphery have much lower GDP per capita than the rest, with very weak and temporary tendencies for convergence. The average real GDP per capita of the economies of the periphery had reached 71.2% of the EA-12 average during the 1990s. During 2000-2007 there was relatively rapid convergence, as it rose to 78.6% of the EA-12 average. However, since 2008 in has fallen back to 76.6% of the EA-12 average. Thus, although the creation of the euro area originally resulted in convergence of real GDP per capita between the core and the periphery, after the

[26]The weights used for constructing the group aggregates are the ones used in the Area Wide Model (AWM) database of the European Central Bank. They are GDP based, adjusted for PPP, and reflect the PPP adjusted real GDP of each particular economy as a share of the Euro area economy GDP in 2001. See Fagan et al. (2005) for more details. The weights for the different countries are as follows: Germany (DE) 28.3%, France (FR) 20.1%, Italy (IT) 19.5%, Spain (ES) 11.1%, Netherlands (NL) 6%, Belgium (BE) 3.6%, Austria (AT) 3.0%, Greece (EL) 2.5%, Portugal (PT) 2.4%, Finland (FI) 1.7%, Ireland (IE) 1.5%, Luxemburg (LX) 0.3%. The source for the original data used and depicted in figures 8 to 15 is the November 2018 *Annual Macroeconomic Data Bank* (AMECO) of the European Commission. In the figures, we do not present the three largest euro area economies (Germany (DE), France (FR) and Italy (IT)) separately, as the aggregates for the EA-12 mainly reflect the characteristics of these three economies, which constitute more than two thirds of the EA-12. We thus present the evolution of aggregates for the EA-12, the 'core' small economies (Netherlands (NL), Belgium (BE), Austria (AT) and Finland (FI)), and the economies of the 'periphery' (Spain (ES), Greece (EL), Portugal (PT) and Ireland (IE)).

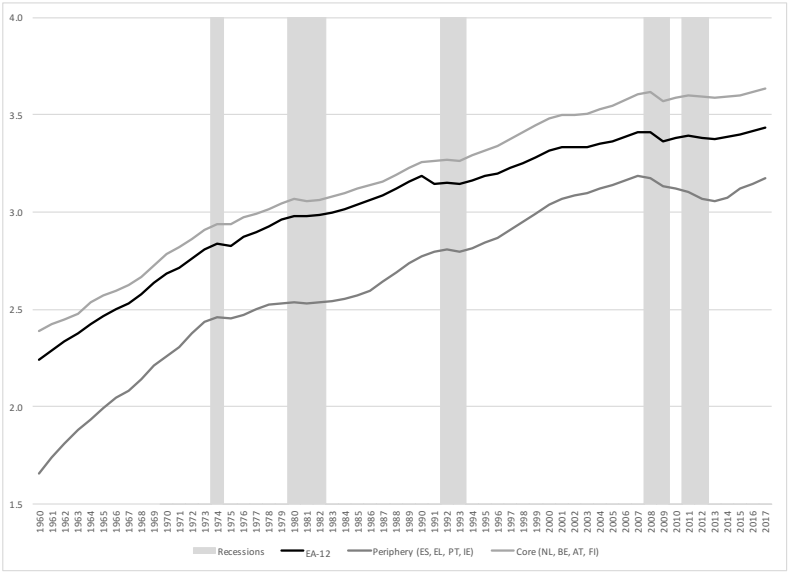

Figure 8: Real GDP per capita in the Euro Area (2010 prices, log scale): 1960-2017

euro crisis the gap widened again. In addition, the coefficient of variation of growth rates among the original 12 EA members tripled from 55% in 2000-2007 to 162% in 2008-2016, indicating a significant worsening of growth asymmetries after the crisis.[27]

The economies of the periphery have also experienced significantly higher unemployment rates, especially since the 1980s. The evolution of unemployment rates is depicted in figure 9. Unemployment rates in the periphery converged towards the unemployment rates of the core economies in the pre-crisis years since the creation of the euro, but unemployment rates in the periphery have more than doubled since the crisis. They rose from 9.3% of

[27]The coefficient of variation is the standard deviation over the mean of a variable, and is probably the most suitable measure of asymmetries among the 12 in this case.

the labor force in 2000-2007 to 18.7% in 2008-2016. For the EA-12 the post-crisis rise of unemployment has been much smaller, from 8.5% of the labor force in 2000-2007 to 10.3% in 2008-2016. The coefficient of variation of unemployment rates in the EA-12 has risen four times, from 21.9% in 2000-2007 to 86.6% in 2008-2016, indicating a significant worsening of unemployment asymmetries.

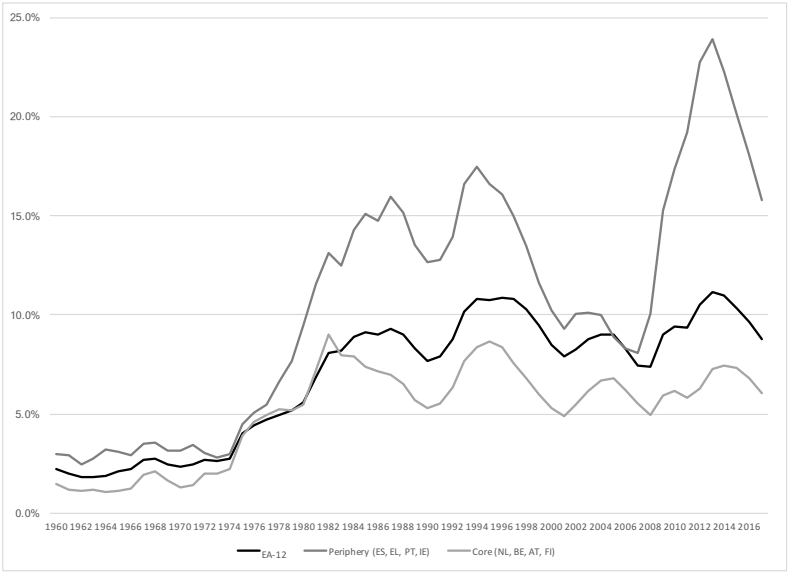

Figure 9: Unemployment Rates in the Euro Area (% of civilian labor force): 1960-2017

Figure 10 depicts the evolution of consumer price inflation. Inflation rates in the periphery were much higher than the core before the creation of the euro. However, they converged quickly towards the lower inflation rates of the core around the time of the creation of the euro and converged even further during the crisis. Furthermore, the coefficient of variation of inflation rates in the EA of 12 has fallen since the crisis, from 47.0% in 2000-2007 to 31.0% in 2008-2016. The convergence of inflation rates can certainly be counted as

probably the only enduring macroeconomic success since the creation of the euro.

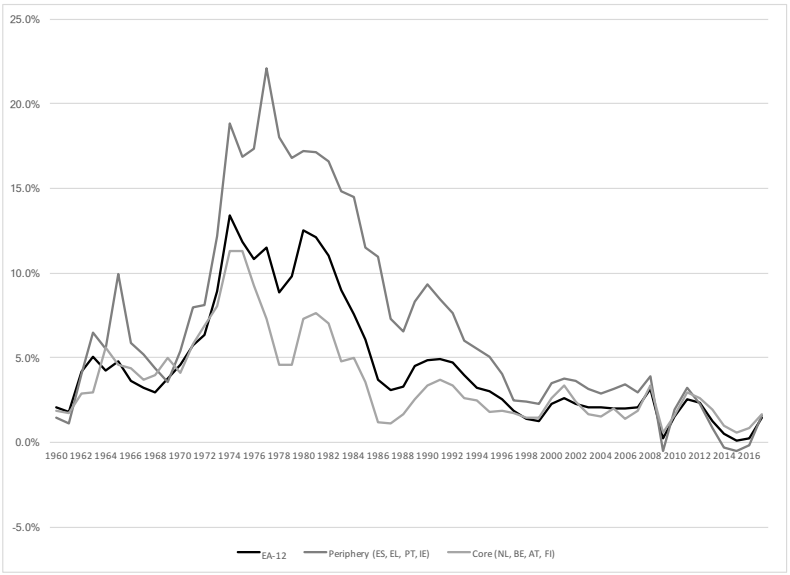

Figure 10: Inflation Rates in the Euro Area (% per annum): 1960-2017

Figure 11 depicts the evolution of current account balances. External imbalances between the periphery and the core worsened significantly since the creation of the euro. As we have already discussed, the economies of the periphery have had much higher current account deficits, both historically, and especially during the first nine years since the creation of the euro. This was a major destabilizing factor and a serious contributor to the euro area crisis of 2010. The standard deviation of current account deficits in the EA of 12, relative to GDP, almost doubled to 5.6% in the 2000-2007 period, and has only fallen slightly since the crisis, to 4.2% in the 2008-2016 period.

Macroeconomic asymmetries also exist within the groups of small economies of the periphery and the core but their common features are much stronger

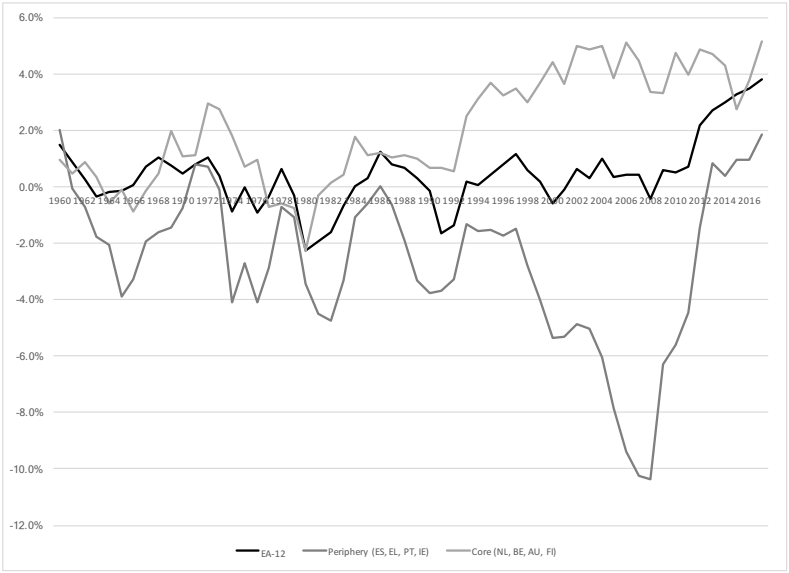

Figure 11: Current Account Balances in the Euro Area (% of GDP): 1960-2017

than these differences.[28]

4.3 Financial Asymmetries

We next turn to financial asymmetries, focusing on the evolution of long term interest rates, real exchange rates, general government balances and general government debt.

The euro area has been a monetary union among sovereign states with

[28]Probably the most important development that does not conform with our classification is the divergence of the GDP per capita of Italy since the euro area crisis. In this respect, the behavior of Italy is more similar to that of the countries of the periphery than the core. On the other hand, Ireland is recently demonstrating features that would justify classifying it in the small core rather than the periphery.

national budgets, national banking systems and financial markets and national labor markets. The EU budget, with a upper limit of 1% of EU GDP cannot function as an automatic stabilizer, and labor mobility is low. This has resulted in significant financial asymmetries, which were papered over before the euro area crisis but have since taken centre stage.

Figure 12 depicts the evolution of real long term government bond rates in the period 1995-2017.[29]

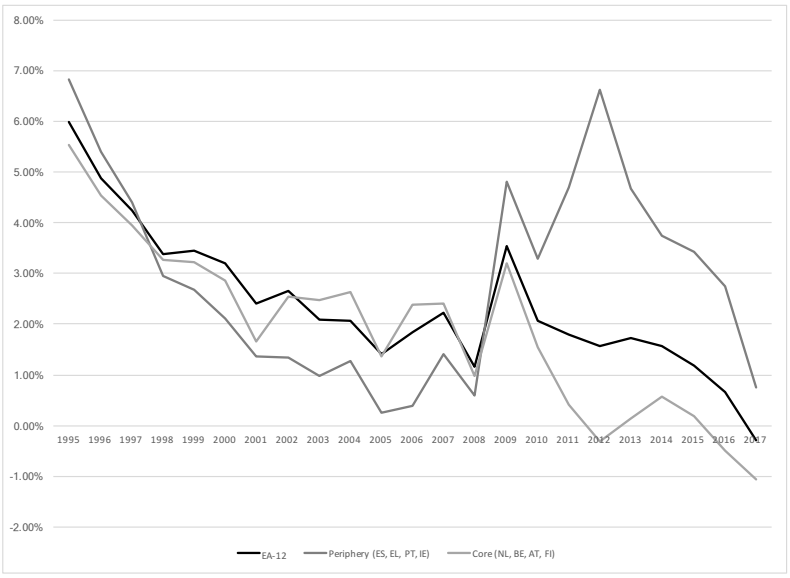

Figure 12: Real Long Term Interest Rates in the Euro Area (% per year): 1995-2017

As can be seen from the figure, the creation of the euro resulted in a much more significant reduction of real interest rates in the periphery than in the

[29]Real long term interest rates have been calculated as the difference of annual yields of 10 year government bonds from current annual rates of consumer price inflation. Source: EU Commission, *Annual Macroeconomic Data Bank* (AMECO), November 2018.

core. Real long term interest rates on government bonds in the periphery fell from 5.2% in the 1990s, to 1.1% in 2000-2007. This was mainly the result of the convergence of nominal interest rates following the elimination of the risk of currency devaluation for the economies of the periphery. Real interest rates in the core economies fell much less in the relevant period. Savings thus fell and investment rose much more in the periphery during the 2000-2007 period, contributing to the significant widening of current account deficits. Since the crisis, interest rates have again moved asymmetrically. Long term interest rates also continued falling in the core EA economies, but they rose significantly in the periphery. External imbalances have been partly corrected, but at the cost of much deeper recessions in the periphery than in the core.

External imbalances have also worsened due to the the behavior of real exchange rates. Real effective exchange rates rose by almost 16% in the periphery in the twenty years before the creation of the euro, while those in the core fell by almost 7% in the case of the large core economies, and 4% in the case of the smaller ones. Furthermore, real effective exchange rates continued appreciating in the periphery during the 2000-2007 period. The sustained loss of competitiveness of the economies of the periphery is another major asymmetry induced by the process of monetary integration in Europe, that has been strengthened since the early 1980s, and appears to be a significant determinant of the external imbalances that led to the euro area crisis. Since the crisis, real exchange rates in the periphery have depreciated and are back to the levels of the mid-1990s.[30]

Real effective exchange rates, based on unit labor costs, for the 1995-2017 period, are depicted in figure 13.[31]

Figure 14 depicts the evolution of general government balances, while figure 15 depicts the evolution of general government gross debt.[32]

Fiscal asymmetries between the periphery and the core are less significant than usually thought. The behavior of current government balances,

[30]Chen et al. (2013) analyze how changes in competitiveness affected current account imbalances in the euro area.

[31]Real effective exchange rates are based on unit labour costs (total economy) and are measured relative to 24 industrial economies, using double export weights. They are presented as an index set to 100 in 1995. Source: EU Commission, *Annual Macroeconomic Data Bank* (AMECO), November 2018.

[32]These are presented as % of GDP. Source: EU Commission, *Annual Macroeconomic Data Bank* (AMECO), November 2018.

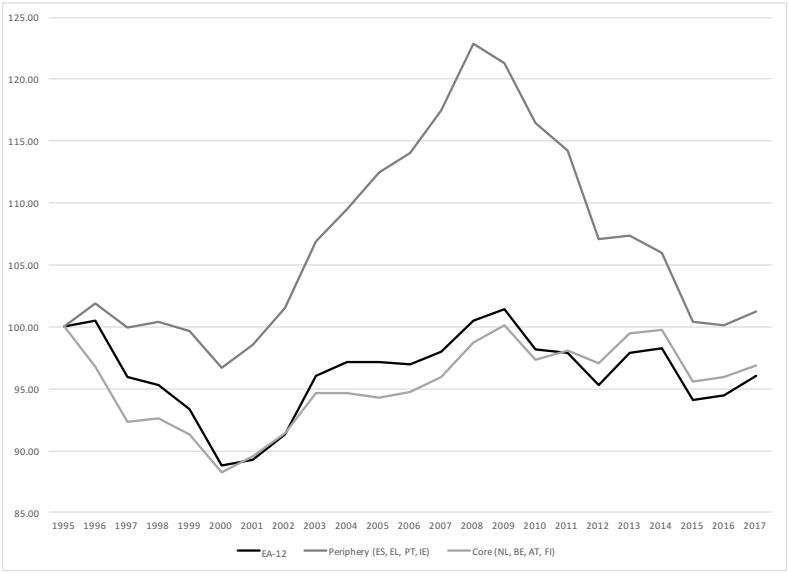

Figure 13: Real Effective Exchange Rates in the Euro Area (2010=100): 1995-2017

or government debt was not that much different between the periphery and the core before the euro area crisis. In fact, before the 2008 international financial crisis, as a percent of GDP, both government deficits and debts were lower on average in the periphery than the EA average and the small economies of the core. However, fiscal imbalances in the periphery widened significantly after the crisis, despite their fiscal consolidation efforts, due to the deeper and longer recessions that these countries had to go through.[33]

The main financial asymmetries between the periphery and the core of the euro area seem to be due to the segmentation of financial markets and differences in their anti-inflationary credibility before the creation of the euro

[33]The exception to this pattern is Greece, which was characterized by significant fiscal imbalances for a number of years before the euro area crisis. For a detailed analysis of the Greek crisis along the lines suggested in this paper see Alogoskoufis (2019).

Figure 14: General Government Balances in the Euro Area (% of GDP): 1995-2017

area. These factors determined the evolution of real interest rates, savings-investment imbalances and current accounts in an asymmetric fashion. Differences in wage and price setting institutions, and the different inflation experiences in the periphery also seem to have affected the evolution of real exchange rates and current account positions. With the exception of Greece, fiscal asymmetries seem to have been a much less significant source of financial asymmetries before the international financial crisis of 2008.

5 Reforming the Euro Area

Although financial market integration and effective regulation of financial markets have taken a priority since the 2010 crisis, the euro area remains a

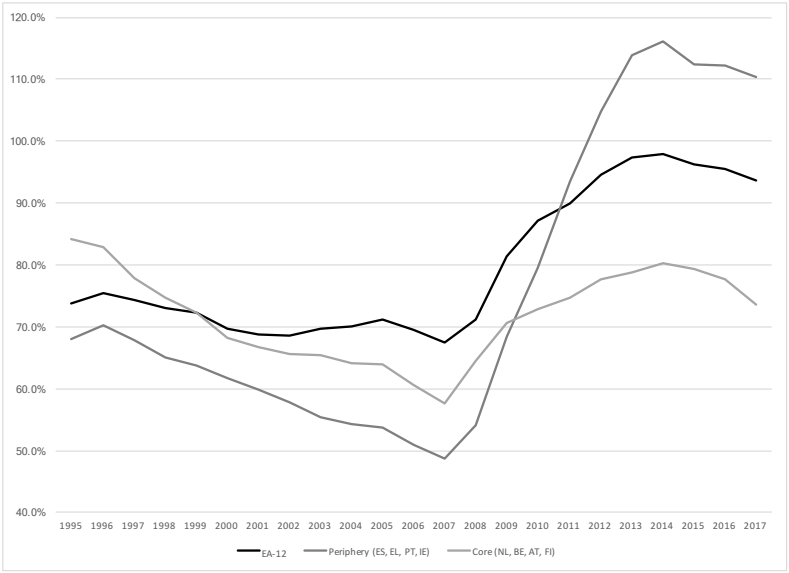

Figure 15: General Government Debt in the Euro Area (% of GDP): 1995-2017

single currency area with significant real and financial asymmetries, segregated national fiscal systems, weak coordination of fiscal policies and a virtually non-existent common 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 financial and labor markets and a federal budget that would act as an automatic stabilizer in the

case of asymmetric macroeconomic developments. Furthermore, in 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. The euro area is in urgent need for additional fiscal, financial and labor market reforms.

Since the crisis, there have been scores of proposals for reforming the euro area. However, there has been very little progress towards actual reform. The heads of the European institutions issued a blueprint for the future, the *Four Presidents' Report* in June 2012 (Van Rompuy et al. (2012)). In a statement on 29 June 2012 the euro area heads of state agreed on breaking the vicious circle between banks and sovereigns by establishing a banking union. The agenda, which was endorsed by the European Council, has not been completed and the roadmap for the future remains a matter of fierce controversy. At the June 2018 summit, despite the prior Franco-German rapprochement and the joint 'Meseberg Declaration' by President Macron and Chancellor Merkel, the euro area heads of state could only agree to call for further work on a series of still-divisive issues. Why is it that it remains so difficult to reform the euro area?

As suggested by Pisani-Ferry (2018), p. 1, "There are essentially two possible theories for this enduring state of controversy: the 'battle of interests' and the 'battle of ideas'. The first posits that problems are fundamentally distributional ? decisions are controversial because they pit creditors against debtors, high-debt against low-debt states, stable against crisis-prone countries, or global banks against local banks. The second emphasises cognitive issues. According to this reading, a major factor behind disagreements is that actors do not share the same representation of reality, but rather work with different implicit or explicit models of it."

An attempt to reach a consensus in the battle of ideas was made recently by a group of 14 French and German economists, in Benassy-Quere et al. (2018). They suggest that the euro area 'remains vulnerable, underperforming and divided'. (p. 2). They highlight three main weaknesses for the euro area: 'First, the euro area continues to face significant financial fragility and limited institutional capacity to deal with a new crisis. Stabilisation and recovery have relied mainly on monetary easing by the ECB. ... Second, the euro area lacks adequate institutional conditions and incentives for long-term prosperity. Incomplete banking union and fragmented capital markets prevent it from achieving full monetary and financial integration, which would boost both growth and stability. ... Third, and perhaps most worrisome,

the flaws of the euro area's fiscal architecture have given rise to political problems. This has to do partly with the poor design and complexity of the EU's fiscal rules and partly with the euro area's inability to deal with insolvent countries other than through crisis loans conditioned on harsh fiscal adjustment.'

Our analysis of economic and financial asymmetries in the euro area broadly supports the proposals for reforming the euro area put forward by Benassy-Quere et al. (2018) in their attempt to provide a resolution to the battle of ideas within Europe.[34]

The Benassy-Quere et al. (2018) proposals aim to reconcile risk sharing with market discipline, and concentrate on four main areas:

1. *Reform of fiscal rules, including of the enforcement device*: Introduction of a debt-corrected expenditure rule (acyclical discretionary spending), the ditching of EU sanctions, and the assignment of more individual responsibility to countries

2. *More and better risk sharing*: Reduction of home bias in bank sovereign portfolios through concentration charges, introduction of common deposit insurance with national compartments, the promotion of a 'safe asset' based on diversified sovereign debt portfolio (e.g. ESBies), the creation of low-conditionality access to ESM liquidity for pre-qualified countries, and the creation of an unemployment/employment reinsurance fund

3. *A targeted role for market discipline*: They suggest the enforcement of the fiscal rule via mandating the issuance of subordinated (junior) bonds for the financing of excess spending, and making sovereign debt restructuring a credible last resort when debt is clearly unsustainable.

4. *Clarify role of institutions*: Separation of the roles of 'prosecutor' (watchdog) and 'judge' (political), the upgrade of the ESM to an IMF-like institution, the introduction of political accountability and the strengthening of national fiscal councils.

However, we would go beyond those proposals in two directions. First the need for a common euro area budget, and, second, the need to strengthen the role of the ECB as a lender of last resort in times of crisis.

We would argue for the introduction of a moderate and appropriately targeted common EA budget that would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal

[34]The battle of ideas that emerged after the euro area crisis was first analyzed and highlighted by Brunnermeier et al. (2016).

stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation. A significant part of the fragmentation of labor markets in Europe is the result of the lack of a cross border system of unemployment and health insurance. This could be addressed in a reform that would allow for a separate EA budget, targeted to unemployment insurance. A EA unemployment insurance scheme would have common rules, such as common replacement ratio and eligibility rules, and would reduce the divergence the national fiscal balances in the case of asymmetric cyclical shocks.

We would also argue for an explicit recognition of the responsibility of the ECB to act as lender of last resort to banks and sovereigns in times of crisis. This would help avert 'sudden stops' and the market disruptions associated with sovereign debt crises much better that an upgrade of the ESM to an IMF-like institution, due to the higher capacity of central banks to create liquidity.

At the same time, the banking union should proceed as planned and national reform efforts that enhance international competitiveness should be strengthened, especially in the periphery.

All proposals for a common EA budget go against the arguments of those opposing a transfer union, chiefly the countries that are net contributors to the EU budget. We feel that these objections are misplaced. The EU and, in particular, the EA are already transfer unions, through the operation of the single market and the monetary union. They encourage significant economic transfers from weaker and less competitive sectors and economies in the periphery, to stronger and more competitive ones, as suggested by the disparate macroeconomic performance of the core and the periphery following the creation of the Euro area.

A fiscal transfer union, which would partly correct the effects of such transfers through fiscal redistribution is a logical counterpart of the single market and the monetary union. The transfers we suggest are modest, but certainly higher than the current EU ceiling of 1% of GDP. They could be concentrated in key cyclically sensitive areas such as unemployment insurance.

The objections of net contributors to a moderate increase in the EU budget could in principle be overcome by an appropriate rules based fiscal reform that would address moral hazard and other coordination problems and ensure an appropriate balance between risk sharing and market discipline, as

is also the case with the Benassy-Quere et al. (2018) proposals.

6 Conclusions

This paper has provided a perspective on the Euro Area (EA), focusing on macroeconomic and financial asymmetries among its member states, and in particular between the core and the periphery. This perspective highlights the need for major and fundamental EA reforms.

After surveying the evolution of EU macroeconomic and monetary cooperation and developments since the creation of the euro, and particularly the euro area crisis, we argue that the euro area needs fundamental fiscal, financial and labor market reforms.

In addition to the banking union and other reforms currently contemplated, and the proposals of Benassy-Quere et al. (2018) , which we support, we stress the need for two additional major reforms, so as to deal with the asymmetries of the EA and deal with potential future crises.

First, a common EA budget of moderate size, focused on a EA system of unemployment insurance. This would shift the EA nearer to being an optimal currency area. It would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers and would thus help countries in recession face smaller national fiscal and financial consequences of such recessions. The reform we propose would also partly address labor market fragmentation. A significant part of the fragmentation of labor markets in the EA is the result of the lack of a cross border system of unemployment insurance. This could be addressed as the EA budget that we propose is targeted to euro area wide unemployment insurance.

Second, it would also help in the avoidance of future crises if the scope for the ECB to act as a lender of last resort in times of crisis was expanded and officially recognized, as the limited scope of the ESM would not suffice in a future crisis, especially if it involved one of the larger EA economies.

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