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The euro at 20

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The euro at 20

A concise critical assessment

Abstract

Eurozone monetary governance was framed for a stable macroeconomic environment. While the ECB policy framework changed much after the global financial crisis, this did not prevent important nominal divergences. These ones prove the importance of non-monetary factors affecting relative nominal prices, such as fiscal policy and labor market institutions. New tools are necessary to limit these nominal divergences, otherwise real divergence will continue to weaken the euro.

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CONTENTS

LIST OF ABBREVIATIONS

ECB	European Central Bank
EMU	European monetary union
GFC	Global financial crisis
LTRO	Long term refinancing operations
MRO	Main refinancing operations
OMT	Outright monetary transactions
QE	Quantitative easing
VLTRO	Very long term refinancing operations

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EXECUTIVE SUMMARY

- The adoption of the euro in 1999 was a new step in the process of European integration. To strengthen the credibility of the euro area, the mandate of the newly created independent central bank, the European Central Bank (ECB), imposed a hierarchy between the inflation and output objectives: the former has the priority. The framework at the origin of this institutional setting assumed that inflation was a monetary phenomenon. Overall, the institutional setting was framed for a stable macroeconomic environment.
- On average, inflation has been close to 2% until the Global financial crisis (GFC), in accordance with the definition of the inflation target decided upon by the ECB.
- The advent of the GFC highlighted the contradiction between the original monetary setting and the real economy. While conventional monetary tools like lower short-term rates initially managed the economic slump, the protracted crisis at the zero-lower bound urged the ECB to resort to a long list of unconventional tools that culminated with the Assets Purchase program of 2015-2018. These ones have highlighted the lack of coordination with national fiscal policies and the lack of a stabilization tool at the Eurozone level. The under-estimation of non-monetary determinants to inflation has also proved harmful to the euro area where the unemployment rate still stands close to 8% of the labour force 10 years after the GFC. Despite below-target average inflation, it is remarkable that the discrepancy of inflation rates across Eurozone member states has remained stable since 1999. This has testified for the persistency of nominal divergence within the euro area.
- Nominal divergence has led to financial imbalances and to real divergence within the euro area, e.g. in France, Germany, Italy or Spain.
- The euro area thus requires operational tools to limit imbalances: a stabilization function at the Eurozone level, such as a European unemployment insurance or a European budget, and a change of mandate for the ECB. The latter has proved pragmatic during the crisis but the single mandate shall not impair the future use of pragmatism if a new crisis occurs. Consequently, the adoption of a double mandate, like the Fed, or a triple mandate, embedding price, output and financial stability, should be on the agenda.
- The monitoring of macroeconomic imbalances should also be refocused on these domestic imbalances with large spillovers and general equilibrium analyses should originate from national productivity boards and coordination improved in the European Semester.

1. INTRODUCTION

The adoption of the euro on January the 1st of 1999 was a new step in the process of European integration, leading to the advent of the European and Monetary Union (EMU) as laid down in the Maastricht Treaty (1991). To help enforce the credibility of the euro area, the Maastricht Treaty embedded the creation of an independent European Central Bank (ECB) meant to curb inflation as its major objective. Public deficits were capped and fiscal rules adopted in 1997 within the Stability and Growth Pact, yet no coordination strategy between monetary and fiscal policy was imposed. Under this institutional framework, the euro area should have become an area of monetary and financial stability generating investment and economic growth. History has shown that mere compliance with the academic constraint of rules/independence/credibility did not deliver the expected results (Creel et al., 2018).

The Maastricht institutional framework (see the appendix) was forged for a stable macroeconomic environment where GDP would smoothly tend towards its potential level at a stable inflation rate. The global financial crisis (GFC) tore the Maastricht framework apart. The Great Recession revealed the sensitivity of euro area Member States to three different factors: external financial shocks, growing public debts, and internal competitiveness. The financial crisis in the US spread to the euro area and required a substantial change in the implementation of monetary policy. Fiscal policy has had to come to the rescue, leading to substantial increases in deficits and debts. The early years of the euro area also showed the weaknesses of the institutional framework: it did not pay sufficient attention to nominal divergences – taking for granted that these were a transitory byproduct of real convergence – that spurred banking and financial crises in so-called peripheral countries of the euro area. Diverging nominal trends translated into current account imbalances, heterogeneous financing conditions and probably heterogeneous productivity trends.

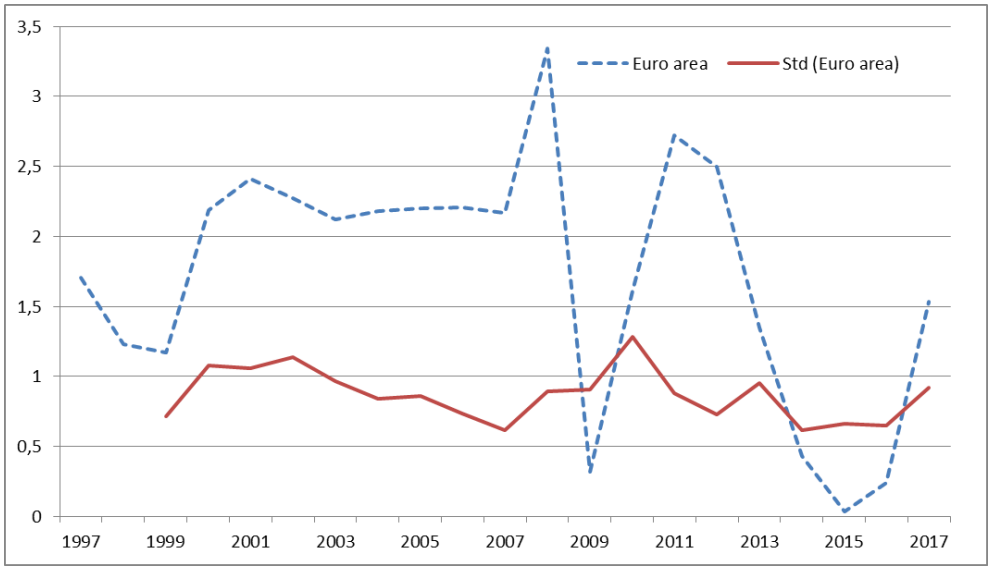
While the performance of the ECB at achieving its objectives has been relatively good on average, the persistency of inflation divergence and financial fragmentation across Eurozone member states has revealed that whatever it takes, the ECB cannot dampen all imbalances in the euro area.

Some institutions must be carefully (re-)designed to monitor and manage the necessary nominal convergence. Some proposals have already been made such as new councils and a European budget for stabilization, but their focus on nominal convergence should be clearly defined. Otherwise, the risk is that the euro could become a parenthesis in the history of Europe.

2. THE EURO AREA ECONOMY: A BRIEF ASSESSMENT

The euro area monetary policy's prime objective is "to maintain price stability" (Article 127, TFEU). Accordingly, the ECB announced in 1998 an operational definition of "a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%". In 2003, the ECB clarified its operational definition of price stability: the increase in the HICP should be "below, but close to, 2% over the medium term". As far as this objective is concerned, the ECB performance has been relatively good: the average inflation rate between 1999 and 2018 is equal to 1.7%. However, mixed evidence emerges from figure 1. It took more than a year for the ECB to reach a 2% inflation rate. Then and until 2007, the inflation rate remained close to but above 2%. It peaked at more than 3% after an oil shock before plummeting in the recession year of 2009. Since 2013, the inflation rate has remained substantially below its target. The inflation swings reveal either a strong external component or real downward determinants. They highlight the difficulty to prevent or dampen shocks rapidly in the Eurozone[1].

Figure 1: The inflation rate of the euro area, in percent



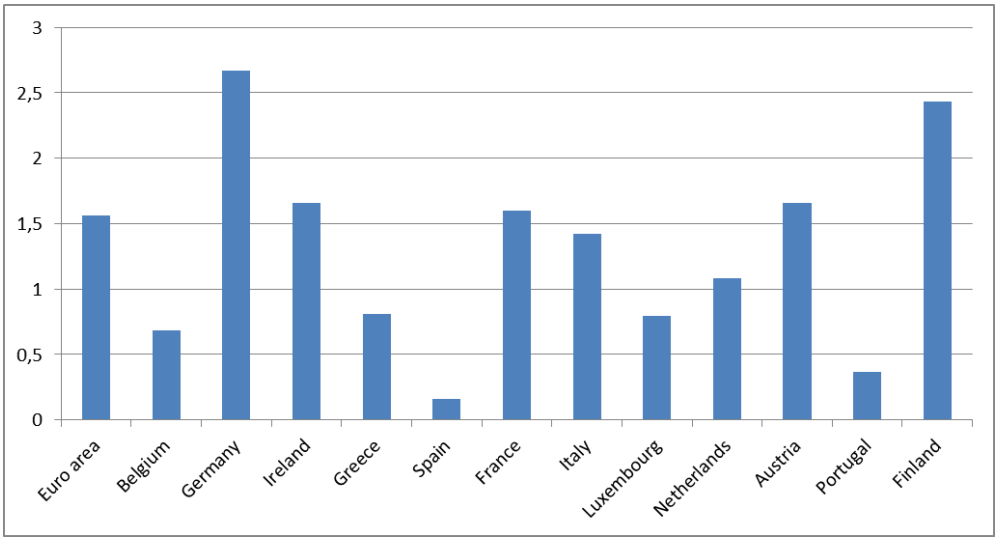
Source: Ameco, varying composition of the euro area, computations by the authors.

In a monetary union, inflation deviations across Member States can be destabilizing. Indeed, since 1999, the standard deviation of yearly inflation rates across Eurozone countries has been stable: therefore inflation divergence has remained despite the EMU creation. This generates diverging real interest rates and a pro-cyclical feature that can trigger financial stability risks (see e.g. Franks et al., 2018): under a single interest rate, countries with higher (resp. lower) inflation than the average will have lower (resp. higher) real interest rates than the average. The situation of real interest rates in the euro area in 2006 is very evocative in this respect (figure 2). Only three Member States (Austria, France and Ireland) had a real interest rate close to the average whereas all the others were largely above,

[1] Hartmann and Smets (2019) show evidence that the ECB was effective in anchoring 5-year ahead inflation expectations to its inflation target, although less so throughout the financial and sovereign debt crisis. They also show that "the higher uncertainty around the expected longer-term inflation forecast and the emergence of a significant negative skew in the balance of risks after the beginning of the sovereign debt crisis in particular suggests that the ECB was not able to fully dispel the probability of ending up in a low inflation/deflation regime (as had happened in Japan)".

e.g. Germany, or largely below, e.g. Portugal and Spain. The core-periphery divide is clearly visible here: peripheral countries which were in a catching-up process towards the core countries benefited from a positive monetary impetus which accelerated economic growth above potential, hence high inflation. In contrast, core countries had subdued economic conditions with low inflation while undergoing a negative monetary impetus.

Figure 2: Real interest rates in the euro area in 2006, in percent



Note: 10-year sovereign yields deflated by the contemporaneous consumer price index.

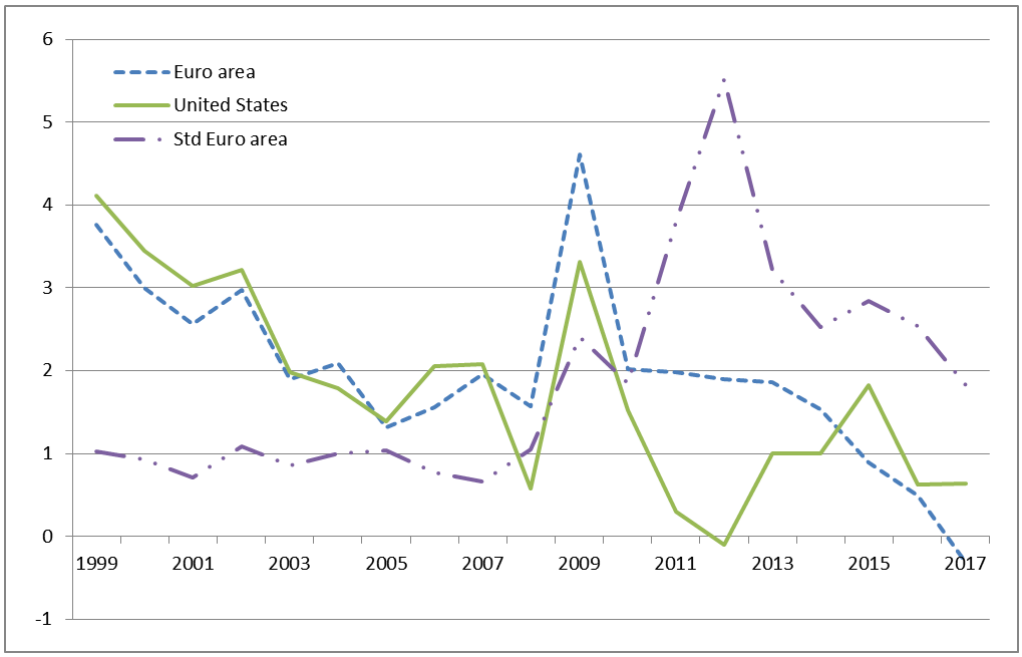
Source: Ameco, computations by the authors.

Evidence reported in figure 3 confirms this original drawback of the euro area. While real long-term interest rates declined substantially between 1999 and 2008, the discrepancy across Member States remained stable. Figure 3 also highlights the consequences of the GFC on interest rates. Unlike in the US where the real long-term interest rate decreased rapidly after its peak in 2009, the euro area rate stayed long at a level higher than before the crisis. More importantly, the standard deviation rose sharply but in contrast with the previous period, real interest rate hikes occurred in the periphery, not in the core. This is clear evidence of the continuous pro-cyclical feature of the ECB's monetary policy.

The performance of the euro area in terms of unemployment has also been mixed. The unemployment rate declined by two percentage points between 1999 and 2008 but the GFC and the European crisis pushed it to a historical peak at 12 percent of the labour force (figure 4). Although the unemployment rates of the euro area and the US were very similar in 2009 –the rise in the US unemployment rate was substantial after the GFC-, divergence has been very large after 2010. The US recovery was early and steady whereas the euro area entered into a second period of recession in 2012-2013.

The smooth functioning of the euro area embodied in the Maastricht Treaty assumed a stable economic environment that clearly disappeared with the advent of the GFC and led to important changes in the euro area policy mix. Contrary to the FED, economic stabilization is not given the same weight as inflation in the ECB's mandate. The high unemployment rate is nevertheless the likely cause of the low inflation rate, below target. Indeed, the Phillips curve is still a valid framework within the Euro area economy (Mojon and Ragot, 2018).

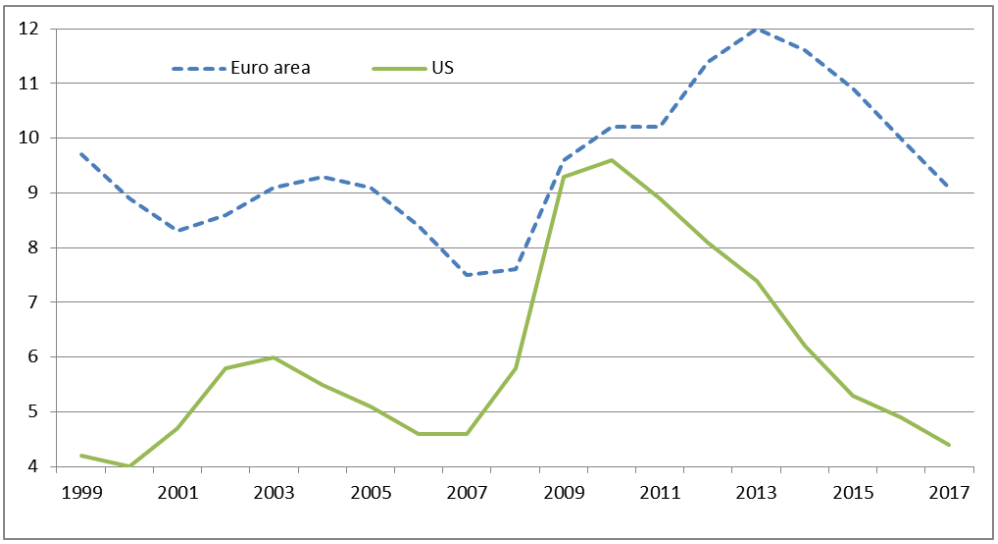
Figure 3: The real long-term interest rate in the euro area, in percent



Note: 10-year sovereign yields deflated by the contemporaneous consumer price index.

Source: Ameco, computations by the authors.

Figure 4: Unemployment rate, in percentage points of the labour force



Source: Ameco.

3. MONETARY POLICY DURING THE CRISIS: A NEW FRAMEWORK

The global financial crisis and the sovereign debt crisis were followed by a double dip recession in the euro area raising important challenges for policy makers. They have led the ECB to modify significantly the conduct of monetary policy, implementing notably unconventional measures, which served three purposes: fixing a liquidity squeeze in the banking system, dealing with fragmentation and impaired transmission of monetary policy, and mitigating the risk of deflation.[2] These changes have sometimes brought the ECB into new paths that had not been contemplated in the Treaty. This new policy has not been sufficient to stabilize inflation, and to allow for re-convergence. This is the main lesson of European crisis: the key-role of factors outside the scope of monetary policy affecting nominal dynamics (aggregate demand) and nominal divergences (wage dynamics and financial imbalances). The implications will be derived in the next Section. This one presents a summary of the evolution of monetary policy in this environment.

The ECB had first to meet high liquidity needs. To that end, it has modified the provisions of liquidity to banks with the fixed-rate full-allotment MRO (Main Refinancing Operations) procedure since October 2008 and several longer-term refinancing operations, with an extended maturity. These changes represented an evolution more than a revolution in the implementation of monetary policy. The operational framework had been established recently so that liquidity could already be allocated to a large number of financial institutions against a large set of eligible assets; in the end, changes have only concerned the maturity of operations and the auction system, i.e. the rules through which liquidity is allocated. However, the nature of the crisis and the deep recession in the euro area required more substantial changes. The ECB launched its first assets purchase programme – the Covered Bond Purchase Programme (CBPP) – in June 2009 to revive the covered bond market, an important source of market funding for commercial banks. Compared to initial measures, the implementation of assets purchase has more radically changed the way monetary policy was implemented. For the first time, the ECB intervened on financial market – though assets purchases – rather than through direct lending to the financial institutions. The aim was to influence assets' price on a targeted market. The programme initially amounted to 60 € billions of assets that should be bought by the Eurosystem from June 2009 to June 2010. The programme was then extended in November 2011 (CBPP2) and in June 2016 (CBPP3). With the CBPP programmes, for the first time, the ECB aimed at easing financing conditions on a single and targeted market. By the end of 2011, the ECB was still concerned with risks of the banking system as a vicious feedback loop arising from the connections between banks and sovereigns.[3] In December 2011 and March 2012, it decided to provide a 3-year maturity funding for the banking system – the VLTRO (Very long-term refinancing operation) – to secure access funding for the banking system. Even though, this operation took the form of a LTRO, the extension of maturity to 3 years indicated that the ECB was intervening beyond the standard maturity of monetary operations. The frontier between liquidity and solvency problems was reached. All those "liquidity" measures were not only important to avoid a systemic liquidity crisis, they also helped to stabilize the economy by notably supporting credit supply.[4]

The financial crisis and the recession have put public finances under pressure and highlighted weaknesses of the euro area. Financial markets have considered that public debt might become unsustainable in some – peripheral - countries and asked higher risk premia. Besides, macroeconomic

[2] The aim here is not to provide an exhaustive description of all the measures taken by the ECB during the crisis but to highlight the major changes and discuss how they radically modified the framework of monetary policy.

[3] See Shambaugh (2012).

[4] See Giannone et al. (2012).

imbalances, which had been overlooked before 2007, suddenly erupted as a concern. Cross-border banking flows have strongly slowed down leading to financial fragmentation.[5]

The sovereign debt crisis, which started with Greece at the end of 2009 resulted in a sharp increase of sovereign yields. The ECB felt concerned with those issues as it implied an impaired transmission of the common monetary policy notably in those peripheral countries. To that end, it launched the Securities Market Programme (SMP), through which it could buy government bonds issued by countries facing higher risk premia. It was a radical change for the conduct of monetary policy as, this time, the ECB purchased public debt on the secondary market, a measure that was unconceivable before the crisis. The main objective of the SMP was not primarily monetary easing per se but most and foremost to improve its transmission across Eurozone countries and therefore implicitly to thwart the forces of market sentiment. However, during the summer of 2012 the contagion of the Greek financial crisis amplified towards other peripheral countries (Portugal, Spain, Ireland, Italy). The President of the ECB announced that the ECB "would do whatever it takes to preserve the euro" and he announced a new program, Outright Monetary Transactions (OMT), of conditional purchases of government bonds, which has never been activated. These measures contrasted with those taken by other central banks as they were designed to address the specific features of the crisis in the Eurozone and of its institutions (Cour-Thimann and Winkler, 2012). The aim was to repair the broken transmission of monetary policy. However, it acknowledged that a single monetary policy would not be able to cope with financial fragmentation. Without fiscal solidarity between members and stabilisation mechanism, only the selected assets purchase policy implemented by the ECB within the SMP and potentially within the OMT could cope with financial fragmentation and imbalances.

The SMP was challenged by Jürgen Stark, a member of the Governing Council, who considered that those assets purchases were financing public debt issued by Member States. In his view, it was violating two provisions of the Treaty: the clause of non-bailout of States within the euro area and the ban on funding of budget deficits by the central bank. The OMT was also strongly criticized by the Bundesbank and by German citizens considering that it might lead to a budgetary transfer between European countries. The opinion of the Court of Justice of the European Union (CJEU), delivered in June 2015, validated the legality of the OMT, the Court considering not only that "the purchase of sovereign debt securities constitutes a measure of monetary policy", but also "that the acquisition of sovereign debt does not constitute monetary financing prohibited by the Article 123 of the TFEU". These episodes highlight the fact that the ECB has implemented measures that had been unforeseen before the crisis. It clearly raised the question of the appropriate instruments that can be used by the central bank. Exceptional circumstances call for exceptional decisions. Even though the CJEU gave credit to the decisions taken by the ECB, it certainly call for further clarifications about the set of tools that can be implemented to achieve the goals assigned to the ECB. These clarifications are all the more important that empirical evidence suggests that unconventional tools have been effective in reducing sovereign yields in crises countries.[6]

The assets purchase policy amplified in 2015. The ECB implemented a quantitative easing (QE) programme to deal with low growth and low inflation in the euro area. It must be noticed that the Assets Purchase Programme (APP) followed several decisions taken in 2014 as the ECB worried about

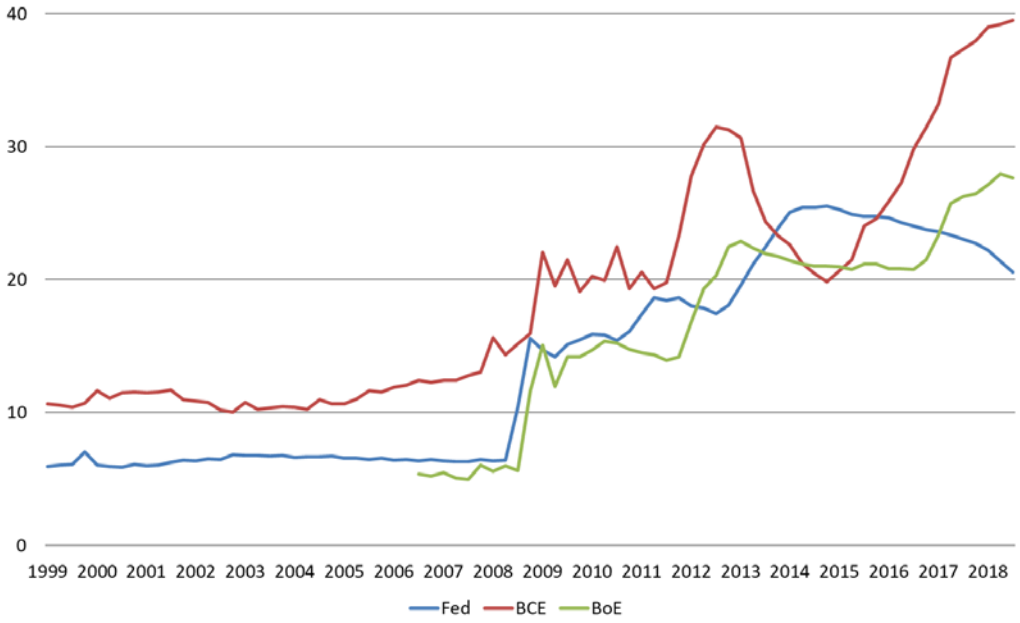
[5] See Bouvatier and Delatte (2015) and Mayordomo et al., (2015) for empirical assessments of the consequences of the crises on international financial flows. Durré et al. (2014) report that "cross-border claims of euro area banks on monetary and financial institutions (MFIs) located in other euro area countries decreased by €670 billion between September 2008 and September 2012" while "cross-border loans [to the domestic nonfinancial private sector] decreased by €450 billion over the same period".

[6] See Szczerbowicz (2015), Altavilla et al. (2016), and Ghysels et al. (2017).

the macroeconomic situation of the euro area and the persistence of low inflation.[7] From March 2015, the PSPP has become the main tool through which monetary policy eased. Between the announcement of the Extended Assets Purchase Programme (EAPP) in January 2015 and 2018-Q3, the amounts of ECB's assets and liabilities expressed in percentage points of euro area GDP almost doubled to reach 40 % (figure 5). It is close to what was done earlier by the Federal Reserve and the Bank of England and implied not only a sharp increase in the size of the Eurosystem's balance sheet but also a radical change in the composition of the assets held by the Eurosystem.

Figure 5: The size of central banks' balance sheet

In % of GDP



Sources: ECB, BoE, Federal Reserve, Eurostat, ONS, BEA.

QE acted as a complement to standard monetary policy and helped to ease financing conditions by directly influencing the longer end of the term structure. It resulted in a much wider monetary stimulus as illustrated by shadow rates, measuring the implicit stance of monetary policy when non-standard measures are encompassed (figure 6). The effectiveness of this change is still hard to measure and this policy has some side effects.[8] First, it has been criticized for the inflation risk it could produce. Until 2018, this risk has not materialized though. This is an important lesson against economists defending a naïve quantitative theory of money. Second, its effectiveness at fixing the issue of fragmented interest rate channels across euro area Member States remains disputable (see, e.g. Horvath et al., 2018, for a recent empirical investigation). A third criticism, assuming these unconventional policies have been effective, states that without a fast and sharp reduction in the size of the balance sheet, the ECB would lack margins for manoeuvre if a new crisis occurs. This argument is not very convincing as it is simply time-inconsistent: there will always be a next crisis, it is not a

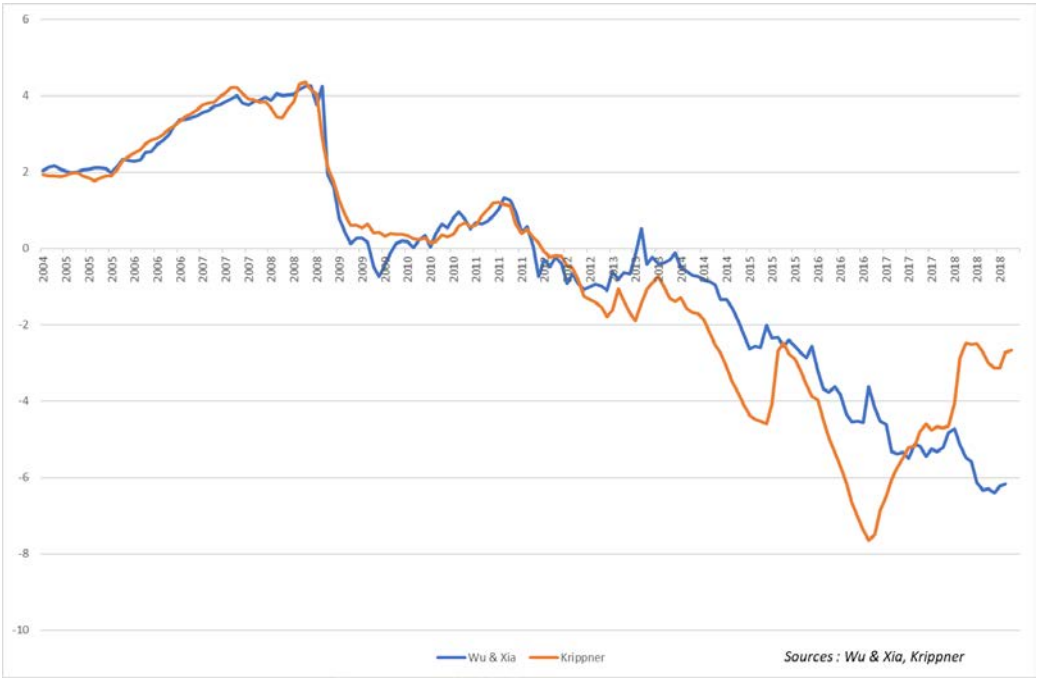
[7] The APP includes all assets purchase programmes: CBPP, PSPP (public sector purchase programme), ABSPP (asset-backed securities purchase programme) and CSPP (corporate sector purchase programme).

[8] Empirical evidence on unconventional measures has suggested that they have been effective at reducing long-term interest rate either through the signalling or the portfolio balance channels

reason not to act in the current one.[9] Swanson (2018) wrote recently about the Federal reserve that it was "not very constrained by the lower bound on nominal interest rates" as central banks may implement negative interest rate policies and have now additional tools available (forward guidance and assets purchase).

Figure 6: Shadow rates for the euro area

In %



Sources: Wu & Xia (2016), Krippner (2013), Thomson Reuters.

Finally, despite a historical monetary policy easing, with shadow rate reaching between -6% and -8 % in the euro area, headline inflation remains below the 2% target and the economic recovery is still fragile. Unemployment rate remains above its pre-crisis level and mass-unemployment is still an issue in some countries (Greece and Spain, notably). Though monetary policy is effective, it cannot fix all the problems and the ability for central banks to achieve price stability still relies on the Phillips curve. The latter highlights that inflation is also driven by aggregate demand. Consequently, fiscal policy plays a key role. Automatic stabilizers should remain the first shock-absorber at the national level. Their efficiency should therefore not be mitigated by austerity measures that reduce the scope of the welfare state otherwise; they need to be complemented at the euro area level through a stabilization mechanism. A budget for the euro area or an unemployment insurance mechanism (Aparisi de Lannoy and Ragot, 2017) are options which have been raised in the public debate. However, with large negative shocks, discretionary fiscal policies are also needed and should not be excessively constrained by fiscal rules. In any case, a better coordination of monetary and fiscal policy is necessary to deal with global and domestic shocks.

The protracted crisis in the euro area also gave rise to a new crisis management institution empowered to make loans between euro area member states. The risk of default of the Greek

[9] This claim is similar to the parabole of the last taxi of Goodhart (2015).

government led in May 2010 to the development of an emergency plan which revealed one of the shortcomings of European governance, namely the absence of a lender of last resort. To remedy this and to cope with the persistence of the Greek crisis, the euro zone set up a European Financial Stability Facility (EFSF) which has become the European Stability Mechanism (ESM). The latter has a conditional capacity of loans for the benefit of a State experiencing financial difficulties. A loan may be granted by the ESM provided it is accompanied by an IMF loan or the conditions for debt restructuring have been previously defined.

Beyond, those new institutional features, the ECB has shown that it may resort to some monetary tools to deal with fragmentation and heterogeneity of the transmission of monetary policy. These tools may yet not be enough and the issue of imbalances deserves a special attention.

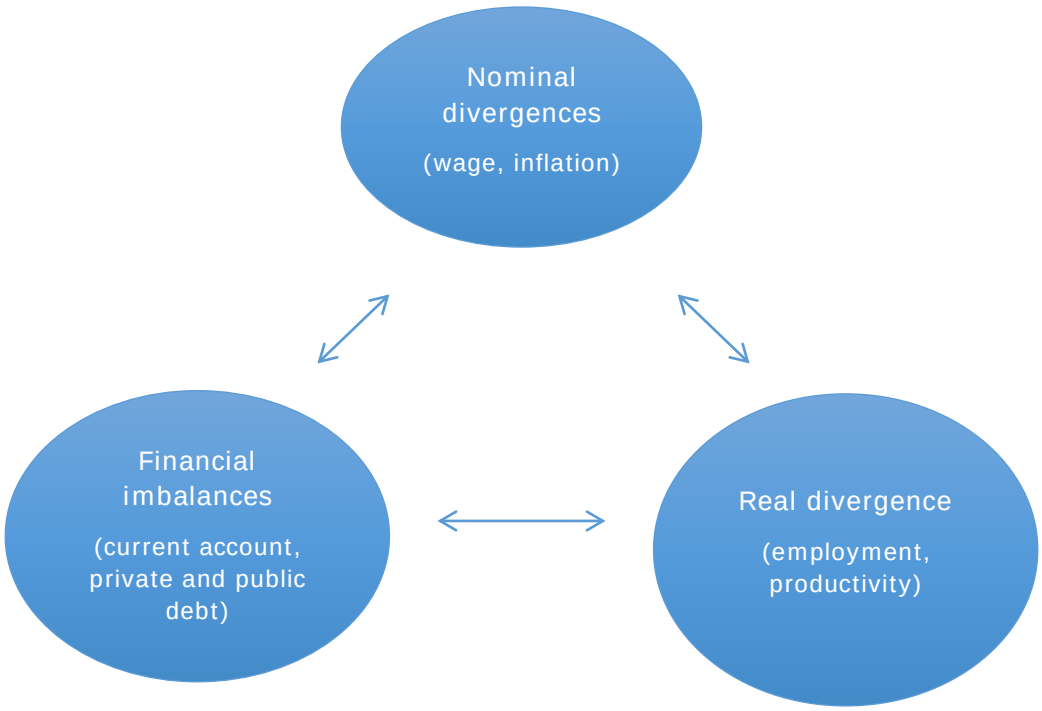
4. DEALING WITH IMBALANCES IN A MONETARY UNION

The real divergences within the Euro area are impressive. Unemployment rates, GDP per capita, public debt, or current account have moved apart. One should obviously avoid attributing all these dynamics to the euro. Many other factors, such as international trade and technology dynamics, occurred during the same period. Nevertheless, the single currency, by definition, prevented using standard macroeconomic instruments to deal with imbalances, such as the nominal interest rates and exchange rates movements. In addition, underlying nominal divergences were not monitored carefully, due probably to the implicit assumption that increased competition on the goods market and financial integration were sufficient to insure convergence. This assumption has been wrong and underlying divergences have been costly managed after the crisis with new monetary policy instruments, as seen in the previous Section, but also with internal devaluations (i.e. change in institutions on the labor market to ensure convergence in unit labor costs).

The goal of this part is to provide a tentative framework to think about divergences, within the Eurozone and to think first about nominal trends as potential *cause* of these divergences and, second, to analyze if nominal evolutions within the euro area, can be a *solution* to reduce these divergences. Both parts of the analysis are key to think about the "Euro at 20". Finally, this high-level analysis will refer to some existing works, because it is possible to justify rigorously each claim, within the pages of this policy brief.

First, a survey of the literature on Euro imbalances identifies three broad types of imbalances: 1) Financial imbalances, 2) real imbalances 3) Nominal imbalances.

Figure 7: Three types of imbalances



Some examples help identifying causalities. In bracket, we refer to the type of imbalances (real, financial and nominal)

1. Capital inflows in Spain before the crisis generates an over-evaluation of house prices and a deficit of the current account (Financial), this generated a mis-allocation of capital and labor in the construction sector (Real), contributing to transitory wage inflation (Nominal). Many economists now insist on financial imbalances being the cause of real and nominal imbalances in, at least some countries. (Martin and Philippon, 2017)
2. Wage moderation in Germany, starting after the German reunification (Dustman at al. 2014) decreased substantially unit labor cost in Germany compared to other countries with roughly the same productivity trends, as France (Nominal). This contributed at least partially to the major European disequilibrium, which is the German current account (Financial)(Le Moigne et Ragot, 2015).
3. High inflation and low real interest rate in Italy contributed to low credit costs. These ones benefited mostly low productivity firms, having strong connections with banks (Financial). This contributed to a mis-allocation of capital in Italy, (Gopinah et al. 2018). (Real). The low growth of income per capita, generated some social concerns. To deal this legitimate concern some measures generating additional inflation could be implemented, contributing to additional nominal imbalances, due to inflation pressure (Nominal).
4. Inflation dynamics higher than in other countries after the introduction of the Euro (as Germany) or after the 2008 crisis (as Spain), generated a high relative exchange rate of France (Nominal). The outcome is that France is a country with one of the most negative current account in Europe (Financial). This competitiveness issue was partially the motivation of an attempt of internal devaluation with the Crédit d'Impôt pour la Compétitivité et l'Emploi (CICE). The outcome of this policy is still under debate (Ducoudré et al. 2017)

Finally, the management of these divergences generated the social demand for heterogeneous fiscal policies (fiscal devaluation as CICE affecting the French budget in 2019, transfer to decrease inequality and the social cost of convergences in Spain and Italy). This translated, ultimately into divergence in public debt dynamics, which should be seen as the result of the public management of these three types of divergences.

Although nominal imbalances have been put at the top of Figure 7, these ones should also be seen as the cumulative outcome of real and financial imbalances. In addition, the poor macroeconomic policy mix until 2014 in some European countries (cf. the austerity debate), generated additional diverging nominal trends.

An assessment of the cumulated nominal imbalances can be provided by measuring the amount if internal devaluation necessary to reach an internal equilibrium (ie. to close the about gap), and external equilibrium (ie. to stabilize net foreign asset position, and to have a sustainable current account position).

The following Table is taken from Ducoudré et al (2018). It provides the nominal adjustment (GDP deflator) to reach this definition of a sustainable equilibrium (See the paper for an analytical presentation of the methodology).

Table 1: Nominal adjustments to correct imbalances, 2000-2017 (relative to the Eurozone average, in %)

	AUT	BEL	DEU	ESP	FIN	FRA	GRC	IRL	ITA	NLD	PRT
2000	5	17	-6	-7	59	12	-60	14	5	11	-54
2001	4	8	-2	-10	72	9	-56	10	4	11	-55
2002	28	15	4	-12	76	4	-61	9	-3	10	-50
2003	21	8	4	-9	47	6	-72	8	-1	19	-45
2004	23	9	12	-18	53	1	-64	5	-3	22	-53
2005	27	1	15	-20	35	2	-69	2	0	24	-61
2006	34	-1	20	-23	42	4	-81	-2	-1	31	-59
2007	38	3	25	-24	53	3	-90	0	1	26	-53
2008	51	-14	26	-20	36	4	-87	-11	0	25	-61
2009	41	-13	23	-12	20	3	-85	-13	-2	29	-59
2010	35	3	21	-12	11	0	-78	-6	-8	27	-53
2011	20	-15	22	-13	-14	-2	-69	-9	-8	26	-33
2012	16	-11	18	-11	-24	-7	-44	-18	-5	22	-21
2013	14	-14	15	-10	-25	-6	-36	-14	-4	18	-8
2014	16	-16	17	-11	-24	-9	-32	-9	-1	13	-14
2015	8	-15	16	-11	-19	-9	-27	24	-5	10	-15
2016	10	-13	15	-7	-13	-10	-32	2	-2	9	-11
2017	8	-18	11	-6	-5	-9	-30	21	-2	11	-11

Source: Ducoudré et al (2018).

Table 1 confirms well-known trends. German relative undervaluation is 11% in 2017, whereas France overvaluation is 9%. Italy does not see a major price level problem. Spain and Portugal experience a continuous reduction of the overvaluation of their prices. In addition, the dynamics of the imbalances is somehow reassuring. One can observe a global reduction in imbalances in many countries.

The reduction of imbalances after the crisis of 2008 is only very partially the results of market forces. Some very active policy interventions were implemented to correct economic imbalances. Labor market reforms in some countries as Spain and France, contributed to decrease nominal wages and thus unit labor cost, contributing to reduce the price level. (iAGS, 2017 on labor market reform).

The Spanish economy shows that although nominal divergences may be the result of financial imbalances. Some policies directly affecting price and wage level have a solution of these imbalances. Macroeconomic imbalances were restored at the cost of some new undesirable evolutions, such as the decrease in the labor share and increasing inequality.

5. INSTITUTIONAL IMPLICATIONS

Some recommendations stem from the preceding developments. They all require some institutional changes: some are minor and could be easily implemented (#1 and #2), whereas the others are major (#3 and #4).

#1 Macroeconomic Imbalances. These imbalances are monitored during the European Semester and one can say that they are already embedded in the Macroeconomic Imbalance Procedure (MIP). This procedure is indeed useful, but as many economists have acknowledged, it lacks two key aspects (Ragot, 2017). The first one is a clear focus on issues in each country with high externality on other member states, or on the resilience of the Eurozone as a whole. Second, a clear hierarchy of the problems should lead to assessment of key imbalances (compared to less severe ones).

As an example, information in Table 1 should be key to provide a hierarchy of recommendations, as nominal imbalances are, at the end of the day, the main problem in a monetary union.

#2 National Productivity Boards. National Productivity boards (NPB) are independent institutions to analyze productivity and competitiveness. These institutions should analyze nominal divergences, which are an important aspect of competitiveness (as seen in Table 1). These nominal divergences can be understood only in general equilibrium. The reduction of the competitiveness of one country within the euro area is the counterpart of the rise of competitiveness of other countries. As a direct consequence, the convergence of competitiveness (measured by relative factor costs for instance) implies that some high exporter countries see a relative reduction of their competitiveness. Hence, only the relative evolution of competitiveness matters.

The same reasoning does not apply to productivity. An increase in productivity (correctly measured, i.e. taking into consideration environmental issues) is a good thing as it reveals a more efficient use of factors of production[10].

NPB's insights should also be carefully coordinated during the European semester: general equilibrium issues that help identify nominal divergences shall be understood at the level of the Eurozone. Domestic recommendations elaborated during the European semester shall also be embedded in Eurozone-wide estimations, to help identify the spillovers of the recommended solutions to other member states.

#3 Euro area stabilization function. Although the final statement of the Euro Summit of December 2018 limits the scope of a Eurozone budgetary instrument to "convergence and competitiveness for the euro area", the capacity of Eurozone members to dampen either domestic or global shocks must improve. Pro-cyclical fiscal policies during the latest crisis have been doubly counterproductive: first, on GDP outcomes, via large fiscal multipliers, and, second, on the necessity to resort almost entirely on ECB's policies. The burden of stabilization should be better shared between Eurozone governments and the ECB. A European unemployment (re)-assurance scheme or a European budget would help.

#4 ECB's mandate. In practice, one can argue that the mandate of the ECB has moved from a single one to a dual and even a triple mandate with the adoption of unconventional measures and the Banking Union. The strengthening of the euro area, most importantly in the case of a new financial crisis, should urge an institutional change in the ECB's mandate with three objectives – price, output and financial stability-, so that deeds would definitely match words. International examples show that having multiple objectives does not prevent accountability and efficiency.

[10] We do not discuss here the difference between factor productivity and total factor productivity, which is should be part of the analysis of National Productivity Boards.

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APPENDIX: THE INSTITUTIONAL FRAMEWORK FOR MONETARY POLICY IN THE EUROZONE

While 11 countries adopted the euro in a first stage (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain), there were 19 out of 28 EU Member States for the 20-year birthday of the euro. Greece joined in 2001, Slovenia in 2007, Cyprus and Malta in 2008, Slovakia in 2009, Estonia in 2011, Latvia in 2014 and Lithuania in 2015.

EMU institutional provisions, applicable since 1 January 1999, were mainly laid out in the Maastricht Treaty, signed on 9-10 December 1991. The Amsterdam Treaty in 1997 introduced additional provisions, mostly related to fiscal policymaking after the adoption of the euro (2 regulations on the SGP). The Lisbon Treaty in 2007 amended the Maastricht Treaty or Treaty on the European Union (TEU), e.g. by establishing the euro in article 3. The Lisbon Treaty also amended the former Treaty of Rome, now Treaty on the Functioning of the European Union (TFEU), and consolidated the organisational and functional details of the EU.

The European System of Central Banks (ESCB) is composed of the ECB and the national central banks of the 28 EU Member States. It is entrusted with the euro area's monetary policy whose prime objective is "to maintain price stability" (Article 127, TFEU). Article 127 adds a secondary objective: "without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union".

The tasks of the ESCB are not limited to the implementation of monetary policy for the design of which the ECB retains full independence of means. They also include foreign-exchange operations, the operation of the payment systems, and *contributions* to the prudential supervision of credit institutions and the stability of the financial system. In the latter case, it is only after the GFC arose that a Banking Union emerged, with a single supervision mechanism left to the ECB.

All EU Member States must ensure that the ECB and their national central banks are independent from "Union institutions, bodies, offices or agencies, from any government of a Member State or from any other body" (Article 130, TFEU). The TFEU has introduced accountability provisions, e.g. a monetary dialogue between the ECB, on the one hand, and the European Parliament, the Council, the Commission and the European Council, on the other hand (Article 284, TFEU).

The TFEU forbids monetary financing of public debt: "overdraft facilities or any other type of credit facility with the ECB or with the (national) central banks in favour of (…) public authorities (…) shall be prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments." (Article 123, TFEU).

The TFEU also adds a "no bail out" provision that shall entirely limit risk-sharing between the EU Member States: "The Union (or a Member State) shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any (or another) Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project" (Article 125, TFEU).

While the ESCB is given the task of implementing foreign-exchange operations, it shares with the Council the responsibility of exchange rate policy: "In the absence of an exchange-rate system in relation to one or more currencies of third States (…), the Council, either on a recommendation from the Commission and after consulting the European Central Bank or on a recommendation from the European Central Bank, may formulate general orientations for exchange-rate policy in relation to these currencies. These general orientations shall be without prejudice to the primary objective of the ESCB to maintain price stability." (Article 219, TFEU)

Eurozone monetary governance was framed for a stable macroeconomic environment. While the ECB policy framework changed much after the global financial crisis, this did not prevent important nominal divergences. These ones prove the importance of non-monetary factors affecting relative nominal prices, such as fiscal policy and labor market institutions. New tools are necessary to limit these nominal divergences, otherwise real divergence will continue to weaken the euro.
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