The Optimum Currency Area Theory and the Euro

Robert A. Mundell Global Risk Annual Lecture as part of the Global Risk Series

With his careful analysis of Optimum Currency Area (OCA) theory and its application in the Eurozone, Professor Vitor Constancio, former Vice President of the European Central Bank (2010-2018), pays homage and evaluates the intricacies of OCA theory conceptualized by the Economic Nobel Prize laureate, Robert A. Mundell. Dr. Constancio shares his perspective on the European Sovereign Debt Crisis and explains the shortcomings of the European Monetary Union (EU) framework that factored into a period of economic instability. His lecture illustrates the limitations and benefits of currency homogeneity in Europe and Dr. Constancio shares his hope for improvement and economic reform – ultimately envisioning continued economic stability for the EU and its member states.

The OCA theory rests on the capability of a given geographic area to be economically efficient through the adoption of a single currency. Prior to Dr. Mundell’s development of the OCA theoretical framework, countries maintained their national currency and monetary unity across borders was thought to be problematic for sovereign governance. The subsequent iterations of OCA models delved into issues of how to address mobility of labor, price and wage fluctuations, inflation proximity criteria, the role of capital markets in income financing, asymmetric shock identification in the financial system, and necessary political integrations. Dr. Constancio notes that these variables and the OCA theoretical make-up in general were often contradictory as is with most econometric work. Though the early OCA theorists were in disagreement in some senses their determination for the materialization of monetary unification pushed the idea forward. At this point it was widely accepted that there was substantial evidence in support of a monetary union and that the financial markets for goods, services, and capital would best thrive under a one-currency model.

Transitioning into the eighties, components of the original OCA theory prevailed yet anti-keynesian macroeconomics and its prioritization of inflation control over output stabilization led to a nuanced OCA theory. Dr. Constancio argues this development is central to the Maastricht list of criteria and EU organizing principles. The flaws of the new OCA theory for Dr. Constancio are trifold; 1) a lack of a crisis management system to resolve dramatic fluctuations in the sovereign debt market resulting from a devaluation of public debts, 2) absence of macro stabilization necessary for responding to asymmetric shocks, and 3) a failure to establish conservative regulatory principals in the financial system in tandem with monetary integration. He sees the narrow scope of the OCA theories as cause for their inability to foresee repercussions linked to a politically conservative approach that was intent on maintaining economic and financial governance at the national level. Further, each group’s inadequate explanation of the Crisis he views as an extension of their problematic frameworks that overlooked the vulnerability of public debts and irregular behaviors of financial markets. The framing of the Crisis as a competitive/balance of payments or excess fiscal imbalance issue negates the true driver of the economic instability: financial shocks. Dr. Constancio states that the narrative
surrounding the Crisis should be understood as connected to two shocks in the financial market one being the drop in interest rates following the Maastricht Treaty and two, the significant increase in credit flows from banks in EU core countries to banks in the EU periphery countries.

The actions taken starting in 2010 to remedy the Crisis have allowed financial markets in EU countries to become relatively stable, and in 2014 these countries experienced growth and reduced current account and budget deficits to below 3%. So, what does the future entail for the EU? To prevent a similar economic collapse from occurring, Dr. Constancio calls for economic reform through the development of a European safe asset and a central financial capacity to provide a safe fund and regulate communication surrounding national fiscal policies. With the possibility of a global economic depression looming, he argues that there needs to be a mechanism in place for the EU to remain resilient and responsive to swift and dramatic market pressures. His optimism for continued partnership among EU member states is apparent, and he concludes with remarks about the importance of a united front stating, “No country can abandon ship without becoming victim of tempestuous seas without an anchor, lost in waves of weak currencies, high inflation and high interest rates.” Ultimately the future of the EU is promising and Dr. Constancio’s analysis brings to light the linkage between OCA theory and the Euro, presenting the intricacies of monetary unity among EU states.

I am grateful and honoured by the invitation to speak at the Robert Mundell Global Risk Annual Lecture at this prestigious University. In choosing my subject, related to the euro area vicissitudes, I had to start by paying homage to Professor Mundell for his creation in 1961 of the Optimal Currency Areas (OCA) theory and for his strong support for the materialization of the European monetary union. In a 1970 Conference in Madrid, together with new arguments justifying currency unions, he presented “A plan for a European currency” \(^1\). It is a text that transcends the mere enumeration of the project’s economic advantages, also highlighting the political economy dimension of its role in building Europe as an autonomous power in world affairs. Later, I had the opportunity to read an internal Note he wrote for the European Commission that ended with a forceful call for action: “Set the printers”. Professor Mundell had always shown a staunch preference for fixed exchange rates and a personal episode testifies to that. When I was a young Finance Minister of Portugal we were adopting a crawling peg to manage the exchange rate, as inflation had been for years higher than in our European trading partners. A friend, who had been his student, brought Professor Mundell to meet me at the Ministry where he tried to convince me that we should instead operate a significant devaluation, fix the exchange rate, and defend the new parity. I was not persuaded, however, as I felt that in the still politically unstable environment of our young democracy at the time, there was not enough institutional and policy credibility to make that new regime successful. We had already presented our membership application to enter the European Community which was then distant from a monetary unification project after the demise of the experiences to stabilise exchange rates in the follow-up to the Werner Plan.

Naturally, OCA theory had continued to develop with many empirical studies discussing its application to Europe. I thought, therefore, that it would be interesting to explore today the connection between the OCA

theory and the evolution of the euro area by organising my exposition around three questions: 1) What was the role of the OCA theory in providing motivation for the European monetary union and in influencing its initial design; 2) Does the OCA theory help to explain the reasons for the difficulties encountered by the euro area; 3) and finally, what advice does the theory provide about initiatives to improve the euro area stability and robustness.

**OCA theory developments and the initial design of European monetary union**

To address these questions, we need a brief reminder about the OCA theory evolution since its inception. It emerged in the context of international monetary economics developments that gave us two years later the Mundell-Fleming model. The thought breakthrough of the 1961 Mundell seminal paper, was to ask anew the question of “what is the appropriate domain of a currency area?” raising the possibility of monetary unifications instead of just continue to discuss the alternative between fixed or flexible exchange rates. Consequently, it was a theory mostly concerned with identifying economic features that would make the loss of monetary and exchange rate policies less important or with finding compensating mechanisms that could offset that loss, both from the perspective of real adjustment and stabilisation of output. From the initial list of mobility of labour and flexibility of wages and prices (Mundell), we had several well-known extensions from the degree of openness (McKinnon) to the sectoral diversification and fiscal integration (Kennen). In the early seventies Fleming and Corden added the inflation proximity criterium and Mundell and Ingram the role of capital markets in income smoothing and financing. Already then, some

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authors, like Tower and Willet (1976)\(^6\) highlighted the importance of a high political integration as needed for successful monetary unification.

The heterogenous list of criteria that sometimes could even contradict themselves, e.g. between openness and diversification, always plagued the theory. It also led to the search for encompassing tests like the absence of asymmetric shocks or, later, the synchronisation of the economic cycles. Nevertheless, it was only with the revival of the monetary unification objective in the late eighties that we saw new efforts to develop the theory and a flurry of empirical studies that stretched during the nineties and the 2000s.

There were also in the nineties some efforts e.g. by Bayoumi (1994), Mélitz (1996) Ricci(1997) and Beine and Docquier (1998)\(^7\) to develop general equilibrium models, trying to encompass different criteria and allowing general welfare analysis. However, it is difficult to include all the aspects at stake and theoretical models, even later ones, could not really deliver an integrated theory. The approach left available was a sort of cost-benefit analysis with subjective weighs given to the different criteria and some encompassing tests. Unavoidably, in this type of econometric work, we find many papers with contradictory conclusions. I will just mention some of the more relevant controversies.

Regarding the identification of asymmetric shocks, the most well known paper by Bayoumi and Eichengreen (1992)\(^8\), using a AD-AS model and the Blanchard-Quah decomposition, identified a set of core countries with high demand and supply correlations with Germany, the anchor country; and a periphery of countries with lower correlations, potentially subject to asymmetric shocks. The model was critised in view of the assumptions made that demand shocks, either real or nominal/monetary, would have temporary effects whereas supply shocks left behind permanent effects. These assumptions were essential for the identification strategy, but ignored hysteresis and path-dependency that generate demand shocks


interacting with supply and produce permanent effects. Another objection is that the paper does not control for the possible significant policy changes during the sample period 1960-1988. Another point, made by Daniel Gros (1996)\(^9\) is that the more relevant distinction is between domestic and external shocks, especially to exports. Gros illustrates that shocks to exports were not meaningful determinants of output or unemployment in European countries.

A different strategy to assess the risks of asymmetric shocks has been to analyse the degree of synchronisation of the economic cycle in member countries. Artis and Zwang (1997, 1999)\(^{10}\) find that since the beginning of the Exchange Rate Mechanism (ERM) a European common cycle emerged and that among member countries “...the business cycles phases have become more synchronous through time”, making more unlikely the materialization of asymmetric shocks. Same conclusion is reached by other authors, including Paul de Grauwe (1997)\(^{11}\) who concludes that “Most ... EU Countries have now converged so much un terms of the Maastricht criteria that this distinction between a core and a periphery cannot be made anymore”.

Bayoumi and Eichengreen(1997)\(^{12}\) later created an evolving OCA index based on forecasting regression of the exchange rate variability, with regressors measured in relation to Germany that included output, two trade related variables and country size. The extent of the forecasted exchange rate standard deviation, calculated for rolling 10 years samples, allowed the identification of 3 groups of countries but with the southern periphery gradually converging and integrating the second group, a more positive conclusion that in their previous contributions.

Paul De Grauwe (1997)\(^{13}\), in another of the controversies still alive today, takes the sceptical position about the effectiveness of the exchange rate in achieving a relevant stabilisation role. The important protagonism given to the exchange rate in the early OCA theory was dependent on a sort of trade-flow elasticities model, assuming strong

\(^{11}\) De Grauwe, P (1997) "Core-Periphery relations in EMU " in Shriften des Vereins fur Socialpolitik, Band 261
\(^{13}\) ibid
nominal rigidity of wages and prices and ignoring the negative reputational effects of recurrent devaluations. In reality, there was no evidence, already in the nineties that the exchange rate had a permanent effect on output or unemployment. Canzoneri, Vallés and Viñals (1996) showed that exchange rate movements were dominated by the capital account and monetary and financial shocks, making it not so useful to real stabilization purposes, a subject I will dwell upon later. That the volatility of exchange did not visibly affected the variability of real macro variables was confirmed by many studies e.g. Rose (1995) or Flood and Rose (1995).  

Another important debate was between the endogeneity thesis and the specialisation hypothesis. The first, defended that currency unions would generate significant increases in trade (the Rose effect) and would improve the synchronization of business cycles, endogenously reducing the risk of asymmetric shocks. The second, argued that monetary unions would lead, via increasing returns to scale and positive externalities, to production specialisation and concentration, creating higher risks of asymmetric shocks. Frankel and Rose (1997) and Rose and Wincoop (2001) were on the first camp with Krugman (1993, 1996) defending the specialisation hypothesis. Both the increasing returns trade model and the Heckscher-Ohlin model assume perfect mobile goods and immobile factors. In reality, later developments did not confirm the pessimist version of the concentration view.

Astdrubali, Sorensen and Yosha (1996) documented that risk sharing and income smoothing via capital markets and the credit channel was much smaller across European countries than in the US, which underscored the need for some degree of fiscal integration.

The overall assessment stemming from all the numerous papers produced was somewhat ambiguous, as it is usually the case with econometric studies. Nonetheless, there was sufficient supporting


evidence and the official European reports 16 gave comfort to the
decisions to forge ahead with monetary union, a project that always had
a political component but that was basically grounded on the economic
rationale that the integration of markets for goods, services, capital and
financial assets, required in the end a single currency to work efficiently
without the barrier of national currencies. The complexities of managing
the common agricultural policy of subsidies with different exchange rates
and the US benign neglect with the vagaries of the dollar, added to the
fundamental motivation for all the attempts, since the 1969 Summit, to
move for monetary unification. OCA theory just provided some
reassuring arguments together with caution regarding the participation of
some countries.

Meanwhile, macroeconomics in the eighties suffered the influence of
the anti-keynesian new classical school. This affected the way of
thinking about monetary unification. Suddenly, inflation became more
relevant and output stabilisation was demoted because of the alleged
“impotence” of macro policies to achieve it in a world of fully rational
expectations. The horizon of policy should be the long term and to avoid
the time-inconsistency problem, rules rather than discretion should be
the norm to conduct policy. The Phillips curve was supposed to be
vertical in the long term and so monetary policy could not have
permanent effects on output and should be concerned only with inflation
control. Likewise, nominal flexible exchange rates would not influence
output. Consequently, losing both policy instruments became less costly
as inflation control would be easier to achieve because monetary union
would provide the new benefit of added credibility to that endeavour 17.
It was no longer needed to consider the criterium of previous
convergence of inflation rates. There was even the illusion that
desinflating in such an environment would entail only small costs in
terms of output loss, which reality proved to be wrong. The prospects for
European monetary became brighter under this new-classical vision that
had many uncanny similarities with the kind of “ordoliberaslianism”
prevailing in central European countries, according to which it is enough
to control inflation and keep prudent public finances because self-
equilibrating private markets, within a stable regulatory environment, will

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EMU” European Economy, 2 volumes
Credibility” in European Economic Review vol 32
ensure stability and growth. This vision was even dubbed as the “New OCA theory” in Tavlas( 1993)\textsuperscript{18}

The important point to retain is that this new vision had enormous influence in the Maastricht criteria and in the initial design of monetary union, excluding therefore the recommendations of the traditional OCA theory. Aside from a single currency and a fiscal brake, EMU’s institutional architecture was minimalist: governance of economic and financial policies remained firmly a national competence. Political considerations were an important factor behind this choice, insofar as governments had incentives to limit the centralisation of fiscal, economic and financial policies. But to a significant extent, it also reflected the economic thinking that prevailed at that time.

This initial framework had several shortcomings: 1) First, the absence of any crisis management mechanism to respond to acute liquidity squeezes and “sudden stops” in the sovereign bond market, linked with the demotion of national public debts; 2) Second, the framework did not include a macro stabilisation function to deal with asymmetric and symmetric significant recessionary shocks; 3) Third, economic and financial integration was not accompanied by any sort of European level macroprudential policy and micro-supervision of the financial system, particularly of banks.

These deficiencies reflect a failing common to both views of the OCA theory: the omission of concerns with finance, credit, and financial markets’ behaviour and structures. Under the influence of the efficient markets hypothesis, it was not considered that the financial sector could originate huge economic imbalances that would destabilize several member countries. Financial markets could generate crises that would include unfounded liquidity squeezes, contagion and herd behaviour. Indeed, no one anticipated that a “sudden stop” of capital flows could occur in a currency union of advanced economies. The fragility of banks in such an environment of liquidity stress, compounded the problem.

The new potential fragility of national sovereign debts without their own central bank was also not properly considered. Charles Goodhart had already warned us back in 1998 in his classic paper on two concepts of money and optimal currency areas\textsuperscript{19}. He made the point that in all national monetary unions “both the main political, the main fiscal and the monetary


powers and competencies have similarly emigrated to the federal level. The Euro Area will not be like that. In particular, the participating nation states [...] in the monetary field, their status will have changed to a subsidiary level, in the sense that they can no longer [...] call upon the monetary authority to create money to finance their domestic national debt. There is to be an unprecedented divorce between the main monetary and fiscal authorities”.

The far reaching consequences of this were not properly considered at the time. In 2012, talking about the gaps in the European monetary union, Christoffer Sims wrote in the same vein: “The combination of a treasury that issues fiat-currency debt and a central bank that can conduct open market operations provides a uniquely powerful lender of last resort. The euro as originally structured seemed to require the elimination of national-level lender of last resort functions for central banks, without creating as strong a replacement at the European level”.20 He also warned that a narrow interpretation of the framework “would return Europe to something akin to the gold standard, with no lender of last resort, no inflation cushion against extreme shocks, and an implicit euro area bankruptcy court exacting sacrifices from delinquent debtors. It is not clear that the member nations thought this was what they were signing up for”.

Later, Paul de Grauwe (2011a, 2001b, 2011c) and Willem Buiter (2012)21 talked about a fragile euro area, also calling for the creation of a lender of last resort that could deal with sudden liquidity crisis in the markets of national sovereign bonds. It was only when the ECB stepped in, acting like a normal central bank in using open market operations, that the crisis subsided and recovery could start.

Competing crisis narratives
All these problems were absent from OCA theory thinking which focused in two specific obsessions: the early view, on the importance of the exchange rate for real adjustment and in what could substitute or offset its absence; the “new” view, on public finance as the only policy, in an

environment of otherwise self-equilibrating private markets, that could destabilize countries and could provoke spillovers to other economies.

It is, therefore, not a surprise that both views originated two narratives about the euro area crisis that are globally wrong: one, presenting it as a competitiveness/balance-of-payments story; and the other as an excessive fiscal imbalances narrative. Naturally, there are some valid explanatory elements in these views, but I think the financial shocks narrative is, overall, the correct one. The point is particularly important to think about the initial phase of the crisis and to reflect about the future deepening of monetary union to make it more robust and efficient.

Starting with the fiscal narrative, it is by now accepted that the crisis and the overheating of peripheral countries did not start because of the evolution of public debt since 1999 (see Table 1 from Constâncio, 2014).

<table>
<thead>
<tr>
<th></th>
<th>Budget deficits in % of GDP (2006-2007)</th>
<th>Public Sector Debt Ratio (% of GDP)</th>
<th>Private Sector Debt Ratio (Variation in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1999</td>
<td>2007</td>
<td>Δ 99-07 In %</td>
</tr>
<tr>
<td>Euro Area</td>
<td>-1.1</td>
<td>71.7</td>
<td>66.4</td>
</tr>
<tr>
<td>Greece</td>
<td>-6.3</td>
<td>94.9</td>
<td>107.2</td>
</tr>
<tr>
<td>Italy</td>
<td>-2.55</td>
<td>113.0</td>
<td>103.3</td>
</tr>
<tr>
<td>Spain</td>
<td>2.05</td>
<td>62.4</td>
<td>36.3</td>
</tr>
<tr>
<td>Portugal</td>
<td>-3.65</td>
<td>51.4</td>
<td>68.4</td>
</tr>
<tr>
<td>Ireland</td>
<td>1.55</td>
<td>47.0</td>
<td>25.0</td>
</tr>
</tbody>
</table>

In fact, in a number of those countries the debt ratio declined, and in some of them it declined substantially. For instance, from 1999-2007, public debt in Spain declined from 62.4% of GDP to 36.3% of GDP. In Ireland, over the same period, public debt fell from 47.0 % of GDP to 25.0% of GDP. While at high levels, public debt also went down in Italy (from and increased only slightly in Greece. Imbalances originated mostly from

22 Throughout the text, when speaking about peripheral countries I refer to Italy, Spain, Ireland, Portugal and Greece
rising credit to the private sector, which was in turn funded by the banking sectors of the core countries.

As Table 1 shows, contrary to public debt levels, the overall level of private debt ratio increased in the first seven years of the EMU by 27%. The increase was especially pronounced in Greece (217%), Ireland (101%), Spain (75.2%), and Portugal (49%). The steep rise in public debt, on the other hand, began only after the financial crisis due to collapsing tax revenues and rising expenditures related to the automatic stabilisers and assistance to banks under stress.

The financial narrative of the crisis, reflected in the explosion of private debt, is based on two financial shocks. The first, started in the early nineties when the approval of the Maastricht Treaty triggered a major drop of interest rates in countries coming from a higher inflation regime. In those countries from 1992 to 1999, 10-year real rates declined between 2.5 and 5 percentage points and short term Euribor rates, with the exception of Greece, between 5.5 and 9 percentage points.

The second shock was the huge increase of credit inflows from banks in core countries to banks in the periphery (see Figure 1) which quintupled since 1999 and attained a peak of 50% of the peripheral countries’ GDP. Notice also the dramatic “sudden stop” in 2008.

In the OCA theory, both Mundell (1973) and Ingram (1973) only mentioned financial integration in its benign role in helping financing and income risk-sharing. The potential instability created by excessive volatility of capital movements was not foreseen which is understandable
as they wrote at a time of existent capital controls. In the euro area case, as a consequence of both financial shocks, domestic credit to the non-financial private sector exploded (see Figure 2).

The private sector reacted rationally to the new low rate environment by upfronting expenditures justified by their anticipation of future higher growth. Consumers went into intertemporal optimal smoothing. Writing in 2002, Blanchard and Giavazzi (2002) rationalised this development with open economy intertemporal optimization model: “Lower private saving …and, to a lesser extent, higher investment appear to be the main drivers of the larger current account deficits… the Feldstein-Horioka phenomenon appears to have largely disappeared. … we discuss whether the current attitude of benign neglect vis-à-vis the current account in the euro area countries is appropriate… We conclude that, as a general rule, they should not.”

A second aspect to highlight, refers to the lack of instruments in the receiving countries to significantly contain the inflows in a context of free movement of capital and European banking regulations that did not favour direct measures of credit control, also anathema to the deregulation climate of the time. The absence of a European supervisory mechanism and the absence of supervisor action coordinated with core countries allowed some asset price booms. In Ireland and Spain big housing prices

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increases happened which was not the case in the other three countries (Italy, Greece and Portugal).

The evolution of the private sector credit shows also the extraordinary credit crunch that after 2009 affected most of those countries. The ECB provided sufficient liquidity, but the weakness of the banks was more fundamental and Europe did not implement the type of forceful policies taken in the US. Both demand and supply of credit collapsed in tune with the recession and contributing to the double dip of growth in 2012-13. However, two other factors were also relevant for that negative development that could and should have been mitigated. The first, came in the wake of the immense surprise of the Greek 2009 public deficit that ended up being almost the triple of what was initially foreseen. This generated uncertainty and distrust and I believe that without it the European crisis would have been different and less severe. That was compounded, both by the unexpected and not-planned-for extraordinary severity of the Greek adjustment programme and by the protracted process of Greek debt restructuring, from October 2010 to February 2012, when it was finally decided with a meaningful haircut. To invoke the possibility of debt default in a monetary union of advanced countries was going to be always to be a problematic and controversial decision in view of the likely contagion and the fragility of banks. Authorities agonised over the choice which in the end was a matter of judgment and I share the ECB’s view that in that situation the choice was not warranted. Yet, if it was to be done should not have dragged for so long with distressing contagion effects on other countries. In 2011, in a speech at Bocconi I talked about the ECB analysis ,using several methods: “Results confirm that besides general risk aversion and own credit risk also the Greek credit rating affected other euro area countries’ bond spreads in a statistically significant way, in a small magnitude for some countries such as France and in a larger magnitude for other countries such as Ireland, Spain, Italy or Portugal... The findings are also consistent with the observation that CDS spreads of each euro area country have recently been higher, in some cases markedly, than the CDS spreads of other countries with the same ratings.”

Nonetheless, the main driver of second recession of 2012-13 was mostly due to the jointly fiscal consolidation followed by all member countries

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between 2011 and 2013. Simulations with the EU Commission model Quest show that that policy contributed from 2011 to 2013 to cumulative GDP deviations from the baseline scenario that vary from 8 to 18%, counting with spillover effects varying from 1 to 2% .

Those policy mistakes were significant and it is therefore wrong to attribute significant blame for the period’s turmoil to the controversial increase in the ECB interest rates in the first half of 2011, as Ashoka Mody (2018) tries to do in his new book. Those increases were quickly undone before the end of the year and had no time to do much harm. The OMT decision in 2012 put a stop to the euro “existential crisis” but I acknowledge that the delay in using QE made monetary policy less expansionary during a number of years. Naturally, with hindsight, it is easier to recognise it but the reality is, that in real time all official forecasts missed both the seriousness of the double dip and the protracted period of very low inflation.

The competitiveness narrative and the exchange rate

In discussing the etiology of the crisis I have not yet mentioned the traditional OCA theory view about the role of the exchange rate and the need to find compensating mechanisms. In his 2012 paper on the “Revenge of the Optimum Currency area” Krugman conflates the theory criteria into two main aspects: the missing exchange rate and the transfers associated with the fiscal integration. He then blames both for the euro area crisis. The second one would have been useful to mitigate the downturn. The loss of competitiveness and the missing exchange rate is another matter. The real appreciation that occurred in the first years of the monetary union was not a prime exogenous driver of the crisis but rather the result of the domestic demand surge induced by the financial shocks. The appreciation itself was even more related to the general increase of the nominal effective rate than to the relative evolution of real

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unit labour costs, as Table 2, extracted from Wyplocz (2013) \(^{29}\) clearly shows:

<table>
<thead>
<tr>
<th>Evolution in % 1999 to 2009</th>
<th>REER = EU/U*</th>
<th>u/u*</th>
<th>E</th>
<th>P/P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece</td>
<td>14.4</td>
<td>2.6</td>
<td>11.7</td>
<td>-0.1</td>
</tr>
<tr>
<td>Ireland</td>
<td>34.1</td>
<td>13.0</td>
<td>15.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Italy</td>
<td>17.7</td>
<td>5.6</td>
<td>12.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>Portugal</td>
<td>13.0</td>
<td>1.9</td>
<td>6.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Spain</td>
<td>19.0</td>
<td>-2.7</td>
<td>10.3</td>
<td>10.9</td>
</tr>
<tr>
<td>Germany</td>
<td>-8.0</td>
<td>-2.5</td>
<td>11.4</td>
<td>-15.3</td>
</tr>
</tbody>
</table>


Wyplocz decomposes the real exchange rate in terms of relative unit labour costs (REER/RULC), into the euro nominal effective exchange rate, the relative real unit labour costs and the relative price deflators. The REER evolution is mostly due to the euro nominal effective rate developments and not so much stemming from relative real wage pressures or relative price inflation.

Some loss of competitiveness due to relative wage/price developments came about as a consequence of the previous demand shock that also explains the rising current account deficit. Naturally, there was never a classic balance of payments crisis because the normal provision of liquidity by the ECB to banks, when private flows stopped, avoided the scarcity of internationally accepted liquidity. This analysis points to the limitations of the competitiveness narrative and that is reinforced by the behaviour of exports in the countries where the real appreciation was higher (see Figure 3):

\(^{29}\) Wyplocz, C (2013) "The Eurozone crisis and the competitiveness legend" in Asia Economic Papers 12:3
The relative performance of real export growth of countries like Portugal, Spain or Ireland (excluded from the chart because of data problems since 2015) seems at odds with the real appreciation suffered by these countries. The same happens with the export shares performance, another usual indicator of economic competitiveness. (see Figure 4)

Both in the case of export shares in relation to the EU or the World, there is a remarkable stability over time showed by the same group of countries. A recent ECB paper (Osbat et al (2017)) uses the Bayesian Model Averaging approach to explain world export market share growth

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The authors sum up their results: “... for both old and new EU Member States, competitive pressures from rapidly developing China strongly affected export performance since the early 2000s. In the case of old EU Member States, investment, quality of institutions and available liquidity to firms also appear to play a role for trade outcomes. For the new EU Member States, labour and total factor productivity are particularly important, and …inward FDI”. As it can be seen in the table, the real exchange rate has a very low posterior inclusion probability and is not statistically significant. Countries competitiveness depend on much more than just wage/price factors.

Besides, the exchange rate pass-through to prices has been declining and, overall, its effectiveness to influence net exports has been also decreasing. Another recent ECB working paper 31 concludes that: “Overall, our shock-dependent ERPT 32 measure suggests that the ERPT to import prices in the euro area has been weak during the very recent period and close to zero to consumer prices.” There are many reasons for this lower effectiveness: price to market for competition purposes, supply-chain enlarged role, increasing invoicing in euro, shifts in sectoral export composition. Pointing to the limitations of the exchange rate as a stabilisation instrument had already happened in the

Table 3: Regressors of export market share growth as indicator of competitiveness  
(For European Union 14 early member countries)

<table>
<thead>
<tr>
<th>Variables</th>
<th>PIP*</th>
<th>Mean</th>
<th>Mean/Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential crowding out from China</td>
<td>0.86</td>
<td>-0.42</td>
<td>-2.71</td>
</tr>
<tr>
<td>New Member Countries overlap with China</td>
<td>0.70</td>
<td>-0.31</td>
<td>-2.53</td>
</tr>
<tr>
<td>Debt (total liabilities % GDP)</td>
<td>0.51</td>
<td>-0.17</td>
<td>-2.09</td>
</tr>
<tr>
<td>Investment (% of DGP)</td>
<td>0.44</td>
<td>0.28</td>
<td>1.59</td>
</tr>
<tr>
<td>Loan growth</td>
<td>0.34</td>
<td>0.14</td>
<td>1.64</td>
</tr>
<tr>
<td>Real Exchange rate (HICP-CPI)</td>
<td>0.23</td>
<td>-0.11</td>
<td>-1.19</td>
</tr>
</tbody>
</table>

Note: PIP * Posterior inclusion probability. Source: Osbat et al “What drives export market shares? An empirical analysis using Bayesian Model Averaging” ECB wp 2090, July 2017 (Table 3)

32 Exchange Rate Pass-Through (ERPT)
OCA theory development, as I mentioned before. It is also generally accepted that there are no permanent or long-term effects of the exchange rate on output or unemployment. These two points should be a cautionary tale for those who seem to think that if some euro area countries go back to their national currencies they could devalue their way into high economic growth. Weak currencies under continuous market pressure with reputation destroyed by recurrent depreciations, would be even less suitable to solve the structural problems that are hampering growth.

What can we conclude from this examination of crisis narratives? Certainly, in different periods, elements of different narratives partially apply. However, everything started and ended with financial markets, both the initial shocks and the final loss of access to financing by crisis sovereigns. The reassuring aspect is that the significant shocks of steep declines of interest rates as well as the huge capital inflows followed by a stop, are unlikely to be repeated in such a scale.

In any case, what the European experience shows is that the main omission of the OCA theory, which it shares with macroeconomics dominant views at the time, reduced role given to finance, its markets and institutions. Monetary unification fosters financial integration and without proper regulation, supervision and macroprudential policies, deep instability and self-fulfilling crises may occur. The crisis confirmed that the control of money and inflation is not enough to regulate the macroeconomy, and that finance and debt are at the centre of our economies. Private sector debt is behind most financial crises because private debts do not cancel each other out as in pure ‘Arrow-Debreu’ non-default contracts 33. In a monetary union with the consequent financial integration, there are features like centralised supervision, deposit insurance and resolution of banks, with appropriate fiscal backstops, that are necessary for the whole framework to effectively function.

**Present and future of the European Monetary Union.**

Since 2010, many institutional changes and painful adjustment policies in member countries, helped to repair the turbulence and start a recovery.

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The next chart shows the overall euro area performance in terms of GDP per head:

Figure 5. EA Performance: crisis, adjustment and recent improvements

The left side chart, shows how until 2011 our recovery was similar to the US, how the double dip disrupted that and how since 2014, per capita growth has been again similar to the US. The righthand side chart, in terms of GDP per head measured in Purchasing Power Standard of the 28 member countries, shows that for the whole period since 2007, the euro area has grown even slightly more than the US. However, the usual 5 peripheral countries have done much worse, which comes across most strikingly in the next chart:

Figure 6. GDP per head cumulative growth
(in Purchasing Power Standard PPS of EU28) (Index 1993=100)

In this chart I used 1993 as the starting year because if includes the catching-up nineties, after the Maastricht Treaty initiated the great
convergence of interest rates and the increase in capital inflows. In terms of growth, two peripheral countries did well and two others not so well for different reasons: Greece because of the artificial boom and subsequent collapse and Italy as the result of a structural failing of productivity growth. Ireland was by far the best performer, but I did not include it in view of the artificial GDP jump in 2015. These performances are in a way reflected in the results of the latest Eurobarometer, showing that the percentage of the population supporting being in the euro area was 86% in Ireland, 80% in Portugal, 76% in Spain, 69% in Greece, 61% in Italy and 74% for the average of all euro area countries.

In general, the euro area economic performance improved markedly since 2014, with all countries growing with positive external current accounts and budget deficits below 3%. No euro area country has now a real problem of debt sustainability.

Besides the convergence of growth rates, showing the lowest dispersion since 1999, the synchronisation of the economic cycle significantly improved, indicating a lower possibility of asymmetric shocks.

In the context of the present situation, it would be possible to say that the euro area has attained a sustainable path of economic performance. There are however three difficulties: some countries have the vulnerability of high indebtedness; a worldwide downturn is coming in the next two years or so and the macroeconomic policy space is small;

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34 Obviously the chart is not about a comparison of absolute levels.
finally, there are irredentist political tensions created by the threatened return of the well-known historical danger of populist nationalism.

While the economic situation is still favourable it would be important to adopt further reforms to build a more solid and unassailable monetary union where redenomination risk does not occur at every sign of market pressure.

The way I presented the narrative of the crisis, should make evident what are the points that I consider more important or urgent to strengthening our monetary union. I have to be brief today in describing my priorities but in my last speech as ECB Vice-President, I developed my views more extensively.\(^36\)

The first priority is to definitively address the question of the potential fragility of national sovereign debts without their own currency. The ultimate solution that now seems impossible, would be to have Eurobonds or fiscal union which implies political union. Other than that, the solution lies in what Eichengreen and Wyplocz called for, namely “a normal central bank able to pursue flexible inflation targeting and backstop financial markets, thereby protecting the Eurozone from potentially self-fulfilling crises.”\(^37\) The initiatives that the ECB took in this domain of lender of last resort to banks and markets have been supported by the European Court of Justice and are therefore available to be used again. From now on, the ECB will have no excuse to not fulfil its mandate in addressing the impairment of the single monetary policy transmission by intervening in the sovereign bond market when markets go well beyond what fundamentals would justify. Nonetheless, it would help if more legal clarity would be provided by all member countries so that these ECB competences would not be challenged.

The second point is the completion of banking union which right now implies, in my view, the Creation of The European Deposit Insurance Scheme (EDIS) with its own backstop, the public credit line to the Single Resolution Fund, the framework for liquidity provision in bank resolution and the creation of a European safe asset. This last point is for me of the utmost importance. The European safe asset, as something different from full-fledged Eurobonds, could consist of a tranched synthetic


security based on national sovereign debts with a joint first loss guarantee for the junior tranche or it could be a non-tranché Bond issued by a public entity with seniority over national debts. A European safe asset is the only stabilising solution to the problem of “excessive” banks’ holdings of domestic sovereign debt. The alternative of introducing now quantitative limits or high “concentration charges” to give incentive to diversification of banks’ portfolios, would destabilize national sovereign debt markets and it is not proportional to the problem in the first place.

A European safe asset is also crucial for the Capital Markets Union (CMU) project as a European bond market cannot ultimately exist without a European safe asset. CMU is a very demanding project because it requires a European safe asset, greater harmonisation of taxes on financial products, a convergence of company law, including on bankruptcy, the creation of a single rule book of regulation for markets activity and ultimately a European Single Securities Market Supervisor.

However, CMU would give a boost economic growth as a deep and liquid market, both of debt and equity, would spur innovation and enable the development of an efficient venture capital market. Authorities have so far treated the CMU as almost an empty slogan with very few marginal initiatives. It is true that the CMU project involves all EU member states, but it is particularly important for the euro area member countries. I believe that euro area countries should forge ahead in enhanced co-operation to achieve CMU more rapidly.

My third priority goes for the creation of a central fiscal capacity with two elements: an effective institutional mechanism to ensure coordination of national fiscal policies to discuss and decide an adequate euro area fiscal policy stance; second, a complementary central Stabilisation Fund, that can take several different forms. I agree with the recent IMF proposal which I consider quite appropriate. Alternatives, in the form of a common unemployment reinsurance scheme or an investment protection scheme, are not so convincing. Even less, of course, if they just about providing loans as in certain proposals.

What is necessary is a stabilisation fund for periods of quite significant shocks in the form of a “rainy-day” fund that would provide transfers to

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38 For a through discussion of different solutions, see Leandro, A and J. Zettelmeyer (2018) “The search for a euro area safe asset” CEPR DP 12793, March 2018; for a defense of non-tranché alternatives see Leandro, A and J. Zettelmeyer (2018) “Safety without tranches: creating a ‘real’ safe asset for the euro area” CEPR Policy Insight n. 93, July 2018

39 For a long list of arguments on this issue see my speech quoted in the previous footnote

be used in public spending with high multipliers. Transfers should not permanently benefit the same countries and, to avoid moral hazard, the use of the ESF should be conditional on past compliance by countries with the existent fiscal rules. Triggering the transfers should be automatically dependent on a threshold indicator based on the unemployment rate.

This is my list of more urgent and necessary reforms. Many defenders of the fiscal narrative of the crisis, see an urgent need to improve the disciplining of countries conduct by revising the Stability Pact and reinforcing the possibility of debt restructuring to enhance market discipline. Regarding the debt restructuring mechanism, I believe that introducing now any new rules, thresholds or automatisms would be dangerously destabilising and therefore unacceptable. What already exists, implying that at the beginning of any programme request the ESM has to ask for a debt sustainability analysis from the Commission is enough presumption that debt restructuring may be considered.

Concerning the Stability Pact, I agree that it should be revised as it is difficult to enforce, specially when the strategy has been to permanently increase the granularity of rules, in an attempt to improve compliance. There are five annual quantitative targets that countries must respect, subject to exceptions and exemptions, so that now it takes a vade mecum of 236 pages, published by the Commission, to explain the convoluted maze. Nevertheless, in the past the Pact has fulfilled its role of instilling discipline and the large fiscal adjustment made by several countries would not have happened the same way. The judgement of the independent European Fiscal Board (EFB) in its first Report concludes that: “Despite imperfections and scope for improvement, the EU’s fiscal framework has helped make the euro area more stable”. As I mentioned already, after years of peer pressure, practically all countries with higher imbalances during the crisis have now budget deficits below 3% and positive primary surplus after, in some cases, a double digit unprecedented structural primary balance correction. Primary surpluses must be kept going forward, in order to reduce the public debt overhang. The past adjustment was, in certain cases, excessively harsh and contributed to the second recession in the euro area. This implies that the balance between the two main goals of

the SGP, long-term debt sustainability and macroeconomic stabilisation, was not always well managed, particularly in 2011-2013. The flexibility criteria introduced by the Commission since 2015 partly addresses that issue. Nonetheless, the present granularity and complexity of the rules makes compliance more difficult and an overhaul of the Pact is justified. Also, the rules became more intrusive, creating potential for political tensions, as we see now with Italy. Some economists, for instance Eichengreen and Wyplocz (2016) go as far as proposing a renationalisation of fiscal policy, as anyhow fiscal spillovers among countries are small. That change would give more responsibility to member states in facing markets because it would be accompanied by a credible no-bailout rule and the increased possibility of debt restructuring. It is an intriguing concept, but I consider that monetary union needs a fiscal rule and although I would prefer a wider and deeper search for a Pact review, realistically, I think that, with some adjustments, the proposal recently presented in a Note by the French CAE could be a good starting point for a negotiation as it has similarities with the well known document by 14 French and German economists. The CAE Note proposes an expenditure rule, calculated in order to achieve a country-specific path of debt-to-GDP ratio gradual reduction to the 60% target. The existent targets of an annual mechanical reduction of the debt by one twentieth of the difference to 60% and the annual progression for the medium-term structural deficit target, would both disappear. The only annual compliance target would be given by the expenditure path, adjusted for new decisions to increase revenues and not counting expenditures with interest and conjunctural dependent expenditures, like unemployment subsidies. All these features would make the new fiscal rule in comparison with the existent framework, less procyclical, less intrusive and easier to comply with.

44 This is confirmed in the recent ECB wp by Attinasi, M-G, Lalik, M. and I. Vetlov (2017) Fiscal spillovers in the euro area, a model based analysis” ECB wp n. 2040, March 2017
A last aside comment for the more distant future, refers to the economic meaning of the medium-term target of 60% for the public debt ratio. As you know, there is no technical justification for that target. The 60% were fixed in the annexed Protocol to the Treaty because it was close to the average of all countries at that moment and because if one considers the 3% deficit and a nominal growth of 5% (3 real, 2 for inflation) the quotient of 3 over 5 would lead to the long-term convergence of the debt to GDP ratio to 60%. The demographic decline and secular stagnation of growth make the 5% number a thing of the past and consequently the long-term debt ratio would be higher. In a CEPR Policy Insight Lu and Teulings (2016) 48 make the point that demography, at least until 2030, explains why there will be high private savings which put downward pressure on the real interest rate and justify that part of the demand deficiency that those high savings imply, should be offset by more useful public expenditures and debt, instead of being exported to uncertain investments as the counterpart of high current account surplus. They also make the point that in case EU countries would continuously comply with the present target of a 1% structural deficit, over many cycles with nominal growth between 3 and 4%, the debt ratio would converge for 25-33%. In the case of euro area countries that have adopted a 0.5% target, the long-term ratio would be lower and around 15%. It seems to me that this ignores the role of safe assets and risk-free rates in financial markets and reduces the use of debt for investment without apparent economic justification. It is worthwhile to recall that Article 126, item 3 of the Treaty refers that the first Commission Report initiating the excessive deficit procedure states that the Report “shall also take into account whether the government deficit exceeds government investment expenditure” a clear reference to the classic golden rule.

Conclusion
Let me conclude. Optimal currency areas theory, and Professor Mundell himself, were instrumental in fostering the case for European monetary union as a logical sequel to economic integration. Unfortunately, national political interests and the wrong turn taken by macroeconomic theory, led to a minimalist design for the hubristic project. It ignored the dominance of finance in our modern economies and how volatile and

difficult to tame it can be. Financial shocks, financial panics, financial speculation, financial contagion, combined with some misbehaviour and a few mistakes created an existential threat to our monetary union.

The unprecedented crisis was difficult to control but we managed to reach calmer waters and looking back the average performance was reasonable, as I showed, and presently all countries are growing again in a healthier balanced way, despite the recent soft patch due to world trade tensions. In pure economic terms, the euro area is not on the brink of another existential crisis. Naturally, rules and market reactions cannot be ignored by high indebted countries, as they are part of reality. That is why I believe that dialogue and compromise will in the end smooth out the tensions between Rome and Brussels, as it has happened in the past with other countries and with Italy itself.

As I said in my ECB farewell speech: “Our nations tied themselves to the Odyssean mast of monetary union and endured mighty storms to survive and pursue the journey towards a peaceful and prosperous destination49”. No country can abandon ship without becoming victim of tempestuous seas without an anchor, lost in waves of weak currencies, high inflation and high interest rates. Only an united Europe can protect our citizens in terms of safety and prosperity. In the new geopolitical environment created by US anti-multilateralism, Europe needs to project whatever power it can muster. An unassailable monetary union, a capital markets union with a European safe asset and an enhanced international role for the euro would be invaluable instruments. Monetary Union was always a political project and so, I deem entirely appropriate to conclude with the words of Robert Mundell, written in 1973,50 explaining that political dimension: “… life needs a power center and money, the creation of the state, is the seat of the power base. The provinces of Europe are getting a money, but it is the US dollar. Thus, the famous myth of the rape of Europa…would have its sequel in the Oedipus, a new rape of Europe by her son, America. Europe has for three decades now huddled with relief under the umbrella of a friendly America. The dollar has served as the anchor for a degree of European integration. As long as this system continues, the US balance of payments deficit will grow; and as long as it grows European independence will be increasingly undermined; her economic power

diminished…. Can there be a transformation of attitudes in Europe? A shift away from the concept of competitive national interest and rivalry so destructive in the past? … It is time for Europe to wake up”
Thank you for your attention.