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The crisis in the euro area:  
an analytic overview

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## **Editorial**

On 23-24 May 2013, the Bank of Greece organised a conference on “The Crisis in the Euro Area”, in Athens.

The papers and commentaries presented at the conference addressed many important issues related to the functioning of the euro area. Our hope is that these contributions will help improve understanding of the nature of Europe’s monetary union, the underpinnings of its crisis, and the changes that are needed so that crises will be prevented in the future.

The papers examined two main sets of issues. One group of papers, adopting a union-wide perspective, assessed the aspects of the euro area’s institutional architecture that, with the benefit of hindsight, may have contributed to the crisis, and the policy responses to the crisis at the union level. A second group of papers focused on developments in three crisis countries -- Greece, Ireland, and Portugal.

The papers presented at the conference, with their discussions, will be published in the *Journal of Macroeconomics*.

Here we present the paper by Barry Eichengreen (University of California), Naeun Jung (Princeton University), Stephen Moch (Princeton University), Ashoka Mody (Princeton University) with its discussion by Apostolis Philippopoulos (Athens University of Economics and Business and CESifo).

# THE CRISIS IN THE EURO AREA: AN ANALYTIC OVERVIEW

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## Abstract

This paper provides an introduction to the special issue “The Crisis in the Euro Area”. We take stock of what the euro area crisis has taught us about monetary integration. At the inception of the euro area in 1999, the main parameters of the theory of monetary integration seemed to have been pretty well-settled. Although it was common knowledge that the euro area fell short of fully satisfying all the conditions needed for an optimally-functioning monetary union, most politicians and many economists thought that the euro area satisfied enough conditions so that it would not encounter major difficulties. This paper discusses several developments that came as surprises about the conditions needed for monetary unification as the euro crisis unfolded. These developments include the need of an adequate adjustment mechanism, the links between banking and sovereign crises, and the sharp costs of adjustment to adverse asymmetric shocks.

*Keywords:* Financial crises, euro-area, monetary integration, optimum currency areas, adjustment mechanism

*JEL Classifications:* E51, E52, F33, F41, G01

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## 1. Introduction

The year 2009 was the tenth anniversary of the creation of the euro. Throughout the year, academic conferences were held to celebrate what at that time was widely considered to be the success of the boldest attempt ever by diverse sovereign states to reap the efficiency gains of a single currency. Despite the earlier misgivings of some economists about the feasibility of a common currency in Europe (*e.g.*, Feldstein, 1997; Friedman, 2007), by 2009 evidence of the euro's success was plentiful. The euro had created a low-inflation, low-interest-rate environment (even for formerly high-inflation countries) conducive to sustainable growth. It had fostered trade integration and the integration of financial (and, to some extent, labor and commodity) markets among the members of the euro area. The number of participating countries had risen from eleven in 1999 to sixteen in 2009. Notwithstanding the eruption of the global financial crisis in August 2007 and its intensification in September 2008 with the collapse of Lehman Brothers, the euro area had been relatively unscathed by the effects of that crisis. To mark the euro's tenth anniversary, at the end of 2009 the European Commission published a study that sought to explain the reasons the skeptics of the single currency could have been so misled in their assessment of the euro's feasibility (Jonung and Drea, 2009).

Yet, amidst the celebrations in 2009, in Greece a shock was unfolding that, by the end of the year, would materialize into a full-blown financial crisis.<sup>1</sup> Krugman (2012, p. 4) would later characterize that shock as “the mother of all asymmetric shocks -- a shock that was, in a bitter irony, caused by the creation of the euro itself.” During the ensuing years, the euro crisis broadened and deepened, threatening the sustainability of Europe's common currency. What had started as a sovereign-debt crisis in Greece spilled over to that country's banking system, creating twin crises. In other euro-area countries, including Ireland, Spain and Cyprus, the crises originated in the banking systems and spilled over to the sovereign debt. While at the time of this writing (August 2013) the euro-area crisis is by no means over (although it has subsided considerably), the events of

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<sup>1</sup> See Provopoulos (2014) for an analysis of the origins of the Greek crisis.

the past four years provide the opportunity to take stock of what went wrong and what can be done to prevent future crises in the euro area.

In order to gain a better understanding of the issues involved, on May 23-24, 2013 the Bank of Greece held a conference on “The Crisis in the Euro Area.” The papers presented at the conference examined two main sets of issues. One group of papers, adopting a union-wide perspective, assessed the aspects of the euro area’s institutional architecture that, with the benefit of hindsight, may have contributed to the crisis, and the policy responses to the crisis at the union level. A second group of papers focused on developments in three crisis countries -- Greece, Ireland, and Portugal. This issue of the *Journal of Macroeconomics* is comprised of the papers presented at the Bank of Greece conference and the discussions of those papers at the conference.

## **2. Monetary integration reconsidered**

At the inception of the euro in 1999, the main parameters of the theory of monetary integration seemed to have been well-settled. Beginning with the work of Mundell (1961) on optimum currency areas, academic research had delineated (i) the conditions under which nations should adopt a common currency and follow a common monetary policy, and (ii) the benefits and costs of participating in such a currency arrangement. The literature pointed to several key conditions that were thought to be necessary for joining a common-currency area. These included the similarity of structural characteristics (*e.g.*, labor market institutions, inflation rates, levels of economic development, and production structures) among the participants to reduce the incidence of asymmetric shocks, and the existence of adequate adjustment mechanisms (*e.g.*, labor mobility and fiscal integration) to lessen the impact of asymmetric shocks, should they occur. The benefits of a common currency were shown to include the elimination of both currency risk and competitive devaluations, lower inflation for countries with histories of high inflation (providing that the central bank of the monetary union follows a credible monetary policy), reducing the uncertainty produced by inflation distortion, increased transparency and possibly greater competition in product markets because of the ease of comparing prices, the lowered risk premia incorporated into the cost of raising capital, and reduced costs of servicing the

public debt stemming from the reduction in risk premia in domestic interest rates, a factor that would facilitate fiscal adjustment and free resources for other uses. The main disadvantage attributed to a common currency was the reduced flexibility to adjust to asymmetric shocks because of the loss of (i) monetary-policy independence and (ii) the ability to use the exchange-rate instrument to change the terms of trade in order to restore external and internal balance.

It was common knowledge in 1999 that the members of the euro area did not fully satisfy all the conditions for a monetary union. Empirical studies had shown that the participants were subject to asymmetric shocks, with a clear divide among northern and southern members (De Grauwe, 2012, pp. 76-80) while Europe fell far short of the United States, for example, in terms of labor mobility and (especially) fiscal integration.

Despite the existence of asymmetric shocks and the lack of sufficient adjustment mechanisms, European political leaders and many economists thought that monetary union would succeed without major difficulties. What accounted for their optimism? First, they believed that the incidence of (fiscal-induced) asymmetric shocks would be reduced if countries maintained sound fiscal policies (Krugman, 2012). Second, they thought that, with the reduced ability to use demand-side policies to counter asymmetric shocks, national policy makers would undertake structural reforms, including the freeing of labor and product markets, to lessen the impact of asymmetric shocks. Third, they thought that since the euro would eliminate exchange-rate risk from national interest rates it would be easier to evaluate risk characteristics and, therefore, investment opportunities across countries. In other words, the elimination of exchange-rate risk would lead to increased market discipline on governments (Fernández -Villaverde, Garicano, Santos, 2013, pp. 146-48).

Four years into the euro-area crisis, what have we learned about the underpinnings of monetary integration? Clearly, those who thought that all the participants in the euro area would take the necessary fiscal and structural measures to ensure the success of the common currency were overly optimistic. In addition, the unfolding of the euro-area crisis has revealed that the state of the theory of monetary integration, *circa* the late-1990s, was incomplete. In what follows, we sketch several developments that came as

surprises as the euro-area crisis unfolded -- developments that were not foreseen by policy makers or, for the most part, discussed in the academic literature.

### **3. The adjustment mechanism**

An underlying feature of the euro-area countries that have been hit by crises is that they experienced large and growing current-account deficits in the years leading up to the crises (Holinski, Kool and Muysken, 2012; Honkapohja, 2014). At the time of the inception of the euro area, a prevailing view was that current-account imbalances among participating countries should not be a major concern in a monetary union (Blanchard and Giavazzi, 2002). Underlying this view is the idea that intertemporal utility maximization helps ensure that diverging current-account positions are the natural consequence of a convergence process among countries with different levels of economic development.<sup>2</sup> In the presence of integrated markets, countries with relatively-low per capita income, such as Greece, Ireland, Portugal and Spain, should attract capital inflows because of high productivity growth and relatively-high rates of return.<sup>3</sup> As long as (i) the investment financed by the capital inflows provides a rate of return that exceeds the cost of borrowing (so that the accumulated foreign liabilities can be repaid) and (ii) any increased consumption associated with the imbalance is temporary and desirable for purposes of intertemporal consumption smoothing, current-account deficits in a monetary union (according to this view) are nothing to worry about.

Holinski, Kool, and Muysken (2012) provide an assessment of the causes of the current-account deficits of Greece, Ireland, Spain, and Portugal as a group.<sup>4</sup> Here, we first

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<sup>2</sup> See Holinski, Kool and Muysken (2012), who are critical of the intertemporal-utility-maximization hypothesis.

<sup>3</sup> Buiter and Greffe (2003, p. 36) put the argument as follows: “It is a positive finding for EMU that sustained differences in real economic growth can be accommodated within the framework of a common monetary policy. This is important because among the existing 12 EMU members (and the existing 15 EU members) there are at least three, Greece Portugal and Spain, whose per capita incomes are still well below the EU average. Properly managed, these economies should, over time, converge to the per capita income levels of the leading EU members, through a process of catch-up growth.”

<sup>4</sup> Those authors assess the determinants of the evolutions of the current-account deficits of the above group of countries on the basis of the contributions to the deficits of changes in public-sector and private-sector saving and investment.



discuss the specific case of the Greek current-account deficit and then we consider the (average) current-account deficits of the above group of four countries. In particular, we discuss how the absence of a euro-area adjustment mechanism allowed these countries to run large current-account deficits in the years preceding the crisis.

### *Outbreak of the Greek crisis*

Greece's current-account deficit swelled from 11.5 per cent of GDP in 2001 (the year in which Greece joined the euro area) to 18 per cent in 2008 (see, Provopoulos, 2014). Under a well-functioning fixed-exchange-rate regime (and in the absence of a fiscal-transfer mechanism), such large and sustained external deficits are not expected to occur. For example, under the classical gold standard of the late-19<sup>th</sup> and early 20<sup>th</sup> centuries, countries that experienced current-account deficits would typically experience gold outflows, and, with money and credit growth tied to gold, lower money and credit growth.<sup>5</sup> The lower money and credit growth would cause prices and wages to fall (or would lead to reductions in the growth rates of prices and wages), helping to restore competitiveness, thus eliminating the external deficits. Conversely, countries with current-account surpluses would typically experience inflows of gold, which led to rises in money and credit growth, pushing up prices. The appreciation of the real exchange rate would help eliminate the current-account surpluses.<sup>6</sup>

Greece's experience during the period 2001-2009 demonstrates what happens when a fixed-exchange-rate regime does not work satisfactorily. Although the country's large current-account deficits signaled a competitiveness problem, capital continued to flow into the country until 2008-2009, pushing up money and credit growth, which, in turn, increased inflation and caused competitiveness to deteriorate further. As shown in Table 1, during the period 2001-2009, annual money growth (M3) averaged 8.8 per cent in Greece; credit growth to the private sector rose by 16.7 per cent a year. During that

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<sup>5</sup> See Dellas and Tavlas (2013).

<sup>6</sup> The above description of the adjustment mechanism assumes that the members of the gold standard followed the "rules of the game" by not sterilizing gold inflows and outflows. The core members of the gold standard did, in fact, follow the rules of the game.

period, Greece's current-account deficit averaged 13.4 per cent a year. In contrast, for Germany, which had an average current-account *surplus* of 4.4 per cent during the period 2001-2009, M3 growth averaged 5.7 per year, and credit growth to the private sector averaged 2.7 per cent a year. The relative flows of money and credit led to a 15 per cent appreciation of Greece's real exchange rate (in terms of consumer prices) relative to that of Germany.<sup>7</sup> Since Greece and Germany shared a common currency, the appreciation of Greece's real exchange rate relative to that of Germany was entirely due to movements in relative prices.

The rise in Greek inflation caused the real interest rate to fall, leading to more borrowing. Increased government borrowing led to deterioration in competitiveness through two main channels. First, to the extent that Greek producers provide differentiated tradable goods -- for example, Greek islands are not perfect substitutes for non-Greek tourist destinations -- the producers face a negatively-sloped demand curve (since they produce a differentiated good). In this situation, a rise in prices leads to a reduction in the quantity demanded of tradeable goods (that is, a movement along the demand curve rather than a shift in the demand curve) -- Greek products lose competitiveness. Second, as the government borrowed (and spent) more, it pushed up the prices of non-traded goods relative to traded goods. Wages in the non-traded-goods sector rose relative to wages in the traded-goods sector. The former increases, in turn, spilled over to the traded-goods sector, creating a "Dutch-disease" effect under which the increase in costs in some sectors spills over into other sectors. To the extent that the prices in those other sectors could not absorb the increase in costs, because, for example, prices could not be increased due to international competition and/or productivity growth was insufficient to offset the rise in costs, there was a loss of international competitiveness (Angeletos and Dellas, 2013).<sup>8</sup>

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<sup>7</sup> In terms of unit labor costs against its main trading partners Greece's competitiveness declined by about 30 per cent during the period 2001 to 2009. See Protopoulos (2014).

<sup>8</sup> Effectively, under the Dutch-disease mechanics producers face a horizontal demand curve (i.e., they produce in competitive markets). If the costs of production rise, the supply curve shifts to the left, and producers are able to sell less on global markets.

Correspondingly, the current-account deficits led to a build-up of (mainly) government debt. The stock of Greek government debt essentially doubled between 2001 and 2009, rising from € 151.9 billion to € 299.7 billion; during the same period, the share of Greek sovereign debt held by non-residents jumped from 43.4 per cent to 78.7 per cent.<sup>9</sup> In 2009 the markets recognized that Greece's debt dynamics were not sustainable; there was a sudden stop of capital inflows and the Greek sovereign crisis was underway.

The adjustment process did not operate in the euro zone because for many years investors did not draw a distinction between the sovereign debt of the core countries and the sovereign debt of the peripheral countries, such as Greece. Instead, in the years preceding the outbreak of the Greek sovereign-debt crisis, investors pushed interest rates on Greek (and other) sovereigns down to near German sovereign levels<sup>10</sup>. In this connection, Gibson, Hall, and Tavlás (2012; 2014) provide evidence showing that, prior to 2008-2009, the markets failed to incorporate Greece's deteriorating fundamentals into the price of Greek sovereigns. Consequently, there was no mechanism to adjust money and credit growth, and Greece and other countries were able to run large, current-account and fiscal deficits on a sustained basis without taking remedial policy measures.

### *North versus South*

A similar conclusion emerges in a comparison of the current-account positions of euro-area crisis countries as a group with (selected) euro-area northern countries as a group. Table 2 presents aggregated data on money and credit growth, and the current-account positions for Greece, Ireland, Portugal and Spain, which we call the South, and for Austria, Finland, Germany, and the Netherlands, which we call the North. (The figures in the table are unweighted averages of the respective groups.) As shown in the Table, during the period 2001-2009 the average current-account deficit of the South was 6.5 per cent of GDP. The North ran an average current-account surplus of 4.1 per cent of

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<sup>9</sup> These figures are from Dellas and Tavlás (2013).

<sup>10</sup> The markets' perception that Greek sovereign debt represented a safe investment -- probably founded on the expectation of a bailout by core countries -- suppressed the effect of sovereign credit risk on Greek interest rates. As we point out below, the ECB's collateral policy may have contributed to this situation.

GDP. Under a properly-functioning fixed-exchange-rate adjustment mechanism, money and credit growth should have been higher in the North than in the South, pushing up relative prices in the North. Instead, the opposite occurred. M3 growth averaged 8.9 per cent in the South and 7.3 per cent in the North. Credit growth averaged 12.6 per cent in the South and 6.2 per cent in the North. As a result, the South's real exchange rate (in terms of relative consumer prices) appreciated against that of the North, the opposite of what was required to adjust the external imbalances of the two groups of countries.

The inflows of capital associated with the current-account deficits contributed to an abandonment of economic reforms in the above countries through two main channels (Fernández-Villaverde, Garicano and Santos, 2013, p. 146). First, the inflows reduced the pressure for reforms by relaxing the budget constraints that the countries in question faced. Second, by mispricing sovereigns in these countries, the inflows made it more difficult to distinguish between those euro-area countries that were performing well and those countries that were performing poorly.

We draw the following (inter-related) conclusions from the above discussion for the analysis of monetary integration. First, in monetary unions comprised of sovereign states that have not mutualized a guarantee on public debt, current-account deficits matter.<sup>11</sup> Second, a well-functioning monetary union requires a well-functioning adjustment mechanism. To ensure that the adjustment mechanism is effective, the institutional design of the union needs to include mechanisms mandating that participants will take measures that eliminate the external imbalances.<sup>12</sup> In this connection, a new Macroeconomic Imbalance Procedure (MIP) was put in place in December 2011 with the aim of preventing and correcting macroeconomic and competitiveness imbalances among all EU countries. The MIP seeks to identify potential risks of imbalances early on so as to

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<sup>11</sup> Ironically, as Bordo and James (2014) point out, it was the build-up of large current-account imbalances in the late 1980s and early 1990s that convinced European policy makers that a monetary union would be the only way of avoiding the risk of periodic crises with currency realignments that threatened the survival of an integrated internal European market.

<sup>12</sup> As indicated above, current-account deficits matter in currency unions in which the members have not mutualised a guarantee on public debt, as is the case in the euro area. Debt mutualisation on its own, however, would not solve the problem of national current-account deficits since some countries could view debt mutualisation as a license to ignore the external constraint. Hence, debt mutualisation would need to be accompanied by strong disciplinary mechanisms to be effective.

prevent the emergence of unsustainable imbalances and correct imbalances already in place. To do so, the MIP relies on a graduated approach that reflects the gravity of imbalances. Sustained imbalances can eventually lead to the imposition of sanctions on euro-area Member States, should they repeatedly fail to meet their obligations under the MIP.<sup>13</sup> Additionally, on 20 February 2013, the EU Council, the European Parliament and the European Commission reached agreement on two EU regulations -- the so-called “two-pack”. One regulation aims to prevent the build-up of significant fiscal imbalances by strengthening the economic and budgetary surveillance of euro-area member states and improving policy coordination among those states. The other regulation enhances economic and financial surveillance of euro-area member states threatened with “serious financial difficulties” (Council of the European Union, 2013).<sup>14</sup>

#### **4. Links between banking and sovereign crises**

The theory of monetary integration as it had developed by the late-1990s paid little, if any, attention to banking issues.<sup>15</sup> The euro-area crisis, however, has perhaps been first and foremost a banking crisis as bank failures have led to negative feedback loops between weak banking systems and confidence in the sovereigns. Banking crises in euro-area countries have placed large fiscal burdens on governments, calling into question their solvency and making the use of counter-cyclical fiscal policy infeasible.

Why have the interconnections between banking systems and fiscal positions been so strong during the euro-area crisis? This circumstance reflects the following factors (Shambaugh, 2012; Pisani-Ferry, 2013). First, total bank assets as a share of euro-area GDP are much larger than in the United States; in 2012 this share amounted to almost 360 per cent in the euro area, compared to less than 80 per cent in the United States. Second, firms in the euro area are much more reliant on the banking system for finance

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<sup>13</sup> See European Commission.

<sup>14</sup> The “two-pack” takes effect with the fiscal-year 2014 budgets of the euro-area countries. The “two-pack” applies to euro-area countries whereas the MIP applies to all EU countries. Honkapohja (2014) discusses recent initiatives that aim to improve economic and fiscal governance in the European Union. As Honkapohja points out, whether these measures will lead to improved outcomes will depend on implementation, but effective implementation may be constrained by the particular political context.

<sup>15</sup> This point is stressed by Krugman (2012).

than are U.S. firms; banks account for about three-quarters of total credit intermediation in the euro area, compared with about one-quarter in the United States. Third, although the largest banks in the euro area and the United States are of roughly the same size in terms of euro-area GDP and U.S. GDP, respectively, the largest euro area banks represent a much larger share of any individual *national* economy in the euro area compared with the situation of U.S. banks. This circumstance implies that the fiscal consequences of euro-area bank failures could be large enough to bring state-solvency into question (Pisani-Ferry, 2013, p. 9). Fourth, domestic euro-area banks typically hold relatively-large shares of debt issued by their respective national governments in their portfolios, leaving the banks' balance sheets vulnerable to doubts about sovereign solvency. In contrast, U.S. banks typically hold small amounts of local and state debts on their balance sheets; U.S. banks mainly hold U.S. government debt as their "safe" liquid assets. Consequently, defaults by U.S. state and local governments have not involved a systemic risk to the U.S. financial system (O' Rourke and Taylor, 2013, p. 181).<sup>16</sup> Fifth, the ECB's collateral policy prior to the outbreak of the Greek crisis, under which the ECB treated debt of all euro-area sovereigns on an equal basis, may have contributed to the low interest rates and lending booms in the crisis countries (Pisani-Ferry, 2013; Honkapohja, 2014). Sixth, the euro area lacks a common banking authority -- member states retain responsibility for banking supervision, bank resolution and deposit guarantees in their respective jurisdictions. The recognition that the foregoing factors have played important roles in the euro-area crisis has led to efforts to build a banking union so that the negative feedback loops between banking fragility and sovereign weakness can be broken.<sup>17</sup>

De Grauwe (2011; 2012) has added another element into the discussion about the interconnections between banking systems and sovereigns in the euro area. De Grauwe argues that, in contrast to the situation in the U.S. monetary union, euro-area bond markets are inherently fragile because the ECB does not have the mandate to act as a lender-of-last-resort to governments. Without a central-bank backstop, euro-area

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<sup>16</sup> Eichengreen, Jung, Moch and Mody (2014) provide a comparison between U.S. and euro-area banking systems.

<sup>17</sup> Goodhart (2014) discusses the importance of a banking union for a well-functioning monetary union. Constancio (2014) [Comment: make sure that there is no comma and 2014 is in parentheses] provides a detailed assessment of the measures taken or under consideration for building an EU banking union.

sovereigns cannot guarantee bondholders that the sovereigns will always have the necessary liquidity to repay their bonds at maturity. In contrast, nations that have their own central banks can guarantee that the cash will always be available, because they can always force the central bank to create the money [and] there is no limit to the amount of money a central bank can create (De Grauwe, 2011; see also, De Grauwe and Ji, 2014). Effectively, euro-area governments issue debt in “foreign” currency, over which they have no control. De Grauwe argues that this situation renders both euro-area sovereigns and euro-area banks fragile, since doubts about sovereigns’ capacity to repay can harm the banking system.

## **5. The costs of adjustment**

As mentioned above, a major cost of monetary unions is the reduced flexibility to adjust to asymmetric shocks. In the face of such shocks, real-exchange-rate adjustments in individual countries need to be brought about entirely through adjustments of domestic prices and wages, that is, through internal devaluations. The euro-area crisis has shown, however, that it is more difficult to effectuate the needed adjustments in the present environment than had been assumed in the earlier literature on monetary integration. Several factors have contributed to this situation.

- The earlier literature was written against a backdrop of higher inflation, both in Europe and globally. With the decline in inflation to the low single digits in the euro area, it has become more difficult to achieve a given internal devaluation. For example, if inflation in a monetary union averages one per cent a year, a country that needs to regain price competitiveness of the order of ten per cent will need to run a zero inflation rate for ten years. If, however, inflation in the monetary union averages two per cent a year, that same country, by running a zero inflation rate, will have recovered its competitiveness in five years. Thus, an internal devaluation may be slow and costly (in terms of output loss and a rise in unemployment) in a monetary union that features a very-low inflation rate. Everything else held equal, the

lower the average inflation rate in a country's trading partners, the slower and more costly an internal devaluation.<sup>18</sup>

- Rose (2000) presented evidence indicating that a monetary union leads to increased trade among the members of the union (over and above those derived from the elimination of any exchange-rate uncertainty stemming from fixed exchange rates among separate currencies).<sup>19</sup> Several conclusions emerged from this evidence. (1) Since monetary union encourages trade integration, it also leads to greater business-cycle correlation (through the higher trade linkages) among the members of the union. (2) A corollary of greater business-cycle correlation is that monetary union itself will make asymmetric shocks between countries less likely, reducing the advantage of a country-specific monetary policy.

- Two comments are in order. First, a main casualty of the euro-area crisis is the idea that trade creation effects could reduce asymmetries among countries in a monetary union.<sup>20</sup> Instead, increased trade integration appears to lead to regional concentration of industrial activities. The basic reason here is that trade integration tends to lead to agglomeration effects under which production becomes relatively cheaper (due, for example, to the access of firms to pools of skilled labor, which, in turn, provides employment opportunities to labor) in areas where there has been a clustering of economic activity (Krugman, 1993). These agglomeration economies, in turn, make it profitable to concentrate production so that firms can benefit from (external) economies of scale. As Pisani-Ferry (2013, p. 8) reports, the “evidence seems to suggest that agglomeration effects [in the euro area] have been present, as the share of northern Europe (Germany, Austria, Finland and the Netherlands) in euro-area manufacturing production grew from 46 percent in 2000 to 51

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<sup>18</sup> However, a country in a monetary union could regain competitiveness against countries outside the union should the union's currency depreciate against the currencies of those countries.

<sup>19</sup> The empirical literature suggests that the trade creation effect of monetary union is in the range of five per cent to twenty per cent. See De Grauwe (2012, pp. 26-27).

<sup>20</sup> As Pisani-Ferry (2013, p. 7) put it, “hopes that trade-creation effects could reduce asymmetries turned out to be naïve.”



percent in 2011.” Consequently, any trade-creation effects of the euro appear to have led to reduced -- instead of increased -- business-cycle synchronization. Second, to the extent that the euro has resulted in greater intra-euro trade, the larger is the magnitude of real exchange rate adjustment that needs to take place without the benefit of a nominal adjustment. As mentioned above, in a monetary union that features a very-low inflation rate, an internal devaluation is slow and costly. The larger the share of intra-union trade among the participants, the larger that part of trade that can regain competitiveness only through an internal devaluation.

- The crisis countries have had to undertake large fiscal consolidations. The earlier literature assumed that a given fiscal adjustment was associated with a fixed fiscal multiplier. However, recent work on fiscal multipliers has indicated that the multipliers are considerably higher in a crisis environment than in more tranquil situations. Several factors account for this circumstance (Blanchard and Leigh, 2013). First, fiscal multipliers tend to be higher than otherwise when economies are in recessions and there is a great deal of slack in an economy. Second, in situations of very low nominal interest rates, central banks have limited scope to reduce policy rates to offset the contractionary effects of fiscal consolidation on real economic activity. Third, in relatively-closed economies, such as the Greek economy, fiscal multipliers tend to be larger than in more open economies. Any decline in demand hits domestically-produced goods more than imports. The decline in demand for domestic production, then, affects output more than if the economy were more open (Provopoulos, 2012). Consequently, fiscal consolidations in crisis countries have featured moving targets as efforts to reduce deficits have had especially large effects on income, reducing revenues, and necessitating further fiscal consolidations.

## **6. Concluding remarks**

The papers and commentaries in this volume address many important issues related to the functioning of the euro area. Our hope is that these contributions will help improve understanding of the nature of Europe's monetary union, the underpinnings of its crisis, and the changes that are needed so that crises will be prevented in the future.

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TABLE 1

MONEY (M3) AND CREDIT GROWTH: GREECE, GERMANY AND THE  
EURO AREA  
(Annual Averages, 2001–2009)

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	Greece	Germany	Euro Area
M3	8.8	5.7	7.9
Total Credit	10.0	1.9	6.6
Credit to Public Sector	0.3	-1.8	1.9
Credit to Private Sector	16.7	2.7	7.9
Current Account Balance (% of GDP)	-13.4	4.4	0.3
Addendum item: Cumulative inflation, 2001-2009	29.4	15.0	18.9

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Source: ECB Statistical Data Warehouse

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TABLE 2

MONEY (M3) AND CREDIT GROWTH: NORTH AND SOUTH  
(Annual Averages, 2001–2009)

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	North	South
M3	7.3	8.9
Total Credit	6.2	12.6
Credit to Public Sector	1.7	7.8
Credit to Private Sector	7.1	14.9
Current Account Balance (% of GDP)	4.1	- 6.5
Addendum item:		
Cumulative inflation, 2001-2009	16.9	25.8

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North: Austria, Finland, Germany, Netherlands

South: Greece, Ireland, Portugal, Spain

Source: ECB Statistical Data Warehouse

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### **The Crisis in the Euro Area, May 23-24, 2013**

14. Provopoulos George, “The Greek Economy and Banking System: Recent Developments and the Way Forward”, July 2013.
15. Constâncio Vítor, “The European Crisis and the Role of the Financial System”, July 2013.
16. Honkapohja Seppo, “The Euro Area Crisis: a View from the North”, including discussion by Dimitris Malliaropulos, July 2013.
17. Goodhart C.A.E., “Lessons for Monetary Policy from the Euro-Area Crisis”, including discussion by Gikas A. Hardouvelis, July 2013.
18. Bordo Michael and Harold James “The European Crisis in The Context of the History of Previous Financial Crises”, including discussion by Nicos Christodoulakis, July 2013.
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