

JCER DISCUSSION PAPER

No.139

European Monetary Integration and Sovereign Debt Crisis

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April 2013

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(Abstract)

The aim of this paper is to have a better understanding of the reasons behind the difficulties that the euro area faced, and the problems that led to the outbreak of the sovereign debt crisis in 2010.

The paper first examines the extent to which the euro area was an optimal currency area (OCA). After finding that there were too much inflexibility and rigidity to be an OCA as a whole, it goes on to discuss the reasons for not being one in spite of the fact that euro area countries were chosen on the basis of the Maastricht convergence criteria. It also discusses the existence, among the euro area countries, of ex-post pressures towards OCA, provided by market forces arising from improvement in economic opportunities, and by implementation of policies that aimed to introduce more flexibility into the euro area.

Another issue that the paper focuses is the reason for the absence of pressure from the financial markets that should have provided discipline to countries with fiscal problems. Since low interest rates were a common phenomenon in industrial countries, it needs to be discussed in the context of a global change in financial structure. A number of hypotheses that have been proposed to explain the phenomenon, including the global banking glut hypothesis, are taken up and discussed.

It concludes by noting the importance of a strong political will to implement structural reform even in a favorable macroeconomic environment.

Keywords:

European monetary integration, euro area, optimum currency area, convergence criteria, sovereign debt crisis

1. Introduction

Twenty years ago (in 1993), I contributed a paper entitled “European Monetary Integration and Macroeconomic Policies” to the journal *EU Studies in Japan* (then the *EC Studies in Japan*), Volume 13 (Saito (1993)). The paper discussed issues that related to the then-pursued European monetary integration from a perspective of economics, with special focus on the impact of European monetary integration on macroeconomic policies in the area. The paper raised some concerns about the approach taken at that time. It was because monetary integration was about to take place in an area that was not an optimum currency area, and it was destined to enlarge further.

Twenty years has elapsed since then. Significant developments have taken place during the period; the creation of the euro area is undeniably the most significant but other policy initiatives have also been made. The aim of this paper is to assess the progress made up to the birth of the euro area, and also the experience thereafter under the monetary integration. By doing so, we should have a better understanding of the reasons behind the difficulties that euro area faced, and the problems that led to the outbreak of the sovereign debt crisis in 2010.

The structure of the paper is as follows. In Section 2, we examine the extent to which the euro area is an optimum currency area (hereafter denoted as OCA). In Section 3, the reasons why the euro area did not become an OCA will be investigated. The meaning of the Maastricht convergence criteria, the effectiveness of ex-post endogenous pressure toward an OCA, and policy efforts to reform the economy to an OCA will be discussed. Section 4 picks up the economic problems that the euro area faced as a result of a monetary integration in a non-OCA. It will also discuss why there had not been enough financial market pressure to enforce prudence on public finance. Section 5 concludes.

2. To What Extent Was the Euro Area an OCA?

2-1 Conditions for an OCA

The economic background for European monetary integration lies in the OCA literature that has grown out from a pioneering paper by Mundell (1961). The literature has highlighted a number of conditions that the countries in the area have to satisfy to give up their national currency, to introduce a single currency for the area, and to surrender exchange rate policy as an adjustment tool and subject itself to a common monetary policy. While they were illuminating, the conditions that have been picked up

have been wide-ranging, and the relationship among them was not always clear. In the following, therefore, I will categorize them into four areas and try to provide economic rationale to each.

The first category includes conditions that will allow the market to absorb any impact coming from an external shock. An economy with flexible prices and wages should be able to absorb shocks by itself. Even if the flexibility of prices and wages is limited, high mobility of capital and labor would be able to undertake the necessary adjustment. When either of these conditions is satisfied, there will be no need for any policy response, including exchange rate policy and other macroeconomic policies, to reach full-employment equilibrium. Adopting a single currency in such an area would not pose any fundamental problem.

The second category includes conditions that, even though a policy response is necessary, it rules out exchange rate policy as a policy option. One of the conditions in this category is the significance of the openness of economies in the area. If an economy is open, exchange rate devaluations, for instance, lead to higher domestic prices, and, hence, negate the effectiveness of the exchange rate policy intended to influence price competitiveness of its tradables.

The third category of conditions includes those that reduce the need for individual countries' separate policy responses to a shock. Symmetry of shocks is one of them. Similarities of the policy reaction function in terms of timing and magnitude of response is another. If these conditions are met, a common monetary policy implemented by the only central bank in the area can be sufficient in dealing with the shock.

The fourth category includes conditions that allow the countries to undertake an individual action when needed. Fiscal balance and government debt should be under control. It may also be complemented by an appropriate framework for an area-wide fiscal transfer mechanism.

Among the four categories, there is a clear distinction between the first and the latter three. The conditions in the first category, if satisfied, will insure that the shocks will be absorbed by the market mechanism, so that policy responses will not be necessary. In that sense, the system will be sustainable. On the other hand, the conditions in the other three categories, even if satisfied, will only support the policy setup; i.e. giving up exchange rate policy, introduction of a common monetary policy, and implementation of individual fiscal response. They do not, by themselves, insure stability of the system.

What is more important in the present context is that none of the conditions seemed to have been satisfied in the euro area, as the ongoing sovereign debt crisis revealed. In what follows, a focus would be given to the first category of conditions, and the extent to which they have been satisfied will be examined.

2-2 Function of the Market Mechanism

2-2-1 Flexibility of Prices

One of the most important factors for the market mechanism to operate is the flexibility of prices. Prices need to respond to the gap between supply and demand so as to match the two in the medium-term.

The studies on prices have tended to concentrate on the examination of the degree of price convergence in the region. The European Commission (1996), for instance, examines price convergence on the assumption that emergence of integrated markets, where arbitrage is allowed to operate, and where member countries' borders are not hindering economic transactions, will translate into increased price convergence across the region. It is concluded that changes in the structures and in the degree of competition of European markets prompted by the implementation of the Single Market Programme have resulted in an increased price convergence across the EU between 1985 and 1995.

The Organisation of Economic Co-operation and Development (2012a), which examines the development of the price convergence indicator since 1995, concludes that price convergence has continued in the EU as a whole during the 2000s but it has largely been driven by the catch-up of prices in EU12 (representing central and eastern European countries) toward EU15 (EU countries excluding EU12) levels. Price differential remains wide for the EU as a whole, and price convergence within the EU15 during the 2000s has also been very limited.

Such an approach, however, is unsatisfactory: Even if prices converged, it does not imply that a single market with price competition has been introduced. It may be, for instance, a reflection of region-wide oligopolistic price behavior. Price flexibility remains to be confirmed.

One simple approach to examine price flexibility itself is to look at the correlation coefficients between the GDP gap and the rate of change in the private consumption deflator. They have been calculated for the member countries of the euro area OECD countries and for some other countries in the non-euro EU area, and for the periods 2001-2005 and 2006-2010. If prices are flexible, prices should react to GDP gap in a positive way, so that a positive sign is expected. The result summarized in the left hand side of Table 1 shows that, first, the euro area in general has the right sign and seems to be moving toward more price flexibility; second, there are still significant differences in price flexibility among the countries in the area; and third, some countries, like Greece, are showing less correlation, suggesting existence of significant price rigidity.

Table 1
Correlation analysis on flexibility of prices and wages

| Country | Correlation coefficient | | | | | |
|------------------|---|-----------|------------------|---|-----------|------------------|
| | Level of output gap and changes in private consumption deflator | | | Level of unemployment rate and changes in real wages adjusted for productivity increase | | |
| | 2001-2005 | 2006-2010 | More flexibility | 2001-2005 | 2006-2010 | More flexibility |
| Austria | -0.241154 | 0.723758 | * | -0.698785 | -0.021989 | |
| Belgium | 0.724947 | 0.882243 | * | -0.920521 | -0.268871 | |
| Estonia | -0.279430 | 0.877670 | * | 0.769066 | 0.004321 | |
| Finland | 0.505579 | 0.582439 | * | -0.300726 | -0.053588 | |
| France | 0.126640 | 0.768592 | * | -0.724826 | 0.205494 | |
| Germany | 0.299016 | 0.565779 | * | -0.514017 | -0.381931 | |
| Greece | 0.728887 | 0.063949 | | 0.010657 | -0.500781 | * |
| Ireland | 0.758992 | 0.901575 | * | -0.262324 | -0.627874 | * |
| Italy | 0.135406 | 0.844791 | * | 0.478538 | 0.030502 | |
| Luxembourg | -0.408141 | 0.860594 | * | -0.932151 | 0.888282 | |
| Netherlands | 0.887806 | 0.522920 | | -0.810098 | -0.591655 | |
| Portugal | 0.754463 | 0.855627 | * | -0.084574 | 0.025855 | |
| Slovak Republic | -0.395686 | 0.598883 | * | -0.417012 | -0.238090 | |
| Slovenia | n.a. | n.a. | | -0.535494 | -0.005188 | |
| Spain | -0.130143 | 0.671835 | * | -0.073728 | -0.417549 | * |
| Euro area (OECD) | 0.486080 | 0.788345 | * | -0.594257 | 0.015843 | |

(Note) * shows that, over the period, a wrong sign changed to a right one, or, when both had the right signs, correlation coefficient rose.

(Data source) OECD (2012b)

A more formal study to address the issue of price flexibility can be seen, for instance, in Dhyne et al. (2009). Their empirical analysis shows, among other things, that; prices change infrequently; the frequency of price changes varies across product categories, and across countries; and the competition and retail trade structure are believed to influence significantly the frequency of adjustment. Using the indicators that allow the assessment of intrinsic rigidity, they investigate the extent of intrinsic rigidity of consumer prices to find that the differences in rigidity between sectors are greater than that between countries.

It is suggested that, while a shift to more flexibility in prices has been witnessed in some countries, significant price rigidity still remains in the euro area.

2-2-2 Flexibility in Wages

Wage flexibility is another important condition that could absorb shocks to the system. An exercise similar to the one that has been done for price flexibility has been done for wage flexibility as well. This time, correlation coefficients between the unemployment rate (harmonized) and the rate of change for real wages (compensation per employee deflated by private consumption deflator) adjusted for productivity

increase for the periods 2001-2005 and 2006-2010 have been calculated. If wages are flexible, real wages should respond to unemployment in a negative way, so that a negative sign is expected. The result summarized in the right-hand side of Table 1 shows that, first, a number of countries have the wrong sign, implying that wage flexibility seems to be very weak in these countries; second, most of the countries seem to suggest movements toward more rigidity, rather than flexibility. However, it should be noted that countries that faced crisis toward the end of the period, such as Greece, Ireland, and Spain, have shown movements toward greater flexibility over these periods.

There are studies that address wage flexibility more directly. By estimating wage functions, a study by the OECD (1999) confirms a high sensitivity of real wages to unemployment in the long run, but they also point to a relatively high degree of short-run rigidity. In addition, the speed of adjustment of real wages toward their long-run equilibrium level is slow. A more recent study like Arpaia and Pichelman (2007) also found that, while there are considerable variations across the euro area, a significant degree of nominal and real rigidity exists in the area.

2-2-3 Mobility of Labor

If there is rigidity in wages, the burden of shocks would have to be borne by reduction in employment. Nevertheless, unemployment may not have to increase if there is significant labor mobility within the euro area. Unemployment can be reduced if workers are able to move to other countries where there is shortage of labor¹. In terms of legal rights, EU nationals who move to another country enjoy full equal treatment with nationals with respect to conditions of employment and work, including pay and social advantages. Starting from workers, the right has been extended to all EU citizens under certain conditions. Self-employed workers have the right to establish or to provide services in other EU countries.

According to studies that examine labor mobility, however, labor mobility in the euro area is considerably limited between countries as well as within countries (OECD (1999, 2012a)). A number of factors seem to exist behind such limitations, including cultural and linguistic differences, housing difficulties, and non-portability of social policy and assistance (including pensions).

¹ Recent discussion on the economic impacts of migration is based on growth theory, which emphasizes the role of human capital on growth. They see migration of human capital as a loss for the “home” country, while stimulating growth in the “destination” country. See, for instance, Strausbaaer (2000). Compared to such dynamic view of migration, the traditional OCA theory depends on a more static view. An OCA theory may need to be reconstructed as the dynamic aspect becomes more significant.

3 Why Didn't the Euro Area Become an OCA?

3-1 Maastricht Convergence Criteria and OCA

3-1-1 Nominal Convergence as Criteria

The discussion in the previous section suggests that, while there has been progress toward greater flexibility in the euro area, there are still considerable differences among the area, and that there are, in some countries, backward movements toward rigidity.

The natural question that could be asked, then, is “Why didn't the euro area become an OCA?” The obvious place to start is the Maastricht convergence criteria, the conditions that have to be met by the countries that aim to join the euro area, and that were introduced by the Treaty Establishing the European Community (part of the Maastricht Treaty) and the Treaty's Protocol in 1992. They consisted of (a) achievement of high degree of price stability; (b) sustainability of government financial position; (c) participation in the Exchange-Rate Mechanism of the European Monetary System; and (d) convergence of interest rates.

A number of questions arise with regard to the choice of the indicators for the Maastricht convergence criteria.

First, why didn't the criteria include indicators related to flexibility of price and wages, and labor mobility, in spite of the emphasis given to them in the literature on OCA? As we have already seen, even in those countries which have cleared the Maastricht convergence criteria, there exist considerable rigidities in their product and labor markets. It implies that “prior convergence of inflation rates, of interest rates and of budgetary policies is not necessary, nor is it sufficient, to form a successful monetary union” (De Grauwe (1996)).

Second, why did the convergence criteria include criteria for fiscal sector indicators? In other words, why is convergence of fiscal condition necessary, when it is of only secondary importance for being an OCA? The significance of the question should be confirmed if we take note of the possibility that the criterion such as (b) would limit the use of fiscal policy at a time of asymmetric shocks, and could constrain the smooth functioning of monetary integration.

Frankel (1993) argues that fiscal criterion is unnecessary because a profligate country will be subject to a penalty of high interest rate premium. Even if this penalty does not work, it should still be left to the countries themselves to deal with the problem. Having made that argument, he offers possible explanations for the inclusion of fiscal indicators. They may have been included because of the risk of a bail-out by central authorities; the danger of spread of fiscal or financial crisis to neighboring countries;

and the possibility of macroeconomic spillover effects via interest and exchange rates. However, the explanations are less directly related to the creation of OCA. What is suggested as the real motive behind the inclusion, therefore, is the intention to test the national willingness to give up independent-will. Because fiscal restraint is difficult, it is considered that fiscal commitment offers a good test of strength of will.

The third question about the Maastricht convergence criteria is: Why did the convergence criteria include only inflation rates and *nominal* indicators (nominal interest rate and nominal exchange rate), rather than those related to real indicators? Obviously, if an economy is perfectly flexible, competitive pressures would lead to convergence in regional labor productivity, real rate of return on capital, and real wages.²

One argument that tries to explain this puzzle is based on the *new* theory of OCA. It focuses on the credibility gained by joining a monetary union. By making sacrifices to lower inflation, high-inflation countries can show their seriousness in fighting inflation. However, it would have a painful implication for a high-inflation country to meet, especially when they lack credibility, and speculation of devaluation can emerge easily. So the conditions, in effect, work as a preventive clause to deter entry of high-inflation countries (De Grauwe (1996)).

Furthermore, some argue that, if the countries are converging in terms of labor productivity in the tradables sector, the countries witnessing a rise in productivity will see the Balassa-Samuelson effect working itself through, raising the relative price of non-tradables and bringing an upward trend in the consumer price index (De Grauwe and Schnabl (2005)). If that actually takes place, convergence of productivity would imply a divergence in the inflation rate rather than a convergence of it. If the countries find themselves obliged to meet the conditions even under such circumstances, they would have to exert a downward pressure on the economy. It shows that convergence criteria are not consistent with real convergence.

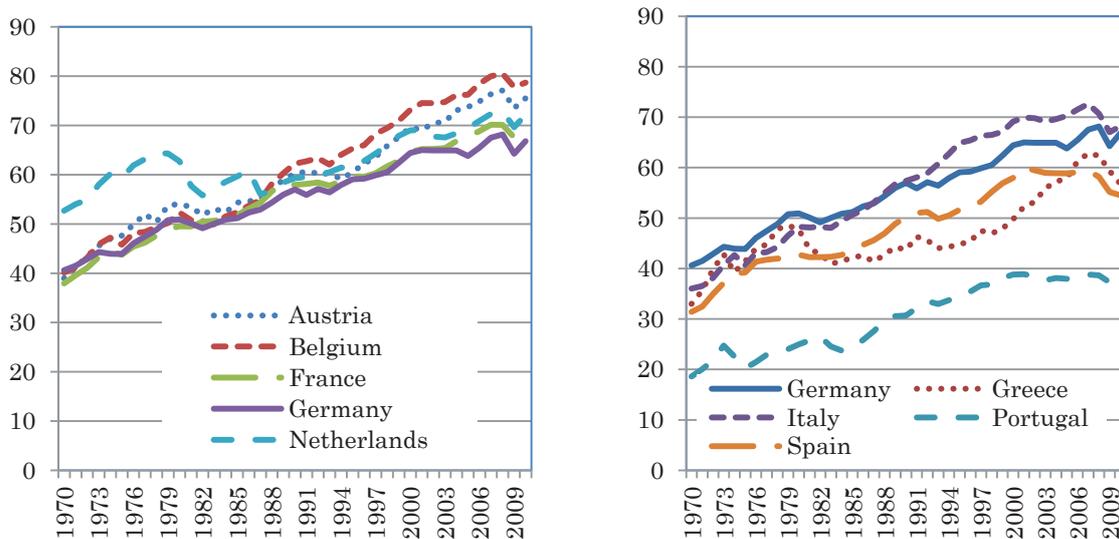
In sum, the countries in the euro area would not qualify for an OCA just because they meet the Maastricht convergence criteria. The fact is that the criteria may have been inconsistent with one another, and that even though the Maastricht convergence criteria were met, in principle, by all of the countries now in the euro area, convergence in real terms may have been absent.

² Furthermore, it can be said that realization of real convergence is essential for a single currency area. That is because, otherwise, it would be difficult to stabilize the single currency area unless there is some kind of an arrangement for fiscal transfers within the area to offset the diverging macroeconomic performance.

3-1-2 Real Convergence in the Euro Area

A perfectly flexible economy implies an economy in which convergence in real terms has taken place. One way to see the extent to which the euro area has converged in real terms is to check the trends in labor productivity. Figure 1 shows the trend of the member countries' labor productivity for the period 1950~2010. More specifically, the series are PPP converted GDP chain per worker at 2005 constant prices. Calculating and comparing *level* of labor productivity across countries is always difficult; all estimates should be looked at with considerable margin of error. But it does seem to show that there is a clear difference between the core and the periphery countries. For the core countries, consisting of Germany and its neighbors, significant convergence in labor productivity was witnessed during the period up to 2010. In contrast, Germany and its southern periphery countries did not show such convergence during the same period.³

Figure 1
Labor productivity
(in thousands of 2005 US dollar per worker)



(Data Source) Heston et al. (2012)

3-2 Ex-post Pressures Toward an OCA

In reality, political motivation has often been more important than economic reasoning in forming a monetary union. This also applies in the case of the formation and the enlargement of the euro area. Monetary integration was a result of a

³ The coefficient of variation in 2010 was 0.0608 for the first group of countries, and 0.1929 for the second.

long-standing determination “to lay the foundation of an ever-closer union among the peoples of Europe” (from the preamble of the Treaty of Rome).

However, if the conditions for OCA are not satisfied, the euro area is not assured of its sustainability. Therefore, to enjoy the full benefit of the monetary union, the economic structure of the countries needs to be reformed so that the conditions are satisfied after the formation of the monetary union. This can be achieved in two ways. One way is for the market forces to exert pressures on the economy, forcing it to transform itself to an OCA. The other is the implementation of policies to transform the economy so that it would satisfy the conditions for an OCA as a result. We will examine them in turn.

3-2-1 Endogeneity of OCA

Once a single currency is adopted in a number of countries, it should change the economic opportunities facing the agents in the area and a strong tendency toward cross-border transaction should emerge. Discussions on the issue have been around since the 1990s, which eventually led to a literature that came to be known as the *endogeneity* of OCA.

In the early years, a study investigated the relationship between intensity of trade with other countries and the correlation of domestic business cycles with those of the other countries (Frankel and Rose (1996)). They found empirically that the countries with closer trade links tend to have more tightly correlated business cycles. It was suggested that countries are more likely to satisfy the criteria for entry into a currency union after taking steps toward economic integration than before.

The argument was expanded by focusing on four channels through which monetary integration pushes the regions to satisfy conditions for an OCA *ex post*, even if they did not *ex ante* (De Grauwe and Mongelli (2005)). The four channels are (a) economic integration; (b) financial integration; (c) symmetry of shocks; and (d) product and labor market flexibility. It was preliminarily concluded that the different endogeneities toward OCAs are at work. However, they also state that the strength of these endogeneities, and how quickly they do their work, remains to be seen.

3-2-2 Policy Efforts Toward OCA

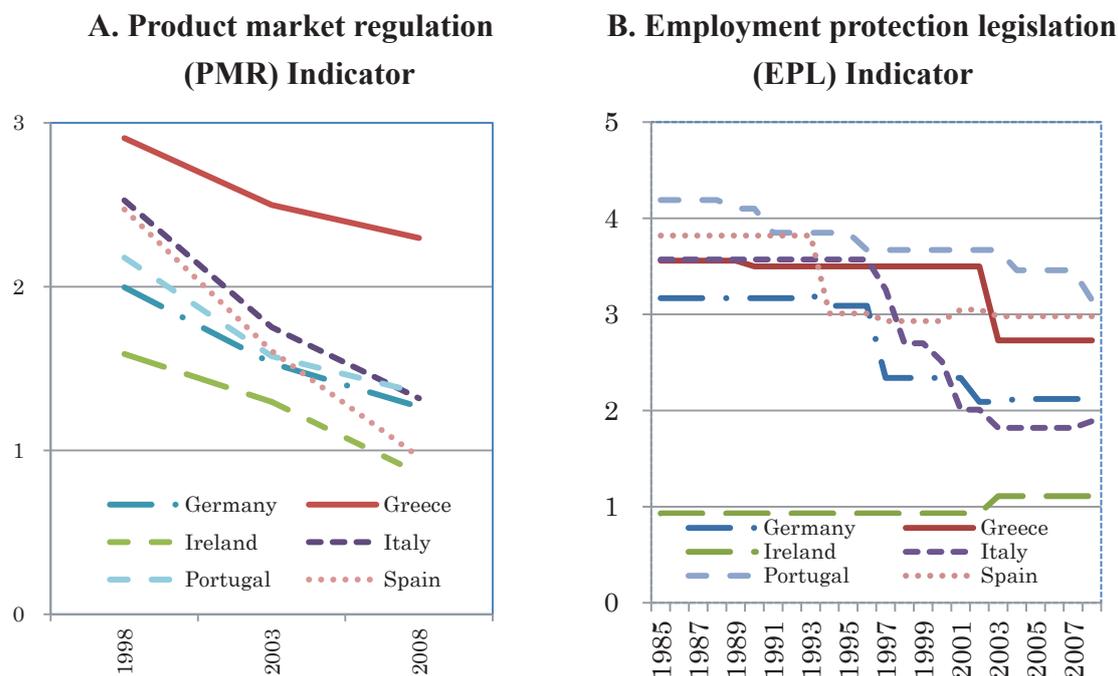
In terms of the policy efforts, it is true that directives have been issued in an effort to introduce more flexibility into the euro area. What is clear, however, is that they were not sufficient to transform the area into an OCA. Actual legislation and implication were left for the member countries to act on so that the issuance of directives did not necessarily mean that they were effective. To see the extent to which the efforts have

been introduced, it is useful to look at the two indicators developed by the OECD.

The Product Market Regulation (PMR) indicator is a set of indicators developed to measure the degree to which policies promote or inhibit competition in the product market. They cover formal regulations in state controls of business enterprises, legal and administrative barriers to entrepreneurship, and barriers to international trade and investment. Data are available for 30 OECD countries in (or around) 1998, 2003, and 2008, and for another four OECD countries as well as five emerging economies in (or around) 2008. The value is a weighted average of coded information that is normalized over a scale of zero to six, with increasing numbers indicating restrictiveness of regulatory provisions for competition.

Figure 2-A shows that the regulation has been eased in all of the member countries in the euro area, but its pace has slowed down in the recent five-year period. By country, Greece stands out as the most restrictive country. If lower level indicators are inspected, it is surprising to find that an indicator showing barriers to entry in services has in fact risen in such countries as Italy, Spain, and Portugal in the recent period.

Figure 2



(Data Source) OECD, Indicators of Product Market Regulation Homepage, and Employment Protection Legislation Homepage.

The Employment Protection Legislation (EPL) indicator is a set of indicators developed by the OECD intended to measure the procedures and costs involved in

dismissing individuals or group of workers, and the procedures involved in hiring workers in fixed-term or temporary work agency contracts. They are compiled from items covering individual dismissal of workers with regular contracts, additional costs for collective dismissals, and regulation of temporary contracts. The scale is from zero to six, with the least restrictive being zero and the most restrictive being six.

The EPL shown in Figure 2-B shows that legislation has been introduced to reduce protection in the labor market. In particular, significant improvement has been made by early 2000s, but there has been little change, if not a reversal, thereafter. It should be noted that there is a wide difference in the indicator, with Greece, Spain, and Portugal at the higher end.

The two indicators show that considerable progress has been made in the euro area, especially in the 1990s, but the improvement has slowed down, leaving a wide divergence among the member countries.

4 Why No Pressure From the Financial Markets?

One of the expectations at the time of the launch of the euro was that when there is a problem in the fiscal situation, the financial markets will give a warning signal, i.e. a surge in interest rates. The Crisis of 2010 showed that such a warning signal failed to emerge. What should be asked at this point is: Where was the pressure from the financial markets? In the first half of this section, problems faced by the euro area as a result of low interest rates combined with the rigidities and diversities in the euro area will be examined.⁴ In the second half, we will discuss the reasons for the absence of warnings from the financial markets in the context of global change of the financial structure.

4-1 Problems That Arose in the Euro Area

Monetary integration in an area that is not an OCA led to significant changes in various fields of the economy. We will focus on those that had important implications for the emergence of the sovereign debt crisis in 2010.

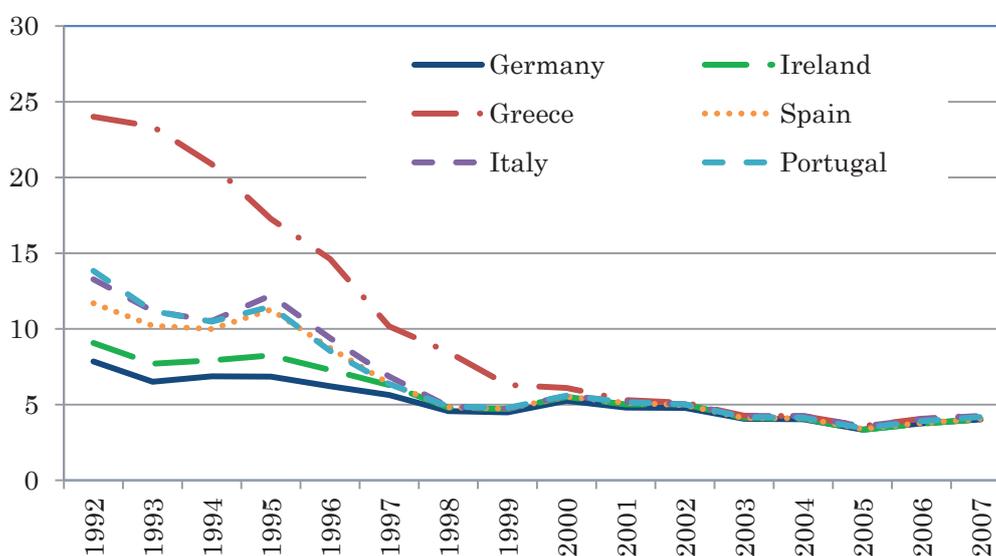
⁴ The sovereign debt crisis that broke out in Greece in 2010 reflects the problem of a monetary integration in a non-OCA. However, this does not mean that an OCA is immune from any crisis. This can be verified by the fact that a financial and economic crisis broke out in the latter half of the 2000s in the U.S. which is considered to be an OCA.

4-1-1 Convergence in Interest Rates

With the establishment of the euro area, European Central bank (ECB) became the only central bank responsible for the monetary policy in the area, whose unique mandate is price stability. As a result, short-term interest rates converged due to the market operations by the individual central banks, which now function as regional branches.

On the other hand, there was no apparent reason for long-term interest rates to converge among the member countries. This is because inflation rates were high and the fiscal situation was worse in some countries, especially those in the south, compared to others. The actual development of long-term interest rates after the introduction of the euro, however, was to the contrary. As Figure 3 shows, long-term interest rates converged to a low level, equivalent to those of Germany, towards the mid-2000s. The situation remained as such until 2010, when the sovereign debt crisis broke out in Greece.

Figure 3
Long-term interest rates
(in percent)



(Data Source) European Commission, Eurostat.

4-1-2 Disparity in Inflation Rates

Rigidities in the economic system in the euro area resulted in different rates of inflation among the member countries. Inflation was so highly imbedded in the system that it was insensitive to the cyclical developments. It may be recalled that, in Section 2,

above, the responsiveness of prices to GDP gap was found to be weak.

The convergence of long-term interest rates to low levels had a significant macroeconomic effect when it was accompanied by diversified inflation rates. First, it implied that *real* long-term interest rates differed among the member countries; it was relatively high for the low-inflation countries like Germany, but relatively low for high-inflation countries like Greece and Spain. Second, the different macroeconomic impact of the developments in long-term interest rates cornered the ECB into a difficult situation. Because there is only a single monetary policy for the area, all it could do was to focus on the average CPI for the area by manipulating a single short-term interest rate for the area. The ECB found itself unable to deal with the local situation.

4-1-3 Surge in Asset Prices

Low interest rates in countries with considerable rigidity resulted in low, or even negative, real interest rates. But because the industries in those countries were suffering from low productivity, not much real activities went on to absorb liquidity. Hence, the natural destinations of funds within the same low-productivity countries were the markets with flexible prices and inelastic supply so that expectation of price rise was easily formulated.

The typical market of this kind was the real estate market. Real estate prices in Spain, among others, surged as rise in prices encouraged further investment on the expectation that they would rise further. The *bubble* situation as such took place until the late 2000s, when the emergence of sub-prime mortgage loans problem in the U.S. led to the burst of the *bubble* in the euro area.

4-1-4 Unsustainability of Fiscal Situation

There were some countries in the euro area whose fiscal situations were worse than that required by the convergence criteria (for example, Belgium, Italy, and Greece had debt to GDP ratios of more than 100 percent). For these countries, the favorable macroeconomic environment should have provided a comfortable environment in which the fiscal situation could be improved. However, the reality was that not much had been done in this respect, as can be seen in the structural fiscal balance during the 2000s. In particular, the social security systems that offered generous benefits were left untouched even in the face of rapid aging of the population. The situation was left unaddressed while the favorable macroeconomic situation lasted. It is only when the macroeconomic environment worsened, after the outbreak of sub-prime mortgage loans problem, and after the Lehman Shock in particular, and when loss in revenue and increase in expenditure in response to the deterioration of the economic situation became evident,

that countries realized the importance of addressing the fiscal situation.

The fiscal situation worsened more significantly when the decline in real estate market led to a build-up of non-performing loans in the financial sector. Fiscal assistance to the ailing financial sector led to a significant increase in government debt, as was the case in Ireland.

4-2 Global Change in the Financial Structure

As we have seen, fiscal consolidation was left untouched because of the favorable macroeconomic environment that was characterized by the convergence to low long-term interest rates for the countries in the euro area. Low interest rates were realized irrespective of the fiscal situation, which was disappointing from the point of view of the expectation of a financial market pressure toward fiscal discipline. In this sense, a low-interest-rate environment was a major factor in creating the problem that later became apparent as the European sovereign debt crisis.

4-2-1 Explanations for Low Interest Rates

The above naturally leads to the next question: “Why did long-term interest rates converge to such a low level?” There are number of possible explanations for this.

First, actual occurrence of default in a developed county may have been underestimated. Since no sovereign debt default in the region has taken place since the immediate aftermath of World War II, the reality of a default of a member of the euro area may have seemed remote.

Second, the market may have believed that the countries that run the risk of defaulting would be bailed out by other members of the EU. While the Treaty had a *No Bail-Out* clause, it may not have been believed to be maintained at a time of crisis.

Third, the Repurchase Agreements (Repos) operation by the Eurosystem has been providing subsidies to issuers of government debt with high default risk (Buiter and Sibert (2005)). Government debt in the area was treated effectively the same when they were offered as collateral for Repo operations, so that banks tended to regard them as the same in terms of risk, irrespective of the different fiscal situations that countries face.

While they all seem plausible, it is important to note that low interest rates did not take place only in the euro area: In the mid-2000s, low interest rates were a common phenomenon in the industrial countries. Therefore, the development in the euro area needs to be understood in a global context.

4-2-2 Hypotheses to Explain the Conundrum

The distinct feature of the financial market in the mid-2000s was the global fall in long-term interest rates. In the U.S., it was described by then-chairman of the Federal Reserve Board Mr. Greenspan as the *conundrum* (Greenspan (2005)). Since then a number of hypotheses have been proposed to explain the phenomenon. Three of the main hypotheses were (a) the *global savings glut* hypothesis; (b) the *global imbalance* hypothesis; and (c) the *global banking glut* hypothesis.

Because the aim of this paper does not concern global changes in the financial structure *per se*, it will not be discussed in detail. In the current context, it should suffice to say that hypothesis (a) only examines the excess funds that the Asian and oil producing countries receive as a result of their export-oriented policies and oil price hike. The hypothesis, therefore, explains the low interest rate in the U.S. only by the *push* factor. But, usually, “it takes two to tango.” The *pull* factor such as the widening fiscal deficit or the fall in household savings rate should also be taken into account. From that point of view, (b) tries to describe the situation by both the large sustained current account deficit in the U.S. and the large current account surplus in the Asian and oil producing countries.

The problem with hypothesis (b), on the other hand, is that it tends to focus on the current account balance, i.e. on the difference between the receipt and the payment of current transactions. It may overlook an important aspect of the problem if a simultaneous increase in receipts and payments of capital transactions has an important implication. This aspect is taken up by hypothesis (c).

4-2-3 Global Banking Glut Hypothesis

Transactions that take place on both the asset- and liability-side of the capital account are the main focus of the global banking glut hypothesis (Shin (2011)). These kinds of transactions took place between the U.S. and Europe. European banks (which include European subsidiaries of U.S. banks) raised funds through Money Market Funds (MMF). They invested the funds back in the U.S. by purchasing mortgage backed securities (MBS) and structured products. The investments by the European banks contributed in raising prices of these securitized products, and thereby in encouraging the supply of sub-prime mortgage loans in the U.S.

A similar relationship seems to have emerged between the core and the periphery countries in Europe. German and French banks, for instance, increased their supply of funds to Spain, which was an attractive destination for investment because of the high

rate of return that was expected as a result of the bubble in the real estate market.⁵

These were the explanations provided for low interest rates in the mid-2000s. To determine which hypothesis is good, or whether they should give way to an alternative explanation requires further research. Whatever the explanation would be, it is undeniable that financial markets failed to signal the growing unsustainability of the fiscal situation in some countries, which later had to receive assistance from other members of the euro area.

5 Concluding Remarks

There are many lessons to be learned from the European crisis. Much has been discussed about the need for fiscal union. It may be an important step in dealing with the immediate problem of assisting the ailing countries and keeping the euro area intact.

The more fundamental issue, however, is to minimize the incentive to call for fiscal actions. That could only be achieved by making the euro area an OCA. The importance of structural reform in the area of, for instance, the labor market and the service sector cannot be overemphasized.

To maintain the momentum for structural reform, targets should be set for a number of indicators closely related to structural transformation. The process for achieving the targets should be insured by implementing incentive-compatible policies, and a framework to monitor the progress is needed. In all of this, strong political will is necessary; it would push the agenda through even in a favorable macroeconomic environment, which tends to disguise the deeply embedded problems.

⁵ The theory of OCA, which was initiated in the 1960s, did not anticipate the significant development of cross-border activities in the banking sector and the disruptions they may cause. How to incorporate such banking activities in the theory of OCA is an important area for future research.

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