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Lesson from the financial crisis in the Euro area

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1 Introduction ¹

The euro was 10 in 2008. To celebrate this important birthday the European Commission produced a 350 pages report (European Commission, 2008), accompanied by a string of research papers, to evaluate the EMU experience after a decade. Lights and shades emerged from a careful and thorough analysis of the relevant issues, but the overall conclusion was: "EMU is a resounding success". Though perhaps more soberly, most observers would have subscribed to this view, ready to shelve some issues that, hotly debated when EMU was first launched, seemed now to have lost relevance: the effects of asymmetric shocks when optimum currency area conditions are not satisfied, the dangers of uncoordinated fiscal policies, the Walters (1986) critique of a one-size-fits-all single monetary policy. One of the questions examined in the report, and at first sight somewhat reminiscent of the issues raised by Sir Alan Walters, was that of persistent differences in growth and inflation between some countries and the rest of the euro area. Misgivings on the sustainability of these trends were expressed here and there, but on the whole the policy conclusion was broadly reassuring:

“The performance of [Spain, Ireland and Greece] has... shown a satisfactory development overall... The strong performers have been thriving on investment booms spurred by capital inflows attracted by comparatively high rates of return, with the single currency and the integration of financial markets acting as a catalyst. [...] Overall the divergences in growth and inflation have been long-lasting, involving major shifts in intra-euro-area real effective exchange rates... This has been reflected in divergent current account positions across countries. Some, but not all, elements of these differences in inflation, growth and external positions can be attributed to structural convergence in living standards. Even so, not all inflation differentials are harmful; some are merely a sign that competitiveness realignment is doing its job.” (European Commission, 2008).

At the time of the publication of the report few would have taken exception to these propositions. When, however, hell broke loose between the end of 2009 and the beginning of 2010 and the four "cohesion" countries² (the three strong performers as well as stagnant Portugal) came under attack, media and markets, turning those propositions onto their head, used them as arguments for the prosecution as the euro was put on trial. True, the proximate cause of the attack was the sudden discovery that the Greek public accounts had been a pack of lies for years (something of which the Commission had been unaware).³ But this was not the case for the other three countries, two of which moreover exhibited an enviable and widely praised record of high primary surpluses, low overall deficits (surpluses in some years) and low debt levels up until 2007 (table 11.1). True, this flattering appearance melted away with the crisis, as the deterioration of public finances in Ireland and Spain in 2008 and 2009 was far greater than in the rest of the euro area; markets and media were, however, more shocked by the sudden realization that all four cohesion countries had accumulated high levels of foreign indebtedness, as a result of a long succession of current account deficits (table 11.2), and of domestic household debt. The relevant data were of course available before, but as long as the going was good those imbalances were considered the natural side effect of a healthy process of convergence; now instead they came to be considered as symptoms of future sovereign insolvency and indicators of the inherent fragility of the whole single currency project. Had the markets been too complacent before or were they now displaying unwarranted pessimism?

[INSERT Tables 11.1 and 11.2 about here]

The current account position, and hence the savings-investment balance of individual countries, have always been neglected both in the academic debates on and in the policy management of the Euro area. In section 2 we shall examine the conceptual reasons provided by the literature that explain this attitude and even, in some cases, offer a normative justification for the persistence of current account deficits. We note however that the growth experience of the most dynamic cohesion countries displays some peculiar features which do not fit into the conventional convergence pattern which justifies foreign imbalances. Models establishing the optimality of a succession of current account deficits in a catching-up process implicitly assume that the intertemporal budget constraint is satisfied, so that the accumulation of foreign liabilities is matched by future surpluses. In section 3, by means of a simple two-period, two-good model, we show that fulfillment of that condition constrains the destination of foreign capital inflows even in a currency union. In section 4 we argue that the growth pattern of the countries under consideration was unsustainable because it violated the solvency constraint: the counterpart of the capital inflows (which occurred to a large extent through the borrowing of domestic financial institutions) was a boom of non-tradable residential construction or a growth of consumption. While monetary union removed the external constraint in the short run a common monetary policy targeting the average inflation rate of the

area did nothing (nor could it do much) to prevent the extraordinary growth of credit that fueled the growing imbalances in the countries under considerations. In section 5 we shall address some policy issues. As our analysis shows, there are indeed fault lines in the construction of the single currency, which, previously hidden, became visible under the impact of the world financial crisis. We believe that the euro will survive, but fear that it may not be a healthy survival unless institutional changes are introduced to shelter it from recurrent crises.

2 Convergence and external borrowing

The external payments situation of member states has always been disregarded in both the academic and the policy debate on the conception and implementation of the single currency project. It found no place either in the Maastricht convergence criteria or in the Commission's assessments of individual members' performance; the European Central Bank has worried less about current account imbalances and net foreign positions than about the deterioration of some countries' competitiveness. Tellingly, under art. 143 of the Treaty on the functioning of the European Union only member states with a derogation (those which have not adopted the euro) can receive financial assistance to deal with balance of payments problems.⁴

The literature provides sound justifications for this attitude. Ingram (1973, but see also 1962) was perhaps the first to point out that under monetary integration "the traditional concept of a deficit or a surplus in a member nation's balance of payments becomes blurred" even from a conceptual point of view. With a common currency, no individual country can be exposed to speculative attacks: "payments imbalances among member nations can be financed in the short run through the financial markets, without need for interventions by a monetary authority". Owing moreover to "the great diversity in circumstances of member nations", it is likely that "certain member nations may be chronic borrowers in Community capital markets".

Modern growth theory elaborates on the "diversity in circumstances" of nations and predicts convergence at a speed depending on the distance between actual and potential output levels, where potential output depends on total factor productivity, savings and population growth, as well as on policies - what the literature refers to as "conditional convergence"⁵. Capital flows to the catching-up countries, attracted by the expectation of faster productivity growth, to finance the current account deficits generated in the convergence to higher output levels. Monetary union facilitates this process by promoting financial integration and reducing the cost of foreign capital thanks to the elimination of the exchange-rate premium.

Blanchard and Giavazzi (2002) provide a normative dimension. Considering specifically the euro area, they use an intertemporal model to show that foreign borrowing is optimal for a converging country: the recommended level of external borrowing is higher, and hence savings are lower or investment higher,

the greater the country's expected output growth relative to the area average, the lower the wedge between the domestic and the foreign interest rate and the higher the elasticity of substitution between domestic and foreign goods. EMU and the single market have reduced the interest rate wedge and increased the elasticity of substitution between home and foreign goods. For countries at the periphery of the union, with lower initial levels of per capita income, the optimal level of external borrowing, and hence the excess of investment over savings, has therefore increased: persistent current deficits are thus a physiological effect of their catching up process.

Three of the four countries we are considering (the exception being Portugal) seem to conform to this model. They have indeed been "chronic borrowers" in the capital markets: at first sight with good reasons, as their higher growth rates were consistent with the excess of their potential growth over that of the euro area (as later documented in table 11.4). It was indeed the Commission's view (2008) that the EMU years "can be characterized as displaying a typical convergence pattern": monetary union contributed to this process "via financial market integration and the elimination of the exchange risk premium" and allowed a smooth financing of the current account deficits caused by higher growth. If this were the case, one should conclude that the fears expressed by the markets were misplaced, or at least grossly exaggerated.

The picture provided by the available data, however, is not only more complex but also not quite consistent with the "typical convergence pattern". Table 11.3 reports country levels of GDP per capita and of productivity per person employed and per hour worked, relative to the euro area average and to Germany, in 1998 (2000 for hourly productivity) and 2008. In terms of GDP per capita, we can properly talk of convergence only for Greece and Spain: Portugal has hardly moved; in the case of Ireland potential growth, as computed by the Commission, exceeded actual growth but per capita income was higher than the average already in 1998. We add Italy, where there was downward divergence, but no systematic accumulation of current account deficits. The changes in relative labour productivity are consistent with those of GDP per capita in Greece (upwards), in Portugal (almost flat) and in Italy (downwards). In Ireland the growth of labour productivity (especially hourly productivity) was much slower than that of per capita GDP. The case of Spain is extreme: the fast catching up of per capita GDP (eleven points with respect to euro area, ten points with respect to Germany) occurred at an almost unchanged level of relative productivity and appears to be due almost entirely to an increase in employment.

[INSERT Table11.3 about here]

The behaviour of labour productivity deserves attention. Two growth accounting exercises — to be found in the 2008 Commission report and in a 2007 ECB study — provide interesting information⁶. Assuming a technology $Y = Af(K, L)$, with A an index of total factor productivity and $L = (N * Hours)$ the

input of labour, depending on labour participation and utilization, the growth rate of GDP per head can be decomposed as

$$\left(\frac{dY}{Y} - \frac{dN}{N}\right) = a\frac{dK}{K} + (b-1)\frac{dN}{N} + b\frac{dHours}{Hours} + \frac{dA}{A}$$

where a and b are the elasticities of output with respect to capital and labour. The first three terms measure the contribution to the growth of per capita GDP of the factors of production, the fourth that of total factor productivity. In the course of the catching-up process, as the first three components converge to the levels prevailing in the more advanced countries, we expect the weight of total factor productivity to increase.

Table 11.4 reports the results of the Commission exercise, showing potential growth rates rising in Greece and Spain in the EMU decade, falling in Portugal and remaining constant at a very high level in Ireland. The Commission notes that the catching-up process was "heavily geared towards a greater use of . . . labour and capital". Actually the picture is more complex, and more interesting. The TFP contribution collapses in Portugal and Spain and declines in Ireland, while the labour contribution rises, particularly in Portugal and Spain. Greece instead displays a performance more in keeping with what a conventional convergence model would lead us to expect, with a rising contribution of TFP and a declining relevance of the use of factors.

[INSERT Table11.4 about here]

The results of the ECB (2007) exercise (table 11.5) are quite consistent with this pattern. The ECB computes the contributions to actual growth of population and labour utilization (lumped together in table 11.5) and of hourly productivity for two five-year periods before and after EMU; the contribution of hourly productivity is in turn split between that due to capital deepening and that due to TFP growth. Once more we see that Spanish GDP growth appears to have relied almost entirely on employment growth; in the second period the modest contribution of hourly productivity is entirely accounted for by capital deepening, as TFP remains flat. Greece, on the contrary, displays a sizeable productivity component, resting on robust TFP developments. Ireland stands in the middle, with a declining contribution of labour productivity and of its TFP component. The low growth rate of Portugal relies to a large extent on capital deepening.

[INSERT Table11.5 about here]

This evidence does not fit easily into the story narrated by a classical convergence model, where capital flows financing current account deficits are prompted by the expectation of faster output growth driven by rising productivity. Though (with the exception of Portugal) growth remained vigorous in the cohesion countries until 2007-2008,⁷ while current account deficits grew faster⁸, the behaviour

of labour productivity and especially the declining role of TFP in three out of the four countries is a signal of lower future growth and therefore not quite compatible with the persistence of foreign capital flows. Spain earns a distinction for its stagnant labour and total factor productivity. As for Ireland, it is noteworthy that its growth, while export-led and accompanied by hefty current account surpluses in the golden convergence period of the early 1990's, was driven by domestic demand, with declining TFP and growing current account deficits, after 1998.

All this leaves us with two questions. First, we ask in the next section under what conditions persistent current account deficits, reflecting persistent excesses of investment over savings, are the natural and acceptable consequence of a convergence process. Second, we shall illustrate (in section 4) why developments in Ireland, Greece and Spain in the EMU years were incompatible with those conditions.

3 The intertemporal budget constraint and the composition of output

Ingram (1973) warns that the irrelevance of current account imbalances and of external debt in a monetary union holds only as long as *"the proceeds of external borrowing are used for [...] productive purposes"*: if this is the case, a rise of external debt is sustainable because it is accompanied by a proportional growth of national wealth. Instead - he adds, by way of example - *"to finance unemployment compensations or other income-maintenance programs by external borrowing would be asking for trouble !"*.

The distinction between "productive" and unproductive purposes of foreign borrowing on the part of catching-up countries seems to have been lost, at least in the context of EMU. That distinction, and the requirement that national wealth and external debt grow together, can be translated into the condition that the borrowing country must respect an intertemporal solvency constraint requiring that today's liabilities must be matched by future (discounted) current surpluses. This is only possible if foreign borrowing is used to increase the country's productive capacity of exportable goods and services. This important point is overlooked in convergence models (such as Blanchard and Giavazzi 2002) which assume that all the goods a country produces are tradable and can as such contribute to the achievement, at some future date, of the export surplus required by the solvency condition. As soon as we allow for the existence of non-traded goods and for the possibility that investment can be devoted to the production of either type of goods, that condition becomes more stringent and therefore the current account position may come to matter. A simple model helps to better understand this point.

3.1 Optimal external borrowing in the presence of traded and non-traded goods

In this sub-section we analyze a simple model with external borrowing and both traded and non-traded goods. This model is designed to show that introducing both traded and non-traded goods makes the conditions for the sustainability of external borrowing much more stringent. The simple reason is that if a country borrows mostly to finance the production of non-traded goods it will eventually violate its intertemporal budget constraint since it will be unable to generate the export surplus necessary to satisfy the intertemporal budget constraint. Fagan and Gaspar (2008) also use a model with traded and non-traded goods to analyze macroeconomic adjustment in a monetary union. Their model, however, although it derives optimal consumption decisions from the intertemporal choices of infinitely-lived agents, makes one crucial assumption: the flow endowment of traded and non-traded goods is exogenous. Thus the model cannot address the question of what happens if a country decides to invest mostly in the non-traded sector. This is the distinguishing feature of our simple exercise⁹.

The structure of the model is as follows. Agents consume both traded, T , and non-traded, N , goods. We concentrate on the country's intertemporal budget constraint overlooking – contrary to the model described in the Appendix – agents' optimal consumption decisions.

There are two periods, t and $t + 1$, and the economy can exchange traded goods with the rest of the world in each period. At time t , $C_t^N = Y_t^N$, because N goods can not be traded, while C_t^T can be larger or smaller than Y_t^T (we assume that both Y_t^T and Y_t^N are fixed).

Domestic output of traded and non-traded goods at time $t + 1$ depends on investment at time t . There is no labour and the technology is linear in capital: $Y_{t+1}^N = A^N K_t^N$, $Y_{t+1}^T = A^T K_t^T$, where K_t^N and K_t^T are the amounts invested at time t in the non-traded and traded goods sectors respectively and A^N , A^T denote productivity in the two sectors¹⁰. For illustrative purposes we make the extreme assumption that all capital invested at time t is financed by foreign borrowing F . F finances investment in the two sectors, therefore $F = K_t^T + K_t^N$. Along the economy's production possibilities frontier (shown in Figure 11.1)

$$Y^N = A^N (F - Y^T/A^T)$$

The optimal allocation of capital, and thus of production, between the two sectors depends on the expected relative prices of traded and non-traded goods $E(P^T/P^N)_{t+1}$ at the time when they are produced ($t + 1$)

$$\left(\frac{dY^N}{dY^T}\right)_t = E\left(\frac{P^T}{P^N}\right)_{t+1}$$

where E denotes expectations as of time t . This equation defines the PP line in Figure 11.1. The higher the expected relative price of non-traded goods, the

more production (and thus capital) is tilted towards the N sector. In Figure 11.1 the optimal production is denoted by P .¹¹

Next consider the intertemporal budget constraint of this economy. Net foreign borrowing in period t , F_t , must correspond to a current account deficit in the same period and hence to an excess of consumption over production of traded goods in period t . At time $t + 1$ the intertemporal budget constraint requires that net exports are sufficient to balance the debt incurred the previous period

$$(Y_{t+1}^T - C_{t+1}^T) \geq F_t(1 + R) \quad (1)$$

Using the production function, the intertemporal budget constraint can be re-written as

$$\left(\frac{K^N}{K^T}\right)_t \leq \frac{A^T}{(1 + R)} \left(1 - \frac{C_{t+1}^T}{Y_{t+1}^T}\right) - 1$$

The first term on the right-hand side can be assumed to be greater than 1 as $A^T - (1 + R)$, the net marginal product of the capital goods employed in the production of traded goods, can be assumed to be positive. The second term is the share of the production of tradable goods which is not consumed at home in $t + 1$. For the condition to be fulfilled with a positive value of K^N the productivity in the tradable goods sector must be high enough and/or the share of traded goods not consumed internally must be high enough. Notice that productivity in the non-traded goods sector is also indirectly relevant: for a given demand C_{t+1}^N , the higher A^N the lower the required K^N . The above condition can be re-written as

$$\left(\frac{Y^N}{Y^T}\right)_{t+1} \leq \frac{A^N}{(1 + R)} (1 - C_{t+1}^T/Y_{t+1}^T) - 1$$

In figure 11.1 this condition (the slope of which is the expression on the right-hand side) defines a region of current account “sustainability” which corresponds to all points above the SS line. Thus in Figure 11.1, P violates the sustainability condition.

[INSERT Figure11.1 about here]

Of course the intertemporal budget constraint as written in (1) looks exceedingly stringent: but this is only due to our extreme assumption that all investment at time t is financed by foreign borrowing: it is easily shown that allowing for domestic financing would make the constraint more plausible. Still the message remains the same: an excess of foreign borrowing with the purpose of financing the production of non-traded goods is incompatible with a budget constraint. The intuition behind this result is quite simple. Insofar as non tradable goods by definition can only be consumed domestically, foreign financing for their production is equivalent to borrowing abroad for consumption purposes.

3.2 Discussion

Before dealing in the next section with developments in the cohesion countries in the light of the above model, we need to clarify some points.

First, the foreign capital inflow into the country at time t , though matching identically a current account deficit, is not motivated by the financing of that deficit. The channels through which the inflow occurs are either direct foreign investment, or the sale of domestic debt securities, or the borrowing of home banks abroad, from foreign banks or on the wholesale market. Direct investment consists of the purchase of a physical asset and does not have to be paid back. The net borrowing abroad, mostly by the banks, reflects an excess of investment over savings. If there is this imbalance, an increase in the domestic demand for loans cannot be matched by a corresponding increase of residents' deposits and can only be satisfied if the banks increase their foreign liabilities. Second, the distinction between traded and non-traded goods has a high degree of arbitrariness: any non exportable good or service – from a haircut to housing services – becomes tradable to the extent to which it is consumed by visiting foreigners. Still, a criterion of prevalence holds: there are goods which are mostly devoted to domestic use, either because they can only be consumed in loco or because they cater mostly to domestic tastes.

The third point is more delicate¹². What is foreign and what is domestic when the currency is the same? Why should the current account balance, and hence a constraint to the foreign net position, be relevant for an individual Member State of the European monetary union, while certainly irrelevant for the states of the American federation? Why indeed are current account statistics available for the former, but not for, say, California or Wyoming? As in the case of traded and non traded goods there is no clear-cut answer. We observe that markets do seem to make a distinction: while European corporate bonds often include a country risk component and are correlated to government bonds, in the US nobody cares about the state where a company operates; more relevantly, as we saw in the recent crisis in Europe, markets did pay attention to the individual countries' foreign position. These facts however, while corroborating our view that even under a single currency the current account may matter, still do not answer the question of why this does not hold for the dollar. Our tentative answer goes along the following lines. First, there is far greater personal mobility within the US than within Europe, where there are language barriers and administrative obstacles: this by itself reduces the quantity of goods and services which are traded in the sense that they are consumed at home by non residents. Second, unlike the US, Europe is not a federation but an association of fully sovereign states which, even when accepting a common currency, have delegated their competences to Union law only in some specific matters: not for the national budgets (the Union budget being almost non-existent), not for taxation, not for civil and company laws, not for bankruptcy laws. Even when European legislation holds, it often only sets minimal requirements, as in the case of financial services for which there is no single rule book. In short, each Member State of the EU remains a separate jurisdiction with its own legal system and its

own entities in charge of enforcement and supervision. (The obvious example is banking, where the recent crisis has brought to light the national fragmentation of supervisory rules and practices.) We conclude that a common currency, while blurring to some extent the notion of a Member State's foreign position, is not by itself sufficient to make that notion irrelevant.

4 Unsustainable growth

In Ireland and Spain growth was led by a construction boom. The share of construction in total value added rose sharply in those two countries (Figure 11.2), while it declined slightly in Greece and Portugal and remained more or less constant in the euro area. The same happened to construction investment, both as a ratio to GDP and as a share of total investment: housing construction accounts for the rise in that ratio as well as for the increase in the ratio of gross capital formation to GDP which, until 2007, took place in Ireland and Spain, but not in the rest of the euro area¹³

[INSERT Figure 11.2 about here].

Table 11.6, reporting the households' saving rate, investment rate and gross debt (as ratios of gross disposable income), shows the other face of the housing boom. In both Spain and Ireland the households' investment rate rose sharply (to collapse in 2008), but the savings rate declined: the result was an increase in households' gross debt of the order of 80 percent. A fall in the saving rate caused an increase of debt in Portugal in spite of a decline in the investment rate. Data for Greece are not available now, probably because of ongoing revisions: earlier releases of Eurostat reported negative saving rates. Be that as it may, Greece stands out for its ratio of private consumption to GDP, which is the highest in Europe (about 0.75 as against 0.58 both for the EU and for the euro area).

[INSERT Table11.6 about here]

The housing boom in Ireland and Spain was accompanied by an impressive expansion of domestic credit. Table 11.7 reports the ratios to GDP of domestic credit (loans) to the private sector in the four countries under consideration and in the three major Euro area countries. The ratio remained constant in Germany, and grew slowly towards the German level in France and in Italy. In Ireland and Spain, instead, it doubled in eight years, to levels far higher than those of the larger countries. Between 2004 and 2007 loans for housing credit increased by 68 percent in Ireland and by 65 per cent, in Spain, twice as much as in the average of the euro area. Though the ratio of credit to GDP is often taken as an index of a country's financial development, we would find it difficult to interpret the developments in Ireland and Spain in this light. Domestic credit also increased rapidly, though at a less hectic pace, also in Greece and Portugal. Everywhere credit growth was fed by foreign borrowing, as domestic

banks would tap the interbank market and issue commercial paper or bonds (Kelly 2010, Suarez 2010). While there was little direct foreign investment, foreign portfolio investment rose fast. Table 11.8 reports the share of portfolio investment in the four cohesion countries in total foreign portfolio investment from France and Germany: it doubled or almost doubled (it more than doubled in the case of Ireland and Spain).

[INSERT Table11.7 and 11.8 about here]

These developments shed light on several issues. First, EMU created the environment suitable for a credit boom in countries at the periphery of the single currency area. As argued by Lane (2010), by eliminating currency and liquidity risks (and by fostering financial integration), EMU represented a major shock for those countries, as even low yield differentials would attract massive capital flows. But this is, after all, what the convergence model would predict.

The growth pattern in the four countries shows, however, that we are far away from that model. Considering first Ireland and Spain, the growing weight of construction in value added provides an explanation for the disappointing behaviour of TFP in the two countries, as construction is a sector less exposed to productivity enhancing innovations. More importantly, the output of construction – housing services - is a largely non traded good. Selling houses to foreigners would be registered as foreign direct investment: but direct investment was a small share of total flows. True, housing services can be a tradable outcome of the construction activity to the extent to which houses are rented to foreigners. Appropriately weighting for the period of occupancy, it is however unlikely that housing services to foreigners represent a significant fraction of the total.

Ireland and Spain thus fit into our simple model above. In both countries foreign capital went into the production of non-traded and non-tradable goods to an extent incompatible with the intertemporal budget constraint. Viewed in this light, the current account positions of the two countries became unsustainable even within the convergence model. While recognizing that there was a housing price bubble (even more pronounced than in the United States), one may ask why foreign investors did not seem to be aware of the sustainability problems. The answer is that to a large extent there were no foreign investors investing specifically in assets earmarked for the financing of the construction activity¹⁴:foreign banks and investors would lend to, or purchase financial assets from, domestic banking institutions which would then finance the domestic construction industry.

The cases of Greece and Portugal do not fit into the picture of an excess production of non-tradable goods. As for Greece, productivity performance was not unsatisfactory; credit grew, but more slowly than in Ireland or Spain; there was no comparable construction boom. The violation of the budget constraint was at the same time less interesting and more blatant. With a ratio of private investment to GDP near the euro area average (and lower than in Ireland and

Spain), but with much higher levels of consumption and high public deficits, Greece was just not saving enough. Real appreciation was not the major cause of the current account problem: foreign capital was financing an excess of Greek consumption¹⁵. The Portuguese story is sadder. Its imbalances are similar to those of Greece, with high consumption and low households' saving. But in the EMU years Portugal, unlike Greece, remained stagnant, with its GDP per capita hardly growing relative to the European average¹⁶.

The 2009-2010 crisis in the euro area was ignited by the discovery of the Greek budget lies, but there were deeper causes. In an environment where the current and prospective increase in the supply of public debt by all advanced economies caused investors to be more selective, it is not surprising that the weaker members of the euro area came under attack. First and foremost, investors realized that the pattern followed by some countries in the last decade, with growth driven by domestic demand and financed with foreign borrowing, was unsustainable: the heavy imbalances which had accumulated signaled, as we have argued, the existence of solvency problems. Second, members of EMU are more exposed than other countries with similar problems because they do not have an own central bank which in troubled times, if need be, can support the national Treasury as "market maker of last resort". From this point of view the sovereign debt of a member of the euro area, though issued in euros, is from other points of view similar to foreign debt, unlike that issued in national currencies by countries with their own central bank.¹⁷.

Finally, for the countries that came under attack the deterioration of the fiscal position caused by the crisis was far greater than for other euro area countries¹⁸. This also was to some extent the effect of their growth pattern. The remarkable fall in public revenues in Ireland (about three percentage points) and in Spain (six points) is connected to a considerable extent to the collapse of the past growth pattern in the two countries. Honohan (2009) shows that in Ireland there was a systematic shift towards "fair weather" taxes based on the construction and housing boom. Martinez-Mongay et al. (2007) argued, before the crisis, that the increase in tax revenues recorded in Spain depended very much on the composition of growth rather than on permanent factors. Suarez (2010) reckons that the real estate boom inflated Spanish government revenues by almost 3 per cent. It thus turned out that the surprisingly good past records of budget discipline were not a permanent acquisition.

5 Policy implications

Jaumotte and Sodsriwiboon (2010) run regressions to show that specific EMU/euro effects, in the shape of lower savings, explain most of the (abnormal) deterioration in current accounts in the southern euro area. Though the group of countries is heterogeneous and Ireland is missing, the result is interesting and plausible, but leaves unexplained why there is a geographical partition and has no obvious policy implications. Honohan (2009) argues that EMU membership "lulled [Irish] policy makers into a false sense of security", especially because

the single currency removed the external constraint and made the exchange rate and the interest rate insensitive to domestic developments. Kelly (2010) thinks that the impact of low interest rates allowed by the euro on the Irish construction boom was modest, but Suarez (2010) believes that the ECB monetary policy, while consistent with developments in the three bigger countries of the euro area, was unfit for the Spanish conditions of fast output growth and rampant credit expansion. This discussion reminds one of the ancient Walters critique, according to which the project of a single currency for Europe is inherently flawed because of the chronic inability of a common monetary policy to deal with a diversity of cyclical situations in member countries: one size can fit some, but not all. The issue is, however, more complex and goes deeper than the macroeconomic effects of a common monetary policy on countries in different cyclical situations: it reflects weaknesses in the way in which EMU was conceived.

The admission criteria to the common currency were the levels of inflation and interest rates (with respect to the average) and the levels of public deficits (while the public debt criterion was conveniently massaged to fit all applicants). The first two variables were largely endogenous: once a common currency and a common monetary policy are in place, short-term interest rates and to some extent inflation rates are expected to converge. After the start of the euro the attention of European policy makers and of external observers was exclusively, and at times obsessively, concentrated on public deficits, with the Treaty and the Stability and Growth Pact dictating detailed (and often ineffective) procedures to deal with deficits in excess of the limit. Many other variables instead have always been neglected: relative productivity and cost trends; credit and leverage; the savings-investment balance, and hence the current account, which, though no longer a short-term binding constraint under a common currency, is an immediate indicator of the existence of output-expenditure imbalances. Whereas the Maastricht variables more or less converged (including the deficit variable, at least until 2007-2008), the situation in the euro area was unsettled by the diverging trends of precisely those neglected variables. It is sobering to recall the praise lavished on Ireland and Spain for their deficit and debt performance. It has thus become apparent that the stability of the monetary union depends on a wider set of conditions than compliance with budgetary discipline.

Insuring that those conditions are fulfilled is however a daunting task. In the case of public deficits precise limits can be set (whether they make sense is another matter) and an implementing procedure can be devised (again, whether it is effective or not depends on political factors). Setting a scoreboard of enforceable targets for macroeconomic variables, as envisaged by the European Commission (2010 a, b, c), meets instead with conceptual difficulties and with problems of implementation in an association of fully sovereign states, which have only one market, one money and a limited number of laws and rules in common. The identification of imbalances requiring action would be a highly judgemental operation, open to all kind of objections in a long and complicated collegial procedure and with little preventive value. In some cases it would

even be difficult to conceive of enforceable remedies, as for instance when an external imbalance is caused by falling competitiveness due to unsatisfactory productivity developments.

Any alternative to a full-fledged macroeconomic programme should be less ambitious in scope, but at the same time be more effective for the prevention of imbalances and easier to enforce. As recent experience shows, the imbalances that matter for the stability of monetary union are the result either of fiscal profligacy - as in Greece and to some extent in Portugal - or of an unchecked credit expansion fueled by capital inflows and feeding an unsustainable growth of the non-traded sector - as in Ireland and Spain. Fiscal imbalances are, or should be, taken care of by some enhanced version of the excessive deficit procedure (European Commission 2010 d). The problem then is how to deal with credit in the individual Member States.

This is not a new issue. Ceilings on total domestic credit used to be a major ingredient of IMF conditionality in the stand-by agreements with countries in need of support because of current account imbalances. But it is a difficult issue in a financially integrated, single-currency area.

Common monetary policy is hardly the appropriate instrument. An augmented Taylor rule (Giavazzi and Giovannini 2010), even if acceptable and feasible, can hardly deal with divergent credit dynamics within the union: again one size cannot fit all. Macro-stability rules - dealing for instance with reserve requirements - are also unfit for the purpose: the much praised Spanish rules on dynamic provisioning did nothing to prevent the credit boom. One must therefore turn to the exercise of specific supervisory and regulatory powers (Orphanides, 2010, Bean et al 2010): stricter rules on lending (for instance on loan/equity ratios and mortgage refinancing) would have prevented the excesses observed in some countries (and did so in other countries).

Who should be entrusted with these regulatory and supervisory tasks? The Irish, Spanish and British experiences show that national authorities are not always reliable: they may be captured by the regulated (as in Ireland: see Kelly 2010 and Honohan 2010) or may be lenient and hesitant to interrupt a boom. In a financially integrated area with a single currency some supervisory and regulatory powers should be entrusted to a supranational body. The Treaty has not given such powers to the ECB. The new bodies which are being set up, implementing the proposals of a report by Jacques de Larosière, may serve the purpose. The already established new European Systemic Risk Board (ESRB), and especially the European Supervisory Banking Authority are potentially in a position to discipline, directly or indirectly, the domestic rules and practices which allowed the excesses leading to a crisis that put the stability of the whole union at risk.

The first decade of the life of the euro deluded policy-makers and observers into thinking that almost all had gone well and was well, perhaps unexpectedly. The recent crisis has shown the fragility of the construction. The ESRB and the European supervisory authorities mark an important institutional development

in the Union: they offer an opportunity to improve the stability of the single-currency area..

Notes

¹We thank the editor of this volume, participants at the conference on *The Euro Area and the Financial Crisis*, Bratislava, September 2010, Jacques Melitz in particular, and at seminars at Iger-Bocconi and Banca d'Italia for comments; Giulia Zane for research assistance; Fabio Panetta and Andrea Nobili for providing the data on credit growth.

²So defined because at the time of their accession to the EU they were less developed than other countries (GDP per capita less than .9 of the EU average and large part of their territory with a "less favoured" region status) and were therefore granted additional financial transfers (cohesion funds).

³The Greek general government deficit figures were successively revised from 2.8 to 3.6 to 5.1 per cent for 2007; from 2.1 to 5 to 7.7 per cent for 2008; from 5.1 to 13.6 per cent for 2009. Source: European Commission. Public Finances in EMU, various years and Eurostat.

⁴"Where a Member State with a derogation is in difficulties or is seriously threatened with difficulties as regards its balance of payments" and "if the action taken by the Member State... and the measures suggested by the Commission do not prove sufficient... the Commission shall... recommend to the Council the granting of mutual assistance...". On art. 143 and on the implicit assumption that balance of payments problems were expected to disappear in a monetary union, see Marzinotto et al. (2010).

⁵See for instance Barro and Sala-i-Martin (2003).

⁶ECB (2007), however, cautions against the measurement shortcomings and the theoretical limitations of these exercises.

⁷In Italy instead a very low growth rate was consistent with the dismal performance of TFP and labour productivity.

⁸The deterioration of the current account between 2000 and 2007 (by 5.3 percentage points of GDP in Ireland, 6.7 in Greece and 6 in Spain) was not accompanied by a decline in the share of the three countries in total euro area exports.

⁹Blanchard (2007 a) also studies optimal external borrowing in a model with traded and non traded goods. In that model, however, there is no capital and labour is the only factor of production. Thus the model, like Fagan and Gaspar (2008), cannot address the effects of alternative allocations of imported capital between the traded and non traded good sectors. Introducing labour, however, allows wages to be determined so as to clear the labour market, something we obviously overlook in this model. A complete model should have both capital and labour, something for future work.

¹⁰An alternative interpretation of our assumption about technology is perfect complementarity between capital and labor (fixed coefficients) with constant returns to scale. Nothing of substance would change under such an interpretation. Nor would the substance of our result change if we assumed decreasing return to K and then used a linear approximation of the technology to solve the intertemporal budget constraint.

¹¹This depends on the fact that in a monetary union there is no exchange

rate. If the exchange rate was not fixed a shift in P^N could be partly (and temporarily) offset by a change in the domestic currency price of traded goods.

¹²We are very grateful to George Kopits, our discussant when this paper was first presented, who raised this point forcibly and provided many useful observations.

¹³See the analyses in Martinez.-Mongay et al.(2007) and Suarez (2010) for Spain and in Kelly (2010) and Honohan (2010) for Ireland.

¹⁴The circulation of the equivalent of mortgage backed securities, especially in their most sophisticated version, was far less common than in the US.

¹⁵Also because the real effective exchange rate appreciated in Greece less than in many other countries. In 2008 the index (1999=100) was 107 in Greece, but 136 in Ireland, 118 in Spain, 113 in Portugal, 115 in Italy and 108 in France.

¹⁶See Blanchard (2007 b).

¹⁷Asset managers have always priced in this possibility when assessing probabilities of default. More importantly, the recent "quantitative easing" practices of the Fed and of the Bank of England, which have acquired government securities on their balance sheets show that that possibility is not forgotten. Formally, the Treaty only forbids the ECB from financing governments on the primary market; but its emergency decision in April to intervene on the secondary market to support some countries' sovereign bonds in the presence of "dysfunctional market conditions" was severely frowned upon: so heavy were the criticisms that its interventions were small and timid.

¹⁸Between 2006 and 2009 the general government primary balance worsened by more than 16 percentage points of GDP in Ireland, more than 13 points in Spain and more than 9 in Greece.

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Table 11.1**- General Government Balance and Debt, % of GDP**

	Balance			Debt	
	Average 2000-2007	2008	2009	2008	2009
Euro area	-2,3	-2	-6,3	69,7	79
Ireland	-1,0	-7,3	-14,3	43,9	64
Greece	-6,1	-7,7	-13,6	99,2	115,1
Spain	-1,3	-4,1	-11,2	39,7	53,2
Portugal	-4,1	-3,7	-7,1	66,3	76,8
Italy	-3,1	-2,7	-5,3	106,1	115,8

Source: Eurostat

Table 11.2 - Cumulated current accounts - 1999-2008, % of GDP

Ireland	-19,2	Germany	31,5
Spain	-59	Netherlands	53,7
Greece	-85,1	Finland	59,1
Italy	-13	France	3,1
Portugal	-90,7	Euro area	22,2

Source: Eurostat

Table 11.3 - Per capita income and labour productivity

	GDP per capita		Labour productivity per person employed		Labour productivity per hour worked	
	(a)	(b)	(a)	(b)	(a)	(b)
Ireland						
1998	106,1	99,2	108,1	111,4		
2000					94,9	89,0
2008	123,8	116,4	118,7	121,7	104,2	94,7
Greece						
1998	72,8	68,0	78,4	80,7		
2000					64,2	60,2
2008	86,2	81	93,2	95,5	71	64,5
Spain						
1998	83,3	77,9	92,9	95,7		
2000					87,2	81,7
2008	94,5	88,8	94,5	96,9	92,4	84
Portugal						
1998	69,3	64,8	60,4	62,3		
2000					52,9	49,6
2008	71,6	67,2	67,1	68,8	56,2	51,1
Italy						
1998	105,3	98,4	112,2	115,6		
2000					98,5	92,3
2008	93,6	87,9	99,8	102,3	88,8	80,8

(a) Euro area =100

(b) Germany = 100

Source: Eurostat

Table 11.4 - Potential growth and its components

	Euro area	Ireland	Greece	Spain	Portugal
Potential growth rate					
1989-1998	2,3	6,5	2,1	2,9	3,1
1999-2008	2,2	6,5	3,9	3,7	1,9
% contributions to potential growth rate					
- <i>Labour</i>					
1989-1998	8,7	20,0	19,0	34,5	9,7
1999-2008	22,7	29,2	15,4	54,1	36,8
- <i>Capital</i>					
1989-1998	34,8	16,9	38,1	44,8	41,9
1999-2008	36,4	27,7	33,3	43,2	52,6
- <i>TFP</i>					
1989-1998	56,5	58,5	38,1	20,7	45,2
1999-2008	36,4	40,0	48,7	2,7	10,5

Source: European Commission (2008)

Table 11.5 - Determinants of growth 1995-2005

	Euro area	Germany	Italy	Ireland	Greece	Spain	Portugal
Real GDP growth							
1995-1998	2,3	1,7	1,7	10,0	2,9	3,4	4,2
1999-2005	1,9	1,2	1,2	6,8	4,3	3,7	1,6
% contributions to GDP growth							
- Labour utilisation and population							
1995-1998	34,8	-23,5	29,4	40,0	34,5	94,1	14,3
1999-2005	36,8	-25,0	66,7	44,1	14,0	86,5	37,5
- Hourly labour productivity							
1995-1998	65,2	123,5	70,6	60,0	65,5	5,9	85,7
1999-2005	63,2	125,0	33,3	55,9	86,0	13,5	62,5
of which:							
<i>TFP</i>							
1995-1998	47,8	82,4	41,2	60,0	48,3	5,9	57,1
1999-2005	36,8	83,3	-8,3	39,7	58,1	0,0	-6,3
<i>Capital deepening</i>							
1995-1998	17,4	41,2	29,4	0,0	17,2	0,0	28,6
1999-2005	26,3	41,7	41,7	16,2	27,9	13,5	68,8

Source: European Central Bank (2007)

Table 11.6 Households, ratios to gross disposable income

	Savings				Investment				Gross debt			
	2000	2002	2007	2008	2000	2002	2007	2008	2000	2002	2007	2008
Euroarea	..	..	..	..	10,3	9,6	10,9	10,4	75,5	78,0	94,6	94,8
Ireland	..	9,0	7,9	9,9	..	16,8	24,0	15,8	..	107,5	194,2	196,7
Spain	11,1	11,4	10,6	12,9	10,9	12,0	15,1	12,9	72,4	79,2	129,9	127,8
Portugal	10,2	10,6	6,1	6,4	10,7	10,0	7,7	7,6	87,2	99,3	126,2	136,0

Source: Eurostat

Table 11.7 - Domestic credit (*) - ratios to GDP

	Germany	France	Italy	Ireland	Greece	Spain	Portugal
2000	1,06	0,72	0,71	1,00	0,42	0,87	1,10
2004	1,01	0,76	0,78	1,26	0,62	1,11	1,24
2008	0,95	0,95	0,97	2,02	0,85	1,71	1,51

(*) outstanding amounts at the end of the period.

Source: National Central Banks

Table 11.8: Portfolio investment in the four cohesion countries
share of total investment

	2001	2008
France	10,8	18,3
Germany	10,8	20,3

Source:IMF

Figure 11.1

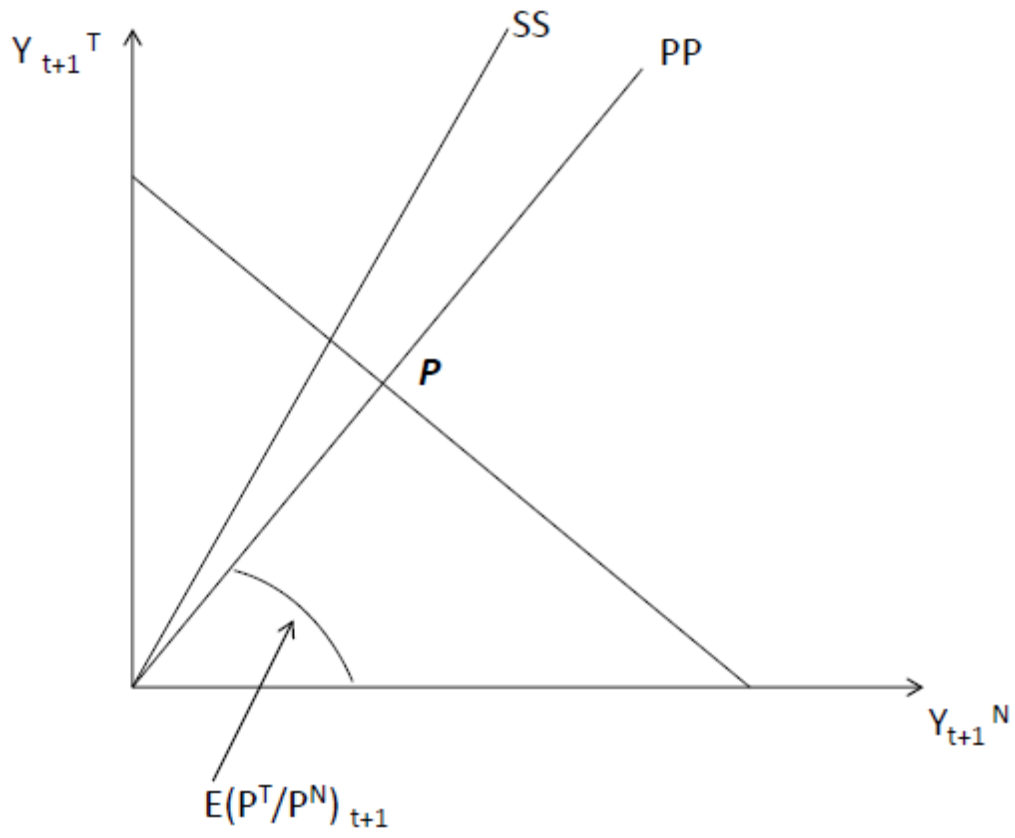


Figure 11.2

Chart 1 - Value added of construction as % of total value added

