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Lessons for monetary policy from the euro-area crisis

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Discussion:
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Editorial

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

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

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

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

Here we present the paper by C.A.E. Goodhart (London School of Economics) with its discussion by Gikas A. Hardouvelis (University of Piraeus and Eurobank SA).

LESSONS FOR MONETARY POLICY FROM THE EURO-AREA CRISIS

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Abstract

The earlier 2007/8 financial crisis generated the main lessons for monetary policy, notably that price stability does not necessarily guarantee financial stability. Nevertheless, the on-going Eurozone crisis has pointed to further lessons, notably that a single currency covering diverse states does need a Banking Union; and to problems of zero risk-weighting for sovereign debts. Without such a Banking Union, economic divergences between the Eurozone states have continued and look likely to persist.

Keywords: Price stability, financial stability, banking union, zero lower-bound
JEL Classifications: E52, E44, F36, G01

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1. The 2007/2008 crisis

The crisis with the most lessons for monetary policy was the original 2007/2008 crisis, not the subsequent Eurozone crisis. This initial 2007/8 crisis, however, originated in the US housing market, and was not specifically European. Nevertheless the resulting financial debacle entailed numerous important lessons for monetary policy. Amongst these were:

i) Price stability does not necessarily guarantee financial stability.

As Hy Minsky demonstrated, price stability may even conflict with financial stability, rather than complement it. This is because a reduction in macro-economic volatility may seem to reduce risk, and therefore make financial institutions raise their leverage, and reach for yield.

Hence there is a need for counter-cyclical macro-prudential instruments. The use of these would be relatively new, and remains unproven. In particular, macro-prudential counter-cyclical measures would have to be imposed against the momentum and grain of the market. If an asset price boom was perceived to be unsustainable, it would immediately subside under its own weight. Accordingly, the majority of those involved must be believing that further price increases in the relevant asset market(s) may well continue. Politicians may believe that the asset markets have risen because of their own successful policies. Consequently, macro-prudential counter-cyclical policies would have to be introduced at a time when they are likely to be opposed by many politicians, most borrowers and lenders, and many, probably most, commentators in the Press.

It will be hard enough to be counter-cyclical in a boom; it will be almost impossible to do so in a bust. In a bust, counter-cyclical measures would suggest reducing capital and liquidity requirements. But the availability of bank capital and liquidity has just been shown, almost by definition, to have been insufficient in the preceding bust. In a boom, macro- and micro-prudential measures go hand-in-hand; but in a bust, the micro-prudential authorities will want to toughen regulations, while counter-cyclical macro-prudential measures would need to involve the opposite. The banking industry fears that macro-prudential measures will be tightened in the boom period, but not then relaxed in the bust period; so that such macro-prudential measures would get continuously ratcheted up. Moreover, since they would be operating against the trend of the market, the likelihood is that they would not be sufficiently vigorously and aggressively introduced in order to provide much of a mitigation of the cycle. The example of the Spanish dynamic pre-provisioning scheme comes to mind; this was a well-designed counter-cyclical measure, but of insufficient scale and extent to provide much of a mitigant to the Spanish housing cycle.

ii) The Basel II Capital Adequacy Requirements (CARs) were insufficient loss absorbers in the crisis.

Hence there was a need for reinforced and extended CARs under Basel III. Even so, there remains a question whether this has gone far enough, and been sufficiently radical. The main shortcoming of the banking system prior to 2007 was its extended leverage. But the backstop simple leverage ratio imposed under Basel III still allows that to be up to 33 to 1, which is surely too high. Similarly, Basel III still puts its main reliance on a Risk Weighted Asset approach to CARs, although the RWA regime has been shown to be faulty and capable of manipulation. There is, therefore, a serious question whether the reform and increase in CARs has gone far enough. This is the main burden of the new book by Admati and Hellwig, entitled *The Bankers' New Clothes*; and also the work by Miles, et al, in *The Economic Journal.*

Moreover, the attempt to strengthen the equity basis of the banking system has been badly mishandled in Europe. The banks have been requested to raise their equity ratio. This has been done at a time when the incentives for bank senior officials remain focussed on the desire to maintain a high Return on Equity, (RoE). With bankers simultaneously focussing on RoE, and being forced to improve their equity ratios, the inevitable implication is that this has reinforced the pressure to deleverage and reduce the outstanding volume of assets on banks' books. This sharp reduction in leverage has had a significant negative effect on the ability to recover from the financial crisis.

iii) At times of crisis, funding liquidity via wholesale markets dries up.

Hence there has been a need to introduce liquidity ratios again, for the first time since they became dropped after wholesale markets developed in the 1970s. These new liquidity ratios include the liquidity coverage ratio (LCR) and the net stable funding ratio

(NSFR). The LCR has already been introduced; but its introduction has not had a deleterious effect in further putting downwards pressure on bank assets. This has been because the collapse of many wholesale funding markets has been offset by a massive expansion of Central Bank balance sheets, providing a similar huge increase in commercial bank deposits (reserves) at the Central Bank, which has in most cases more than sufficed to meet the new required LCRs. With the volume of loans having expanded faster than the volume of deposits in the run-up to 2007, (Schularick and Taylor), much of the excess in loans over deposits was financed through relatively short-term wholesale deposits. The introduction of an NSFR would most likely have put further downwards pressure on credit expansion by banks; but its introduction has been deferred, and it remains unclear when, and with what parameters, it may eventually be introduced.

iv) In crises the zero lower-bound to interest rates becomes a reality.

Hence there has been a need for unconventional expansionary monetary measures in the forms of quantitative easing (QE), credit easing (CE), long-term refinance operations (LTRO), and Abenomics, etc. The initial introduction of these measures in 2009 and 2010 did lead to a considerable immediate recovery in confidence, and brought the initial sharp downturn in economic output to an end. It also led to a further reduction to official interest rates on government debt, and to some, albeit somewhat minor, reduction in the enhanced risk premia. But with official interest rates having already being reduced to levels close to zero by the first round of such measures, it has not been clear whether subsequent rounds of these expansionary monetary measures has actually done very much additional good to our economies.

v) In particular, the increase in the monetary base did not lead to a wider increase in either bank credit expansion or the broader monetary aggregates.

The expansion of M0 does not guarantee an equivalent expansion of M2; the money multiplier can, and did, collapse in this crisis. Hence there was a greater need to consider the incentives and underlying driving forces that would lead banks to expand credit, rather than just hold the resulting vastly increased reserves on deposit at the Central Bank. More consideration might have been given to the (relative) remuneration of such commercial bank deposits at the Central Bank. The interest payable on such excess reserves (IOER) might have been cut faster and further. More generally, there was more need to understand, and perhaps to nudge, the incentives of bank managers towards credit expansion, especially to SMEs.

A. The On-going Eurozone Crisis

It is far less clear what additional lessons for monetary policy were provided by the specific Eurozone crisis, starting in 2010 and continuing thereafter. This crisis underlined the failings of the risk-weighted asset approach, notably the zero-risk weight on all developed countries sovereign bonds, with Greek sovereign debt, held by the private sector, being restructured, and the credit risk of many other peripheral countries declining sharply; but we knew that already. The main lesson, in my opinion, is that a single currency covering several diverse states does need, inter alia, a Banking Union. As noted earlier, the initial financial crisis hit the USA just about as badly, or perhaps more severely, than Europe. Nevertheless the economies of the various states in the USA has, since then, converged back, and the USA as a whole recovered, whereas in the Eurozone the states continue to strongly diverge, certainly in their unemployment experience. What then were the main differences between the experiences of the USA and of European states? As shown in the charts below, the initial housing shock was much the same in both, but the USA then converged, whereas the Eurozone strongly diverged. Why, then, has the USA been such a much more successful currency union than the Eurozone?

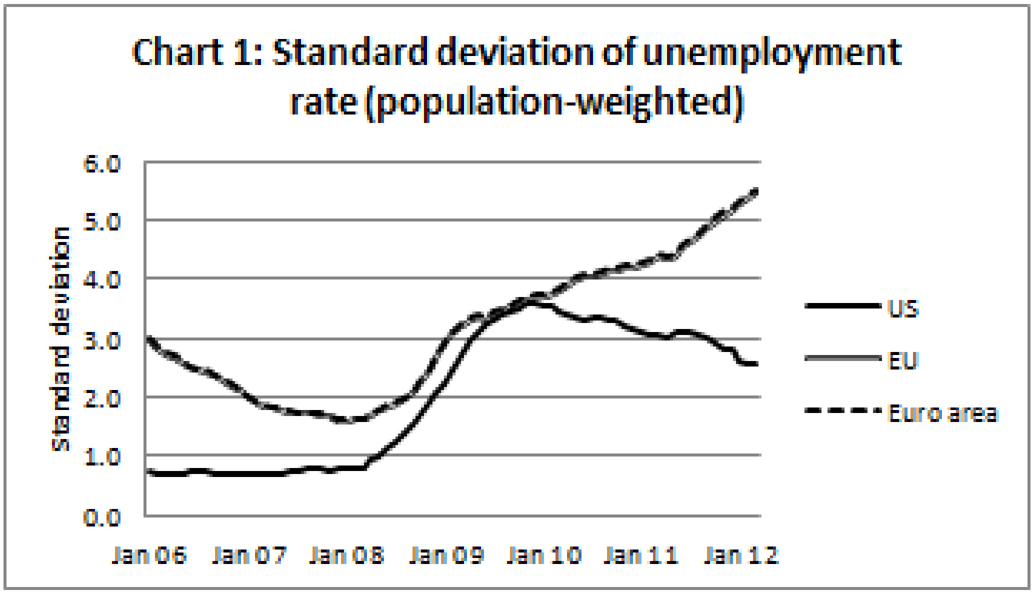


Chart 1: Standard deviation of unemployment rate (population-weighted)
Standard deviation
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan 06
Jan 07
Jan 08
Jan 09
Jan 10
Jan 11
Jan 12
US
EU
Euro area

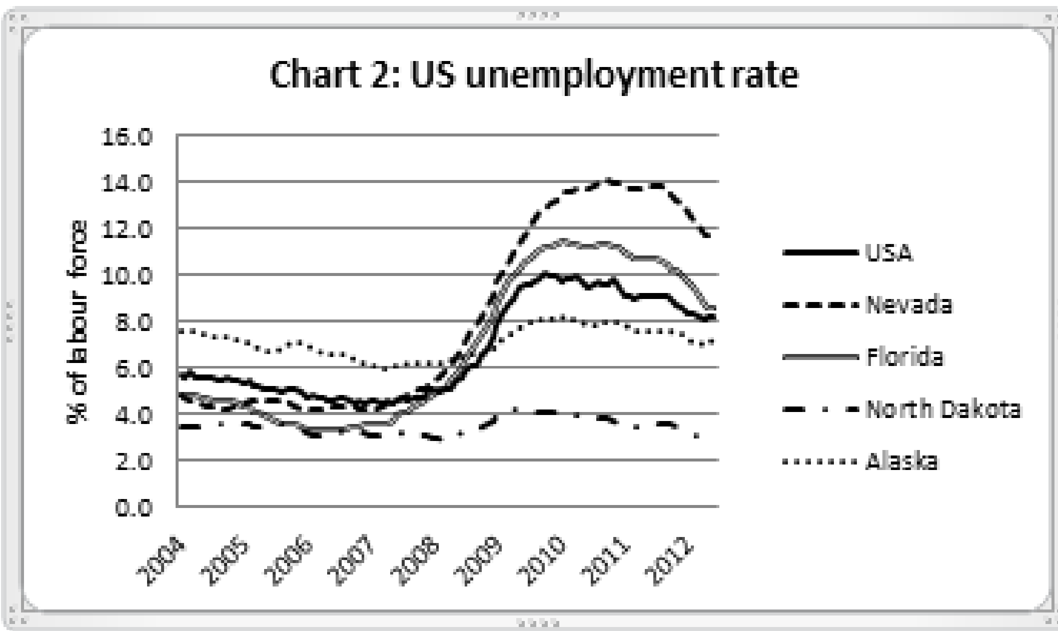


Chart 2: US unemployment rate
% of labour force
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2004
2005
2006
2007
2008
2009
2010
2011
2012
USA
Nevada
Florida
North Dakota
Alaska

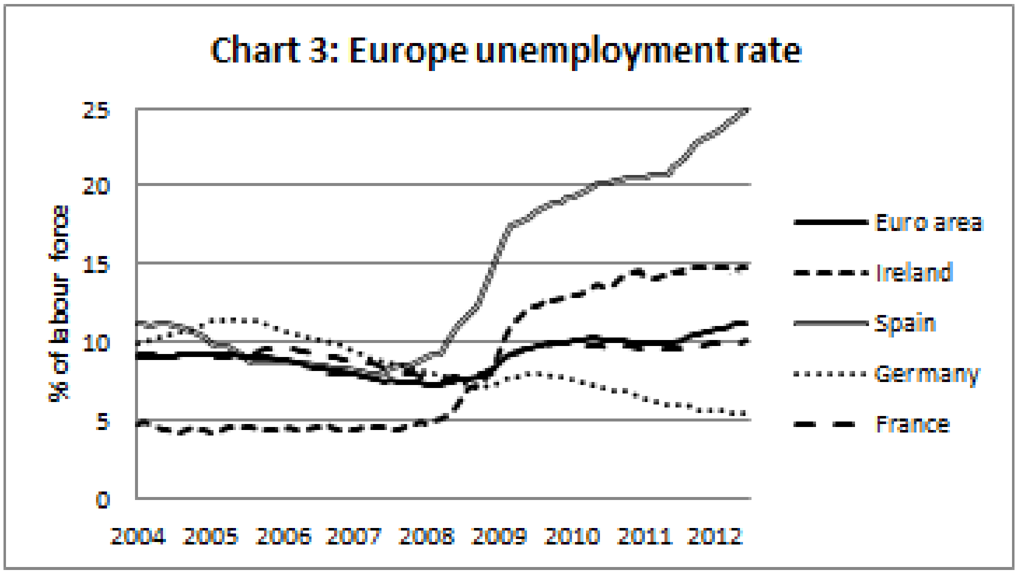


Chart 3: Europe unemployment rate
% of labour force
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
Euro area
Ireland
Spain
Germany
France

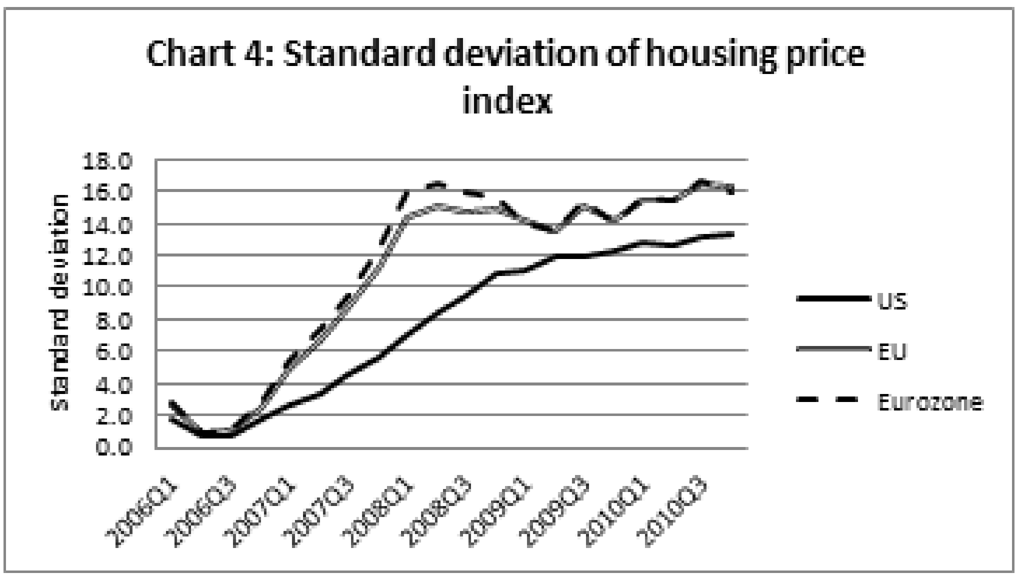
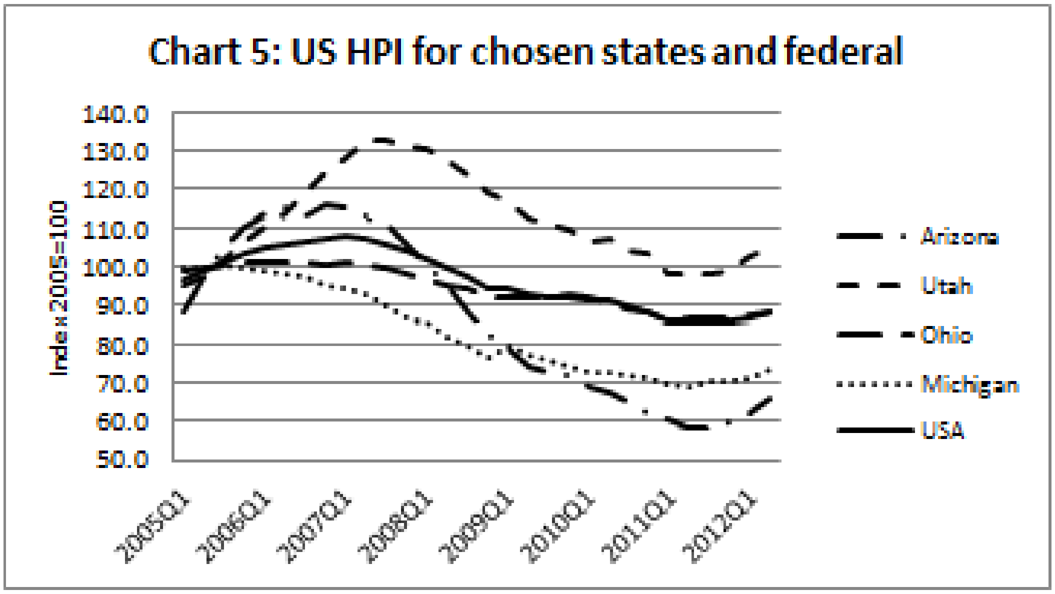
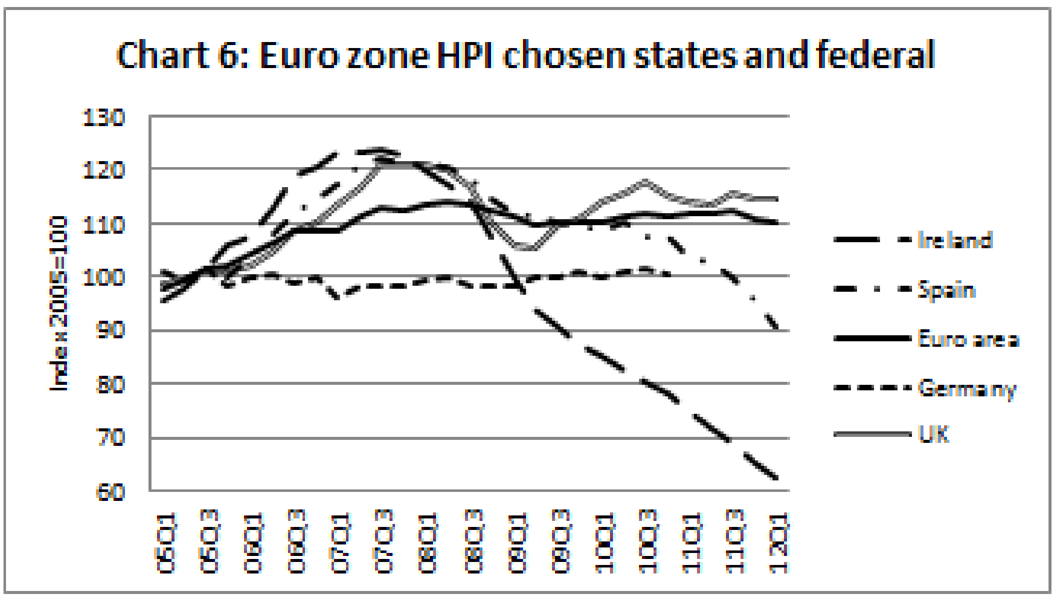


Chart 4: Standard deviation of housing price index
Standard deviation
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2006Q1
2006Q3
2007Q1
2007Q3
2008Q1
2008Q3
2009Q1
2009Q3
2010Q1
2010Q3
US
EU
Eurozone





The main adjustment mechanisms in the face of asymmetric shocks in a currency union are:

- Wage flexibility
- Migration
- Fiscal federalism

- Cross-border (Federal) banking, thereby breaking the doom loop between the sovereign and the banks in each state.

This is not the place to go at any length through the differences between the USA and the Eurozone. Barry Eichengreen, in this volume, has already gone through several of the differences, as I did myself in another paper in *Open Economies Review (*Goodhart and Lee, 2013). Nevertheless, it may just be worth noting that wage flexibility is no more a major mechanism for adjustment in the USA than it has been within the Eurozone. Indeed it is possible that in the last few years the adjustment in terms of wage flexibility has been greater in some European states than it was in the USA. Meanwhile migration is somewhat easier in the USA than it has been in the Eurozone; nevertheless there has been much more flexible labour migration within Europe recently, than there used to be previously. A large proportion of the Latvian working population, for example, moved out of Latvia to other countries in the course of the crisis. What is, perhaps, more striking about differences between Europe and USA in this respect is not so much the flexibility of migration, but how it is perceived. In the USA the willingness of people to move from areas of low job opportunities to areas with better job opportunities is regarded as a good thing, an indication of the entrepreneurial, get-up-and-go characteristics of the American population, while within Europe, the disadvantages of migration both to the receiving and to the departing countries are emphasised much more. Clearly the barriers to migration in terms of differences in language, culture, law and other social conditions are much greater in Europe.

Again, I need not emphasise the difference between the fiscal federalism in the USA, and the fiscal state nationalism within Europe, because many other speakers have alluded to this already in their presentations.

In states in the USA which were badly affected by the housing shock, such as Arizona and Nevada, there were many small banks which were headquartered in those states. And several of these may have failed during the financial crisis. But the main providers of banking services in these states, were the federal, cross-state-border banks such as Citi, Bank of America, JP Morgan Chase, and Wells Fargo. Although there will have been many non-performing-loans in those states on the balance sheets of these large cross-border banks, their overall funding costs will have been determined nation-wide. Their credit-expansion criteria will again be determined nation-wide, so those seeking new loans in Arizona will not necessarily have that much worse a set of credit and financial conditions, e.g. for collateral, than those seeking loans from the same banks in Texas or New York.

In contrast, most banking within Eurozone states was done by banks which were headquartered, and very frequently entirely operating, in those states. Thus all Spanish banking, or virtually all such banking, was done by Spanish banks; and most of these banks, excluding Santander and BBVA, had very little exposure and activity outside of Spain. Thus, when Spain got particularly badly hit by the housing shock, the Spanish banks became particularly badly hit. With the Spanish banks being particularly badly hit, and no banking union, there was no alternative then, but that the local state government would have to bear the main burden. In contrast, the states of Arizona, Nevada, or Florida bore virtually no extra burden from the particular difficulty of housing in their own states. But the Eurozone states were not really in most cases strong enough to bear this additional burden without their own credit rating being adversely affected. The worsening credit rating of the Irish and Spanish governments in turn dragged down the credit ratings of their banks yet further. This meant that the terms and conditions and interest rates at which the local banks could provide new credit to the local state population worsened; this then further reduced economic activity, yet further reducing the tax revenue of the state, and enhancing the weakness of the economy more generally. To take a counter example, in Latvia banking is half done by Swedish banks and half done by local Latvian banks. When the Latvian crisis took hold, the external Swedish banks did three quarters of the additional new credit expansion, on the base of half of the local deposits.

So, one answer for dealing with asymmetric shocks within a currency union, is to ensure that there is a banking union over the whole of that currency zone.

But a banking union, involving common deposit insurance and a common resolution fund, may be less attractive to the (stronger) creditor states within a currency union than would be mechanisms to bail-in the local bank creditors. Thus, the example of Cyprus, whereby local uninsured depositors took a major hit in order to recapitalise the local Cypriot banks, has been perceived as a possible template for future measures to recapitalise banks which might otherwise be failing. This reduces the possible call on taxpayers and banks in the wealthier and stronger states of northern Europe from having to support banks in the weaker countries. Such a bail-in of uninsured depositors is much more likely both to impose losses on local residents and thus reinforce the doom-loop, and also to enhance the likelihood of contagion, with large depositors fleeing northwards whenever a crisis appears imminent. This reluctance of northern creditor states to come to the support of banks in the weaker southern states has, of course, been reinforced by the recent ECB study suggesting that the median German household had less net financial wealth than households in the southern states. The German position appears to be that, whereas a banking union might be desirable in the long-run and in principle, it should not be introduced in the short-run, nor seen as a mechanism for dealing with current (legacy) problems of adverse downwards spiral interactions between the economy, banks and the local government within the Eurozone.

As was shown in the earlier charts, divergences in economic conditions, especially in employment and labour markets, throughout the Eurozone, have been continuing throughout these crisis years. It is not clear what is going to stop this divergence continuing, even if pressures for further austerity recede. What is going to make the weaker peripheral countries begin to grow faster than the core countries? That is one question that I wish to leave with you. But I also have one other question that I think is suitable to ask the audience at this conference. This is, that, knowing what you do now, if you were to go back to 2010, what would you do differently than was done then?

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Discussion

Gikas A. Hardouvelis
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1. Introduction

The international crisis of 2007-2009 and the subsequent Euro Area crisis, which is still with us in mid-2013, have caused a lot of soul searching among macro and monetary economists. Many dogmatic beliefs of the way monetary policy operates and relates to inflation and financial stability were shattered by the economic consequences of the multiple crises. The lessons for monetary policy are, indeed, many and are nicely summarized by Charles Goodhart in his paper, "Lessons for Monetary Policy from the Euro Area Crisis."

Goodhart (2013) draws on his theoretical and practical experience with monetary policy over the last four or five decades to claim that most of the lessons to be learned originate from the earlier international crisis, and not so much from the on-going Euro Area crisis. In his view, the new lesson from the Euro Area crisis is the need for a banking union in a single-currency area. Thus before I discuss the main topic of monetary policy in the Euro Area and the current problematic fragmentation of its transmission mechanism, I will briefly review his summary of the lessons learned from the international crisis.

2. Lessons from the international crisis

The major lesson from the international crisis is that price stability does not guarantee financial stability. Prior to the 2007-2009 crisis, few economists worried about financial stability as they took comfort in the low inflation and high growth environment of the previous two decades.[1] The crisis revealed the lack of perfect correlation between the two stability concepts and forced the G-20 leaders to move quickly and adopt – besides expansionary fiscal measures – new and extended Basel rules on bank behavior.

Charles expresses a number of doubts on whether the countercyclical BIS macro and micro prudential rules can work in practice. He points to the political difficulty of ruling against the interests of bankers, enterprises and households during the euphoric periods and brings as an example the Spanish dynamic provisioning rules, which were nice in theory but proved ineffectual. He does propose an interesting idea worth exploring more, namely, that regulators should target the numerator of Capital Adequacy Ratio, say the nominal value of Core Tier I capital, and not the ratio itself. He argues this is a way to avoid deleveraging in an economic downturn. He also criticizes the low level of the minimum capital-to-assets ratio in Basel III (3%), as it allows a huge maximum leverage factor of 33.3, being in close spirit with current efforts by US regulators, who propose stricter US rules on this particular ratio. In general, he criticizes Basell III as continuing to be too dependent on the risk-weighted-asset approach, which in the past proved inadequate as it was gamed by the banks. He also discusses how the zero-bound on nominal interest rates brought quantitative easing, credit easing, etc., pointing to the fact that the increase in the monetary base due to QE-II and QE-III in the US has increased excess reserves and has not led to an equivalent percentage expansion of the broader monetary aggregates.

I do share some of Charles' skepticism on the effectiveness of the new regulatory tools, yet I am more optimistic than he is. First, the crises have freed policy makers to think out of the box and devise new and innovative tools of intervention. Second, Basel III rules are extensive, detailed and flexible. For example, they are not completely symmetric during economic upturns and downturns, so the political factor may not play a critical role in their implementation. Basel III imposes a cushion of higher capital requirements in normal periods, not necessarily in "bubble" periods. This cushion can automatically absorb losses in a bust period and the banks do not have to raise new capital then. Also, the Spanish dynamic provisioning did help the large Spanish banks

[1] For the view that the two concepts are not identical see earlier work by Borio and Lowe (2002) or Hardouvelis (2003)

avoid a major catastrophe early on in the international crisis. I would not discount them that easily. There is a lot more one can say on those issues, but given the space requirements, let me turn to the main topic of the paper's title, which refers to lessons from the Euro Area crisis.

3. Lessons from the Euro-Area crisis and the core-periphery asymmetry

The new lessons for monetary policy from the Euro Area crisis become apparent once we compare the Eurosystem with the Federal Reserve. The Eurosystem faces different - more complicated- restrictions: First, the Eurosystem has to worry about 17 countries with separate parliaments, autonomous governments and different social cultures, not simply separate states within an Optimum Currency Area like in the US. Thus, the Eurosystem needs to be on guard and defend its independence against (a) Fiscal dominance, i.e. politicians who refuse to reform their economies, (b) Bank dominance, i.e. bankers who insist on targeting the return on equity despite the calamity around them, and (c) Court dominance, i.e. judges of some countries who worry mainly about moral hazard and pre-existing rules and do not understand the needs arising from the collapse in Europe's Periphery.

Second, the Eurosystem's main macroeconomic target is price stability, whereas the Fed also looks after the rate of unemployment, thus enjoying more flexibility in its response. During this crisis, the Eurosystem went at lengths trying to justify its interventions based on its financial stability mandate. But it definitely lagged behind the Fed as it brought down interest rates much later and not completely down to zero (and remember the increase in August 2008, prior to the Lehman collapse). And, although relative to the size of the economy, it has a bigger balance sheet, it expanded its balance sheet less aggressively and much later than the Fed did (Figure 1). Put differently, the ECB used non-standard measures (SMP, LTROs, OMT) as complements to its interest rate policy, in an announced effort to repair the transmission mechanism, whereas the Fed used non-standard measures (QE) as substitutes to its interest rate policy, particularly after it hit the zero-interest bound.[2]

Third, the financial system in the Euro-Area is bank-based, as external financing depends overwhelmingly on bank loans, especially so for SMEs.[3] Hence, the main focus of the ECB's transmission mechanism is bank lending, unlike the Fed, which targets the yield curve, or asset prices or market-based inflation expectations.

Finally, as Charles Goodhart detailed, there is no banking union in the Euro Area. The absence of a banking union has allowed a large fragmentation in financial intermediation, as deposits leave even healthy banks of the Periphery and move to the banks of the Center. Sovereign risk, which was institutionalized earlier by the Deauville agreement in October 2010, has affected the perceptions of bank risk. Banks in the Periphery face a higher cost of funds and lack liquidity. This has translated into higher lending rates, even beyond the levels that could be justified by the higher country risk premium (Figure 2). In other words, the Periphery is suffering not only from a fiscal contraction, which was long overdue, but from a simultaneous monetary contraction as well.[4] Moreover, those who argue that the different lending rates correctly price the different risk premia in the different countries fail to take into account that quantities of lending do matter in an economy, not just interest rates. Monetary policy is obviously not optimal in many countries of the Periphery today.

European politics today suggest that a proper banking union will take a long time to materialize, as countries at the center, given the existing bank legacy problems in countries like Italy or Spain, are reluctant to provide an immediate sufficient backstop to a common resolution mechanism and, even more so, to a common deposit insurance system. Thus the question of immediate policy interest ultimately becomes:

> "*Given that the Euro Area is not an Optimum Currency Area and a banking union will take a long time to materialize, can the Eurosystem find a way to alleviate the fragmentation in lending rates without compromising its independence*?"

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[2] Cour-Thimann and Winkler (2013)

[3] Liikanen Report (2012)

[4] For example, the Extraordinary Liquidity Assistance mechanism of the Eurosystem charges two percentage points higher interest rate to borrowing banks, effectively making Monetary Policy a lot more restrictive for countries that face problems!

The obvious answer is to provide direct liquidity to countries in which lending rates are high because of lack of liquidity. This can be done, for example, via a securitized market for bank loans, in which the Eurosystem directly buys securities. For such a market to exist an agency like the European Investment Bank could interfere and provide the proper guarantees, perhaps with the backing of EU funds. This is another lesson to be learned from the on-going Euro Area crisis.

4. Final remarks

The crisis destroyed the homogeneity of interest rates across EMU. Markets first, and subsequently politicians, finally realized with a 15-year delay, that EMU is not an optimum currency area. Politicians then began a new project of stricter EMU rules, hoping to mimic an optimum currency area without necessarily a fiscal union or even without an immediate banking union.[5] Moral hazard concerns dominated the response to the crisis. This aggravated the crisis further. Yet, the project of building a new EMU architecture continues.

Monetary policy in the Euro Area has thus far helped avoid a major catastrophe. Although more sluggish and less aggressive than the Fed, the Eurosystem did stretch its mandate and risked compromising its independence in order to keep EMU intact. Of course, there is always more to be done, particularly in the direct provision of liquidity exactly in the areas where it is needed most. The monetary toolbox can easily expand. This would reduce the fragmentation in bank intermediation across EMU, improve the growth prospects in the periphery, provide more market tranquility, and thus allow EMU's long term project of mimicking an optimum currency area to proceed smoothly.

[5] It would also help to create a more uniform EMU economy, with common market structures, pension systems, labor market policies, etc.

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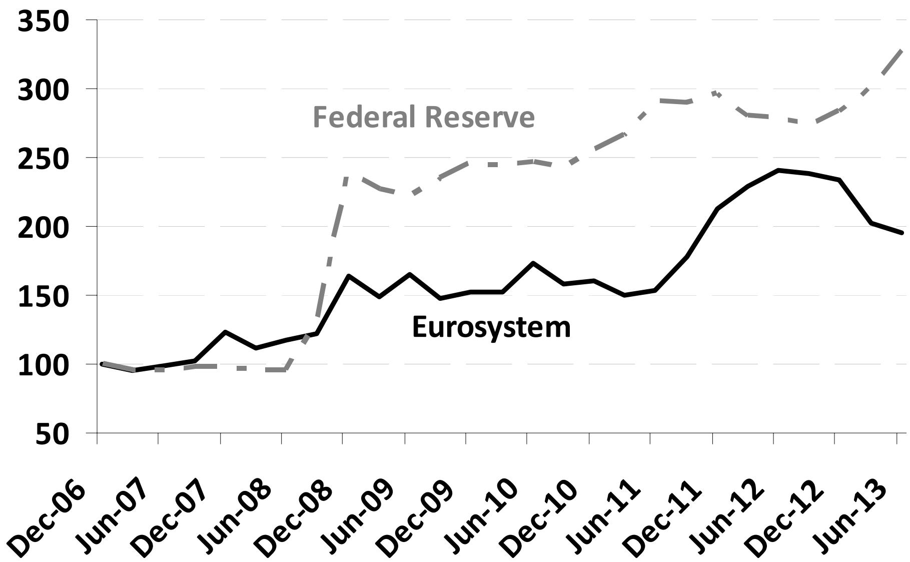
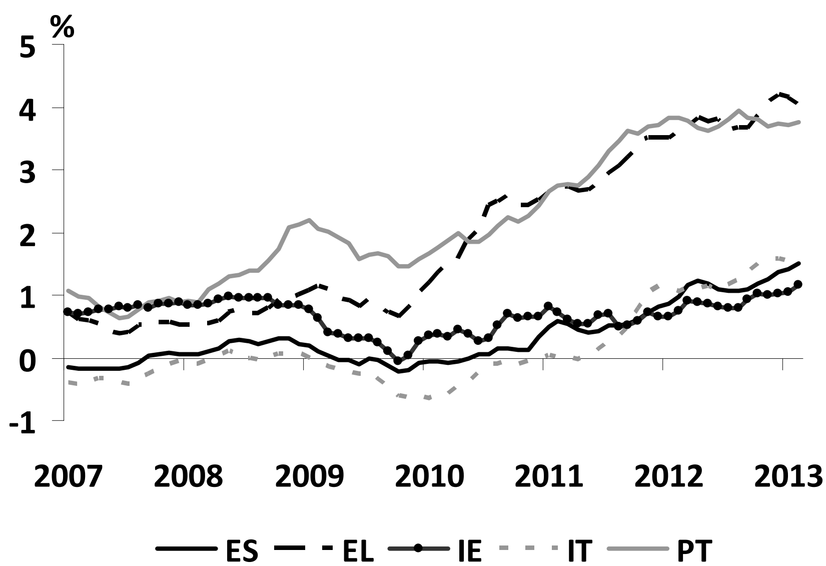
Figure 1. **Central bank assets as % of GDP** (Index, Dec 2006 = 100)



Notes: In December 2006, Eurosystem assets were 13.6% of EMU GDP and Fed assets were 6.5% of US GDP. In June 2013, Eurosystem assets were 26.5% of EMU GDP (they almost doubled) and Fed assets were 21.4% of US GDP (more than tripled).

Source: Fed, ECB, Eurostat

Figure 2. Spread of lending rate on new loans to NFCs (Peripheral country over Germany)



Notes: Three-month moving-average of annualized interest rate on new loans. Spread over corresponding German rate. Interest rate refers to new business loans to non-financial companies, of maturity up to one year. ES ≡ Spain, EL ≡ Greece, IE ≡ Ireland, IT ≡ Italy, PT ≡ Portugal.

Source: ECB

Special Conference Papers

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

14. Provopoulos George, “The Greek Economy and Banking System: Recent Developments and the Way Forward”, July 2013.
15. Constâncio Vítor, “The European Crisis and the Role of the Financial System”, July 2013.
16. Honkapohja Seppo, “The Euro Area Crisis: a View from the North”, including discussion by Dimitris Malliaropulos, July 2013.
17. Goodhart C.A.E., “Lessons for Monetary Policy from the Euro-Area Crisis”, including discussion by Gikas A. Hardouvelis, July 2013.
18. Bordo Michael and Harold James “The European Crisis in The Context of the History of Previous Financial Crises”, including discussion by Nicos Christodoulakis, July 2013.
19. Whelan Karl, “Ireland’s Economic Crisis: The Good, the Bad and the Ugly”, including discussion by Thomas Moutos, July 2013.
20. Gibson D. Heather, Hall G. Stephen, and Tavlas S. George, “Fundamentally Wrong: Market Pricing of Sovereigns and the Greek Financial Crisis”, including discussion by Elias Tzavalis and Thanasis Kazanas, July 2013.
21. De Grauwe Paul and Ji Yuemei, “How Much Fiscal Discipline in a Monetary Union?”, including discussion by George Hondroyiannis, July 2013.
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