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**Ireland's European Crisis:
Staying Solvent in the Eurozone**

Colm McCarthy, University College Dublin

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Colm McCarthy, School of Economics, University College Dublin.

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colm.mccarthy@ucd.ie

Summary

A popular narrative amongst European policymakers is that Eurozone members facing problems in the bond market are paying the price for past budgetary excess. Fiscal consolidation in these countries is seen as the principal remedy for the crisis. It is clear however that Ireland's problems derive mainly from a banking bust exacerbated by weaknesses in the design of Europe's monetary union and the policy response of both the Irish authorities and the European Central Bank.

From the Euro's inception in 1999 up to 2007, both debt and deficit ratios in Ireland were comfortably within the Stability and Growth Pact ceilings. The gross debt ratio was only 25% of GDP at the end of 2007. The Stability and Growth Pact was the only macro-prudential measure in place at Eurozone level, and Irish adherence reflected public finances flattered by a credit-fuelled property bubble. The banks experienced intense liquidity pressures in September 2008 and the Irish government provided a blanket liability guarantee. The banks were in reality badly insolvent, the bank guarantee has cost 40% of GDP and Ireland was forced from the bond market and into an EU/IMF programme just over two years later. There can be no presumption that it will emerge, and re-enter the bond market, on schedule at the end of 2013.

This paper argues that the incomplete design of the currency union, with free capital movement and trans-border banking, but no centralised banking policy, contributed to the Irish debacle. The absence of bank resolution and any centralised system of liability insurance threw the burden of bank rescue on sovereigns. Countries in currency union are vulnerable to sovereign default, since they must borrow in what is, in effect, a foreign currency. Resort to official lenders enjoying seniority, combined with ECB insistence on sovereign repayment of bank senior bondholders, even in banks insolvent many times over, has undermined confidence in Irish sovereign debt.

Closer fiscal union may prove necessary if the Eurozone is to survive. To avoid future sovereign debt crises, there is also a need for centralised bank supervision and resolution, as well as for a centralised system of liability insurance for banks. What happened in Ireland shows that sticking to purely fiscal rules is no guarantee of solvency for the sovereign in a currency union with inadequate mechanisms for the prevention and resolution of banking crises.

1. Background

A popular narrative amongst European policymakers, particularly at the European Central Bank, is that Eurozone members facing problems in the bond market are paying the price for past budgetary excess. Fiscal consolidation in these countries is seen as the principal remedy for the crisis. It is clear however that Ireland's problems derive mainly from a banking crisis. Those problems have been exacerbated by weaknesses in the design of Europe's monetary union and the policy response of both the Irish authorities and the ECB.

All Eurozone countries are subject to the Stability and Growth Pact, a set of rules for fiscal policy deriving from the Treaty of Maastricht. The key requirements are that the deficit should be kept below 3% of GDP and the ratio of outstanding debt below 60% of GDP. Ireland joined the Eurozone at its inception in 1999. In the year prior to the inauguration of the Eurozone, Irish debt was 53% of GDP and there was a budget surplus of 2.4%. Subsequent developments up to 2007 were as follows:

| Pre-crisis Debt and Deficit Ratios in Ireland since Eurozone Entry | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|
| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Debt % GDP | 48.0 | 37.5 | 35.2 | 31.9 | 30.7 | 29.4 | 27.3 | 24.8 | 24.9 |
| Deficit % GDP | +2.7 | +4.7 | +0.9 | -0.4 | +0.4 | +1.4 | +1.6 | +3.0 | +0.1 |

By December 2007, Ireland's debt had fallen to 25% of GDP and the country had run a fiscal surplus averaging 1.6% of GDP over the previous nine years. As late as the summer of 2007, Irish government bonds were trading at spreads of about zero against their German equivalents. Whatever caused the sovereign debt crisis in Ireland, it was not breaches of the Eurozone's fiscal policy rules.

The crisis broke in 2008 and just two years later Ireland was forced from the market and into an EU/IMF lending programme. The debt to GDP ratio, according to official projections, will approach 120% by 2014 despite continuing expenditure cutbacks and tax increases which commenced in July 2008. From 2008 to 2014, the gross debt ratio will have risen by over 90% of GDP. The EU/IMF programme envisages exit from official lending by 2013 and the Irish government has declared that it will try to re-enter the bond market late in 2012. Early graduation from reliance on official lenders is however not assured and meaningful bond market re-entry will be difficult.

Ireland has been the most spectacular casualty of the unresolved European banking crisis, which has seen governments increasingly regarded as credit propositions sharing the characteristics of their banks (Mody and Sandri (2011)). Irish bank balance sheets exploded, fuelled by wholesale capital inflows subsequent to Euro entry, mainly to finance the commercial property and housing bubble. Buoyant tax revenues through the bubble years flattered the budget accounts which collapsed into severe deficit when the bubble burst. Bubble-related taxes evaporated and the explosion in public spending was exposed. But the fiscal ratios of the Stability and Growth Pact had been faithfully adhered and without the socialisation of bank rescue costs (40% of GDP), the Irish debt ratio would be below the figure for Germany.

Central bankers regularly point the finger at the fiscal authorities when things go wrong and prescribe rapid fiscal consolidation. Whatever about Greece, the sovereign debt crisis in Ireland is the result of monetary rather than fiscal excess. The escalating debt must be addressed but there are design flaws in the European currency union which accommodated the bubble and which continue to inhibit crisis resolution. Treaty changes leading to fiscal union may be necessary for the effective political leadership of the Eurozone but treaty changes leading to a functioning monetary union are more urgent.

2. The Irish Banking Bust

In the Eurozone bank supervision has been delegated to member states. It became clear in the summer of 2008 that the Irish banks were in serious trouble. The national authorities had failed to appreciate the risks to system solvency consequent on a credit-fuelled property bubble financed through bank foreign borrowing in the Euro bond and money markets. After the Lehman collapse there was a run on corporate and wholesale deposits and the government responded in late September by guaranteeing virtually all of the liabilities of the Irish-owned banking system, a figure approaching 300% of GNP.

A state-run asset management agency was established to purchase distressed assets from the banks at what was expected to be a limited discount. These measures were based on the presumption that the Irish banks were illiquid rather than insolvent or that if insolvent, the capital deficiencies would turn out to be manageable. This was a massive and costly miscalculation. All of the main banks were bust, several having lost large multiples of their equity capital. Larger-than-expected discounts from the asset management agency helped to crystallise these losses. Shareholders were wiped out but bank bondholders have been paid, even in banks bust many times over, despite the resultant insolvency of the state itself. If the costs of bailing out bank bondholders had been zero, or kept at modest levels, most observers think that Ireland would have avoided an EU/IMF rescue given the low starting debt/GDP ratio. In this sense, the Irish crisis is a banking crisis and was not prevented by adherence to the Stability and Growth Pact parameters. Reviews of the origins of the Irish banking and fiscal crises can be found in Kelly (2009), Lane (2011), McCarthy (2009), Honohan (2010), Regling and Watson (2010) and Whelan (2011).

As the true extent of Irish bank insolvencies emerged through 2009 and 2010, the ECB continued to insist that senior unsecured bank bondholders be paid at state expense, even to the point where the Irish government had to withdraw from the bond market in September 2010. There followed a succession of public statements from ECB officials and governing council members which were interpreted as threatening a discontinuation of liquidity support to European banks. The result was a silent run on the most vulnerable, the Irish banks, and the government felt impelled to resort, in November 2010, to an EU/IMF rescue, see O'Callaghan (2011), who argues that the ECB exacerbated the run on the Irish banks.

It is now clear that the Irish banking system made consistent losses over the last decade, illustrated most dramatically in the case of Anglo Irish, jointly the second-largest bank and responsible for about one-half of the total Exchequer cost of the bank rescue. Anglo Irish reported profits and loan loss provisions since 2001 as follows:

Profit before Tax, Anglo Irish Bank 2001 to 2010, with Loan-Loss Provisions, €m.

| Year to Sept | Profit Before Tax | after Loan-Loss Provisions of |
|--------------|-------------------|-------------------------------|
| 2001 | 195 | 70 |
| 2002 | 261 | 66 |
| 2003 | 347 | 58 |
| 2004 | 504 | 19 |
| 2005 | 615 | 30 |
| 2006 | 850 | 66 |
| 2007 | 784 | 82 |
| 2008 | 1243 | 724 |
| 2009* | (12835) | 15105 |
| 2010** | (17619) | 19314 |

* 15 months to end-2009

** 12 months to end-2010

Total profits for the decade turned out at minus €30 billion, after eight years of steady growth and modest reported loan losses. This is a Black Swan distribution (Taleb (2007)), with high and disguised risk-taking accompanied by myopic provisioning resulting in apparent profits averaging €600 million over eight years followed by €30.5 billion in losses when the bank's assets were finally assessed at realisable value. The losses finally acknowledged relate mainly to loans made in the years when provisions were miniscule.

The process has been likened to picking up small coins in front of a large steam-roller. The bank paid sizeable dividends and bonuses through the period as well as engaging in substantial lending to staff and connected parties, and the pattern seems to fit what Akerlof and Romer (1993) call the 'Texan' model from the Savings and Loan bust. Dallas-based lenders in particular booked upfront as current revenue fee and commission income from developers, as well as interest payments in the early years of a loan, which were funded from the amount advanced to the borrower. These loan amounts were in any event excessive and based on optimistic or fraudulent appraisals of collateral values.

ECB discrimination in favour of bank and against other categories of creditors is most clearly illustrated in the case of Anglo Irish Bank. At the end of September 2008, this bank had €4.1 billion in book capital. It was the first to run out of liquidity and sought government support shortly after the Lehmans collapse. Bank managements and the then Financial Regulator maintained that Anglo and the other Irish banks were adequately capitalised and that their problem was just a temporary shortage of liquidity, hence the government decision to guarantee virtually all of the liabilities of the banking system, Anglo included. In the 27 months up to the end of 2010, Anglo alone booked €34.4 billion in loan losses, amounting to almost half of all the loans it had made. The losses in Anglo equal 8.4 times its book capital. To be clear, this bank has blown all of its capital

not once but eight-and-a-half times. Bank busts on this scale have rarely happened anywhere in the world and this bank may cost up to 20% of Ireland's GDP on its own.

Anglo has since been wound down by the government. The bank has been turned into a resolution company which does not lend, does not accept deposits and is devoted solely to collecting whatever it can from those borrowers still on its books. It is also pursuing former executives over insider lending and will be shuttered as soon as these tasks are accomplished. There are police inquiries under way into false accounting, share support schemes and other possible abuses. However most Anglo bondholders have already been paid and the remaining bondholders live on, including holders of senior unsecured bonds which do not enjoy any formal guarantee from the Irish government. At the insistence of the European Central Bank, these unsecured, unguaranteed bondholders in a bank which is in resolution are still to be paid, in full and with no haircut.

The Irish government was forced into this commitment in November 2010 by the European Central Bank during the negotiations leading up to the EU/IMF rescue. The ECB threatened to withhold liquidity from the Irish banking system unless all bank senior bondholders were paid in full and the government must have believed the threat. It has been reported in Irish media that US Treasury Secretary Tim Geithner supported the ECB position and that IMF objections to this approach were ignored. The beneficiaries of this ECB policy are the bondholders in this defunct bank and writers of credit insurance against its bonds. The same generosity is being extended to unsecured, unguaranteed bondholders in other banks which are either defunct or would be were it not for government guarantees and capital injections. It is unprecedented for bondholders in defunct banks to be paid by a country already in an IMF programme.

The losers are, most obviously, the Irish taxpayers, but it should be clear that the holders of sovereign bonds are being treated badly too. Forcing a government struggling to meet its sovereign obligations to pay billions of Euros to people to whom it does not owe any money weakens and may remove that government's capacity to meet its own sovereign obligations.

The ECB has never offered any explanation for this policy beyond assertions that paying off holders of bonds in dead banks at the expense of taxpayers and sovereign bondholders will assist confidence in the European banking system. The policy is demonstrably an inefficient way to help under-capitalised banks, if that is the intention, since the bonds to be re-paid are held by hedge funds, pension funds, life assurance companies and numerous other mark-to-market investors, as well as by banks. Instead, the policy of protecting bank bondholders first at the expense of distressed sovereigns has helped to create a new short-circuit from shattered sovereign bond markets back into bank balance sheets and persists in the pretence that Europe does not have a banking crisis. Competing creditors, particularly risk-averse traditional holders of European sovereign debt such as pension funds, have been significant losers and have exited the peripheral bond markets in large numbers.

3. The Juniorization of European Sovereign Debt

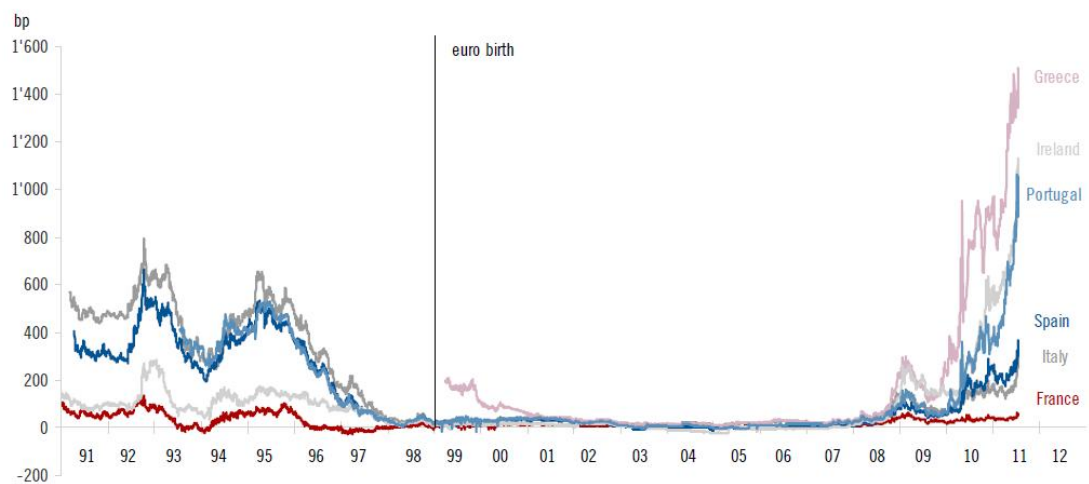
In a world without capital controls, loose monetary conditions can wash up on anyone's shore, in or out of currency union, as Shin (2011) documents. The design of the Eurozone includes unfettered capital mobility and freedom of establishment for banks, without any centralised bank supervision, bank resolution or bank liability insurance.

Paul de Grauwe (2011) has argued that states participating in the Euro have placed themselves in a position where the risk of sovereign default is heightened, and it is salutary to note that, when the Greek haircut is finalised, this will be the first sovereign default in Europe since the 1950s. Several other countries are at risk of sovereign default to varying degrees as evidenced by yield spreads in the bond market and prices for credit default swaps. These countries can no longer create money to meet sovereign obligations in their own currency and have placed themselves in the traditional position of Latin American countries unable to borrow except in dollars. Government balance sheets consist of long, uncertain and illiquid assets (future tax receipts) with extensive short-term liabilities (the ongoing need to finance deficits and to roll over maturing debt). Unable to create money, governments begin to look like banks, and subject to runs.

Spreads above levels prevailing before the euro's birth



Euro area: Sovereign spreads vs. 10Y Bunds



Source: AA&MR, Datastream

The exposure of European governments to sovereign default went unnoticed in the years up to 2008 in the great credit-fuelled convergence play in Eurozone bond markets. Risk premia on peripheral debt were almost eliminated. After the shock of 2008 the supply curve of sovereign credit is no longer elastic once debt ratios reach somewhere around 80% of GDP, and certainly not for countries which are no longer able to finance themselves, even temporarily, through monetary expansion. The nexus between bank and sovereign solvency has been reinforced by European policy, which has inserted new short-circuits, instead of circuit-breakers, into the financial system. Principal amongst these has been the no-bank-bondholder-left-behind policy imposed most visibly on Ireland.

But several other policy actions have exacerbated the vulnerability of sovereign debt issuers. The decision to arrange a 'voluntary' write-down of Greek government debt was apparently designed to protect banks which had written credit default swaps, but has had the predictable consequence of amplifying contagion, since Italian or Spanish debt must now be held without access to effective insurance cover. Banks in the various countries have been encouraged, under the camouflage of indulgent accounting treatment (see Addendum) to increase holdings of home-country sovereign debt, tying fragile banks even more firmly to fragile sovereigns. The European Financial Stability Fund, created to lend to countries no longer able to borrow and guaranteed in effect by the remaining AAA-rated Eurozone members, has itself begun to lose credit-worthiness and has recently had to pay 177 basis points over German bunds for 10-year money. Those countries relying on official lenders must accord them seniority, explicitly in the case of the IMF. As they retire maturing debt at par and cannot issue in the primary market, the stock of outstanding sovereign debt to which any ultimate haircuts must be applied dwindles month by month. This process is likely to be seen as dynamically unstable by bond market investors. Finally the discount to book value in European bank share prices implies severe under-capitalisation, seen as a contingent liability of governments and a further drag on sovereign debt markets.

Sovereign debt is unsecured. Queue-jumping by official creditors renders these instruments less attractive while the imposition of contingent liabilities for bank rescue on distressed sovereigns and the home-country bias in bank liquidity holdings joins dodgy banks to dodgy sovereigns.

The European Central Bank has chosen consistently to discriminate between categories of creditors of the distressed Eurozone members, favouring bank creditors over sovereign creditors. Allied to the Merkel/Sarkozy Deauville declaration of October 2010, envisaging explicit provision for sovereign defaults post-2013, these policies have cut the legs from under the most vulnerable sovereign bond markets. The result has been crisis intervention by the ECB to purchase sovereign debt in the secondary market and a procession of downgrades by ratings agencies. Unwillingness to accept, from 2008 onwards, that Europe had a banking crisis has meant that failing banks have not been resolved; contingent liabilities have been heaped on sovereigns and the damage to European bond markets will not easily be repaired.

Policymakers have already had to accept a ‘voluntary’ Greek default. At some stage decisions will have to be taken to stand behind those sovereigns which can be saved and governments will have to admit to their electorates that banks have to be re-capitalised, by the national fiscal authorities or by European institutions if necessary. The extend-and-pretend policy has bought time, at substantial cost, but the progressive destruction of the European sovereign bond market signals that the time has not been used productively. It is reasonable to identify the Greek crisis as fiscal in nature and there are several countries, Portugal and Ireland included, which need to restore fiscal balance as quickly as possible. But the pretence that there is no banking crisis and that fiscal retrenchment in a few Eurozone members will rescue the single currency has run its course.

The option of a smaller Eurozone is impractical. As Willem Buiters (2011) has argued recently, it would make little sense for Greece to choose Eurozone exit: the economy would remain dollarised (with Euros). Capital controls would not work; there would be little inflation tax revenue from a currency nobody wished to hold and every prospect of financial disorder, fears of further Eurozone withdrawals and economic dislocation. A Greek exit could of course happen by accident.

The greatest risk to small countries in the currency union under prevailing structures and policies is the heightened risk of sovereign default, stemming from attempts to avert a banking crisis. The bursting of a credit and construction bubble will worsen the budget deficit dramatically and the additional fiscal costs of bank rescue can make the overall debt burden too large to handle. This is essentially the story for Ireland, and a large part of the story for Spain. The risk of excessive deficits and debt of the kind witnessed in Greece may however have passed. Fiscally irresponsible Eurozone governments will not emerge again for a long time, because neither the official lenders nor the sovereign bond markets will finance them.

The ECB has chosen to teach a lesson (basically, the lesson that they do not head the queue) to sovereign debt-holders. The lesson to bank creditors is that they will be looked after, at the expense, if needs be, of taxpayers and sovereign creditors. This means that the risk of a credit bubble for a new country entering the Euro has not been removed, although the risk of irresponsible budgetary policy is much reduced, since current policy is that only bank bondholders, and not lenders to sovereigns, should be exposed to moral hazard¹.

Only limited consolation can be taken from foreign ownership of banks. As Kraft and Galac (2011) argue in the case of Croatia, which is a potential Eurozone entrant, the instruments available to control credit expansion are compromised in the absence of effective capital controls, and foreign-owned banks cannot be forced, under current arrangements, to stand behind bust affiliates in another member state. While it should be

¹ The ECB’s behaviour in juniorising sovereign debt can be interpreted as reflecting their role as lender of last resort to banks but not to governments. So their exposure would be contained, it must have appeared at the onset of the crisis, if the rescue of the banks could be left to the governments.

acknowledged that, for example, British banks stood behind bust units in Ireland and various European banks took their losses in Eastern Europe and the Baltics, they were in receipt of direct and indirect official support as they did so. There can be no guarantee that a host government in the future might not be forced to bail out local units of foreign banks in order to protect depositors after a banking bust. It is probably quite a good idea for a small country joining an incomplete currency union to let someone else own the banks, but they can always liquidate and leave.

4. Re-Designing the Monetary Union

The incompleteness in the Eurozone's design, a currency union rather than a full monetary union, has been most evident in the failures to deal centrally with the systemic and Europe-wide banking crisis. The best protection for vulnerable sovereigns would be a centralised system of deposit insurance, bank supervision and bank resolution and an end to contingent liability, on a national basis, for bank rescue. In a fully functioning monetary union, such as the dollar area, these functions are centralised. If a bank headquartered in Delaware, as some very large banks happen to be, goes bust, the Governor of Delaware is not expected to pick up the pieces using only the tax base and sovereign credit of Delaware. Nor is the Governor expected to supervise these banks without powers of bank resolution. If the ECB were running the US system, state governors would refuse to allow banks to be based in their states.

The USA has evolved into a full monetary union and not just a currency union, a group of states sharing a common currency but lacking the architecture necessary for financial stability.

Bank Assets as % of GDP, Selected US States, 2010.

| | | | |
|---------|----|----------------|------|
| Alaska | 10 | North Carolina | 378 |
| Arizona | 5 | Delaware | 1629 |

The responsibilities which have been centralised in the Eurozone since 1999 have included only the conduct of aggregate credit and monetary policy, subject to an explicit inflation target. The target may have been achieved but a banking crisis has been transformed into a sovereign debt debacle which now extends to more than half of the Eurozone sovereign bond market. It arguably could have been confined to Greece, or possibly to Greece and Portugal, if the scale of the banking crisis had been admitted from the beginning.

The political response to date has consisted, especially in creditor countries in Northern Europe, of pressures for a centralisation of fiscal policy and an intensified European oversight of state budgets. The failure of the Stability and Growth Pact, first breached by France and Germany, not by Ireland and Spain, may well result in a stronger fiscal pact with additional sanctions. It may be necessary politically to move towards a strengthening of the Stability and Growth Pact but it is extraordinary how often the failure of a policy leads to demands that the failed policy be intensified. What Europe needs most urgently is completion of the half-formed monetary union, including a European Central Bank which is obliged as well as empowered to take responsibility for financial stability in the

single capital market. This means centralised bank supervision and resolution, centralised and pre-funded deposit insurance and an end to moral hazard and the implicit subsidisation of capital for banks. There are active proposals from the EU Commission, the Bank for International Settlements and others on these matters but no agreement on a new framework has emerged, four years into the crisis.

There can be no presumption that national bank supervisors will recognise credit bubbles in good time and be able to respond effectively. What happened in Ireland should serve as a caution to small countries contemplating the abolition of their own currencies and entry to the Eurozone. The currency union will continue to be vulnerable to localised banking crises, inducing sovereign debt crises, unless it evolves into a full monetary union. This requires the member states to embrace a unified banking policy and to construct a central bank explicitly charged with the pursuit of financial stability and the preservation of the monetary union. .

Addendum: The ‘Banking Book’ Rule

Accounting and regulatory rules which permit the enhancement of apparent financial performance and depart from fair-value accounting encourage legal and illegal behaviour by banks which were highlighted long ago in the Akerlof and Romer (1993) paper on looting. They argue that rules which permit the non-recognition of declines in the fair value of assets can create incentives for owners/managers of banks to exploit (implicit or explicit) depositor protection to engage in consciously risky acquisition of dodgy assets. Courting bankruptcy can be rational, even deliberate, and there is persuasive evidence that this happened during the 1980s Savings and Loan collapse in the United States. The ‘banking book’ convention allows banks to pretend that fair value losses have not in fact occurred and it is arguable that such accounting treatment would not survive in financial markets denied the benefit of, in Europe, implicit and free depositor protection. Thus the moral hazard deriving from implicit and free depositor protection in Europe is exacerbated by the banking book convention. Of course banks must hold liquidity somewhere, but the banking book convention is encouraging risk in a portion of the balance sheet where it is hardly appropriate.

Where regulators and auditors are sufficiently lax, and where those funding the bank enjoy an explicit or presumed taxpayer guarantee removing market discipline, the incentives for bank management are so distorted that it can become rational to make loans with negative expected value. Whether there was illegal as well as imprudent behaviour at Anglo or other Irish banks remains to be established. Those investigating the matter could usefully consult the Akerlof and Romer paper.

The crisis has raised questions about how banks price and manage risk and about capital adequacy but also about the way regulators permit banks to do their accounts. The issues are related and this is illustrated clearly in the treatment of sovereign debt holdings, a critical source of concern in the development of the European crisis. Holdings of sovereign debt on bank balance sheets can be allocated either to the banking book, where they can be valued at cost or to the trading book where they must be marked to market. With thin capitalisation and large sovereign debt holdings, the solvency of a bank can be greatly affected by this allocation. A bank which holds as little as 5% of assets in the form of sovereign debt and which also has 5% free capital could see its capital adequacy materially impaired through collapsing bond prices. Holdings allocated to the trading book, reflecting market-making activities for example, must be adjusted to current prices but bonds trading at 60 or 70 can be shown at cost, usually par, provided they are classified in the banking book. Even relatively short-dated bonds of the type favoured for liquidity holdings have seen price collapses over the last eighteen months. Some banks with substantial sovereign holdings have been allocating 90% and more to the banking book, fuelling market suspicions that losses are being hidden and exacerbating volatility in bank share prices. Holdings other than European government bonds, including US mortgage-backed securities, may also have been marked at prices that could not be realised in liquid markets.

The traditional justification for marking bank assets, such as loans, at par is that they are (relatively) long-lived and that market values are not observable. Impairments to value can be accounted for through explicit provisions. This argument does not apply to sovereign bond holdings which are priced daily in arms-length markets. Since bonds are held for liquidity purposes (banks are not supposed to be depositor-financed bond mutual funds) it is unclear why they should be shown at anything other than realisable value.

A result of this accounting treatment is the spectacle of the recent debate around the European Banking Authority's stress tests and the appropriate haircut to apply to Greek and other bonds held by European banks. The problem has been exacerbated through encouragement of 'home-country' bond purchases by banks, tying their fate even more closely to that of their shaky guarantors, with consequences discussed in the Mody and Sandri (2011) paper. With some greater regulator-induced transparency about actual holdings since mid-2011, investors can now do their own haircuts and whatever value the banking book manoeuvre may have had in concealing losses has been diminished. The bond market collapse has accentuated the interbank credit famine to the degree that losses on bonds and credit derivatives remain unclear and it is arguable that the banking book convention has had a destabilising impact. This raises the question whether, in the new environment, all bond holdings should be marked to market. Arguments about inter-temporal smoothing in reported bank asset values (Freixas & Tsomocos (2006)) have been overtaken by events.

More generally, should European banks continue to hold sovereign bonds at all for liquidity purposes, even shorter-dated bonds, given the heightened risks of sovereign default built in to the Eurozone architecture? Paul de Grauwe (2011) amongst others has been arguing that the absence of a lender of last resort to sovereigns has increased once-for-all the riskiness of European sovereign issuers. Three Eurozone countries already face serious probabilities of sovereign default with several more in the firing line. There has not been a sovereign default in Western Europe since the 1950s. While the creation, courtesy of the common currency, of serious default risks may have been inadvertent, market perception of these default risks is now painfully established and will not go away. If banks (other than for market-making purposes) hold large portfolios of European sovereign bonds, are these any longer a suitable repository for bank liquidity? It is tempting to conclude that the facility to avoid marking to market encourages a carry-trade demand for risky sovereign bonds that is accentuating the fragility of the European banking system. Generous rules on collateral acceptability at the European Central Bank, and cheap liquidity, help to bolster demand for risky sovereign bonds but at the cost of riskier bank balance sheets.

National accounts aggregates can be heavily distorted by the accounting treatment of industries which do not complete sales within a short time-span. GDP is a value-added concept and includes corporate profits. If these are imaginary, as was clearly the case with Irish bank profits, GDP is overstated. But the same problem arises with the construction industry, whose 'output' is valued by producers in advance of final sale and settlement. Had the construction industry been producing unsale-able ice-cream instead

of unsale-able houses, the Irish GDP figures from about 2003 onwards would have been far lower with construction output valued at the prices which eventually materialised. The figures would have been lower again if the 'output' of the banking industry had been adjusted with realistic provisioning.

While it would be absurd to expect that national accounts statisticians could have foreseen the write-downs which eventually emerged, and while it is right to acknowledge that standard methodologies were followed, it would be an interesting and salutary exercise to re-state the Irish national accounts for the last decade using realisable measures for the output of the banking and construction industries. The same exercise would yield downward GDP revisions for Spain, the United Kingdom and several other countries.

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