

The Bond Markets, Irish Debt and Policy Windows

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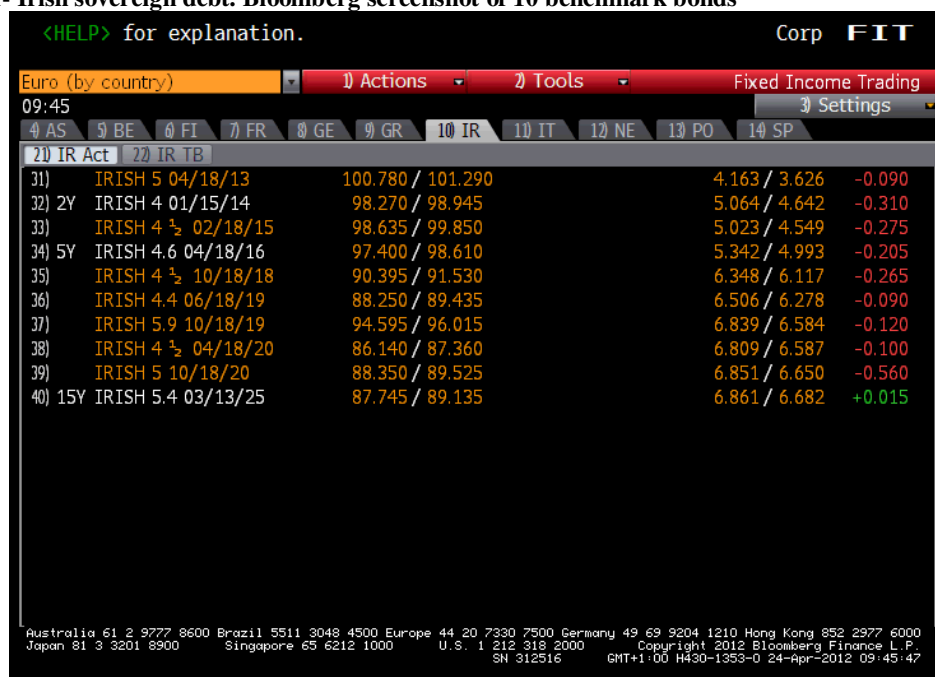
I Bond Market & Irish Sovereign & Guaranteed Debt

The first part of this section focuses on the structure of both individual bonds and the markets in which they are traded. The second part examines a selected history of distressed sovereigns and their relationship with bond market participants.

Introduction

An Irish Government Bond is a debt security issued by the by the Irish Government with a promise of repayment of par value at maturity. The Irish government currently has €83bn outstanding in Sovereign debt.

Figure 1- Irish sovereign debt. Bloomberg screenshot of 10 benchmark bonds¹



| | IR Act | IR TB | | | |
|-----|------------------------|-------------------|---------------|--------|--|
| 31) | IRISH 5 04/18/13 | 100.780 / 101.290 | 4.163 / 3.626 | -0.090 | |
| 32) | 2Y IRISH 4 01/15/14 | 98.270 / 98.945 | 5.064 / 4.642 | -0.310 | |
| 33) | IRISH 4 ½ 02/18/15 | 98.635 / 99.850 | 5.023 / 4.549 | -0.275 | |
| 34) | 5Y IRISH 4.6 04/18/16 | 97.400 / 98.610 | 5.342 / 4.993 | -0.205 | |
| 35) | IRISH 4 ½ 10/18/18 | 90.395 / 91.530 | 6.348 / 6.117 | -0.265 | |
| 36) | IRISH 4.4 06/18/19 | 88.250 / 89.435 | 6.506 / 6.278 | -0.090 | |
| 37) | IRISH 5.9 10/18/19 | 94.595 / 96.015 | 6.839 / 6.584 | -0.120 | |
| 38) | IRISH 4 ½ 04/18/20 | 86.140 / 87.360 | 6.809 / 6.587 | -0.100 | |
| 39) | IRISH 5 10/18/20 | 88.350 / 89.525 | 6.851 / 6.650 | -0.560 | |
| 40) | 15Y IRISH 5.4 03/13/25 | 87.745 / 89.135 | 6.861 / 6.682 | +0.015 | |

Bond prices and yields change on a daily basis, it is important to note that both the par value and the annual coupon rate remain fixed in spite of a changing yield to maturity and price; holders of bonds will still receive the fixed coupon and principle payment. The prices and

¹ This screenshot shows the 10 benchmark bonds that Ireland currently has outstanding in the markets. We are given the Issuer, coupon rate, maturity date, price and yield to maturity. The Issuer in this case is a sovereign entity, Ireland. The coupon rate is the rate of interest the issuer agrees to pay each year. Maturity date - The date the bond matures on. The current price of the bond in the secondary markets both bid (the price that dealers are willing to buy the bond for) and ask (the price that they are willing to sell at. The yield to maturity, this is the yield that you would earn per annum if you were to purchase the bond today and hold it to maturity.

yields stated relate to secondary market prices, these are the prices that the bonds are currently trading at. Note the bond prices are trading at both a premium and a discount, very few bonds will trade on the secondary market at par.

What Causes changes in Price bonds to trade at a discount or a premium?

The two main risk factors that affect the fixed income markets causing changing prices and yields are credit risk and interest rate risk.

Credit Risk

The credit risk of a bond includes

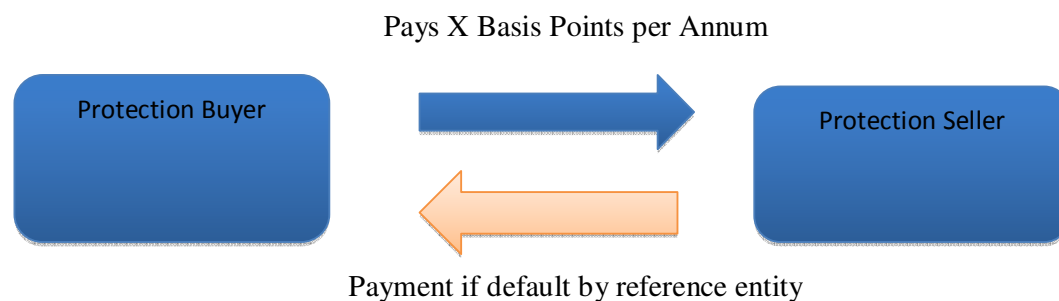
- Default Risk - The risk that the issuer will default on its obligation
- The risk that the bond value will decline and or the bonds performance will be worse than that of other bonds because either (a) credit spread risk - the risk that the market requires a higher spread due to a perceived increase in the risk that the issuer will default or (b) downgrade risk - companies that assign ratings to bonds will lower a bonds rating.

Credit Rating companies calculate these credit risks and assign credit ratings to issuers of debt. Ireland currently has an S&P credit rating of BBB+ a decrease in credit rating will cause a decrease in bond price and in turn an increase in yield to maturity.

Credit Default Swaps

One indication of the market perception of an issuer's credit risk can be seen in a credit default swap (CDS) premium. Credit default swaps are over-the-counter instruments designed to transfer credit risk from one party to another by way of a bilateral agreement; their value is derived from the credit risk of an underlying reference entity. CDSs have similar characteristics to bonds but have the advantage of being "pure" credit instruments. This allows investors to invest solely in the credit risk of an entity as CDSs are in large part isolated from further risks such interest rate, currency and tax risk.

Figure 2 - Credit default swap payment



CDSs function like a default insurance contract for debt. The protection buyer pays a premium of X basis points a year to the protection seller and if the underlying reference entity defaults on a loan or bond, the holder of a CDS (the protection buyer) is paid compensation. When the holder of a CDS is protecting an investment that they own, there is a very real sense that it is a form of insurance, paying out to compensate the holder for loss in the event of a default. However, with a CDS contract there is no obligation for either party to have an interest in the underlying reference entity. So swap buyers may be protecting investments they own or taking a position to reflect the possibility of a country or other borrower defaulting. The trigger for the CDS paying out to the holder rests with a decision made by a committee in the International Swaps and Derivatives Association. This means that a CDS credit event can occur without a formal default on the debt. However can be noted CDS have little direct impact on the sovereign bond market, they are simply a useful measure of the markets perceived view credit risk.

Figure 3 - Irelands 5 year Credit Default Swap premium Jan 2010 – April 2012



Interest rate risk

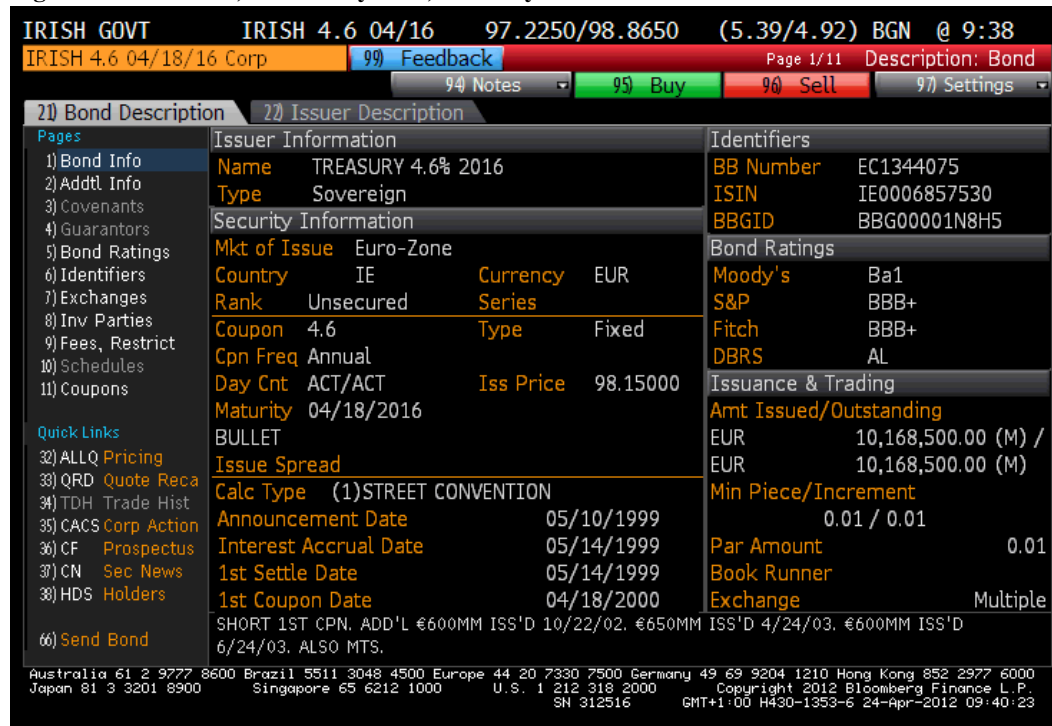
Interest rate risk is a great risk to all bondholders. As interest rates rise, bond prices fall and vice versa. This is because when interest rates increase, the opportunity cost of holding a bond decreases since investors are able to realise greater yields by switching to other investments that reflect the higher interest rate. Bonds and other fixed income securities move in the opposite way of interest rates. As interest rates drop the price of a fixed income security will rise.

Other risks effecting bond prices are:

Credit risk and Interest rate risk are not the only two factors affecting the price of a bond. Other factors include

- Reinvestment risk – Yields are calculated with the assumption that any interest earned on the investment in a bond will be reinvested, reinvestment risk relates to the risk of the rate that the interest is reinvested falls.
- Inflation or purchasing power risk - Inflation risk, or purchasing power risk, arises because of the variation in the value of cash flows from a security due to inflation, as measured in terms of purchasing power.
- Liquidity risk – Relates to an investor having to sell a bond for lower than its true value reflected by wide bid-ask spreads in the market.
- Exchange rate or currency risk – When holding a bond whose cash flows are in a foreign currency there is a risk that the exchange rate will change resulting in uncertain cash flows in the domestic currency.
- Political or legal risk – Governments may declare tax on a bond or declare a tax exempt bond taxable. A regulatory body could conclude that a bond is unsuitable for investment by an entity that it oversees. Both of these situations may affect the bond adversely and are known as political or legal risk.

Figure 4 - Irish 4.6%, Issued May 1999, Maturity 2016.



This Bloomberg screenshot shows one of Ireland's bonds currently outstanding. It is the Irish 4.6 04/18/2016 Bond. The name tells us that it's an Irish bond with an annual fixed coupon paid of 4.6% and the bond matures on the 18/04/2016. It was issued in May 1999 at 98.15, at a discount. We can also see the bond credit ratings, amount issued and outstanding. We will use this bond to look at the inverse relationship between bond price and yield to maturity.

Figure 5 - Irish 4.6 04/18/2016 Bond demonstrating the inverse relationship between bond and yield²



² The inverse relationship is clearly demonstrated in the two screenshots, they are the complete opposite of each other. One moves up as the other moves down and vice versa.

There is an inverse relationship between bond price which relates to how much the bond cost to purchase and the yield to maturity which gives the total return you would receive if you held the bond to maturity. A rising yield relates to falling bond prices.

Looking at both the price and the yield graphs for the Irish 4.6 04/18/2016 Bonds we can see this demonstrated. This is the situation we saw in Ireland from early 2010 through to mid-2011 where bond prices continued falling and the yield on our bonds kept rising due to growing uncertainty over sovereign debt in the Eurozone.

In July 2011 the Price of the bond dropped to around €62 where it was trading at a significant discount. Although trading at a discount the bond is still paying a fixed coupon of 4.6% of par per annum or €4.60 per annum. With the purchase price being €62 then the interest received relative to price paid is comparatively high. Meaning that the interest received is $4.6/62 = 7.5\%$ p.a. Taking into account the discount that the bond is bought at, the redemption yield would be over 15%. We can see this in the yield graph in July 2011 when the yield to maturity hit approximately 15% for this bond.

The Mechanics of Bond Markets

Primary Market

The primary bond market relates to where new securities are first issued. Irish government bonds are initially auctioned to primary dealers in the primary market and are then traded on the secondary market. Bonds are issued by way of scheduled auctions held by the National Treasury Management Agency (NTMA) who are responsible for issuing sovereign debt on behalf of the government.

The Irish Government bond market is based on a Primary Dealer system. There are currently 16 primary dealers³; they are all members of the Irish Stock Exchange and are recognised by the National Treasury Management Agency (NTMA). Bond auctions are conducted electronically on the Bloomberg Auction System and are confined to the Primary Dealers. The use of an electronic auction system means primary dealers do not need to be present in Ireland for the auction and can simply bid for the bond electronically. Depending on the auction bids the bond may be issued at par value, at a discount or at a premium. Par value (also known as face value or premium) this is the amount that the investor will get back when the bond matures. Issuing at a discount simply means that the selling price is below par and at a discount meaning above par. The result of the auction is then posted online and the primary dealers that are successful in the auction can go on and sell the bonds to their investors.

³ Barclays Capital, BNP Paribas, Citigroup, Credit Agricole CIB, Danske Bank, Davy, Deutsche Bank, Goldman Sachs, HSBC CCF, ING Bank NV, JP Morgan, Bank Of America, Merrill Lynch, Nomura International plc, Royal Bank of Scotland, Société Générale and UBS Limited.

Settlement, Registration and Transfer

Each primary dealer is required by the Irish Stock Exchange to provide daily reports on their trades in Irish bonds as well as reports on their own positions at close of business to the Irish Stock Exchange however there is no obligation on primary dealers to provide the NTMA with details on their clients undertaking the trades in Irish bonds. The main reason for this is that in December 2000, Ireland became the first European country to transfer the daily settlement of its bonds from its own Central Bank to an international clearing house, the Euroclear Operations Centre in Brussels (Euroclear). Euroclear is a financial services company that specialises in the settlement of securities transactions.

For every bond issue there is a register of holders held at the Central Bank and Financial Services Authority of Ireland. Although ownership is evidenced by entry of the name of the holder of the bond on the register, Euroclear groups all positions together and is listed as one name on the register.

The Central Bank of Ireland bond register consists of the holdings of:

- Euroclear Nominees Limited (grouping all securities positions held in Euroclear accounts into a single account on the register);
- Non-Euroclear Nominees (mainly retail investors).

In April 2011 approximately 99.74% of the register was made up of this single Euroclear account on the register and because all Euroclear accounts are grouped into one account it is not possible to see the individual holders of these government bonds. The Central Bank of Ireland has appointed Euroclear Bank as the Central Securities Depository for Irish government bonds. As such all settlement of Irish government bonds takes place in Euroclear Bank. Annual coupons and the payment at maturity are paid by the Irish government to Euroclear who in turn distribute the payments to investors. Euroclear maintain a register of nominee accounts and they do not reveal the identity of investors holding government bonds.

Secondary Markets

The secondary markets are where the bonds that have been previously issued are traded and it is where investors sell bonds to one another. All Irish bonds are listed and traded on the Irish stock exchange. Primary Dealers are actively engaged in secondary markets. The Primary Dealer system was introduced at the end of 1995 with the purpose of bringing depth and liquidity to the market and they are expected to maintain a market in Irish government bonds by making a two-way market in the bonds every day on which the stock market is open. They are also market makers in Irish Government bonds on the major electronic platforms. The NTMA maintains a secondary trading function to trade in Irish Government bonds in the secondary market, including market makers and agency-only brokers. The purpose of the secondary trading is to support market liquidity and to acquire market intelligence.

The definition of default

The Credit Rating Agency Definition

Standard & Poor's defines default as the failure to meet a principal or interest payment on the due date contained in the original terms of a debt issue.

Questions can arise, however, when applying this definition in different situations and to different types of sovereign obligations. Standard & Poor's considers a sovereign to be in default under any of the following circumstances:

- For local- and foreign-currency bonds, notes, and bills issued by the central government and held outside the public sector of the country, a sovereign default occurs when the central government either fails to pay scheduled debt service on the due date or tenders an exchange offer of new debt with less-favourable terms than the original issue.
- For local currency issued by the central bank, a sovereign default takes place when notes are converted into a new currency of less-than-equivalent face value.
- For private-sector bank loans incurred by the central government, a sovereign default occurs when the central government either fails to pay scheduled debt service on the due date or negotiates with the bank creditors a rescheduling of principal or interest at less-favourable terms than in the original loan. (S&P 2012⁴)

Academic Literature Definitions

Descriptions of default vary across the academic literature. Three main definitions of default are used in when examining default in recent empirical studies: 1) Arrears on principal or interest payments >5% of debt outstanding or restructuring of a country's total (sovereign plus private) external debt with private creditors.⁵ 2) Default or restructuring of a country's total (sovereign plus private) external debt with private creditors⁶ 3) Arrears on principal or interest payments >15% and 5% respectively or restructuring of a sovereign's external debt with private creditors⁷. The multiplicity of definitions defies the public perception of default as a binary event.

⁴ <https://www.standardandpoors.com>

⁵ Detragiache and Spilimbergo (2001)

⁶ Reinhart, Rogoff and Savastano (2003)

⁷ De Paoli et. al (2009)

Distressed Sovereigns and the Bond Market

Unlike corporate debt, sovereign debt markets are characterised by weak contractual enforcement. Given the paucity of secured assets, the question arises: Why do sovereigns repay their debt? An examination of the literature yields four main rationales for sovereign debt repayment, to avoid penalties, reputation costs, impact on the domestic banking and financial system and also for political reasons.

Why do sovereigns repay their debt?

The usual answer is that they must do so to avoid penalties (trade sanctions or cessation of lending relationships)⁸. Seminal research in the early-1980s assumed that creditors had *no* direct control over debtors whatsoever, and their only means of retaliating in the event of default would be through the denial of future credit. If default triggers permanent exclusion from credit markets, borrowers are risk averse, and debtors have no way of insuring against output shocks other than through borrowing, the threat of losing access to credit markets is a sufficient reason for repaying, up to a certain maximum level. This level is higher the more risk averse the debtor is, and the bigger the variance of output. The problem is that in such a situation both parties—creditors and debtors—are generally worse off than in a situation in which lending were to resume⁹.

Governments need to worry about their reputation in the international debt markets. Reputational costs¹⁰ such as access to markets and a high cost of credit can explain why sovereigns repay. Borensztein and Panizza (2008) find that reputational costs are often short lived with regards to access to international bond markets. Although access may be lost during default; once all restructuring is complete markets do not discriminate against countries that have defaulted. Markets do however discriminate in terms of the cost of credit for these countries as measured by spreads and credit ratings. Gelos et. al. (2004) note that sovereigns that defaulted on their debt in the 1980's were able to re-access the International Bond Markets around 4 years after default.

Default not only affects external bond holders but adversely affects the domestic banking system. There can be huge consequences for the banking system if domestic banks hold large quantities of sovereign bonds and can lead to banking crises or to domestic credit crunches.

⁸ What is the weighted average cost of our current debt and how much would it cost to refinance?

⁹ In technical parlance, a lending equilibrium sustained by the threat of a permanent embargo on future lending is not “renegotiation-proof”, in the sense that after a default both parties would potentially benefit from reaching a new agreement involving positive lending. But if such an agreement is anticipated, then this undermines the expected punishment that was sustaining positive lending in the first place (see Kletzer, 1994, for details). The reason we find the evidence not to provide support for this line of work is that it implicitly assumes a two-party framework. If there are multiple creditors and any individual creditor can expect to obtain full payment from attaching new debt issues in international capital markets, then the incentives for renegotiation actually decrease for dissenting holdouts as the number of creditors that participate in a restructuring increase.

¹⁰ Originally suggested by Eaton and Gersoviz (1981)

Often there are political reasons as to why debt is repaid and default often postponed even when it is inevitable. High political costs can increase a country's willingness to pay, however delays can be costly and amplify costs in the long run¹¹.

Emergence from default also can be a complicated issue for sovereigns. Sovereigns often undertake debt restructurings through exchange offers that, we find, rarely close the books on the restructured debt. For a number of reasons, ranging from difficulty in contacting all debt holders to holdouts seeking payment in accordance with original terms, we have observed that participation in sovereign distressed debt exchanges usually does not reach 100%. This stands in contrast with corporate debt restructurings in the U.S. and in many other jurisdictions, where all obligations are typically addressed in bankruptcy reorganization. A corporate reorganizing outside of bankruptcy generally must continue payments on the holdouts' debt or face the prospect of an involuntary bankruptcy filing.

Less common among sovereign defaults is the repudiation of debt, which most often follows a revolutionary change of regime (as occurred in the Soviet Union in 1917, China in 1949, and Cuba in 1960). Standard & Poor's takes no position on the propriety of government debt (S&P, 2012).

Almost all defaults are partial defaults, even when the Soviet Union refused to pay its debts in 1918, when Russia re-entered the international bond markets 69 years later they were forced to pay a token payment on the debt they had defaulted on. The partial repayment of debt however is usually much more than a small token. Debt is often rescheduled meaning that the debtor repays over a longer period of time, ratings agencies class rescheduling of debt a negotiated partial default. Debt rescheduling can often leave creditors with illiquid assets that may not pay off for decades and this is a huge risk to investors.

Before the establishment of the IMF in 1944 crises were less frequent but they were of a longer duration. Debt crises are now more of shorter duration and more frequent, the reasoning suggested for this is that countries in crisis can now rely on bailouts from the IMF and other creditor countries; this has become known as the moral hazard in international lending.

¹¹ Borensztein and Panizza (2008) describe this amplification of costs that have stemmed from high political costs as “gamble of redemption”.

Distressed sovereigns

Financial crises have been commonplace since the 1800's they have become even more frequent since World War 2. Two recent examples of debt crises experienced by distressed sovereign entities are detailed below, Iceland where the banking system defaulted on its debt and secondly Argentina who defaulted on all debt in 2001.

Iceland¹²

In 2008 Iceland's banking system collapsed as it entered a financial crisis. The total assets on the balance sheets of Iceland's three largest banks went from amounting to 150% of GDP at the end of 2003 to 744% of GDP at the end of 2007, a period during which real GDP rose by 5.5% each year on average. By 2008 this figure had grown to over 1000%¹³. In the space of two weeks this banking crisis led to the collapse of the country's banking system, the stock market declined by 75% leading to a run on the banks. Due to emergency legislation passed in October 2008 all domestic deposits were fully guaranteed by the government however banks could not refinance their debts. The Icelandic government could not sustain the scale of the banking sector debt and Iceland's banking system collapsed. This had consequences for foreign creditors with deposits in Icelandic banks and foreign bond holders. On October 24th, an IMF package totalling \$2.1 billion was announced under the Fund's fast-track emergency financing mechanism. Iceland is now recovering from a deep depression suffered after this banking crisis, the OECD Economic Survey of Iceland 2011 states that that the in by late 2010 the economy stopped contracting and economic growth for 2012 is projected to be 3%. It should be noted that Iceland did not default on its sovereign debt but it let its banks collapse. Iceland now has full access to the bond markets and issued its first sovereign bonds since the banking collapse in June 2011. A new 10 year benchmark bond was announced on the 3rd May 2012 trading with a yield of 5.9%, to put this into perspective the 10 year yield for Irish debt stands at 8.2%¹⁴.

Argentina

In 2001 Argentina defaulted on its sovereign debt of over \$95 billion making it the largest debt default in history. Unlike Iceland Argentina did not have a large debt to GDP ratio and defaulted on its sovereign debt with a ratio of under 60%. A banking crisis and lack of confidence in the government policy actions caused a bank run in early 2001. In late November 2001, many banks were on the verge of collapsing, the government placed restrictions on banks freezing accounts allowing only partial withdrawals (corralito) and dollar denominated deposits were exchanged for pesos at a fixed rate (corralon). In December

¹² For a more in depth discussion on the crisis in Iceland see Benediktsdottir et al. (2011)

¹³ Source: Benediktsdottir, S. and Danielsson, J. and Zoega, G. (2011), "Lessons from a collapse of a financial system", Economic Policy, 26(66).

¹⁴ Figures correct as of 09/05/12 – Source Bloomberg.

2001 the country announced it would suspend payment on its Sovereign debt as a measure introduced to ease the political, economic and social unease that had built since 1999. In December 2002, the corralito was lifted. In January 2003, one bank was closed, three banks were nationalised and many other were reduced in size¹⁵. In the past decade Argentina has restructured its debt, reduced and stretched out its interest payments and has re-entered the international bond markets. Although Argentina has re-entered bond markets its sovereign default has tainted its reputation which is reflected in the high yields and low prices of its sovereign bonds.

¹⁵ Reinhart, C. and Rogoff, K. (2009)

II. The Irish Debt Burden

In this part we examine again the quantum of Irish sovereign debt and the characteristics that are particular to different elements of the debt. We also note the extent of market interconnection which differentiates the current sovereign debt crisis from previous events.

The Irish Context

This contribution outlines the scale and scope of Irish debt, explaining the differences between the different types of debt for which the country has taken on responsibility, the amounts of principal involved, how each category is traded and the degree of market-sensitivity in each case. The opacity surrounding ownership and the inter-connectedness of the financial system is discussed.

Scale of Irish debt

At the end of March 2012, a CNBC report¹⁶ based on World bank data estimated the total external Irish debt at US\$2.26 trillion. This includes household and corporate debt as well as bank bonds, both guaranteed and unguaranteed, and the sovereign debt. While household debt is a very serious and pressing issue, and requires urgent attention, most of those amounts are outside the scope of what we are talking about today. We are concerned with six main categories of long-term debt which impact on the state of Ireland:

1. Government bonds – the bonds actually issued by Ireland as a sovereign
2. The so-called “bailout money” –lines of credit extended to the state by the IMF, the European Financial Stability Facility (EFSF) and the European Financial Stability Mechanism (EFSM) as well as bilateral loans from Denmark and the UK
3. Guaranteed bank bonds – the bonds of the covered institutions for which the state has issued guarantees under the emergency liquidity guarantee (ELG) scheme
4. Unguaranteed bank bonds – those bonds issued by the banks which the country effectively now owns, but which have not been formally guaranteed by the state.
5. Promissory notes owed by the state to IBRC
6. Bond issued in March 2012 as part of the restructuring the Promissory note payments

We are specifically excluding ongoing emergency liquidity assistance (ELA) to the covered banks, transactions involving NAMA, deposit guarantees, household debt and corporate debt.

We will look at each of these below to examine the scale, the key differences in how they are traded, to what extent we can talk about their ownership, etc. We also briefly consider the market sensitivity of each kind of debt. The consequences of default – non-payment or deferred payment of debts – depend on market reaction to the action. This in turn depends on the perceived safety of the debt instrument before the default. For instance, if a bond issuer

¹⁶ See http://www.cnbc.com/id/30308959/The_World_s_Biggest_Debtor_Nations

failed to make payment on a bond which was already considered to be very risky, the market reaction to this would be less severe than if a payment were missed on an apparently very secure bond. This means that the different categories of Irish debt need to be considered separately.

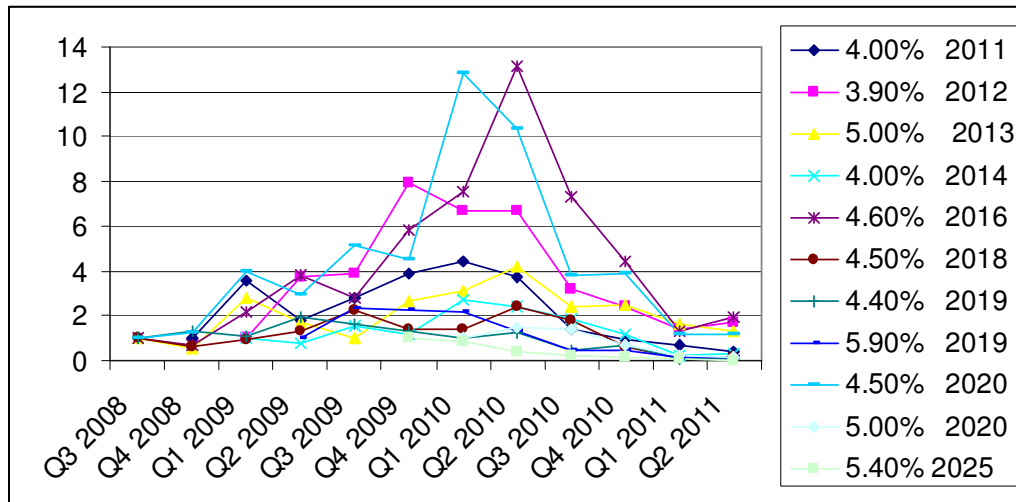
The next section discusses each category of debt, and the overall position is summarised in Table 1 below.

Government bonds

These are the long-term sovereign bonds issued by the Irish state. The ten benchmark bonds were issued between May 1999 and January 2010; the state has not been in a position to issue any new bonds since that date. The bonds mature between April 2013 and March 2025. The total principal outstanding at May 7, 2012 is just over €83bn. There are also two non-benchmark bonds issued in 1986 and 1994, for far smaller principal amounts¹⁷. The yield to maturity on these bonds at 7 May, 2012 was between 3.92% for the 5% bond maturing in 2013 and 6.72% for the 2019 5.9% treasury bond.

These bonds trade on the Irish Stock Exchange, and are bought and sold freely. Data from the Irish Stock Exchange is charted below, showing the change in the trading volume of these Irish Government bonds through 2009 and 2010.

Figure 6 - Changes in trading volume on Irish government debt



Increased volumes in trading of financial instruments, particularly in stocks and options, usually indicate uncertainty or new information arriving on the market. More trades on a fixed number of securities also means a shorter period of ownership, on average, which can indicate a change in the profile of investors from long-term buy-to-hold buyers to more speculative short-term investors. The figures are, however, clouded by purchases by the ECB

¹⁷ 26 million at May 7, 2012

as part of the ECB Securities Market Programme (SMP). This is the term given to all interventions in the debt markets by the ECB, with the aim of ensuring price stability while minimising the impact on monetary policy.

Bailout funds

In November 2010, Ireland accepted a programme which made available financial support from the EU and IMF. The current balances outstanding under this EU-IMF programme come from four main sources: the European Financial Stability Facility (EFSF); the European Financial Stability Mechanism (EFSM); the International Monetary Fund (IMF) as well as smaller bilateral loans from Denmark, Sweden and the UK. The programme amounts to €85bn, but it is worth noting that €17.5bn of this total comes from Ireland (€12.5bn from the Pension Reserve Fund and €5bn from exchequer balances). The total amount of external funding therefore comes to €72.5bn. These loans are made subject to Ireland's compliance with agreed fiscal targets and structural reforms. Unlike government bonds or bank bonds, these are loans, and so are not traded on any market. They are in some cases however backed up by bonds issued by the lender.

EFSM

The EFSM, established in May 2010 by all 27 finance ministers of the European Union, agreed a facility of €22.5bn to be drawn down in tranches from January 2011. A total of €18.4bn had been drawn down as of 5 April, 2012, leaving €4.1bn in agreed borrowings to be drawn down in the future. These separate tranches mature between December 2015 and April 2042, with a weighted average life of just under 12 years.¹⁸

The EFSM will be replaced by the European Stability Mechanism (ESM) when it begins operating in 2013. The ESM will only be open to countries which have ratified the Fiscal Compact.

EFSF

The EFSF which was created by the Euro-area countries in June 2010 has also agreed a facility of €22.5bn, drawn down in tranches from February 2011. As of 5 April, 2012, only €12.74bn had been drawn down, leaving almost €10bn in agreed borrowings available. The tranches borrowed from the EFSF are of shorter duration than those from the EFSM, maturing between July 2012 and February 2037, with a weighted average life of 10.1 years.

The EFSF is completely separate from the EFSM, and is a Luxembourg-registered company owned by Euro Area Member States. Its functions will be replaced by the ESM from June 2013.

¹⁸ 11.8 years weighted average life as at 5 April 2011 (NTMA website)

IMF

The IMF has agreed a facility of SDR19.5bn, which again comes to approximately €22.5bn, to be made available from their Extended Funds Facility (EFF). As of 5 April 2012, €16.26bn has been drawn down, leaving approximately €6.24bn available for future drawdown. The loans from the IMF have terms of between 4.5 and ten years, with balances falling due between 2015 and 2022. Details on the IMF facility are available at <http://www.imf.org/external/np/sec/pr/2010/pr10462.htm>

Bilateral Loans

In addition to the loans from the EU and IMF, Ireland also has access to three bilateral loans. The agreed facilities are €3.8bn from the UK, €400 million from Denmark and €600 million from Sweden. As of April 2012, the overall amount drawn down is €1.57 billion (€1.47 billion from the UK, and €100 million from Denmark). This leaves approximately €2.2 billion in agreed borrowings to drawn down over the coming years. The loans accessed as at April 2012 are repayable in 2019, with a life of 7.4 years.

Guaranteed bank bonds

The next category of debt covers bonds issued by Irish banks and guaranteed by the state. This bank guarantee is in fact two separate guarantees. The first, dating from September 2008 is the Credit Institutions (Financial Support) Scheme 2008, or CIFS scheme. This covered retail and interbank deposits, senior unsecured debt, covered bonds (including asset covered securities) and dated subordinated debt (Lower Tier 2) without any cap on the amount covered. It expired on 29 September 2010. The second guarantee is the Credit Institutions (Eligible Liabilities Guarantee) Scheme 2009, or the ELG Scheme. Initially, the ELG scheme covered seven institutions: AIB, Anglo Irish Bank, Bank of Ireland, EBS Building Society, Irish Life and Permanent plc, Postbank Ireland and Irish Nationwide Building Society. On July 1st, 2011, all of the assets and liabilities of Irish Nationwide were transferred to Anglo Irish Bank, and the combined institution is due to be renamed as Irish Bank Resolution Company. Similarly, EBS has been merged with AIB, and Postbank Ireland ceased to trade in December, 2010. This leaves four institutions now covered by the scheme.

The NTMA announced in May 2012 that the total amount guaranteed under the ELG Scheme at 30 March 2012 was €93bn. Since €63bn of this relates to guaranteed deposits, this leaves approximately €30bn of guaranteed bank debt. The most recent Money and Banking Statistics release from the Central Bank of Ireland¹⁹ notes that €12.9bn of the covered bonds were retained by the covered institutions for their own use and therefore excluded from banking statistics.

¹⁹ http://www.centralbank.ie/polstats/stats/cmab/Documents/2012m03_ie_monthly_statistics.pdf

Unguaranteed bank bonds

This refers to bonds issued by the covered institutions referred to above, but which are not specifically covered by the ELG guarantee. They are discussed here because the banks continue to pay out on these bonds, despite the absence of a guarantee.

Data from Bloomberg shows the level of unsecured and subordinated bonds in the covered institutions as follows:

| | |
|------------|---------------------|
| IBRC | €1,565,586,375 |
| BOI | €3,467,839,268 |
| AIB | €3,563,280,920 |
| <u>ILP</u> | <u>€657,308,583</u> |
| Total | €9,254,015,145 |

The most relevant bonds here are those issued by IBRC, AIB and ILP in which the state owns almost all of the shares. Since these bonds are not guaranteed by the state, they are arguably the least market sensitive of the categories of debt considered here. By this we mean that a default or restructuring of these bonds would have the least impact on the reputation and credit rating of the sovereign.

Promissory notes

€31bn in Promissory Notes were issued by the State as capital injections to banks such as Anglo Irish bank during 2010, redeemable in tranches over the following years¹. The bank's 2010 Annual Report (Anglo, 2011) confirmed that most of its revenue is made up of interest payments from the government to the bank on these notes. The most recent payment was restructured in March via Bank of Ireland and NAMA. The balance outstanding on the promissory notes in May 2012 is €24.6bn.

Promissory note restructuring 2012

The 2012 instalment due on the IBRC promissory note, €3.1bn due at the end of March, 2012, was restructured in a complex deal backed by Bank of Ireland and Nama. Essentially, this restructuring involved the government issuing a new bond for €3.1bn which was transferred to IBRC in lieu of a cash payment on the promissory note. In turn, IBRC exchange the bond with Bank of Ireland for cash, which was used to repay IBRC's ELA liabilities.

The result is that the Irish government did not pay the €3.1bn in cash, but instead has taken on additional debt of €3.1bn which will fall due, indirectly, to Bank of Ireland in one year's time.

Table 1 – Summary/comparison of different categories of debt

| Category of debt | Origin | Outstanding (€'bn) | Matures | Currency | Traded | Cost | Market sensitivity | Future availability |
|---|--|--------------------|----------------------|-------------------|------------|------------------------|--------------------|--------------------------------|
| Government bonds | Issued before 02/10 | 83 | 2013 to 2025 | Euro | In ISE | 4% to 5% ²⁰ | High | Contingent on return to market |
| EFSM | Bailout | 18.4 | 2015 to 2042 | Euro | Not traded | 5.7%+ (est) | High | 4.1 agreed |
| EFSF | Bailout | 12.7 | 2012 to 2037 | Euro | Not traded | 6.05%+ (est) | High | 9.8 agreed |
| IMF | Bailout | 16.3 | 2015 to 2222 | SDR ²¹ | Not traded | 5.7%+ (est) | High | 6.2 agreed |
| Bilateral | Bailout | 1.6 | 2019 | Euro | Not traded | 6.05%+ (est) | High | 3.6 agreed |
| Guaranteed bank bonds | Bank guarantees | 30 | Varies | Varies | Traded | Varies | High to medium | - |
| Unguaranteed bank bonds | Bank borrowing | 9 (cons. estimate) | Varies | varies | Traded | Varies | Low | - |
| Promissory notes | Issued to IBRC in 2010 | 24.1 | Annually in tranches | Euro | Not traded | Varies | Medium to low | - |
| Promissory note restructuring bond 2012 | Restructure of the 2012 payment on PNs | 3.1 | 2013 | Euro | Not traded | 4.5% (est) | High | - |

²⁰ Nominal rate on benchmark bonds. Yields approx 4% to 7% at May 7 2012

²¹ SDR values are based on a weighted basket of currencies (euro, Japanese yen, pound sterling and US dollar)

Opacity

Clearly, since the crisis began, the ownership profile of Irish debt has changed, as it shifted from being a low-risk, low-return prospect to a more volatile and risky investment. This has made the debt less attractive to long-term holders such as pension funds, and, at times, more likely to be held by hedge funds and short-term traders. However, as explained above, at any given time, the ownership profile of the debt is not clear.

In a company, a register is maintained of the shareholders, and it is required by company law in most countries that this register is open to all other shareholders in the firm. The rationale is that if you have a stake in a company, you should be able to find out who else has a similar stake. For bondholders, there is no such requirement. One way to think about bonds issued by national governments is as similar in some ways to currency. A €100 note is essentially a promise by a European bank to pay the bearer €100. On the basis of that backing, the notes circulate freely within the Eurozone, and there is no need to maintain a register of who, at any given time, owns all of the €100 notes. For bondholders, a register must be maintained somewhere, in order to process payments of interest and repayments of capital. However, the same principle of bearer anonymity has been applied, so that the register is not open to the public, or even to the issuers of the bonds.

The result is that while the Central Bank of Ireland maintains a register of holders of sovereign debt, over 99% of the bonds on that register are held in the name of Euroclear. In turn, Euroclear maintain a register of nominee accounts which does not reveal the identity of the investors. This means that from day to day, neither the NTMA nor the Central bank of Ireland can reveal the identity of bondholders. This opacity is a clouding issue in debate about the future of bonds and the bond market in general, and is not helpful for a public understanding of the issues.

The Central Bank of Ireland report quarterly on the percentage of Irish government bonds held by residents of Ireland. This is more or less consistent at 17% of the whole. However, since many resident companies are operating within the IFSC on behalf of non-resident beneficial owners, this information is not as meaningful as it might initially appear.

Partial pictures

Some aggregated debt data is available on Bloomberg accounts for the Hedge Funds, ETF's and Institutional managers holdings, which have been filed under the SEC F13 form.

The SEC F13 form is: 'A filing with the Securities and Exchange Commission (SEC), also known as the Information Required of Institutional Investment Managers Form. It is a quarterly filing required of institutional investment managers with over \$100 million in

qualifying assets. Companies required to file SEC Form 13-F may include insurance companies, banks, pension funds, investment advisers and broker-dealers. This form, which must be filed within 45 days of the end of each quarter, contains information about the investment manager and potentially a list of their recent investment holdings.'

These filings are made available to the public on the Securities and Exchange Commission website, and aggregated by companies such as Bloomberg. As a result, we have some partial lists of bondholders in the different institutions. However, these are less helpful than they might initially appear for three reasons. To illustrate this, consider Figure 7 below, a typical screenshot showing partial ownership of bonds in issue by AIB in April 2012.

Figure 7: AIB ownership screenshot

| Allied Irish Banks PLC | | | | | |
|---|------------|--------------|--------------------|--------------------|-----------------------|
| Total Debt 18,530.1 MLN (All Values in EUR) | | | Bonds 46 | Unique Holders 103 | Filing Coverage 2.77% |
| 21) Bond Inclusion | 22) Coupon | 23) Maturity | 24) Holder Type | | |
| Currency EUR | | | Sort By Bonds Held | | |
| Debt Holder | Bonds Held | % Out | Latest Chg | % Change | |
| 1) JULIUS BAER MULTICOOPERATION | 66,385 | 0.36 | +10,703 | +19.22 | |
| 2) DWS INVESTMENT GMBH | 40,000 | 0.22 | +13,800 | +52.67 | |
| 3) ARCA SGR SPA | 38,900 | 0.21 | +27,200 | +232.48 | |
| 4) NATIONAL UNION FIRE INS PITTBUR | 31,207 | 0.17 | 0 | +0.00 | |
| 5) DWS INVESTMENT SA | 24,200 | 0.13 | 0 | +0.00 | |
| 6) PARVEST INVESTMENT MANAGEMENT | 20,000 | 0.11 | -21,981 | -52.36 | |
| 7) BLACKROCK GROUP LIMITED | 19,425 | 0.10 | 0 | +0.00 | |
| 8) GENERALI INVESTMENTS SICAV | 17,250 | 0.09 | 0 | +0.00 | |
| 9) UNION INVESTMENT GMBH | 16,250 | 0.09 | -4,750 | -22.62 | |
| 10) UNION INVESTMENT LUXEMBOURG SA | 14,250 | 0.08 | -9,250 | -39.36 | |
| 11) SANPAOLO BANK SA | 12,099 | 0.07 | 0 | +0.00 | |
| 12) ABERDEEN INVESTMENT SERVICES SA | 11,750 | 0.06 | +3,100 | +35.84 | |
| 13) BNP PARIBAS INVESTMENT PARTNERS | 11,194 | 0.06 | -8,081 | -41.93 | |
| 14) CREDIT SUISSE ASSET MGMT LTD | 9,000 | 0.05 | -3,000 | -25.00 | |
| 15) TCW INVESTMENT MANAGEMENT INC | 8,205 | 0.04 | +8,100 | +7,714.29 | |
| 16) HL INVESTMENT ADVISORS, LLC | 7,535 | 0.04 | 0 | +0.00 | |
| 17) ERSTE SPARINVEST KAGMBH | 6,950 | 0.04 | 0 | +0.00 | |

The first and most important limit to the usefulness of this information is the filing coverage level at the top right. The figure of 2.77% means that the ownership information held on this database only covers only 2.77% of the bonds in issue from AIB. Thus while Julius Baer Corporation appears at the top of this list of bondholders, that does not indicate that they hold a significant percentage of AIB bonds. In fact, since they come at the top of a list of less than 3% of bondholders, it is likely that their holding is relatively very small.

The second limit to the usefulness of these partial lists is the lack of ownership information about the direct holders themselves. For example, Julius Baer is a private Swiss banking group, so this holding does not tell us much about the beneficial ownership of the bonds.

Thirdly, each bondholder is listed separately, with no aggregation of related companies. So for example, at points 9 and 10 on the list above we see Union Investment GMBH and Union

Investment Luxembourg SA. The fact that these companies are related may mean a common beneficial ownership for these two tranches of bonds. Or not – we do not have enough information to tell.

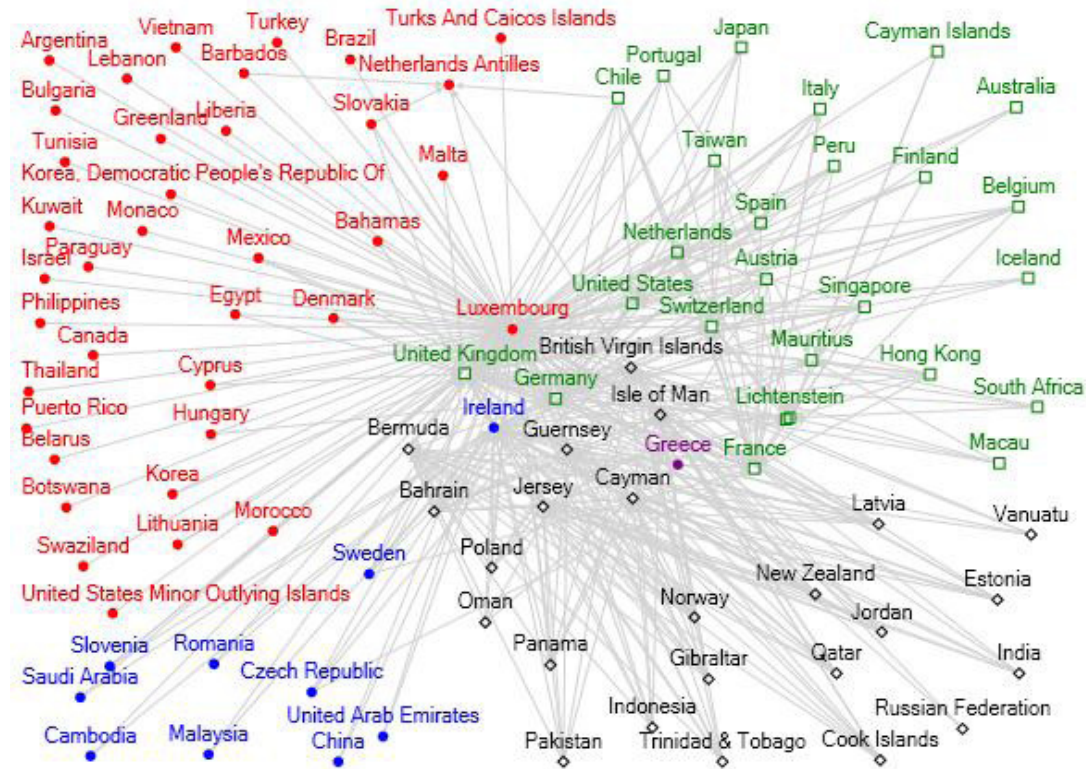
Overall, then, a comprehensive picture of identity of the holders of bonds issued by the Irish government directly, or by the banks supported by the Irish government cannot be drawn because of the way in which the bonds are traded, the limited information reported by European banks, and the opacity of the investment vehicles such as private banks and hedge funds which hold the bonds directly.

Interconnectedness

It is important to remember that the Irish debt situation does not exist in isolation. Funds flow in and out of the country freely, with particularly strong connections to specific locations. In late 2010, the IMF undertook a study²² of global financial interconnectedness. Their research was based on data from Thompson Reuters and the Fund's own calculations. In an exercise focused on the vulnerability of the wider financial system to Greece, they mapped out four main clusters, almost like closed systems, with a high level of connectedness to Greece. These are shown in Figure 8 below:

²² International Monetary Fund: "Understanding Financial Interconnectedness" Prepared by the Strategy, Policy, and Review Department and the Monetary and Capital Markets Department, in collaboration with the Statistics Department and in consultation with other Departments Approved by Reza Moghadam and José Viñals. October 4, 2010

Figure 8 - Source: IMF “Understanding Financial Interconnectedness”, October 2010.



One of these, shown in blue in the diagram above, centres on Ireland. This implies that any the countries in blue – Sweden, the United Arab Emirates, the Czech Republic, Romania, Slovenia, Saudia Arabia, Cambodia, Malaysia and China – have an exposure to Irish instability. As the IMF report noted: “*This close interconnection across other core countries suggests why asset re-allocations and flows might have been large systemically, with potentially significant impact on countries such as Ireland.*”

This interconnectedness is important in considering both the stability of the Irish debt situation – how exposed our banks are to risky debt, for example – and in considering the converse of that: how exposed are financial institutions in other countries to the stability of Irish debt? It is an important part of the context in which any discussion of restructuring or default should take place. The level of interconnectedness also highlights the role of the IFSC in channelling funds in and out of Ireland. The Dublin-based treasury management operations of multinational firms are responsible for €billion flows in and out of the country. Since much of these flows are booked through Irish-resident companies, they cloud and distort the available statistics for corporate debt in Ireland, especially in relation to establishing the residence of borrowers and investors.

III. ‘Policy Windows’ in the Eurozone Crisis

This section sets out the limitations of the current European policy, the issue of sovereign debt restructuring and new policies that may emerge.

Introduction

The choices available to European institutions as well as distressed member states are limited. This crisis is attributed to negative macroeconomic environment but has been mutated by the complexity of the financial markets, the complacency of investors and other market participants and the complexity and interconnectedness of the market. It is thus an unprecedented crisis, both in size and origin, and as such may require new solutions. In this section we look at the austerity agenda, why it will evolve and the possible alternative policies that may emerge.

Why the austerity agenda will evolve

The pace of change within the European political economy has accelerated. Country-specific risks emerging in the political and financial events in Greece, Spain and the Netherlands²³ are encouraging investors to move their money to Germany (thus reducing yields on German long-dated bonds). The common European institutions are continuing to struggle as they attempt to reconcile very diverse political economies. As the crisis continues to evolve there will be inevitable pressures on establishing alternatives to the European austerity agenda.

The Eurozone response to the debt crisis has required a series of austerity measures, including tax increases, privatisation of state-owned bodies and the renegotiation of collective bargaining agreements are all expected responses to significant levels of public debt. In the Irish context, significant resilience has been demonstrated and the fiscal reform measures that have been undertaken to this point have been extensive. The ‘signal effect’ of this reform can be observed in a recent decline in notional yields for outstanding Irish sovereign debt.

In this period, shortly after the ‘bailout’ of Greece, Ireland and Portugal, the austerity agenda can be said to have had some success in maintaining financial market stability. However, the environment has shifted again as political instability (Greece) and new banking concerns (Spain) come to the fore. These more recent events provide cause to look further into the future of the austerity agenda. Recent research examines the current level of sovereign debt and its cumulative long-term impact on economic growth. While the previous section in this

²³ Greece (coalition negotiations/election re-run), France (Hollande victory), Dutch government (collapse), Spain (banking system funding), as at 15th May 2012..

testimony focuses on debt guaranteed by the Irish sovereign, it excludes other forms of debt such as private debt which remains at pre-crisis levels and actuarial debt in the form of underfunded pensions. Taken together, the quantum of debt placed on a limited tax base means the potential for economic growth will be curtailed and the ability to repay will be extinguished. This is not to consider the additional potential impact other shocks such as food and fuel price volatility would place on the capability of some Eurozone, including Ireland, to maintain the current policy.

Re-Examining Sovereign Debt Restructuring

The issue of debt restructuring has remained an issue post-bailout despite our adherence to the criteria set out by the IMF, the European Commission and the ECB as part of the bailout. The ongoing discussion on renegotiating the terms of the promissory notes demonstrates that restructuring (default) has not moved very far from the local agenda although it has ostensibly been set aside elsewhere as European institutions deal with other Eurozone countries.

It is however, the alarming and immediate challenges faced by Greece in particular that are most likely to create a 'policy window' that will allow a new agenda to take shape, possibly one that includes new procedures for sovereign bankruptcy. While economic theory might be helpful in understanding incentive structures and some determinants of behaviour, it is limited in providing an understanding of the risk taking and inter-temporal choice required in the current environment that is in dis-equilibrium.

Although there are a large number of sovereign restructuring events against which to map the current Eurozone crisis, the extent of the legal and economic interconnection within the Eurozone coupled with diverse political economies of member states set apart this crisis and its possible solution.

Measuring precisely how sovereign defaults are costly for the borrowing country (relative to an alternative policy) cannot be done with precision or using a consistent metric. The general argument against default (as noted in an earlier section of this testimony) is that they lead in some way to a prohibition on future borrowing and that sovereign debtors after default incur a financing gap that, barring further external borrowing, imposes severe and damaging disruption to the domestic economy. The dynamic sovereign-creditor relationship can be observed in the bond market response to Argentina's announcement in 2001 that it would unilaterally restructure its debt. Immediately following this announcement Argentina's sovereign bond spreads increased by 6,000 basis points. Argentina's sovereign bond spreads returned to near market levels in 2005 (Miller & Thomas, 2007). Of course, there are significant differences in the Irish context and this historical example. In particular, Argentina's return to the bond market was aided by the high-levels of capital available in the global financial system in 2005, the inward flows to Argentina linked to increasing commodity prices as well as a stable political environment.

The current economic and financial environment is characterised by a high-level of risk aversion that is not necessarily rational but is reflective of investors' limitations in processing new information arriving in to a complex global financial system. Furthermore, international capital flows during a financial crisis are marked by a significant random component. In the context of emerging economies and their access to the capital markets Calvo and Mendoza (1996, p. 3) note that a unilateral default and subsequent exclusion from the capital markets "... may be driven by herding behaviour not necessarily linked to fundamentals." This observation that weak fundamentals alone do not account for all capital flows is an important consideration when considering unilateral action on debt restructuring. The requirement for a clear and progressive policy is a priority when the economic environment is in disequilibrium. The chaotic financial system is producing informational frictions that lead investors to stampede toward or away from a country when the investors have partial and occasionally conflicting information.

Bond investors are required to undertake a risky investment in a country emerging from a period of crisis and restoring fiscal balance while comparing its investment against a safer investment in the rest of the world. This is a decision that relies on information about the riskiness of the investment. This information arrives over time, signalling to the investor the ability of the host economy to meet its agreed repayments. When a sovereign returns to the bond market, the bond issue is evaluated by investors who can choose to buy available bonds or wait for more information.

Thus, for distressed Eurozone countries, unilateral action on debt restructuring (that is, default) presents uncertainties – both political and economic - that extend beyond those experienced by Argentina and other historical sovereign default events. The primary concern is the availability of funding over the short- or medium-term and the associated disorder that would mean. In the current phase of the Greek problem a unilateral action will likely lead to a withdrawal of funds provided by European institutions and severe period of adjustment before limited funding could be accessed.

An emerging 'policy window'

The current Eurozone approach is focused on maintaining a clear and consistent signal to the market participants and restoring general economic confidence. This policy is under continuing strain and it is useful to examine how new policies evolve. The development of a new agenda requires the convergence of three streams.

How does public policy change?

A 'policy window' is created when three streams of discourse converge. A "problem" stream identifies a discrepancy between the objectives set out in the existing policy and its desired goal. The second phase is generally the "policy" stream which emerges as consensus grows around policy instruments to solve the problem. The "politics" stream emerges as the "national mood" and leading politicians accept that an existing approach is insufficient to cope with the gravity of the problem and are willing to implement the policies required to address it. The policy window moves an issue onto the political agenda and into formal policy.

- Ref, Kingdon (1995)

While the austerity agenda remains prominent in political discourse and economic policy among distressed Eurozone member states, a ‘policy window’ will emerge when European institutions are required to respond to a significant ‘focusing’ event – large losses realised within Spanish banking, absence of political leadership and possible exit of Greece from eurozone. This type of focusing event may influence a greater momentum behind a new European-wide agenda. Within the media and sparked by the French presidential election there is a stronger rhetoric around an agenda founded on *growth-oriented policies*. Without a more precise analysis of how these policies will be funded and how they will address the crisis this agenda may fade. Another possible shift in the agenda could see a greater attention on a new international treaty, one that would examine a Europe-wide statutory debt restructuring.

Mapping out Sovereign Debt Restructuring

This section deals with a potential alternative or complementary policy that may re-enter the policy agenda. It relies on assumptions about the sustainability of the austerity policy in maintaining economic and political stability within the Eurozone.

The characteristics of the sovereign bond market have been outlined earlier in this testimony. Debt restructuring can be negotiated between a sovereign debtor and its creditors. However, this bilateral approach is limited by the willingness of creditors to agree a restructuring plan. In the post-bailout environment, individual member states that have received European funds

Political Intervention in Debt Contracts

There are historical examples of ex-post political intervention in debt contracts in a democracy. One such example, in 1819 many states in the US intervened in private debt contracts imposing debt moratoria when the price of cotton collapsed.¹ Similarly, during the Great Depression states passed laws for debt moratoria on farm mortgages¹.

- Ref. Bolton & Rosenthal (2002)

have a liability towards a reduced group (the ECB, IMF and European Commission). Under pending arrangements this will continue under the ESM.

The creation of an international statutory agreement governing the negotiations between the IMF, European institutions and the diverse group of creditors may be an avenue that can be explored further.

International law has no current restructuring

convention. The construction of a negotiated process where the aggregated Eurozone debt burden could be reduced would reduce many of the negative effects of unilateral default.

Ex-Post International Bankruptcy Regulation

The limitations of ex-ante financial regulation are well documented. Regulators rely on motivating a degree of self-monitoring by a diverse group of financial institutions operating in a complex and opaque financial system. When financial failure does occur, its systemic consequences are usually controlled through financial safety nets. These safety nets exist in the first place for financial institutions (e.g. US Fed & LTCM) as well as for sovereigns (e.g.

IMF). The Eurozone crisis demonstrates the insufficiency of the IMF safety net when sovereign default has disproportional regional effects. The combined intervention of the IMF, European Commission and ECB is an extension of this, where a regional safety net is put in place to stabilise a group of distressed sovereigns.

The systemic risk presented by sovereign default is due in part to the greater use of sovereign debt as a financing tool and in the case of the Eurozone crisis the sovereign guarantee that overlays privately created debt. An orderly debt restructuring is prevented for three reasons. Traditionally these are the holdout problem²⁴ and the funding problem²⁵ (Bolton & Jeanne, 2007; Schwarcz, 2011). In the case of the Eurozone crisis an additional issue is maintaining sufficient funding for the European banking system so that an extensive bank-run is avoided.

In 2002, the IMF proposed a so-called, sovereign debt restructuring mechanism (SDRM) which attempted to adopt a legislative solution to sovereign debt not dissimilar to US corporate bankruptcy law. Some version of the SDRM designed by European institutions may be one of the few ways forward for European institutions as they look for an effective long-term solution to the crisis. The objective of this mechanism should be the controlled, well-signalled restructuring of debt that is consistent for Eurozone member states. Undertaking this action while preserving a fragile banking system would be challenging. Succeeding in introducing a European legislation that maps out a bankruptcy path for distressed sovereigns will have to be supported by ongoing financial ECB intervention in the interbank market. An international convention of this type will require greater political coherence among member countries within the Eurozone.

²⁴ Creditors are motivated to resist agreeing to a debt-restructuring plan in the hope that others will settle and they will be allocated more than their fair share of the settlement.

²⁵ A country will require new money to fund critical expenses during the debt restructuring phase, but no lender will provide such funds.

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ⁱ As explained in the Quarterly Financial Accounts for Ireland, Q1, 2011: “During 2010, the State financed capital injections to Anglo Irish Bank and Irish Nationwide Building Society (INBS) through the issuance of a promissory note to the banks, which is classified as a loan in Government accounts. During Q1 2011, the promissory note accounted for 17 per cent of Government liabilities.” (CBI 2011b:6)