



Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Influences on Standard Variable Mortgage Pricing in Ireland

Central Bank of Ireland, May 2015

Part A: Executive Summary

The spread between official ECB interest rates and the standard variable mortgage rate is relatively high in Ireland, both by historical standards and compared to European peers. Three factors are important determinants of this margin. First, the pricing of loans needs to reflect credit risks. In Ireland these risks are elevated due to high levels of non-performing loans and the lengthy and uncertain process around collateral recovery. Second, competition is weak. This is not unrelated to credit risks since high credit risk deters new players from entering the market. Third, bank profitability is still constrained by legacy issues. Profitability is essential to ensure banks build up adequate capital buffers to meet increasing regulatory requirements and to withstand future adverse shocks.

Any policy aimed to address the level of SVR rates must take these factors into account if it is to be effective and constructive. Hasty policy measures to administratively determine interest rates would be likely to have damaging side-effects. By discouraging entry, innovation and competition, such measures could result in higher spreads and higher exchequer costs over the longer term.

On-going research

In its research on mortgage interest rates, the Central Bank has focussed mainly on four aspects. First, the cost and risk factors which have influenced, and are likely to continue to influence, mortgage rates. Second, the influence of the competitive environment on the rates charged. Third, the distribution of borrowers as to size of loan, date of borrowing and rate currently charged. Fourth, the transparency of the banks' policies for determining movements in rates, especially their "standard variable rates". This note summarizes some of the findings of this research (some of which has already been reported on in research reports contained in various Central Bank publications); further research can be expected over the coming months.

Some high level observations can be made.

Risk and cost factors

First, the reduction in ECB policy rates has not been passed through fully to the funding costs of Irish banks. Also non-tracker mortgage lending rates have been slower to respond to a lowering of the policy rate than to increases. Furthermore, the previous under-pricing of credit risk implies that for the future, mortgage rate spreads over bank cost of funds are unlikely to return to the excessively low levels chosen by the banks before the crisis. An important consideration here is the lengthy and uncertain process of recovery on non-performing loans.

Competition

Second, while competition between existing banks for new mortgage business tends to limit the spreads that banks can profitably charge on new loans, to the extent that banks currently active in the Irish market carry a large back book of mortgages with interest rates (SVR) linked to that charged on new business, the cost to banks of lowering its rate on new business is increased. New entrants could charge lower rates without incurring a loss of interest on the back book. When new entrants arrive, this can be expected to happen; the lack of such entrants to date (indeed the withdrawal of several lenders) is thought to reflect the lasting impact of the wider crisis across European banks, as well as an understandable apprehension of entering a market experiencing such a high level of non-performing existing loans.

The question of bank profitability

At this juncture in the recovery the main Irish banks have only begun the return to profitability, having had to make heavy provisions over the past six years for prospective and actual loan losses. The equity capital of banks has been rebuilt thanks to injections from the State and other shareholders. Adequate capital is a sine qua non of operating a bank, and the Irish banks will need to build more equity capital to meet the increasing international standards over the coming years. Equity investors, whether the State or others, cannot be expected to inject capital if a return in the form of profits is not in prospect. That is why it is unrealistic to imagine a regime – even in the long-run – in which mortgage lending rates do not build in not only a sufficient spread (over the cost of funds) to cover the credit risk being undertaken, but also make an adequate contribution to profits. It is likely, however, that the rates in effect for most banks at the end of April 2015 were higher than would be necessary in the long-run for a bank unburdened by a poorly performing mortgage back book.

Nevertheless, the mortgage business as a whole is not profitable for the Irish banks. This is not just because of the emerging loan-losses on the back-book, but also because their profitability is further hampered by low-yielding tracker mortgages originated during the bubble. The ability of the banks to partially compensate for the burden of the trackers by retaining higher spreads on variable rate lending is likely to be transitory; as such spreads will in time encourage entry.

Policy implications

These observations should help make it clear that, while higher than necessary lending rates do tend to act as a drag on the economic recovery, policy steps to interfere with the rates charged risk creating damaging side-effects.

Such measures would also damage the long-term prospects of the banks. Their boards and management need to recognise that charging spreads that excessively exploit the current weak competitive environment risks being counterproductive if they bring down upon themselves Government policy reactions.

In addition, each bank must deal fairly with its customers in regard to the interest rates charged. Greater transparency surrounding the variable interest rate policies operated by each bank would help in this regard.



Part B: Review of Influences on Variable Mortgage Rate Pricing in Ireland

1. Introduction

There is considerable debate regarding the interest rates charged by Irish credit institutions and how these compare with European peers. However, this needs to be considered in the context of a domestic banking system that is still in recovery mode with a high level of expected losses on mortgages relative to continental euro area peers and a higher proportion of low interest bearing tracker loans on the banks' books. Moreover, as will be discussed, EU banking markets have markedly different structural features which complicate cross-country interest rate comparisons. More generally, an assessment of what are “appropriate” lending margins, taking into consideration financial stability and consumer protection perspectives, is a complex task.

Like other businesses, banks manage their balance sheets to maximise their profitability. For financial stability and prudential regulation reasons, it is important that banks also maintain sustainable business models that should take into account the risks and uncertainties inherent in their operations.

These risks and uncertainties are particularly acute in Ireland given the recent financial crisis; the nascent economic recovery; a volatile housing market and continued high levels of impaired loans that require resolution. A sustained level of profits is also required to meet higher regulatory capital requirements due to the implementation of CRD IV¹ as well as market expectations for a return on equity. In this regard, the path to full CRD IV compliance (“fully loaded” basis) will be steep for Irish banks compared to their European peers given that a large part of their current capital base is to be phased out/progressively derecognized.

However, interest rates, beyond those warranted by cost and risk factors, can have detrimental effects for financial stability and economic growth through their impact on arrears, savings, capital formation and personal consumption. Competitive pressures tend to limit the ability of banks to charge such excessive rates.

Lending rates depend inter alia on credit risk, competition and bank profitability. This note considers in detail these main influences in the Irish mortgage market. The note focuses on: **the cost of funds; the cost of credit risk associated with the lending; the**

¹ CRD IV is the fourth iteration of the capital requirements directive, many aspects of which are implemented directly in Ireland by the Capital Requirements Regulation (CRR). It sets out the legal requirements for risk management, composition of capital, determination of capital requirements and rules on liquidity requirements.

operational costs of running a bank, the cost of capital and the competitive environment faced by the bank. Recent public commentary has tended to focus on only one of these elements, the cost of funds, and does so in a limited way. The analysis suggests that a range of factors contribute to higher rates.

The note is structured as follows: Section 2 provides a market overview and compares current existing and new mortgage interest rates; section 3 highlights past and forthcoming research by the Central Bank of Ireland with more details in Annex 1; section 4 discusses the influences of bank lending margins while section 5 concludes.²

2. Market Overview:

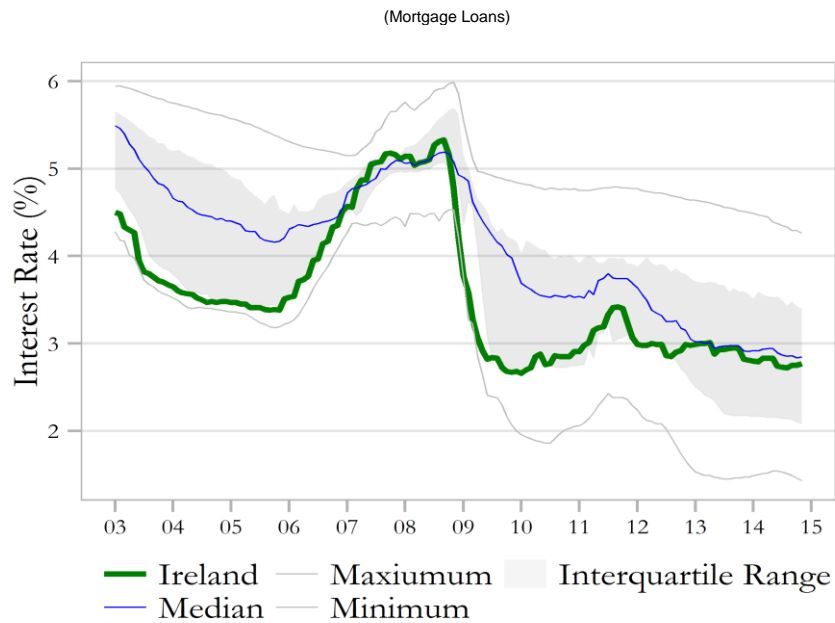
Chart 1 presents interest rates on overall outstanding mortgages³ for Ireland and the median across a group of European countries and shows that the outstanding interest rate in Ireland, at approximately 2.8 per cent, is close to the European median. However, this largely reflects the composition of interest rate types in the Irish mortgage market where low interest tracker loans represent over 50 per cent (by balance, **Chart 2**) of all loans outstanding.

According to the Central Bank of Ireland's latest release on mortgage product pricing, (Retail Interest Rates [release](#)), the interest rate on these outstanding tracker loans was 1.05 per cent in February 2015 while the corresponding rate for outstanding standard variable rate housing loans was 4.24 per cent (**Table 1**).

² While the focus of this note is on standard variable rate mortgages, it is worth keeping in mind the portfolio of assets held by the banks across customer segments which vary in terms of their profitability both on an outstanding loan basis and on a new business basis.

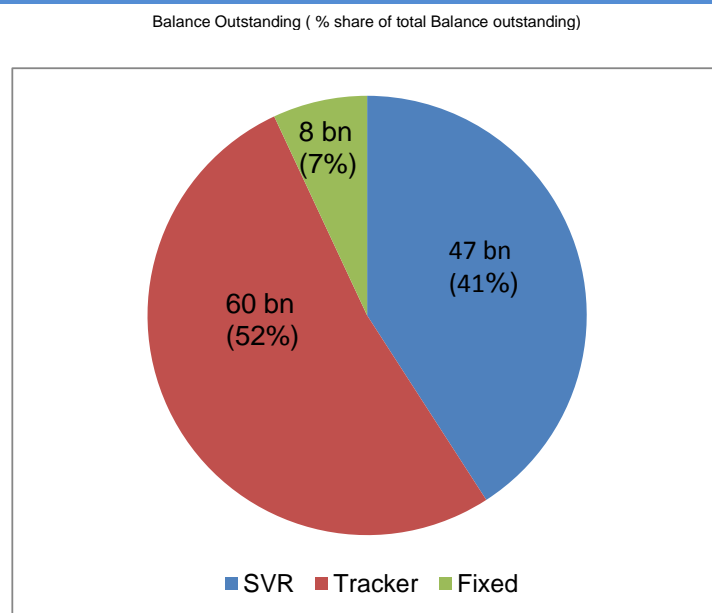
³ Refers to all mortgages for house purchases (includes both PDH and BTL).

Chart 1: Average Interest Rate on Current Outstanding Loans, European Comparison, 2003-14



Source: ECB MFI Retail Interest Rate Statistics, Central Bank of Ireland, Household Credit Market Report, February 2015, Author's own calculations. Countries were selected due to data availability. Included countries are: AT, BE, DE, ES, FI, FR, GR, IE, IT, LU, NL & PT. The grey shaded area captures the 25th and 75th percentiles below and above the median while the grey lines are the maximum and minimum countries in the sample. The percentiles and the sample maximum and minimum are presented.

Chart 2: Interest Rate Type Composition of Credit Advanced to Irish Resident Households for Home Purchases



Source: Central Bank of Ireland, Credit Money and Banking Statistics, Private Household Credit and Deposits, December 2014. The corresponding balances for ROI PDH loans are €43 billion (Tracker); €40 billion (SVR) and €8bn (Fixed).

A different picture emerges when comparing new lending rates in Ireland with the same group of European countries or with the UK (**Table 2**). These cross-country harmonised data show that the interest rate on new mortgages in Ireland, currently 3.60 per cent, is the highest of all countries (**Chart 3**). The median for the selected European countries for new mortgage lending is 2.53 per cent. However, these data include renegotiations of existing loans. When these are stripped out, the new business rate in Ireland during Q4 2014 was 4.26 per cent.

Table 1: Interest Rates on New Business and Existing Outstanding Mortgages (adjusted for renegotiations)

(Mortgage Rates)

	Outstanding Amount	New Business
Standard LTV Variable	4.24	4.26
Tracker	1.05	n.a.
Fixed Rate	3.91	3.83

Source: Central Bank of Ireland, Retail Interest Rate Statistics, February 2015, Statistical Release 10th April 2015. Tracker mortgages are not currently an active new product offering in the market. Renegotiations removed. New Business rate refers to Q4 2014.

Table 2: New Business Mortgage Interest Rate Comparisons (Quoted SVR and Effective Rates with up to 1 year fixation) - March 2015

(Mortgage Rates)

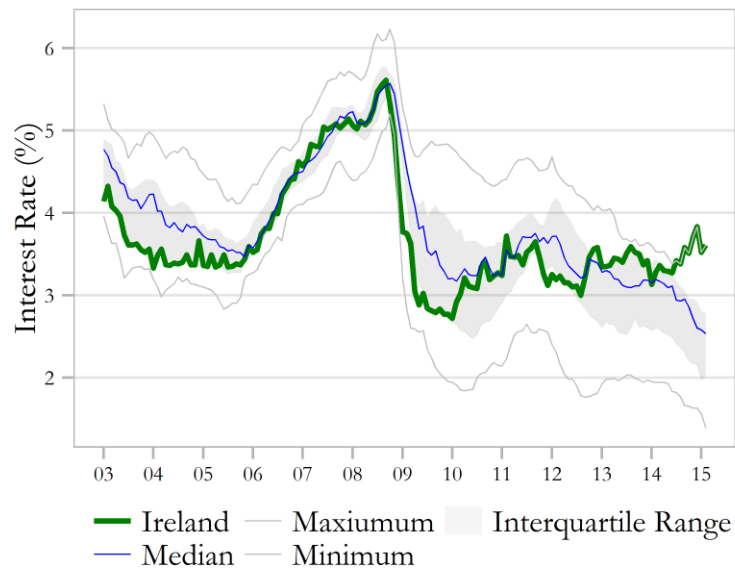
	UK	Ireland	Euro Area
Quoted Rate	4.51	4.29	n/a
Effective Rate	2.01	3.42	2.10

Source: Bank of England, Central Bank of Ireland and ECB.
Notes: Quoted Rates for the Bank of England are sourced from the Quoted household interest rates release and aim to reflect Mortgage rates available to most borrowers. (BOE IUMTLMV series). The quoted rates for Ireland are compiled by the Central Bank of Ireland and reflect the average quoted rate across lenders for a standard variable rate mortgage with a loan to value (LTV) ratio of 80 per cent or higher. The effective rates are for March 2015. The rates for Ireland and the Euro area are sourced from MFI Retail Interest Rate Statistics. The effective rates for the UK are sourced from the BoE Effective Interest Rate Release.

Table 2 also compares the quoted new business rates in Ireland and the UK and compares these with effective rates. While noting that these are necessarily different jurisdictions and are subject to different monetary policy regimes, the UK quoted rate for a typical mortgage (at 4.51 per cent) is higher than a comparable rate in Ireland (4.29 per cent). However, for effective rates (i.e. the rate agreed) with a fixed period no greater than one year, the UK rate is 2.01 per cent while the Irish rate is 3.42 per cent. It needs to be borne in mind that some of the rates included in the UK calculations are "teaser"- like rates applying for an initial period following which there is a return to the quoted SVR.

Chart 3: Average Interest Rate on Current New Loans (all), European Comparison, 2003-14

(Mortgage Rates (as of December 2014))

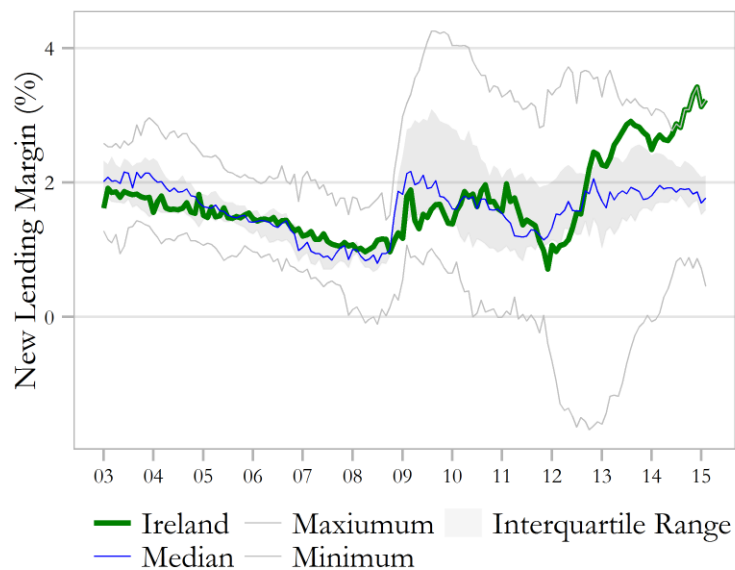


Source: ECB, Central Bank of Ireland and ECB MFI Retail Interest Rate Statistics, Money, Credit and Banking Statistics, Author's own calculations. Countries were selected due to data availability. Included countries are: AT, BE, DE, ES, FI, FR, GR (only until Oct 2010), IE, IT, LU, NL & PT.

Finally, margins on new business lending, defined as the spread between the average deposit rate and the average new business lending rate, are higher in Ireland compared to elsewhere in Europe **(Chart 4)**.

Chart 4: Interest Rate Margins on Mortgage Lending

(Mortgages, New Business lending minus Weighted Average Deposit Rate)

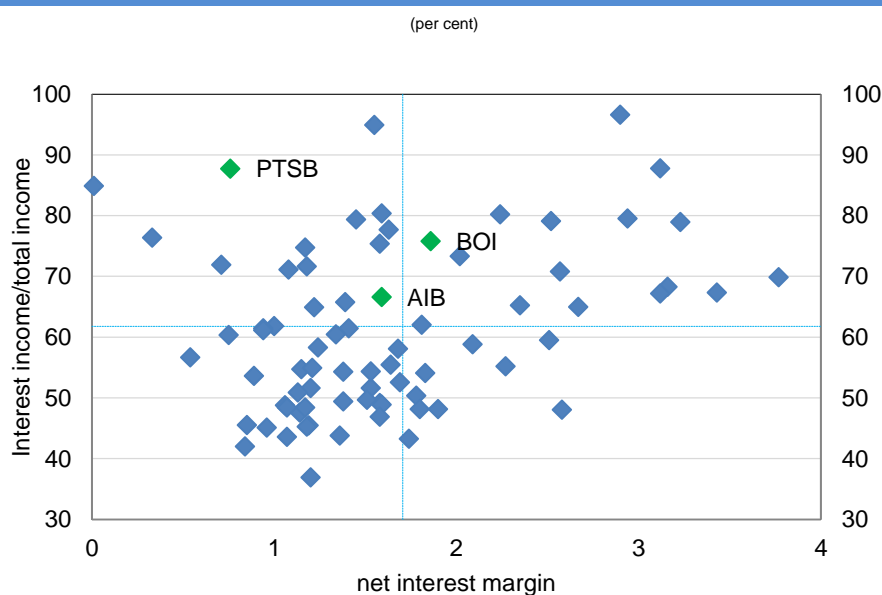


Source: ECB, ESRB Systemic Risk Indicators. Countries were selected due to data availability. Included countries are: AT, BE, DE, ES, FI, FR, GR, IE, IT, LU, NL & PT.

banking markets have markedly different structural features which complicate cross-country interest rate comparisons. Depending on the market structure and product offerings, banks may trade off returns on some products for income from other products or sources. For example, in certain markets, banks may be more competitive in terms of gross interest margins but could earn significant levels of income from 'fees and commission' sources. The competition in lending rates may be in the pursuit of other business interests, such as life insurance sales fees, other fee income, term loan linkages, current accounts or other cross selling opportunities being competed for in the particular market. Therefore, cross-country assessments of competition are difficult without giving consideration to the market-specific product ranges and income sources.

By international standards, Irish banks have a high reliance on net interest income coupled with around average net interest margins for the larger two banks and below average for PTSB (Chart 5).

Chart 5: Average Share of Net Interest Income and Average Net Interest Margins for Selected European Banks



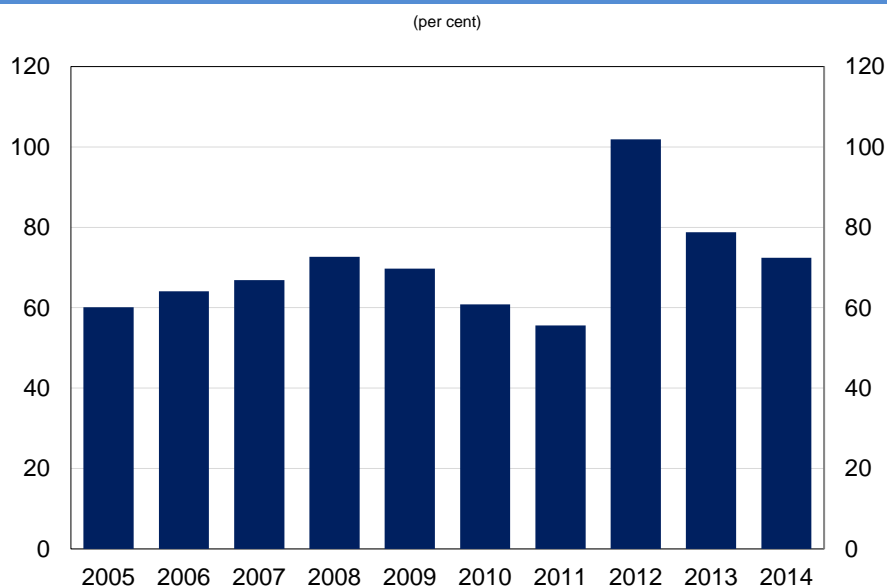
Source: SNL Financial and Central Bank of Ireland calculations.

Notes: Sample of 82 banks that participated in the EBA stress test. Data relate to 2014. Dotted lines represent the average share of income accounted for by net interest income and average net-interest margin in the sample respectively.

Chart 6 shows the high share of net interest income as a percentage of total income for Irish banks over time. To raise net interest income, banks face a trade off on either the quantity of new lending or the price. Increased volumes of lending would, all else equal, result in increased net interest income. Furthermore, banks can either raise the interest rate on lending activities or reduce the rate offered on deposits. Given the low interest rates, there is little scope for further reductions to deposit pricing. This leaves increased lending volumes or increased lending rates as the viable options. The scope for changing

these is also limited given weak credit demand (with high levels of private sector debt) and low yields, which are driving increased competition by banks on both price and underwriting terms and conditions.

Chart 6: Domestic Banks' Net interest income to Total Income



Source: SNL Financial and Central Bank of Ireland calculations

Note: Interest income as a percentage of total operating income. The value for 2012 exceeds 100 per cent due to losses on trading related activities.

3. Relevant Statistics and Research:

Relevant statistics on the Irish mortgage market are published on a regular basis in the Central Bank's statistical releases. These include new data on mortgage product pricing, including new business and existing SVRs, which can be found in Table 1 of the Retail Interest Rates release. Analysis and statistics are also published in official reports such as the biannual Macro Financial Review and Quarterly Bulletins. A more recent initiative is the production of a [Household Credit Market Report](#). This report, the first of which was released in February 2015, brings together the numerous available sources of information on household lending.

A number of research papers have also been produced by the Bank on items affecting standard variable rate mortgage pricing and on the determinants of bank lending margins. **Annex 1** summarizes the recent relevant research undertaken in the Bank as well as some of the international literature on these issues.

Additionally, a number of related research projects are on-going in the Bank in order to understand better the dynamics of the mortgage market in Ireland, of which the drivers of margins and interest rates are important components. First, a study is in progress looking at the ability of borrowers to switch mortgage providers and the potential savings available to those who meet specified switching criteria. This study will also look at the characteristics of the borrowers who do not currently meet the typical benchmark required to switch lenders. Further research is being undertaken on mortgage market competition and another study on interest rate types through the housing market cycle. As part of on-going supervisory activities, analysis is being undertaken to ensure that banks are pricing risk effectively in their risk models, capital allocation, pricing and stress testing frameworks. For credit risk, this includes consideration of how banks reflect the recent extreme credit losses in their expected loss and unexpected loss models.

4. Influences on Bank Lending Margins

There are a range of factors that affect the margin that banks charge on variable mortgage rates. These prices will inevitably reflect:

- the cost of funds;
- the credit risk associated with the lending;
- operational costs of running the bank;
- the cost of capital; and
- the market structure and the competitive environment faced by each bank

Any changes in pricing are based on developments in these components. While two of these components have become more favourable for banks, namely the cost of funds relative to crisis peaks and the fact that the market structure has become more concentrated (increasing incumbents' pricing power above what was the case pre-2008 when more competition was present), developments in the other components have been less favourable. Therefore, in terms of any possible scope for banks to reduce their rates on mortgage lending, there may be some flexibility arising from the cost of funds component but less arising from the cost of risk, cost of capital and profitability components. Each of these components is discussed in detail below.⁴

⁴ For information, **Annex 2** provides further detail on good practice on risk based pricing, including a discussion of the different risk premiums.

The discussion is divided into two parts to provide a more granular assessment of bank lending margins. The first subsection, 4.1, deals with credit risk and cost factors while the second subsection, 4.2, deals with competition and the market structure.

4.1 Credit Risk and Bank Cost Influences

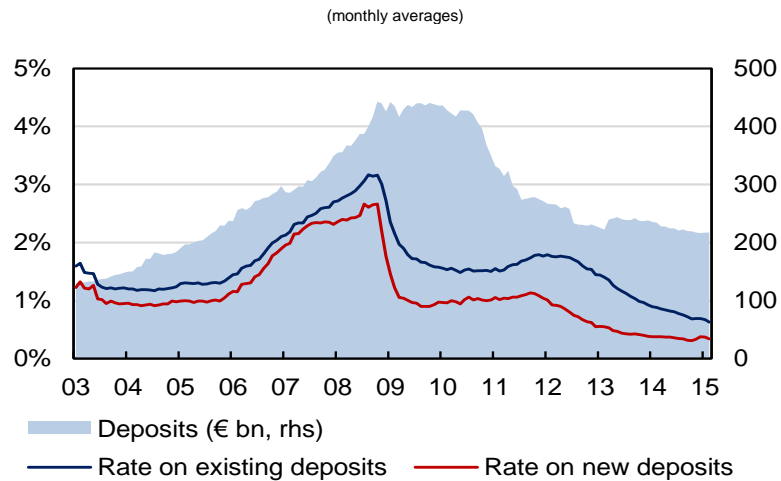
- **Cost of Funds:**

For banks, the gross return on lending must be higher than the cost of funding given the existence of operating costs and the risk of default. The sources of funding available to banks are not static over time and the exact composition depends on a number of factors including a bank's ability to access financial markets, its credit rating, the operating environment and its overall capital health in terms of the level and quality of capital. The typical sources of funding available to a bank include retail sources (e.g. household and corporate deposits); wholesale sources (e.g. secured and unsecured debt); official sources (e.g. ECB monetary policy operations) and other capital sources (e.g. equity investors and investors in bank debt capital instruments). In the aftermath of the financial crisis, the predominant source of funding to Irish banks is the retail channel.

Chart 7 and **Chart 8** show two measures of bank funding costs. **Chart 7** focusses on recent trends in retail funding while **Chart 8** displays banks' wholesale funding. According to both metrics, funding conditions have become much more favourable in recent years for Irish banks, particularly relative to 2011-2012 when banks' long term unguaranteed unsecured market yields (in the secondary market) peaked at over 20 per cent. The improvement reflects, in part, the lower official interest rates coupled with the global search for yield, high appetite for risk and especially the improved sentiment towards Irish banks and the Irish sovereign following the policy actions taken during and since the crisis.

However, it is important to differentiate between the cost of raising new funds (marginal cost of funds) relative to the cost of the existing stock of funding (average cost). **Chart 7** demonstrates that for Irish banks the rate on existing deposits is higher than the cost on new deposits. This indicates that, while overall costs may fall over time, the lower cost for new funds does not capture fully the overall cost of financing for the Irish banking sector.

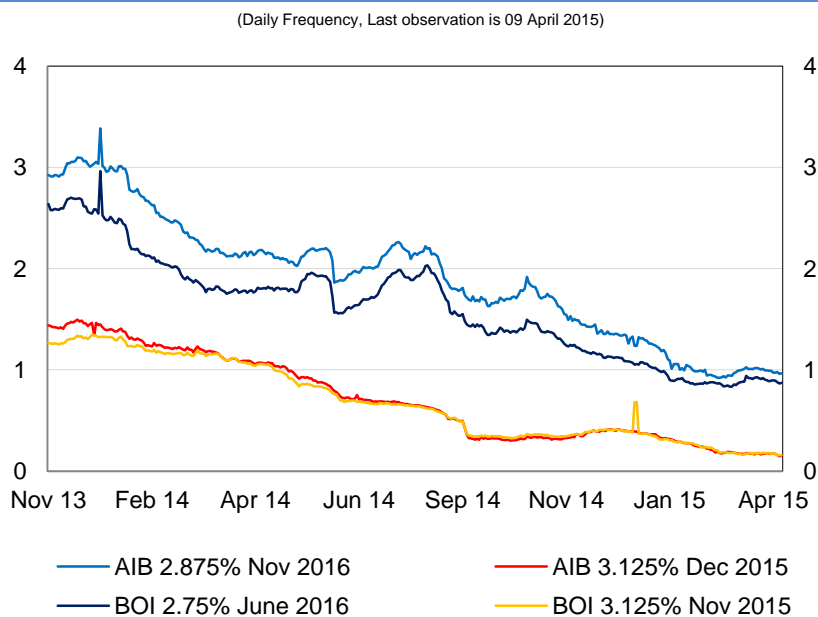
Chart 7: Deposit Volumes and Interest Rates



Source: Central Bank of Ireland Credit, Money and Banking Statistics

Note: Volume of deposits is shown for Irish-headquartered credit institutions and from all depositors. Deposit rates are shown for all Irish-resident credit institutions. Rates describe deposits from household and non-financial corporations in the euro area.

Chart 8: Ireland Secured/Unsecured Bank Bond Yields



Source: Bloomberg

While bank funding costs are expected to remain low in the near-term, the Irish banking sector is susceptible to changes in sentiment that could reverse current low funding costs. In addition, new regulatory requirements such as the Liquidity Coverage Ratio (LCR) (due to come into force in late 2015) and Net Stable Funding Ratio (NSFR) (due to be introduced over the coming years under the CRD IV) and common rules being devised

by the BRRD⁵ for dealing with failing banks and large investment firms across Europe, could lead to higher funding costs for banks in a normalised interest rate environment.

As well as the cost of funds, it is also important to consider the way in which this cost is transferred into the current price of loans. In the lead up to the crisis banks priced loans in two main ways; some banks priced loans with reference to their cost of short-term wholesale funding (the rate that business units were being charged by their central group asset and liability management team), while others priced with reference to their average cost of funds (including current accounts, deposits, short and long term wholesale funding). This created inappropriate incentives for business units in the banks to increase business volumes on what appeared to be high interest margins and profits, upon which managers were rewarded.

An example of this is banks' tracker books which were priced at a fixed margin over ECB repo rates. Such pricing reflected an implicit assumption that banks would be able to regularly roll over funding in the market with an unchanging spread differential (basis risk) over ECB repo rates. In effect, the banks' approach did not adequately consider the potential variability of funding costs in their pricing decisions. Following the crisis, new principals and guidelines have developed on how banks should price loans. Funds transfer pricing (FTP), which is explained in Box 1, is a mechanism that attempts to address this issue.

Box 1. International supervisory principals and guidance on funds transfer pricing

In its September 2008 'Principals for Sound Liquidity Risk Management and Supervision'⁶ the BCBS's Principal 4 highlighted that "a bank should incorporate liquidity costs, benefits and risks in the internal pricing, performance measurement and new product approval process for all significant business activities (both on- and off-balance sheet), thereby aligning the risk-taking incentives of individual business lines with the liquidity risk exposures their activities create for the bank as a whole". In addition, quantification and attribution of risks should "include consideration of how liquidity would be affected under stressed conditions".

The European Banking Authority (EBA) published its 'Guidelines on Liquidity Cost Benefit Allocation'⁷ in October 2010 which highlighted that banks should have in place

⁵ The Bank Recovery and Resolution Directive (BRRD) sets out common rules for dealing with failing banks and large investment firms in Europe.

⁶ <http://www.bis.org/publ/bcbs144.pdf>

⁷ http://www.eba.europa.eu/documents/10180/16094/cebs18_Guidelines.pdf

an adequate and comprehensive pricing mechanism which incorporates all relevant liquidity costs, benefits and risks. It also notes that “Product approval and internal pricing processes should be integrated. Selling only fairly priced products can be considered to be a major criterion for the long-term functioning of an institution. This means that when the institution is making a risk- and profitability analysis of a potential new product, the implication for the institutions liquidity risk position as well as the potential liquidity cost or benefit of the product should be taken into account”.

A common application of FTP is to ask what is the cost in the wholesale market to fund such a loan with the same maturity, interest rate repayment frequency and structure? FTP needs to take into account the liquidity risk of an asset. This is the term liquidity premium charged by the market to borrow at different terms. It captures the risk that a bank will not be able to refinance an asset at the short-term rates that were in place at the time the loan was originally issued. The term liquidity premium can be derived by comparing the bank's funding costs with market benchmarks (swap curve) and reflects the cost of hedging this risk in the market.

Other features that may be considered in designing an FTP framework may include incentives/disincentives related to CRD IV liquidity rules (LCR and NSFR) or whether or not an asset can be securitised or is eligible for a covered bond pool (i.e. how liquid it is).

- **Cost of Credit Risks:**

Following the financial crisis, the Irish mortgage market is characterised by one of the highest mortgage arrears and default rates in Europe (**Chart 9**). The latest mortgage arrears statistics (**Chart 10**) show that, as at end of December 2014, of the 758,988 private residential mortgage accounts for PDH loans in Ireland, 78,699 accounts (10.4 per cent) were in ninety days arrears or more. In balance terms, this is equivalent to 14.8 per cent of the total outstanding balance on all PDH mortgage accounts (€104.9 billion).

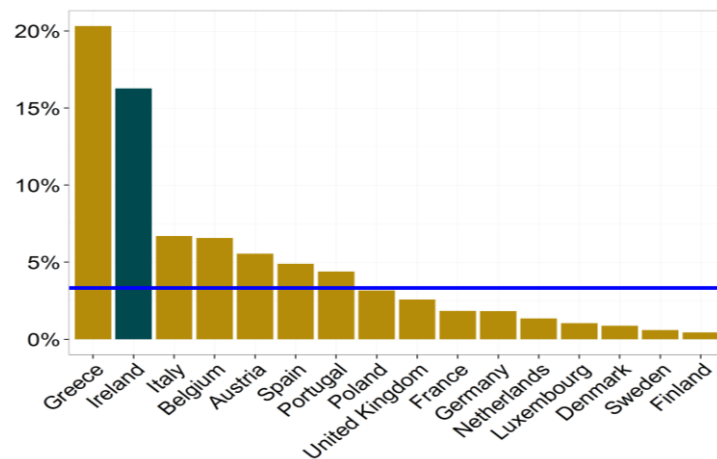
While banks are beginning to reduce the number of non-performing loans, the extent of the problem is such that it will take a number of years of sustained improvement to be addressed. In the meantime, these problem loans leave the banks at risk of significant impairment charges should the economic situation deteriorate or interest rates increase materially.

One implication of the high level of non-performing mortgage loans in Ireland, the scale of negative equity and the heavy indebtedness of so many household borrowers is that the risk in lending to Irish borrowers must be considered higher than in most other countries in Europe. While this situation has its roots in the housing bubble and the

crisis, and despite a recovery in the economic environment, the economy remains vulnerable. The credit-risk premium now considered appropriate in Ireland post-crisis is much higher than the corresponding premium built into pre-crisis loan pricing. This reflects elevated expected losses (based on average historic losses) and the need for a higher provision to meet losses going beyond what is currently expected (the so-called ‘unexpected losses’⁸). Prudent approaches to mortgage pricing that account for risks and uncertainties should result in banks not offering unsustainably low rates that could lead to a recurrence of non-performing loans.

Chart 9: Mortgage Default Rates – end December 2013

(Mortgage Defaults, selected countries)

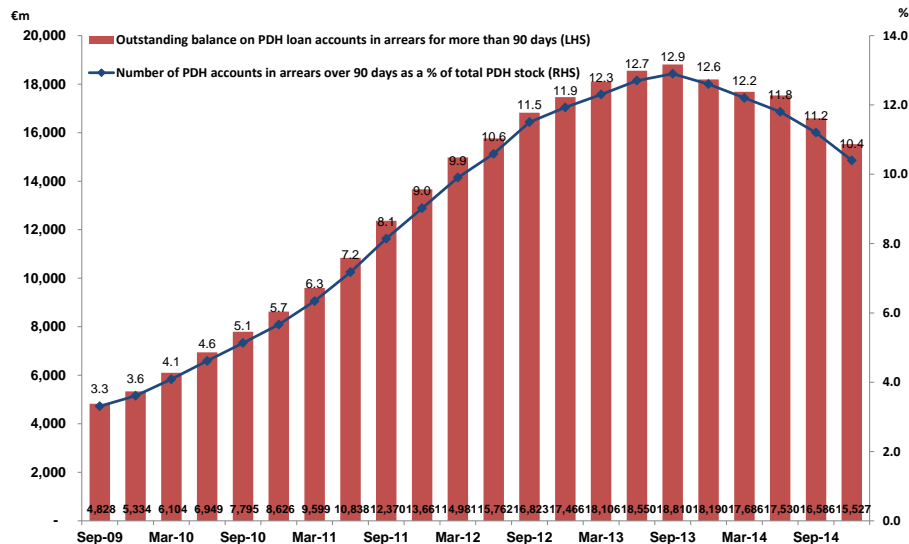


Source: EBA, Central Bank of Ireland Author's calculations, Blue line is aggregate default rate for all countries.

⁸ The unexpected loss component is captured in the capital required and the cost of capital. While new lending risks (front book) may differ from existing lending risks (back-book), it is too early in recovery cycle to fully understand if this is the case.

Chart 10: PDH mortgage Accounts in Arrears Over 90 Days

(Daily Frequency, Last observation is 09 April 2015)



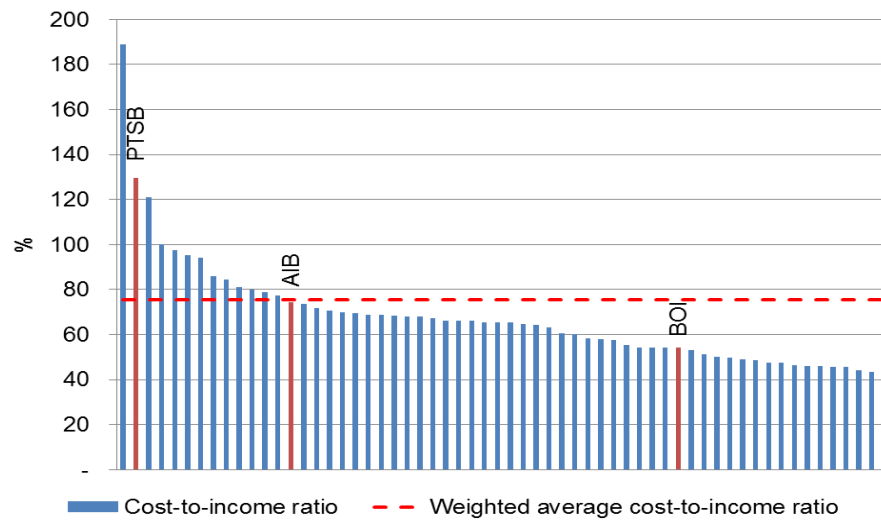
Source: Residential Mortgage Arrears and Repossessions Statistics: Q4 2014. Outstanding balance on PDH loan accounts in arrears for more than 90 days (LHS). Number of PDH accounts in arrears over 90 days as a % of total PDH stock (RHS)

- Operational Costs:**

Through deleveraging of non-core business and other cost cutting measures, Irish banks have improved efficiency and lowered their overall operating costs. Notwithstanding the fact that this has reduced the cost-to-income ratio for Irish banks, the current level of the cost-to-income ratio is still high relative to the European average (**Chart 11**). Furthermore, pressure on income from the low interest rate environment is creating challenges for banks to generate enough profits to cover their day-to-day running costs alongside other costs of lending.

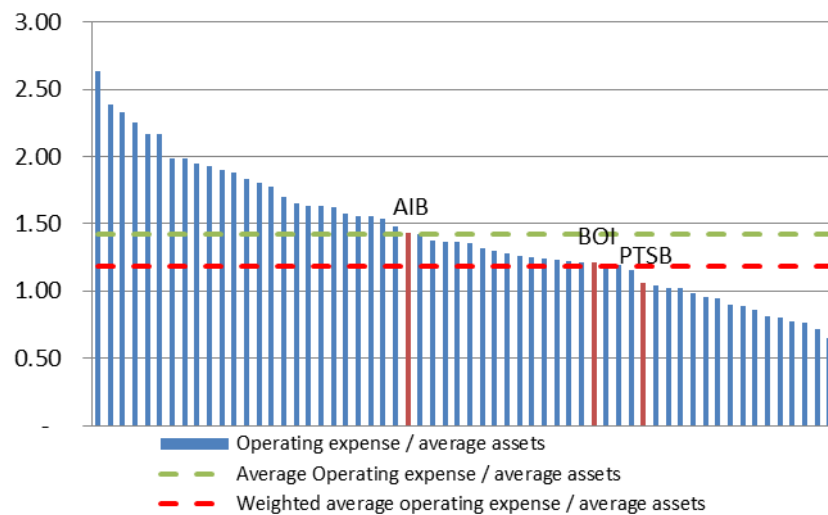
Deleveraging activity has also impacted the cost-to-assets ratio of Irish banks, which has been increasing in recent years. **Chart 12** shows the cost-to-asset ratio for Irish banks relative to European peers. While Irish banks generally have high cost-to-income ratios, they have average or below average cost-to-asset ratios, suggesting that there is limited additional room to reduce costs.

Chart 11: Cost-to-Income Ratios



Source: SNL Financial and Central Bank calculations. Income excludes trading gains/losses and gains/losses on sales of other assets.

Chart 12: Cost-to-Assets Ratios



Source: SNL. Excludes deferred tax assets as these inflate denominator and are not productive assets.

- **Cost of Capital**

A lesson learned from the crisis was that banks globally held too little capital to absorb unexpected losses. The price banks charge for lending is meant to cover expected losses over the life of the loan, while capital held against the loan is for the purpose of covering unexpected losses. Two factors have significantly increased the amount of capital that needs to be held by a bank against a loan. These include (1) increased requirements in relation to the quality and amount of capital and (2) changes in the risk weighting applied to loans as a result of default and loss history arising from the economic downturn.

Prior to the crisis the Irish banks held around 6 per cent of common equity to risk weighted assets. CRD IV required that common equity tier 1 (CET1) increase to a minimum of 7 per cent after deductions, while most banks have indicated to the market that they are targeting a level of 10 plus per cent on a fully loaded basis⁹. Given that equity is needed to support significant deferred tax asset deductions¹⁰, in order for the banks to reach 10 per cent CET1, they need to hold almost two and a half times the level of equity capital they held pre-crisis as a percentage of risk weighted assets. The second factor relates to the internal ratings based (IRB) models used by Irish banks to determine their credit risk weighted assets. For mortgages the primary inputs into these models are probability of default (PD) and loss given default (LGD). PD inputs are generally informed by the banks' historic experiences of default. For a new loan issued today versus one issued in 2006, the risk weighting applied to a mortgage is estimated to be about 50 per cent higher than pre-crisis.

Across the retail banks, the combined effect is that the equity capital required to support a new mortgage is estimated to be almost four times higher than it was pre-crisis. This is independent of any change in the cost of equity. As this capital is invested by equity holders, to attract private investment or seeking private ownership a bank needs to generate some return to reward its owners for the risk that they have taken.

Regarding the cost of capital/equity for Irish banks, it is likely that this will remain higher than pre-crisis levels.¹¹ The pre-crisis investor cost of equity was relatively low, and in

⁹ The banks are currently reporting capital under transitional rules which phase –in CRD IV capital rules. However, banks need to consider their balance sheet once the rules are fully in place (fully loaded) as the assets will need to be allocated capital on that basis over their life.

¹⁰ Irish banks have among the highest level of deferred tax assets as a percentage of their total assets. Deferred tax assets are the accumulated tax losses carried forward arising from the significant losses made by the banks over the past number of years.

¹¹ The cost of equity comprises the risk free rate and a measure of the expected cost of risk for an equity investor. The cost of equity is not straightforward to measure and banks and longer term investors generally consider a medium to long term cost of equity in making investment and lending decisions.

particular, the risk premium component, which reflected a general perception of stable and reasonably certain economic conditions and profit generation by the banking sector. During the crisis the risk premium increased materially reflecting heightened uncertainty and increased risk profiles of the banks.

Over the longer term it is reasonable to expect that banks which are well capitalised and that comfortably meet new liquidity rules will have a lower risk premium reflecting their reduced risk profile. However, in the medium term, with a need for banks to transition to capital levels meeting or in excess of fully loaded CRD IV rules, high levels of outstanding non-performing loans; weak recurring pre-provision profitability (due to legacy assets on which pricing does not reflect the crisis and the balance sheet structure demanded under new regulatory rules); and a relatively less certain economic outlook than pre-crisis, the risk premium on Irish banks will remain relatively high.

4.2 Market Structure and Competitive Environment

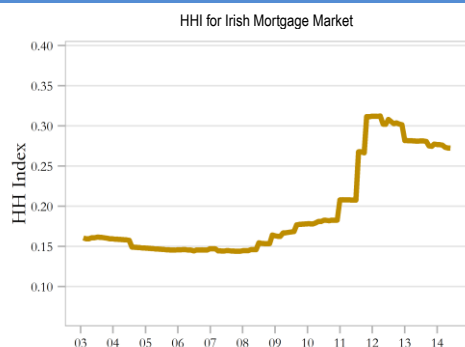
A key determinant of bank lending margins is the degree of competition in the market. The research outlined in **Annex 1** indicates that less competitive markets are associated with higher lending margins. There have been considerable changes in the structure of the Irish mortgage market both pre and post the financial crisis. In the early-to-mid 2000s, banks looked to high lending volumes to increase their net interest income. This was largely a reflection of the degree of competition at that time with many foreign and domestic banks in the market lending into an environment with heightened credit demand. However, in recent years the Irish banking landscape has become more concentrated with a number of structural changes. These structural changes include the merger of AIB and EBS, the market exits of Bank of Scotland Ireland and Danske Bank, the winding down of Anglo Irish Bank and Irish Nationwide as well as the liquidation of the Irish Bank Resolution Corporation.

Chart 13 shows that the Irish mortgage market has become more concentrated in recent years, as measured by a Herfindahl Index.¹² This measure increased considerably after the onset of the crisis, reflecting the market exits and mergers noted above. Such developments indicate a less competitive market structure. This is also evident in **Chart 14** which profiles three and five bank concentration ratios (sum of the market shares of the three and five largest banks in the mortgage market) and also points towards a more concentrated mortgage lending environment.¹³

¹² The measure is the sum of the squares of each institution's market share and is a generally accepted measure of concentration. It lies between zero and one, with zero indicating perfect competition and one a monopoly situation.

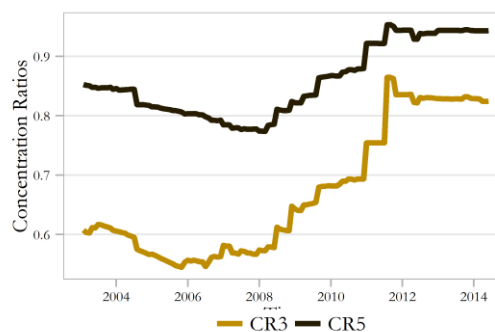
¹³ These measures are developed on the stock of outstanding lending. As new lending is likely to be more concentrated at larger lenders in an environment of reductions in leverage, these estimates can be seen as a lower bound on the level of competition.

Chart 13: Herfindahl Index of Market Concentration



Source: Central Bank of Ireland, Household Credit Market Report, February 2015. Countries were selected due to data availability. Included countries are: AT, BE, DE, ES, FI, FR, GR, IE, IT, LU, NL & PT. The grey shaded area captures the 25th and 75th percentiles below and above the median while the grey lines are the maximum and minimum countries in the sample. The percentiles and the sample maximum and minimum are presented.

Chart 14: Three and Five Bank Concentration Ratios



Source: Central Bank of Ireland calculations.

The link between competition and consumer welfare is complex. On the one hand, from a financial stability perspective, there is a strong case that heightened competitive pressures can lead to excess risk taking which can contribute to increases in systemic risk. In such an environment, strong prudential management is required which ensures that risks are managed and competitive pressures do not lead to adverse outcomes (Vickers, 2010). This is a delicate and difficult balancing act to ensure stability. On the other hand, research indicates that competitive financing markets are important for the degree of efficiency in the production of financial services, the quality of financial products and the degree of innovation (Claessens, 2009). By lowering the cost of finance, competition in banking can lead to higher levels of investment activity which directly promotes economic growth (Claessens, 2009). By providing banks with an impetus to provide more and better priced finance, research shows that companies and households can benefit from banking competition.¹⁴ Competition also provides an impetus for banks to invest in new innovative product offers and platforms which consumers can avail of. Without such competitive stimuli, banks are more likely to continue without investing in consumer welfare enhancing innovations.

An important channel through which bank competition affects the real economy relates to the interest rates charged on household borrowing. International evidence shows that consumption is positively impacted by credit access and interest rates charged to borrowers (Aron et al., 2011). In an Irish context, a link between household spending and access to credit has been established by research undertaken by the Central Bank of

¹⁴ Research on enterprises highlights the reductions in competition increase financing constraints and these effects are strongest for countries with a heightened bank financing dependence (Ryan et al., 2014).

Ireland (Clancy et al., 2014; Lydon and O’Hanlon, 2012). If lower bank competition in Ireland leads to higher interest rates on mortgages, this could impact consumption as households have less spending power after servicing mortgage obligations.

Another important channel through which bank competition in the mortgage market can impact the economy is through the level of arrears. The scale of mortgage arrears in Ireland since the onset of the crisis has been considerable, especially in a European context.¹⁵ Much of the research which explores the drivers of arrears highlights that increases in repayment burdens and debt service ratios lead to increases in arrears through higher interest rates (Lydon and McCarthy, 2013; McCarthy, 2014). In fact, there is evidence to suggest that such effects are much larger than those of house price changes, in particular for very long term arrears cases (Kelly and McCann, 2015). While appropriate risk pricing is required to ensure banks build buffers against future defaults, if a lack of competition leads to increases in interest rates for borrowers, this can directly lead to elevated arrears rates. This is particularly important in a highly indebted economy like Ireland.

There are undoubtedly influences from a range of factors that impact bank lending margins as discussed in this note. However, given the reductions in competition in Ireland, the potential for margins to be affected by market power is clear. To foster competition, attracting new foreign entrants may be difficult in an environment which has seen financial fragmentation and a retrenchment towards national banking markets (Al-Eyd and Berkman, 2013; Barrell et al., 2011; ECB, Various). However, it is important that there are not barriers to entry that serve to discourage new market participants in Ireland.

5. Conclusion:

The spread between official ECB rates and the standard variable rate is relatively high and lending rates are above average compared to European peers. While acknowledging that cross-country comparisons in this area are problematic this note has reviewed key influences on bank-lending rates in the context of this European comparison.

A range of economic and financial factors are contributing to higher margins, including competition, credit risk and profitability considerations. In particular, credit risk remains elevated due to household and corporate sector vulnerabilities and the nascent stage of economic recovery. The amount of capital that banks have to hold against assets has also increased materially reflecting increased requirements under CRD IV and the default

¹⁵ As noted in the recent Household Credit Market Report, H1 2015.

experience of the economic downturn within banks' risk-weight models. These are important issues for banks but are also very relevant from financial stability and prudential regulation perspectives as it is important that banks maintain sustainable and viable business models that take into account the risks and uncertainties inherent in their operations. The dangers from under-pricing of risk were highlighted starkly during the financial crisis, in Ireland and internationally.

Another element of interest-rate pricing relates to market structure. A number of mortgage providers have exited the Irish market and the decrease in competition is quantified by standard measures (Herfindahl Index and concentration ratios). A lack of competition can result in opportunities for excess profits for incumbents in a market and research indicates that competitive financing markets are important for the degree of efficiency in the production of financial services, the quality of financial products and the degree of innovation. As long as the potential for competition exists, the scope for profiteering is limited over the longer run and, in the absence of market failures or barriers to entry, these competitive pressures can be expected to have a beneficial effect in regulating price developments.

It also needs to be considered that the banking sector is different from other sectors due to the potential for individual failures to threaten the stability of the entire financial system. It must be ensured therefore that competitive or other pressures do not lead to excessive risk taking which can contribute to increases in systemic risk. This requires strong prudential management to ensure that risks are managed appropriately and that these pressures do not lead to adverse outcomes. Other pressures in this context might include political pressures (notwithstanding the formal relationship frameworks that govern the interaction between Government and the domestic banks) and it is imperative to ensure that debate regarding lending rates is well informed and that the full range of factors impacting on these rates are taken into consideration. The Central Bank's on-going research in this area is geared towards enhancing understanding of these factors.

Annex 1: Relevant Research on Bank Lending Margins

Central Bank of Ireland Research

The Central Bank of Ireland has undertaken a number of research studies looking at determinants of interest rates and the bank lending margin in Ireland. In particular, since the onset of the financial crises, two studies have been published examining the reasons for the changing nature of banks' standard variable rate pricing (Goggin et al, 2012a; b). These studies note that the financial crisis resulted in a break in the pass-through relationship between market rates and variable rates in the Irish mortgage market. Until the end of 2008, standard variable rates for all lenders closely followed changes in the ECB's main refinancing rate, short-term wholesale rates and tracker-rate mortgages. Thereafter, the relationship breaks down, in part due to banks' increased market funding costs. The studies also noted "that it appeared that some lenders with higher mortgage arrears rates and a greater proportion of tracker rate loans on their books exhibit higher variable rates". In terms of banks' cost of funds, the studies found that money market and deposit rates are an important determinant for standard variable rates. They attribute partly the breakdown in pass-through between lending rates and monetary policy and money market rates post 2008 to increased market funding costs for banks, captured by direct fees and indirect market spreads. Additionally, the authors construct a point in time funding cost estimate for Irish banks at end 2011 using a number of estimates for the price and quantity components of banks' funding costs. They also identify pre crisis effects of competition on lending rates.

Of importance in understanding the impact of the pass-through between lending rates and market rates is a profile of the type of mortgage contracts borrowers have. Kennedy and McIndoe-Calder (2011) provide details on the interest rate types in the Irish mortgage market and other loan, borrower and collateral characteristics using Central Bank of Ireland collected loan-level data at the end of 2011. These data have been updated and many charts are reviewed on a continuous basis in the CBI Household Credit Market Report. Earlier research on the difference between retail interest rates in Ireland vis-à-vis other European countries was conducted by McElligott (2007). The research finds that, prior to the crisis, Irish households enjoyed lower interest rates on their borrowings than most of their euro area counterparts. Determining factors were different product and charging structures, the level of competition within the banking sector, and firm size and sector. Many of these impediments to the convergence of retail interest rates are due to national market preferences and banking practices.

Related research on bank interest margins has been conducted by Holton et al. (2013). This research analyses the ability of banks to earn returns and understanding of pricing in the mortgage market and other sectors. The research found that the financial crisis resulted in banks' net interest margins falling to historic lows of 1 per cent or less. Low margins raise concerns regarding a bank's ability to generate earnings necessary for

building up capital buffers and maintaining the bank as a going concern entity. The study plots the evolution of bank net interest margins over time and discusses legacy tracker loans on the bank's balance sheets that have contributed to depressed net interest margins.

A key issue that influences the interest rate that banks charge is the cost of funds. From an Irish perspective, Coates and Everett (2013) describes the foreign funding flows into Ireland during 2002-2008 and the sharp reversal of these flows in the post-Lehman period. They highlight the dependence of Irish banks on foreign funding flows (in particular, those from the UK) in the run up to the financial crisis and the evaporation of these funding sources post-2008. Further research on interest rates across mortgages in Ireland has been conducted by Kelly et al. (2014) who focus on interest-only loans. Finally, CBI studies have also identified the impact of credit conditions on household consumption (Clancy et al, 2014a;b) a key channel through which bank lending margins (through their impact on borrower repayment burdens) can impact economic growth.

International Literature

Identifying the determinants of bank lending margins is an area of considerable research in the international literature. The seminal paper in the area is Ho and Saunders (1981) (HS), whose theoretical research provides a structure for isolating the determinants of the margin charged by banks. Margins are demonstrated by the model to be dependent on four factors a) interest rate or borrower risk b) market structure and competition issues c) managerial risk appetite and d) transaction sizes. The authors provide empirical evidence in support of the model: using data from a sample of US banks, interest margins are found to be positively correlated with the variance in the rates of bonds. They also find a small but statistically significant difference in spreads that they conclude is due to market structure factors, allowing banks to earn additional profit.

A number of empirical studies build on this early work and provide additional insight into the mechanisms behind the determinants of margins. Maudos and De Guevara (2004) extend the HS model to include bank-operating costs and empirically study the determinants of the interest margin across a number of European banking sectors. They find that a) margins increase as competition falls and b) reductions in operating costs and credit risk as well as lower volatility of market rates all have a negative effect on margins i.e. an increase in operating costs would decrease margins. Studying banks in the US and six EU countries, Saunders and Schumacher (2000) show that the interest margin is positively affected by regulatory components, market structure and risk premium. The authors suggest a policy trade-off with regard to bank solvency and low-cost financial intermediation: higher capital-to-asset ratios are associated with higher interest rate spreads. They also find that the larger the monopoly power of banks, the larger is the premium. A global study across 72 countries Demirgüç-Kunt, Laeven & Levine (2004) looks at the effect of institutions, regulation and market structure on bank margins. They also find a positive relationship between market concentration and margins, though it is

dependent on regulatory impediments to competition and inflation. They note that the economic magnitude of this effect is not large in their data. The authors conclude that tighter regulations on banking activities and barriers to freedom in the banking system boost net interest margins and therefore increase the cost of financial intermediation. Other research also identifies a positive effect of competition on margins (Maudos & Solís, 2009; Peria and Mody, 2004; Van Leuvensteijn et al., 2013) as well as other factors such as foreign ownership.

Annex 2

Supervisors require that banks assess the adequacy of their capital on a forward looking basis. It is expected that their pricing decisions and capital planning are fully integrated with this process to ensure that the bank has a sustainable business model after taking into account the full range of risks to which they are exposed.

Box 3. - Basel Committee on Banking Supervision Core Principals

The Basel Committee on Banking Supervision (BCBS) in its Core Principles for Banking Supervision (September, 2012)¹⁶ notes that “the supervisor determines that banks have a comprehensive risk management process (including effective Board and senior management oversight) to identify, measure, evaluate, monitor, report and control or mitigate all material risks on a timely basis and to assess the adequacy of their capital and liquidity in relation to their risk profile and market and macroeconomic conditions. ... Policies and processes are developed for risk-taking, that are consistent with the risk management strategy and the established risk appetite.”

As part of a bank’s risk management framework, supervisors expect that product development, structure and pricing take into account material risks and support sustainable capital generation which should enable the bank to continue to support the economy over the economic cycle. This is particularly important given that banks need to estimate their future costs of various components over the life of a loan. A common framework in relation to assessing a minimum price level is risk adjusted return on capital (RAROC)¹⁷. This is also used as a means of performance measurement so that, with appropriate inputs, it aligns management and risk-taking personnel’s behaviour within the achievement of sustainable profitability.

Pricing should be sufficient to cover both current estimates of likely costs incurred as well as a risk premium to reflect future uncertainty over costs and income. The following table shows the main components of this additional risk premium.

Factor	Associated Risk
Funding and liquidity cost	Future increases in funding costs might not be fully passed through to the customer. Liquidity and interest rate risk also arise due to maturity mismatch between assets and liabilities. Both are often considered in relation to funding cost via Funds Transfer

¹⁶ <http://www.bis.org/publ/bcbs230.pdf>

¹⁷ BSCB ‘Range of practices and issues in economic capital frameworks’ (March 2009) <http://www.bis.org/publ/bcbs152.pdf>

	Pricing.
Operating Costs	Future operating cost increases might not be fully passed through to the customer.
Credit Losses	Credit losses may be higher than ‘expected losses’ and the capital held against the loan for unexpected losses.
Cost of Capital	Future capital credit RWA requirements may be higher than current estimates or the cost of capital could increase.
Expected Interest Income	Risk of early repayment which would reduce income compared with that assumed in the pricing model. Risk that interest income is reduced via non-performing exposures that still require funding (can be included in credit losses).
Profit margin	Risk that bank is unable to generate capital to support new lending or attract equity investors as returns are not in excess of investors cost of equity.

Approaches to quantify the above costs, income and risk premiums vary in terms of the level at which they are performed (product, business unit or bank wide) with the more sophisticated being a modular approach that considers individual products and their marginal contributions to the overall return on equity for the bank for a given level of capitalisation.

Box 4. - BCBS commentary on risk management and pricing

In the March 2009 paper on the ‘Range of practices and issues in economic capital frameworks’¹⁸ the BCBS highlights that “A bank should effectively document and integrate economic capital models in a transparent way into decision making. Economic capital model results should be transparent and taken seriously in order to be useful to senior management for making business decisions and for risk management. ... Economic capital measures may be one of several key factors used to inform decision-making in areas such as profitability, pricing, and portfolio optimisation – particularly at the business-line level”.

Within individual product pricing it is also possible to base the analysis on the characteristics of the loan agreement (e.g. Loan to Value ratio) and the characteristics of the borrower - risk based pricing. However, the level of sophistication and granularity of

¹⁸ <http://www.bis.org/publ/bcbs152.pdf>

risk based pricing may be limited for retail products by the need for transparency of pricing to potential customers.

While banks may use pricing models such as RAROC, strategic, operating environment and other considerations can feed into the ultimate pricing decision. These factors can include the financial situation of the bank (level and direction of profitability), the need to adapt to changes in the market (including regulatory change), goals defined in the bank's strategy regarding its presence in particular products or customer segments, customer affordability and impact on credit quality, and the level of competition for various products or customer segments.

Other stakeholders in the banks are also focused on the financial position and performance of the banks and this can feed into a bank's ability to access debt markets and the cost at which it can raise debt. Therefore, banks also need to consider the requirements of these stakeholders in their pricing decision. The box below highlights some of the key factors ratings agencies had indicated would increase or decrease the ratings on the Irish banks.

Box 2 - Credit rating agency commentary on factors that will drive ratings up or down

The bullet points below highlight the factors that rating agencies have indicated would improve or reduce the credit ratings of the largest Irish banks.

Drivers of rating down grade

- Unexpected deterioration in the bank's profitability metrics
- Change in Ireland's positive economic environment, such developments likely be followed by a reversal in the bank's improving asset quality trend
- Material deterioration in its liquidity profile or funding position
- Removal of Sovereign Support: Implementation of effective bank resolution

Drivers of rating up grade

- Further improvements in profitability and efficiency;
- Clarity over capital structure with conversion of some or all of AIB preference shares into equity being materially less than expect.
- Demonstrate access to equity markets
- Additional improvements in the bank's fully loaded capital and leverage metrics
- Significant reduction in the stock of problem loans along with positive net lending without material changes in underwriting standards.

Maintenance of sound liquidity and funding metrics and issue significant amounts of senior and/or subordinated long-term debt.

Annex 3: Drivers Of Balance Sheet Changes Post Crisis

Drivers of balance sheet change post crisis

	Direction*	Commentary
Assets		
Cash	↑	Cash and other high quality liquid assets increasing post crisis due to regulatory changes. Low yield reduces average return on assets. Effect amplified by very low / negative interest rate on high quality bonds currently, which will be felt as investments rolled over.
Treasury and liquid assets	↑	
Loans	↓	Repayments greater than new lending due to high level of debt outstanding in the economy. A significant amount of non-performing loans on balance sheets, which generate little to no actual income and are costly to administer.
NAMA bonds	↓	Remain a drag on bank profitability due to very low yield (6 month euribor), but accelerated repayments from NAMA reducing this impact.
Deferred tax assets	↔	Created due to losses through the crisis - are not considered under Basel III/CRD IV to be eligible as capital and so banks need to hold increasing levels of capital over and above reported equity to adjust for this as CRD IV phased in. Will take many years of profits to utilise.
Other assets		
Total assets		
Liabilities		
Current accounts	↔	A very important form of stable funding. In low interest rate environment, given these have an effective 0% fixed rate, do not adjust as variable rate assets decrease.
Retail deposits	↔	Also considered an important and more stable form of funding. Low interest rates generally lead to weaker margins for banks on deposits, where deposit rates do not fall as much as variable rate assets.
Corporate deposits		Less stable and so less valuable as a form of funding. Similar effect as for retail deposits in low interest rate environment. Will banks begin to charge corporate customers as some larger international banks doing?
Short term borrowings	↓	Regulatory changes such as Net Stable Funding Ratio (NSFR) and Liquidity Coverage Ratio (LCR) and general best practice require banks to hold less short term (cheaper) borrowings than that pre-crisis.
Central bank funding	↓	Reducing as bank balance sheets decline and banks regain access to debt markets as profitability and market risk appetite improves. In isolation effect is to increase average cost of funding as is usually a cheaper source than capital markets.
Long term secured debt	↑	The NSFR generally encourages banks to have a greater proportion of long term funding within their wholesale funding (which includes non-operational corporate deposits). This is more expensive than short term borrowings.
Long term unsecured debt	↓	There is a similar NSFR treatment for secured borrowings as for unsecured from a funding perspective, but it increases the encumbrance of assets on the balance sheet. Although a cheaper source of long term funding, too much encumbrance is not positive as it leaves less assets available to unsecured creditors in the event of a bank being resolved. This is becoming more important with upcoming bank recovery and resolution rules (BRRD).
Subordinated debt	↑	CRD IV capital rules and BRRD will lead banks to hold more subordinated debt on top of capital to provide a buffer to unsecured creditors. Given its creditor ranking it is more expensive.
Other liabilities		
Total liabilities		
Equity		
Preference shares	↓	The preference shares initially sold to the State in 2009 are not eligible under CRD IV from 2018 and therefore will need to be replaced with equity either directly or through organic capital generation (profits).
Ordinary share capital and premium	↑	CRD IV requires banks to hold significantly more equity (have lower leverage) than pre-crisis. This reduces the return provided to equityholders and means that in order to provide a return to equityholders that is greater than their risk of investing in the bank, profitability needs to improve from current low levels.
Retained earnings and reserves		
Total liabilities and equity		

*Direction of arrow indicates post crisis or medium term direction of item, while colour of arrow indicates impact on profitability (green = positive and red = negative)

Bank profit and loss - constraints and options

Item	Direction*	Commentary
Interest income on loans	↓/↔	General downward impact from lower interest rates and increased competition. However, will be offset over time by repayment of lower profit loans (e.g. trackers) and replacement with higher rate loans and reduction in non-performing loans. Also decreasing loan balances reducing interest income overall. Implications: Low interest rates and low new lending driving increased competition both in terms of price and terms and conditions. Supervisory focus that banks adhering to risk appetite and appropriately pricing and structuring loans.
Interest income on treasury / liquid assets	↓	NAMA bond repayment helpful for income as replaced with alternative assets. However, as existing treasury investments (generally held for regulatory liquidity purposes) mature will need to be reinvested in lower yielding assets given current markets. Implications: Limited options for banks as have to meet regulatory rules on quality of liquid assets. May incentivise banks to increase risk taking outside of treasury assets (see above) to increase income.
Interest expense on customer accounts	↘/↔	Generally a downward trend over the last year. Implications: Significant improvements made in recent years, but difficult to decrease pricing over and above this in particular given low level of reference rates and zero bound current accounts.
Interest expense on wholesale funding	↘/↔	Current market environment very positive with much reduced funding costs as existing more expensive funding matures and is replaced at lower rates. Implications: Incrementally positive, however, vulnerable should there be a reversal of the currently very strong market risk appetite and from a supervisory perspective would expect banks not to assume a persistence of level of market risk appetite.
Net interest income	↗/↔	Gradual improvement current expected outcome.
Non-interest income	↔	Low as a percentage of total income and little opportunity to increase recurring income streams in the short to medium term.
Total income	↗/↔	Total income to assets expected to marginally increase / stay flat.
Employee costs	↔	Gradually reducing staff numbers expected to continue over time as non-performing loans are addressed, but some wage inflation possible after wage and pension cuts/freezes over past number of years. Implications: Given extent of staff reductions in recent years, difficult to see significant room for further staff reductions in core businesses, although may reduce as process efficiencies put through over time.
Administration costs	↔	May be some increase as banks outsource and invest in the business, but generally expect banks to try and keep under control.
Depreciation and amortisation	↔	
Total costs	↔	Implications: Costs in general have not been decreasing in line with asset reductions due to lost economies of scale. Will be difficult to extract significant cost additional reductions in the medium term. Some positive impact expected as savings from efficiency investments taken over past few years flow through and level of non-performing loans reduces.
Pre-provision profit	↑	Some improvement expected, but most banks currently generating returns well below the cost of equity, so significant improvement still needed.
Loan impairment charges	?	Uncertain - some writebacks in 2014 and possible in 2015, but overall economic situation uncertain so potential for volatility over medium term.
Pre tax profit		

*Direction indicates near term direction of item with a focus on return on assets

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