UNDERSTANDING THE IRISH BANKING CRISIS

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Declaration

I declare that all the material included in this dissertation is the end result of my own work and that due acknowledgment has been given in the references to all sources consulted in the completion of this research

Brendan Collins

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ABSTRACT

The financial crisis that hit Ireland in 2008 was a severe event that will have a lasting impact on the entire population This was not a unique event While the scale of the collapse is significant, there are many parallels with other global financial failures The purpose of this study is to understand how a system of banking can continue to repeat seemingly systemic collapse The study reveals that one difficulty compounding the financial sector is the failure to correctly diagnose bank crises This failure results in the misapplication of corrective policy treatment There are two types of bank failure, a classic and a secondary failure Secondary failures are caused mainly by external macroeconomic events that management are unable to control Classic failures are caused by internal events such as reckless lending Classic failures are typically the product of banks that lack organisational control and accountability The research highlights a structural deficiency in the existing architecture of banking This deficiency creates an agency problem as bank executives are not held accountable for poor management, and supported by government during catastrophic failure This weak structural system fosters an autocratic management style The effects of external conditions such as a booming property market and deregulation, further creates an environment where excessive and unsustainable growth leads to crisis This study uses a combination of qualitative and quantitative research

ACKNOWLEDGMENTS

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CHAPTER 1

1 1Introduction

Charles Kindleberger wrote that, "Capitalism without failure is like religion without sin", (2009 61) As with religion, the banking system in Ireland has been the subject of much controversy The system experienced a shock wave so severe it crippled not only banking, but arguably pushed the State into insolvency Unable to refinance government debt, the State resorted to emergency financing from the IMF, relinquishing partial control over fiscal policy According to the World Bank, this is the 85th crisis the world has witnessed, (Persaud 2009)

This research is intended to diagnose the cause of the financial crisis in Ireland The diagnosis is based on a literature review of previous crises, a financial review of the Irish covered institutions, and, a semi-structured interview with key informants We explore how a system of banking can continue to repeat seemingly systemic collapse Understanding the type of crisis is critical in the diagnostic process, and, is important in recommending effective crisis resolution policies, (Marshall 2009) Our analysis of empirical evidence provides confirmation of a 'classic' banking failure occurring in Ireland The failure was caused by three primary factors

1) <u>The structural deficiencies</u> evident in the existing banking model Structural deficiency plays a key role in the principle-agent theory that has led to the ongoing moral hazard debate The history of Irish Banking will provide key insights to this issue

2) <u>The autocratic management style</u> that existed throughout the banking system This management style failed to recognise the warning signs, and, was unaware of the dangerous consequences of management decisions These actions have been repeated in history with similar consequences

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3) <u>The un-sustainability of growth</u> levels experienced in the banking industry Excessive growth rates have been synonymous with banking failure The financial analysis highlights the unsustainable excessive growth within the covered institutions

These represent the primary factors evidenced throughout the analysis

One of the recognised difficulties in completing this work has been the continual developments both in Ireland and globally in the financial industry As the continent wrestles with the Euro crisis, we continue to read new stories of problems within banking This is made ever more evident by recent developments at Barclays Bank surrounding the LIBOR scandal Every effort is made include the most relevant and up to date news stories as they impact the research

1 2 Structure

<u>Chapter 1</u> contains an introduction to the subject of bank failures

<u>Chapter 2</u> contains a critical literature review of a selection of banking failures, beginning with a brief history of money and banking in Ireland The literature review will look into some selected bank crisis beginning with the first Irish bank crisis of the 1820s This review will provide evidence of the importance of diagnosing financial crisis before attempting to assess the cause, and identify factors associated with bank failure

<u>Chapter 3</u> provides an analysis of banks and an understanding of capital adequacy, the key financial indicator of banks, and a study of the Basel accord

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An understanding of banking and credit, including the five elements of credit is explored

Chapter 4 includes an analysis of our methodology

Chapter 5 contains a financial analysis of the six covered institutions, Anglo Irish Bank, Bank of Ireland, Allied Irish Bank, EBS Bank, Irish Nationwide Building Society, and, Irish Life & Permanent Additionally, we will compare our financial analysis with banks that operated through the crisis that did not require government support This analysis will include Barclays Bank, Santander UK PLC, and CIBC, three banks that operated similar business models in comparable markets

Chapter 6 will conclude with key learnings taken from the research, including the literature review, the financial analysis, and the semi-structured interviews The developments of key factors that will help identify bank weakness The conclusion will outline key factors in bank failures, and the implications for various stakeholders in banking

Chapter 7 Appendix

1 3 Background to the Irish Banking Crisis

On September 28, 2008, the Irish Government signed into law, the Bank Guarantee which provided

> "With immediate effect a guarantee arrangement to safeguard all deposits (retail, commercial, institutional and interbank), covered bonds, senior debt and dated subordinated debt (lower tier II), with the following banks Allied Irish Bank, Bank of Ireland, Anglo Irish Bank, Irish Life and Permanent,

Irish Nationwide Building Society and the Educational Building Society and such specific subsidiaries as may be approved by Government following consultation with the Central Bank and the Financial Regulator", (Lenihan 2008).

According to Patrick Honohan, "the gross amount of liabilities guaranteed came to €365 billion, or almost 2.5 times GNP", (2007:27). Our analysis of the financial statements of the six covered institutions calculates the total liability at €508 billion at the financial year ending December 2008, and €487 billion at the end of 2007. See Fig. 1 Bank Guarantee Values, (extracted from the public financial reports for each of the six covered institutions). This analysis includes debt and subordinated debt which was not included in the report from Mr Honohan, but was covered by the government guarantee. This represented a clear understatement of the total liability

Fig. 1 Bank Guarantee Values

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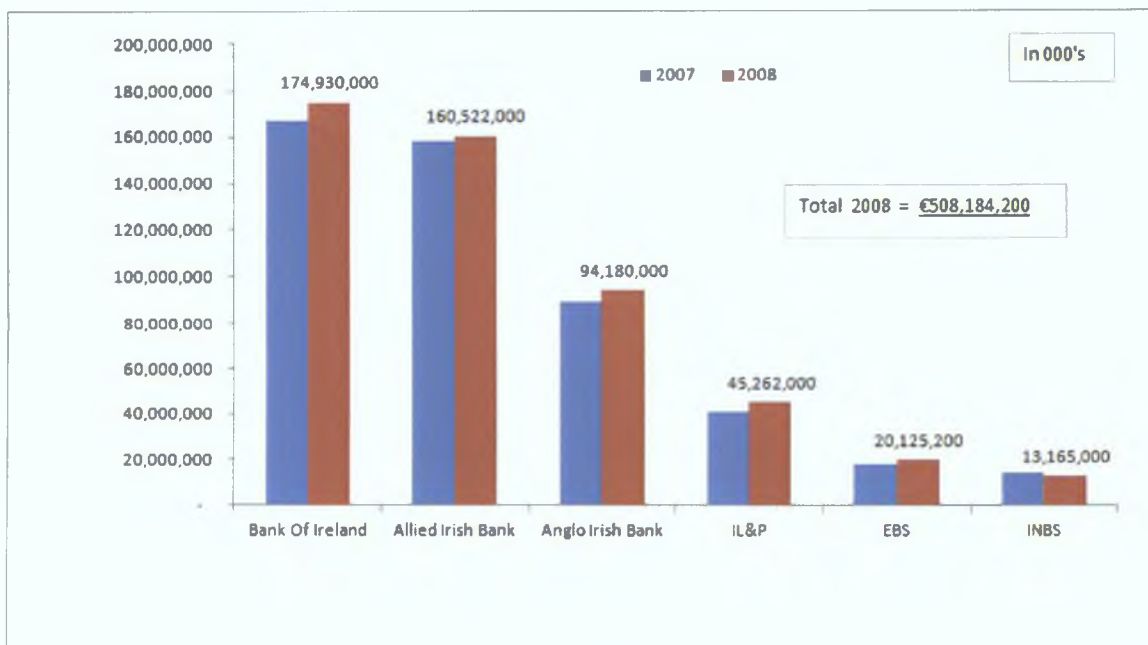
Fig. 1 Bank Guarantee Values

In 000's

Institution	2007	2008
Bank Of Ireland	166,992,000	174,930,000
Allied Irish Bank	158,168,000	160,522,000
Anglo Irish Bank	89,149,000	94,180,000
IL&P	40,557,000	45,262,000
EBS	18,137,800	20,125,200
INBS	14,491,600	13,165,000
Total	487,495,400	508,184,200

Source: Bank Annual Reports.

What became known as the government bank guarantee of covered institutions was followed by the failure of all six banks over the following two years. This failure caused Ireland to pay an estimated €60 billion of private bank debt in order to protect the entire banking system from collapse. Cebula et al. refers to bank failures occurring "when a bank is forced by regulators either to close or to merge with another banking institution" (2011:61). The failure of the banking system resulted in the transfer of risk from the privately owned financial institutions, to the public accounts. This transfer of liability created an overburden of debt on the Irish taxpayer. In November 2010 the Irish government agreed to an €85 billion IMF led emergency funding arrangement. The IMF partnership with the ECB and EU become lender of last resort. The Irish Times reported that the:

"Department Of Finance, the Central Bank and the NTMA will provide weekly, monthly and quarterly updates to the ECB, EU and IMF. The government will also consult them on any policies not consistent with the agreement" (2010:1)

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This represented an abdication of control of government fiscal policy to the IMF The Minister for Finance in revealing the government budget on December 7th, 2010 claimed

"Since I was appointed as Minister for Finance in May 2008, I have been dealing with the worst crisis in our history and one that has few international parallels' (Lenihan 2010)

Our research demonstrates the crisis has very clear parallels with historical events This appears to be a misdiagnosis from the onset

The Irish and Euro banking crisis represents the largest crisis to face both the Euro members and the Irish government, according to Jose Manuel-Barroso, the head of the European Commission

"Irish banking, whose history stretches back to the 1700s, now faces its biggest crisis ever Whether there will be a recognisable 'Irish' banking industry at the end of it will depend on the will of the industry, its customers, and the other major stakeholder, the state" (2011 1)

It is critical for these stakeholders to accurately diagnose the crisis before attempting to prescribe a solution

The build-up of debt and loss of confidence resulted in pressure for other banks and sovereigns in the Euro zone Greece, Portugal, and Spain, have sought Troika emergency funding due to the unavailability of liquidity in the open bond market The crisis in Spain has been complicated by debt laden insolvent banks Spanish banks have also experienced large losses driven by property lending In other markets, banks including Northern Rock, Royal Bank Of Scotland, Lloyds TSB, HBOS, Fortis, Dexia, and, Hypo Real Estate, have suffered failure in recent

times, (Pisani & Sapir, 2010), (Graafland & Van De Ven, 2011) These failures have resulted in the intervention of government funds and the transfer of risk from the banks to the taxpayer to protect depositors, (Kindleberger 2009) The threat of depositors leaving has always been a fundamental check on the responsibility of bankers, (Kindleberger 2010) The crisis in Ireland is not an isolated incident The banking systems both in Europe and the US have experienced stress and collapse

This study will explore and identify factors in the banking system that triggered the collapse In order to embark on this study, we begin with a literature review, starting with a brief history of banking While it would be ideal to include a study of all previous banking crises, we have limited the analysis to a selected group as they all have some relative connection to our study

CHAPTER 2

2 1 Literature Review

The literature review will begin by first understanding banking and the history of money The purpose of this review is to identify the deference between bank products (money), and bank activity According to Valentine & Mason, (1976 98) a bank performs three primary functions

1) Accept deposits from customers

2) Transfer of deposits from one account to another

3) Lending of money to customers

Money forms the basis for all banking activity As banking evolved, historical events in the region helped shape the practice of banking into what exists today Historical events also provided challenges and adversity which demanded adaptability for survival Many banks succeeded in the quest to survive and grow, while others failed The history of money is filled with tales of assertive uncompromising leaders, who challenged authority, and were aggressively autocratic in finding solutions This understanding is critical in our effort to correctly diagnose the crisis

The evolution of money begins with the trading of goats and sheep with barter trade in more primitive societies, (Coggan 1986) Davies 'History of Money' confirms that money did not have a single origin, but rather developed in different parts of the world at different stages Cowrie shells were used as coins in ancient China and Western Africa, (Rena 2007) Precious metals soon became a more convenient form of money When receipts for precious metals became easier to carry and trade than the gold itself, the world was introduced to finance The first coins were created by the Kings of Lydia in 600 BC, in present day Turkey, (Coggan 1986) Emperor Hien Tsung of China developed paper money in 806-

821 as a substitute for copper coins, (Rena 2007) The paper money was first used as a receipt for copper coins to pay off potential invaders from the north As more invaders arrived, hyperinflation ensued, with paper money loosing value due to an increased supply, (Rena 2007) By 1445 following many successive periods of hyperinflation, China abandoned the use of paper money, (Rena 2007) McGowan (1988) of the Irish Central Bank writes of Irish coinage 'They were first issued in Ireland by the Norse Settlement in Dublin during the 990s' (1988 23) While the origin of banking is not associated with a single event in history, Rena and Davies both argue that ancient Mesopotamia in modern Greece saw the creation of banking The Royal Palace and Temple was used to store grain and various other commodities The receipts for grain were traded on a secondary basis, resulting in the earliest forms of bills of exchange In 1272 King Edward I granted land in London to Italian goldsmiths who traded in gold and silver The goldsmiths used benches on open streets to trade, and the word bank was derived from 'banco' Italian for bench, (Coggan 1986) At Mount Hira in Mecca where Prophet Muhammad received divine revelations of Islam in 610, the city was bustling with trade Wealthy businessmen would deposit their valuables, gold and silver for safe keeping However one of the Prophets companions Az-Zubair refused to hold wealth as a deposit for fear it would be lost, and rather treated the deposit as a loan, 'qard', which would be repaid when the owner returned with interest, or 'riba', (Haron et al 2009 48) The use of cheques was introduced in Iraq in 1010, with markets accepting notes written by money lenders in return for goods at market, (Haron et al 2009) Banking became a major industry in the 1340's with the Medici family Ferguson portrays the Medici brothers as more like gangsters than bankers, "between 1343 and 1360 no fewer than five Medici were sentenced to death for capital crimes" (2008 42) As the bank developed in later years, it formed a solid reputation for trading in bills of exchange, and as a currency trader The regulator of the day was the Catholic Church which condemned the charging of interest The Medici family overcame this by trading bills of exchange at discounts in return for

outstanding loans, circumventing the regulator By 1458 the family had become so powerful that the Pope Pius II claimed of the family

> "Political questions are settled at his house, the man he chooses holds office, he it is who decides peace or war and controls the law He is King in everything but name" (Ferguson 2003 46)

The Medici family was a reflection of the Roman totalitarian style of leadership

According to Girardone & Molyneux (2006 4), a bank is a financial intermediary whose core activity is to provide loans to borrowers and to collect deposits from savers In 2006 Amy Kalar references Karl Marx who declared

> "Not even the bones of the saints were exempt from being converted into the colourless quality-less thing, Money" (2006 71)

Kalar also quotes George Simmel's book The Philosophy of Money (1978) Simmel discusses the transition from barter to money Moving society from an emotional society where people trade gifts and actions in the form of goats, wives and labour, to an intellectual society where people use money, while providing a benefit of calculability, divisibility and exactitude The transition expanded social distance according to Simmel, as money provided a more utilitarian approach to trade Simmel, along with Marx, describe money as a new world of sterility and soullessness

History illustrates the key fact that money evolved from many different cultures over time It continues to evolve and reshape in recent history with the creation of new currencies' such as the Euro Additionally new financial products continue to evolve in the form of derivatives, securitisation, credit default swaps, collateralised debt obligations etc As we diagnose the crisis, it is important to

distinguish evolving product, from the actions and activities that cause bank failure

2 2 Banking in Ireland, a Brief History

In Ireland, banking can be traced back to the 1670s when C Hoare & Co established a bank in Ireland, as an offshoot of their UK bank established by Sir Richard Hoare (Barrow 1975) Hoare originally started his business life as a Goldsmith in the 1650s in London He began trading receipts and bills of exchange with customers gold deposits An original director of the South Sea Company, Hoare sought out wealthy well connected customers as clientele, (Laurence 2008) Customers consisted mainly of landed aristocrats and gentry, MP's and office holders, and clergy In Ireland the business was bought by Pike's Bank (Cork) in 1740 Pike's bank closed in 1826 when the bank stock was transferred to The Bank of Ireland, (Laurence 2008)

In 1709 the term bank first appeared in Irish law where notes issued by any

> "Banker, goldsmith, merchant or trader which were payable to any person or persons, his her or their order, shall be assignable or endorsable over in the same manner as inland bills of exchange", (Barrow 1975 1)

This provided a new level of trade above merchant trade, which formed the beginning of the Irish banking system In 1782, the Irish Parliament passed an act which authorised the issuance of bonds which created the formation of the Bank of Ireland, (Barrow 1975) Similar acts had passed in England (1708 Bank of England Act) and Scotland (1695 Bank of Scotland Act) The bank operated from its head office on College Green The building built in 1739 was previously the Parliament building until the Home Rule Act of 1801 The building reflected the prominence and importance of the bank in society The bank commanded power, and operated under the control of an autocratic British government The

bank charter specifically required all other banks in Ireland involved in note issuance were restricted to partnership structures, (Hickson & Turner 2005) The number of partners was limited to 6 The restriction on shareholders resulted in small numbers of banks The limited partnership structure created a weak shareholder base which provided vulnerabilities There were approximately 11 private partnership banks in 1800 in Ireland according to Hickson A Turner, however this number grew A number of these banks failed due to poor management Newcomen's Bank failed in 1722 due to 'slovenly and wasteful management' Alexander's Bank failed in 1820 due to heavy loan losses Roche's Bank Cork failed due to poor property loans Munster Bank failed due to loans made to the owners which went unpaid, (Hickson & Turner, 2005)

There is a history of poor management and lending throughout the private partnership era, with a degree of autocratic management style resulting in poor lending decisions For more detail on the private partnership banks see Appendix A

In the 1820s the industry experienced its first crisis with seven out of fourteen banks closing in just two weeks, (Barrow 1975) While some authors have attributed the banking crisis a result of the depression which followed the end of the Napoleonic Wars, (Hickson & Turner 2005), it was also argued that both the legal structure and the behaviour of the banks were a primary cause, (Barrow 1975) The Bank of Ireland provided the only security in this difficult time period, jostling between the Bagehot Principle as it operated as a quasi-lender of last resort, and avoiding evolving into a Central Bank under Charles Goodhart's Evolution of Central Banks The banking crisis was accelerated by a loss of confidence in the system brought about by business failure Once confidence was lost, customers created a run on the banks which were unable to liquidate their positions

According to Barrow

> "Sound banking required that the volume of liabilities on which payment would be demanded at any one time be balanced by the volume of assets then available in liquid form A sudden extraordinary increase in demand for payment beyond the level of liquid assets on hand would leave the bank dependent for its survival on its ability to borrow enough to make up the difference until sufficient assets matured", (1975 200)

The government responded with The Bank of Ireland Restriction Act (1821) which increased the partner quota system It was not until the Banking Co-partnership Regulation Act (1825) that enabled the joint stock bank structure, did the banking sector recover From this period through 1880, there were approximately eight large banks operating in Ireland, as joint stock companies, (Barrow 1975) They became limited liability companies in 1880, (Hickson & Turner, 2005) The joint stock banks included

- Agricultural & Commercial Bank
- Belfast Banking Company
- Hibernian Banking Company
- National Bank of Ireland
- Northern Banking Company
- Provincial Banking Company
- Royal Bank of Ireland
- Ulster Banking Company

From 1880 through 1922 when the Irish Free State was established, the bulk of banks converted to limited liability banks The joint stock bank structure was an important period in the history of banking in Ireland The structure provided

unlimited liability to shareholders to losses incurred at the bank This encouraged active management of daily operations That liability extended to 3 years after the sale of shares, which prevented shareholders from dumping shares in times of distress This eliminated the agency problem that exists today, Jensen & Meckling (1976) The Joint stock system was an important era in the history of Irish banking, as the unlimited liability of shareholders was linked directly to the security of depositors Shareholders were closely involved in the governance of the banks of joint stock companies (Hickson & Turner 2005) The 1836 Select Committee on Joint Stock Banks claimed that the structure of limited liability of shareholders while providing good security by having shareholders with prominent wealth supporting the bank also had the potential of limiting the expansion of banks The potential to limit expansion arose, as wealthy shareholders would be discouraged from owning shared in an unlimited liability capacity The reality was, however, that the banks expanded (Newton & Cottrell 1998) The joint stock bank structure saw an expansion of banks in the UK in the same period There are elements of the joint stock structure that eliminate the agency problem Economists have long argued that separation of control of shareholders from a firms operations, leads to agency problems (Jensen & Meckling 1976) The loss to shareholders under bank failure can be less than the total loss to depositors, or even taxpayers, (Walker 2009) The larger a bank grows, the more hierarchical the levels between operating agent and principle agent become (Ramskogler 2011) Additionally, banks increase risk taking with the knowledge they will be saved, securing depositors, (Mishkin 1997) It is not clear why we moved away from the joint stock structure The structure provided a system of control and accountability that does not exist in banking today

There was one significant noteworthy bank failure during the joint stock bank era The Agricultural & Commercial Bank failed in 1836 The main activities included discounting bills of low quality, and lending for small merchants and farmers The bank had a large number of shareholders, between 20,000 and 30,000 It was

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claimed that these shareholders were not wealthy individuals, and had limited resources, (Hickson & Turner 2005) The bank collapsed when the Bank of Ireland refused to buy its paper and the shareholders were unable to raise sufficient capital The structure of the bank was not at issue Confidence in the bank was lost

"In the nature of banking, demand liabilities were balanced by assets due at a later date the gap was bridged by public confidence, and this is what the Agricultural Bank lost", (Barrow 1975 49)

In 1836 the Bankers Magazine in describing the management of the bank

"Issues were unlimited and unchecked, the discounts were profuse, the advances without security, extraordinary for their liberality", (Hickson, & Turner 2005 185)

The Banking Magazine reported that the failure of the bank was due to poor management, with poor documentation, poorly attended board meetings, and a lack of banking experience It should also be noted that all depositors were paid in full, and the only loss was to shareholders, (Hickson & Turner 2005 183) Padraig McGowan Of The Central bank of Ireland said of the collapse of Agricultural & Commercial Bank

"It failed because of lack of planning and foresight by the promoters, shareholders of limited means, unsuitable management and staff, misappropriation of funds, reckless lending and record keeping that did not keep track of the amount of currency notes that were put into circulation mainly on a commission basis", (1988 21)

It is clear that the structure of the bank was not at issue, rather the poor management of the bank. Further analysis and research into the management of the Agricultural & Commercial Bank would assist in determining if an autocratic management style prevailed.

The collapse of the Agricultural Bank saw two banks emerge, Southern Bank of Ireland, and, Provident Bank of Ireland, both banks were short lived. Munster Bank was another joint stock bank that failed due to poor management. Unpaid director loans made for property speculation was given as the primary cause of failure. The history of the joint stock bank era is documented in Appendix B The History of Joint Stock Banks.

The Irish banking industry remained largely unchanged through the 1950s (O'Sullivan & Kennedy 2007). The period through 1978 saw significant change in the banking environment with the push to enter the European economic block and monetary regime. The industry saw significant consolidation in an effort to become more competitive and improve efficiencies from external threats, (Leonardi 2005:158). This period saw the emergence of two dominant banks in Ireland, AIB and BOI. Appendix C contains a brief summary of the six covered institutions.

Empirical evidence from our analysis of history provides two striking factors:

1) The failure of banks is consistent with poor management decision making at the highest level. An autocratic management style is pervasive in Irish banking institution as far back as the 1800s.

2) The system of the joint stock banks provided a structure of control and accountability. This structure was a robust model that had much

success, with the exception of a limited number of poorly managed institutions

2 3 Analysis of Selective International Bank Failures

In this section we examine a number of banking failures in international markets As banking systems have failed in similar catastrophic fashion through history we plan to extract some key learnings in the literature review of historical international banking failures The historical evidence will show how accurately diagnosing a bank failure is critically important This diagnosis involves identifying internal versus external factors affecting a bank Identifying internal and external factors will assist in categorising an event as either a classic crisis or a secondary crisis A correct diagnosis will enable the application of appropriate corrective policy (Marshall 2009)

2 4 The Argentinean Crisis

The financial crisis that shook Argentina during the period 2000 to 2002 created a significant negative impact on the country With unemployment over 30%, poverty at 37% and interest rates over five times the international average (Katz 2001) It is acknowledged that the region of Latin America suffered numerous economic crises, such as Mexico 1994, Brazil 1998, Venezuela 1994, Ecuador 1999, Peru 1998, and Uruguay 2002 etc (Kindleberger 2009) It should be noted that these financial crises contained both commercial banking failure, and sovereign currency failure (Marshall 2009) Marshall confirms the significant literature on the correlation between banking and currency crisis, noting that while there is a degree of interaction between the two, they are different and separate events The Argentina crisis for example contained both banking and currency crisis The Brazil crisis of 1998 was limited to a currency crisis This is an important distinction in our analysis of banking crisis Both Marshall and Kindleberger also identify two types of banking crisis

1) Classic banking crisis are caused by internal banking failures

2) Secondary banking crisis are caused by external forces

The Argentinean bank crisis was an example of a secondary crisis, Marshall (2009) Marshall contends that external factors generally include macroeconomic events, such as currency movements, international funding costs etc The author supports the theory that external factors can also include microeconomic events such as asset price inflation, unemployment etc This is supported by the global interconnectedness of the financial system In Argentina, the external force of a currency crisis provided the catalyst to the banking industry resulting with the population moving deposits outside the country for fear of currency devaluation The capital flight that occurred depleted the available capital within the main Argentinean banks resulting in their insolvency An action the bank management could not avoid or control Many economists agree that identifying the difference between a classical and a secondary banking crisis is critical, particularly when attempting to navigate through the crisis and select the appropriate corrective action Marshall notes that resolving a classic banking failure is significantly more complex than a secondary failure The Inter American Development Bank has developed two principles for dealing with classic bank failures (Marshall 2009)

1) Ensure the parties that have benefited the most from the risk taking activities of the banking business bear a large portion of the cost of restructuring the banking system

2) Prompt action should be taken to prevent problem institutions from extending credit to highly risky borrowers, (2009 669 690)

These principles are of critical importance when compared to the history of Irish Banking The joint stock structure clearly addresses the first principle The joint stock structure provided shareholders with unlimited liability They reaped the rewards during profit, and incurred unlimited liability during loss

Comparing this analysis to the Irish bank crisis provides instructive data in understanding how the Irish crisis was diagnosed In the 2010 budget speech, Brian Lenihan stated

"It is clear to us all what went wrong in our economy In the period leading up to the crisis, the construction sector and property prices grew to unsustainable levels The appetite of a rampant building industry for labour and other resources put upward pressure on our cost structure As a result, our competitiveness was damaged and we lost market share for our goods and services Excessive public spending on the back of the enviable but transient taxes of the boom added to the overheating of the economy A huge expansion in bank borrowing for property and construction-related investment was the final and most lethal domestic ingredient in the causes of our crisis The international financial crisis added pace and severity', (Lenihan 2010 1)

Mr Lenihan looks at external forces as root cause in his explanation above In what appears to be a misdiagnosis of a secondary banking crisis He clearly ignored the internal factors of poor decision making, resulting in a classic crisis as the real diagnosis This determination was critical when applying corrective action See Appendix F for the author's personal perspective on the Argentinean crisis In summary, it is critically important to correctly diagnose the type of banking crisis

2 5 US Bank Failures 1920-1930

A number of Banks failed before the great depression of 1930 The collapse of the City Bank of Buffalo in 1840 which failed due to losses incurred on loans to the president and other officers and directors in the bank, (Thies & Gerlowski 1989) The establishment of the Federal Deposit Insurance Corporation (FDIC) in the US in 1933 after the Great Depression followed a series of bank failures These banks failed mainly due to poor lending decisions, and, inappropriate or speculative activity undertaken by senior management (Thies & Gerlowski 1989) Prior to the establishment of the FDIC, there were various state run deposit insurance programs established to protect depositors In 1829 the State of New York enacted the Safety Fund to protect depositors (Thies & Gerlowski, 1989) By 1842 the fund was depleted as a result of 11 failed banks identified by the state examiner as providing 'reckless lending' which included loans to management for the purpose of speculating on the stock exchange

Other states including Vermont and Michigan operated state insurance funds during the period of 1836 to1860, all of which failed due to losses incurred as a result of failed banks engaging in reckless lending, (Thies & Gerlowski 1989) In the period leading up to 1920, many other states provided insurance funds but ultimately became depleted due to recklessness Columbia Bank and Trust Company of Oklahoma failed in 1909 due to losses on loans made to senior management in property and oil speculation This failure also caused the deposit insurance fund in the State of Oklahoma to collapse The history of deposit insurance funds leading up to the great depression was poor, with many states attempting to provide deposit insurance funds which were ultimately depleted by banks failing due to reckless lending

The 1920's saw a period of economic prosperity which culminated in the collapse of the stock market in October 1929, (Romer 1989) What followed in the 1930

was the onslaught of a major banking failure forcing the federal government to move to enact law to protect depositors

The Banking crisis of the 1930's can be traced to the city of Chicago, (Calomiris & Mason 1997), which experienced "panic resulted from location-specific asset shocks that were relevant for bank portfolios" (1997 864) A chain of banks owned by John Bain had failed due to significant unpaid loans incurred by Mr Bain in his real estate development It was noted that due to the volume of banks failing in short succession, many solvent banks were also subject to failure due to the panic and fear (Calomiris & Mason 1997) Calomiris & Mason concludes that "failures during the depression were a consequence of contagion, rather than the insolvency of individual banks" (1997 867) On the other hand, Temin (1976) claims the failure of banks in the period of the 1930's was a result of falling incomes from farmers with his "spending hypothesis', where Stauffer, (1981), contends the bank failures were a result of the failures of the 1920s

Accounting for these various hypotheses, the common factor for these failures was reckless lending at a senior level The actions of senior bank officials at Bain, City of Buffalo, and Columbia Bank and Trust, and many other institutions, all allude to poor management decisions Failure was driven by an attempt to take company funds and speculate for gain In 1799 the US passed law making it illegal for bank managers to borrow bank funds for personal gain (Kindleberger 2009 162) These bank failures are not a new phenomenon Poor management decisions and a lack of control and accountability is evident throughout the history of US bank failure

With the establishment of the FDIC in 1933, the bank failure rate declined considerably Fig 2 shows the number of bank failures in the US since the establishment of the FDIC

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Fig. 2 US Bank Failures (FDIC)
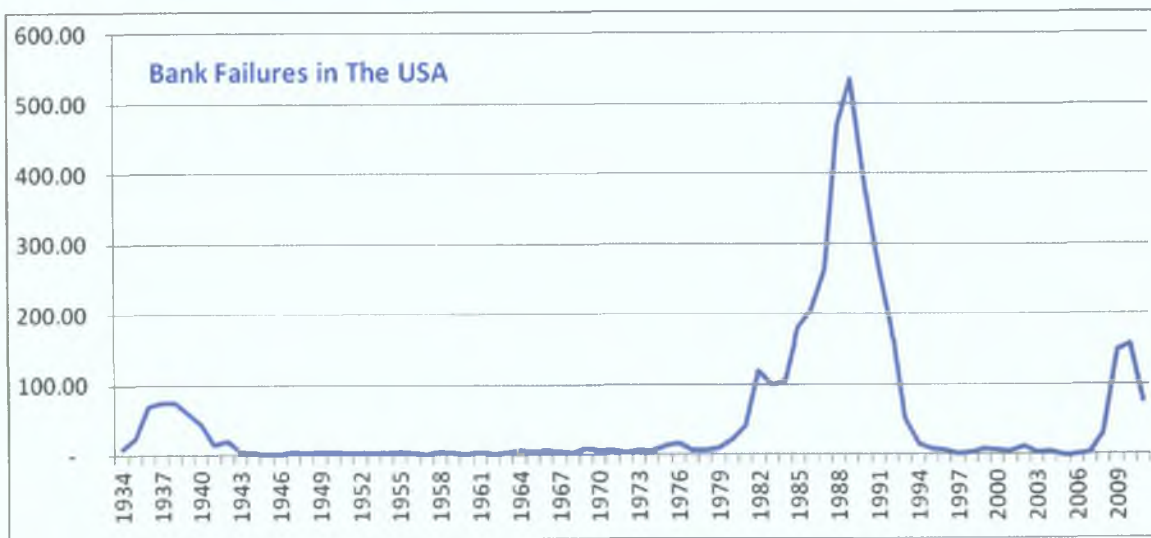
Is it possible that the creation of a state wide deposit insurance programme was the solution to bank failure in the US?

2.6 The Japanese Crisis

In Japan during the period of the 1990s, the banking sector was shaken by a major shift in the economy, resulting in insolvency at Japan's banks. What became one of the costliest banking crisis ever, an estimated 24% of GDP in bank support, (Kindleberger 2009). In the lead up to these failures, Japan witnessed a significant asset appreciation in its domestic market (Kindleberger 2009). The asset increase had been created following an increase in the flow of capital driven by a booming economy in Japan in the 1980s. With lower interest rates in Japan, and a strong export market for Japanese firms, the build up in profits were funnelled into the domestic property market causing property appreciation between 1985 and 1989 (Schnabl & Hoffman 2008). An extreme example of this was the valuation of the Imperial Palace in Tokyo, residence to the Emperor of Japan, which exceeded the value of all the real estate in the whole of the State of California (Schnabl & Starbatty, 1998:99:13). The Central Bank of Japan 'CBOJ' struggled to contain the property appreciation. Between

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1988 and 1990 they increased the primary interest rates from 2% to above 6%, see Fig 3 below

Fig 3 Interest Rates in Japan

JAPAN INTEREST RATE
Benchmark Interest Rate

SOURCE WWW TRADINGECONOMICS COM | BANK OF JAPAN
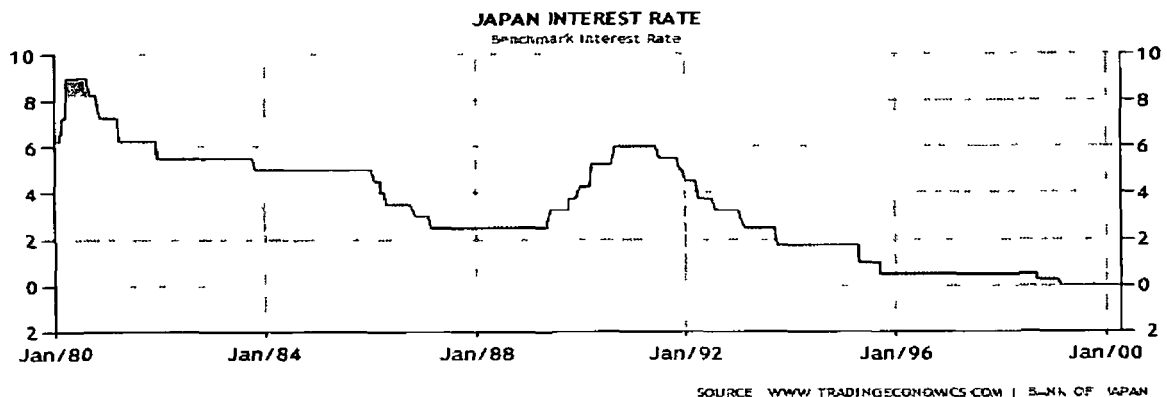
Source TradingEconomics com

As the interest rates increased in the early 1990s, the property market experienced a severe correction beginning in 1991 When property prices collapsed, both commercial and consumer loans began defaulting rapidly The CBOJ was forced to reduce interest rates in an effort to stimulate the economy The crisis was caused by a sudden fall in asset quality in the underlying property market in Japan, resulting in delinquency and impairment of loans to rise sharply There were two forces at play in Japan An external force of a booming economy, low interest rates, and a booming property market was evident The second internal force of poor lending decisions, and a poor structure with lax control was evident

Some analysts apportion responsibility to the ruling Liberal Democratic Party, (Imai 2009) Imai claims the government tended to delay taking action on banks in prefectures that supported the government The additional practice of 'ever-greening' bad loans was popular in Japan This involved banks avoiding losses by pushing out payments in an effort to reserve loan values on balance sheets (Imai 2009) Brown & Dinc (2005) supports the theory that senior members of the government influenced decisions made by regulatory bodies to act on insolvent

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banks, (see Appendix D for details) Another remarkable aspect of banking and business in Japan is the practice known as 'Amakudari' (Asano & Eto 2005), which was supported by the LDP The Amakudari is a system where regulators and government officials retire by taking senior posts in private business, including banks Research has proven that banks who participated in the Amakudari system behaved in a non-prudential manner (Asano & Eto 2005) This system does not enable a structure of control and accountability to exist, as politics plays a role in management decision making The US prohibits regulators from joining banks for 12 months (Caprio & Honohan 1999) The LDP was a right of centre conservative party formed in 1955, and held power in Japan, losing its majority in 1993 (Krauss & Pekkanen 2010)

The LDP in Japan can be compared closely to the Fianna Fail Party in Ireland who also held power for long periods before and during the financial crisis, and had ties to business The CBOJ was forced to protect over 20 banks including the Long Term Credit Bank of Japan (LTCB), with over $20 billion of loan losses In 1997 the government created the Resolution Collection Corporation, under the Takenaka Plan Heizo Takenaka who was the Chief of the CBOJ, moved assets under other financial institutions Similar to NAMA, this was not the first time in history such a mechanism was created The Reconstruction Finance Corporation in the US in 1932, the Istituto per la Ricostruzione Industriale in Italy in 1933 are earlier examples (Kindleberger 2005 19)

The Japanese crisis contains strong parallels with the failures in Irish banking The Japanese system of banking was lacking in control and accountability, with strong government influencing factors

2 7 The Asian Crisis

The Asian bank crisis of 1995 to 1997 saw a number of countries in South Asia seek assistance from the IMF, in a similar pattern to what is presently being experienced in Europe today Thailand, Indonesia, South Korea all received emergency funding of $17 billion, $33 billion, and $57 billion respectively Zheng & Tang, (2009) argue that a weak financial regulatory environment and poor banking supervision lead to the crisis Additionally, Caprio (1998) apportions responsibility in Asia to the low quality of banking supervision and regulation Rahman, et al (2004), contend the bank failures in Asia were a result of poor credit decisions with over $200 billion of bad loans in those countries that sought IMF assistance Rahman et al (2004) refer to the CAMEL framework of analysing a banks solvency which examines capital adequacy, asset quality, management quality, profitability and liquidity, and highlights both management quality and asset quality as major contributory factors in the Asian crisis Nunnenkamp (1998), in analysing the Asian crisis for the IMF contends that the Asian crisis can be attributed to the sudden shift from enthusiasm to panic, and notes that the critical issue was to restore confidence The Asian crisis was similar to the crisis in Japan There were external and internal factors involved in both crises Both events can be categorised as classic bank failures with internal management decision making as the primary cause

2 8 The Norwegian Crisis

The Norwegian crisis was similar to a number of other global banking failures in the sequence of events They include liberalisation of banking regulation, reduction in the government controlled interest rates, followed by excessive increases in lending by banks, followed by a significant increase in asset valuations, followed by a bust, (Vale 2005) In 1986 the banking regulator was merged with the Insurance Regulator in Norway, and a move towards offsite documentary bank inspections replaced more rigorous onsite inspections (Vale 2005) Between 1984 and 1986 the annual growth of bank loans in Norway was

above 20% for all but one quarter, (Vale 2005) This dramatic increase in loan value was also reflected in the residential and commercial property market This is similar to the growth rates experienced at Irish institutions, and the Irish property market Knutsen & Lie (2002) contend, the banks managerial driven strategies of growth maximisation, created a herd like mentality that ultimately resulted in poor credit decision making, causing insolvency in a contracting economy While the strategies seemed successful in an expanding marketplace, once GDP growth stalled, loan losses grew The managerial strategies were driven by an organisational shift in control to marketing and sales, in order to achieve growth Prudent underwriting took a back seat to sales expansion These factors are indicators of a classic banking crisis The government restrictions on banking included limits to lending growth, and restrictions to lending profiles Once the restrictions were lifted, the banks became competitive Unfamiliar with this new environment, the banks focused on building market share (Vale 2005) With a fragmented banking industry of 193 domestic banks in 1987, and a population similar to that of Ireland, competition was fierce The herd mentality was clearly evident, and it was suggested that inexperienced bank managers were unfamiliar with the new regulatory environment led by autocratic bank leaders, proved problematic (Vale 2005) Similar trends were experienced in Ireland The Norwegian bank crisis was caused by internal factors A classic crisis as a result of poor control and no accountability is evident The external factors created a regulatory environment that fuelled unsustainable growth Norwegian banks grew by more than 20%, similar to that experienced in Ireland

2 9 US Savings & Loan Crisis

The FDIC data indicates that 747 banks failed in the Savings & Loan crisis The crisis may cost the US taxpayer over $200 billion (Glasberg & Skidmore 1998) Banks became organisationally structured and motivated to engage in activities that were theoretically fraudulent Lending on real estate speculation became an industry practice, and regulators through passed audits essentially endorsed

speculative, and reckless lending (Glasberg & Skidmore 1998) Analysis indicated that the continued delay of regulators to act swiftly on closing insolvent banks once the problem became known, further damaged the banking system, (Kane 1989) The Depositary Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA) increased the insurance on deposits from $40,000 to $100,000 This created a competitive environment in the industry that caused banks to increase rates for deposit funds, (Shoven et al 1992) Decisions based on the knowledge that both depositors were insured, and would ultimately be protected from loss, created an increased cost to interest rates, returning to the moral hazard question (Kane 2003)

2 10 The Icelandic Crisis

The banking crisis in Iceland in October 2008 resulted in three of the five commercial banks in Iceland collapsing The banks had grown in size fuelled mainly by short term interbank funding This wholesale funding model, similar to Northern Rock, accounted for 75% of total capital requirements for the three large banks (Landsbanki, Glitni, and Kaupthing Bank) The banks had invested this short term capital in speculative offshore investments While a lot of these investments continue to hold value, the immediate contraction in the wholesale funding market created a strain on these banks forcing the government to take action Some observers blame the collapse of Lehman's in September 2008 as the catalyst that created a contraction in the wholesale market It is also apparent that the size of the three failed banks which reached over $168 billion, or 14 times the size of total GDP for Iceland, was partially responsible (Jackson 2010) The unsustainable growth of the Icelandic banks, driven by management desire to grow, was the primary cause of their downfall (Pisani-Ferry & Sapir 2010)

2 11 The UK Crisis

In September 2007, the Northern Rock Bank experienced a 'run' where depositors withdraw their money in fear of insolvency Not since 1866 had the UK experienced such activity, when Overend Gurney Bank, (Shin 2009), (Kindleberger 2009) The problem with Northern Rock was the fragile nature of its funding, coupled by an aggressive growth strategy, (Shin 2009) Between 1998 and 2007 the bank had an annual growth rate of 23% The bank became reliant on short term wholesale institutional funding, which accounted for 25% of its total capital before the crisis During the crisis, this wholesale funding almost vanished The UK government ultimately stepped in to protect depositors who were growing increasingly concerned and had ultimately lost confidence The Independent Commission on Banking set up by the UK government issued a report in September 2011 found that there were two primary causes of the UK banking crisis

1) A concentration on capital ratios, ignored a ballooning leverage ratio problem within the banking system, where leverage ratios were forty times, or more than twice the historical average, and risk weighted assets ratios became meaningless when asset risks were miscalculated

2) Bank debt, once considered a form of equity was unable to absorb loss due to the contagion issue This was a flaw in the structure

The commission proposes structural change, separating retail banking from investment banking This would ring-fence retail activity from investment activity, and, higher levels of loss-absorbing capital The Basel III Accord was deemed insufficient in protecting banks from future loss, quoting ratios nearer 20% as more adequately sufficient The recommendation to separate out the bank structures, along the lines of the Glass-Steagall Act of 1933, would not have

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prevented Anglo Irish Bank from failure. There are strong parallels to the Irish banking crisis. Unsustainable growth levels and excessive debt are evident in Ireland and Northern Rock. An over reliance on conforming to capital adequacy was also evident in both Ireland and Northern Rock. While it is important to acknowledge the failure of Basel and capital adequacy ratios, the IBC did not go far enough. A sound structure of control and accountability is needed within the banking sector, both retail and investment. Additionally, a mechanism controlling the growth of balance sheets would prevent excessive growth in the future. See Appendix F for more detail on the IBC findings.

2.12 Crisis in Ireland

The problems experienced in Iceland and at Northern Rock, are similar to what we experienced in Ireland. The banks' balance sheet size in Ireland had increased significantly as Fig. 4 indicates (ECB).

Fig. 4 Bank Balance Sheet (in billions)
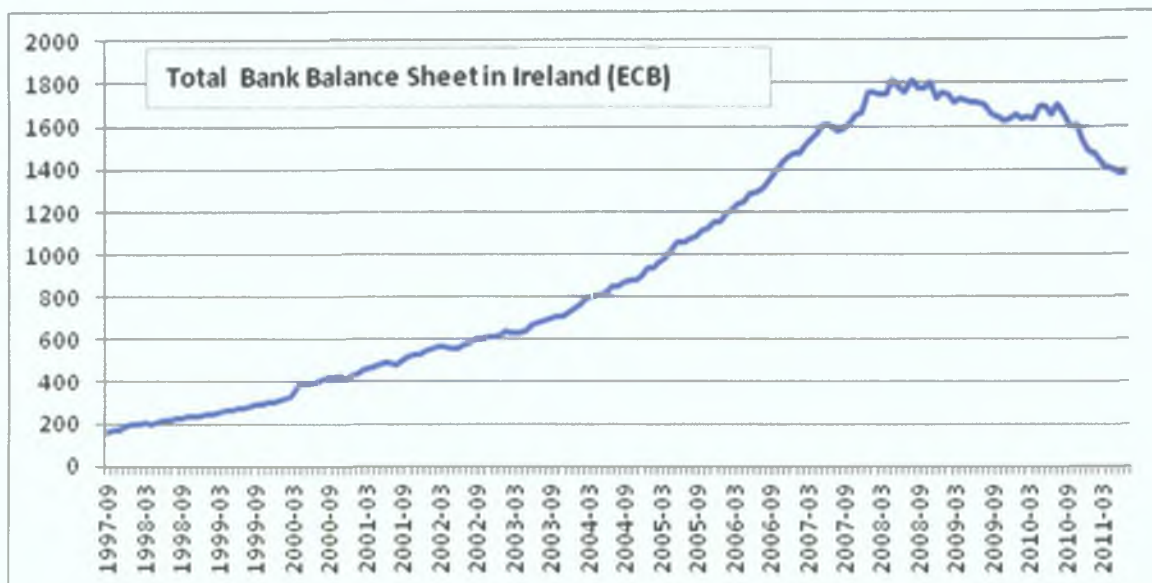
The balance sheets grew to 1.8 trillion Euros in November 2008, compared with a GDP of 184 billion Euros, or 9.7 times the size of the entire economy. The

government was unable to support the banking system, as was the case in Iceland. This is clear evidence of unsustainable growth.

In comparison, GDP growth in Ireland, while increasing, was not as dramatic. The National Debt remained static through the end of 2007, see Fig. 5

Fig. 5 GDP and National Debt in 000's
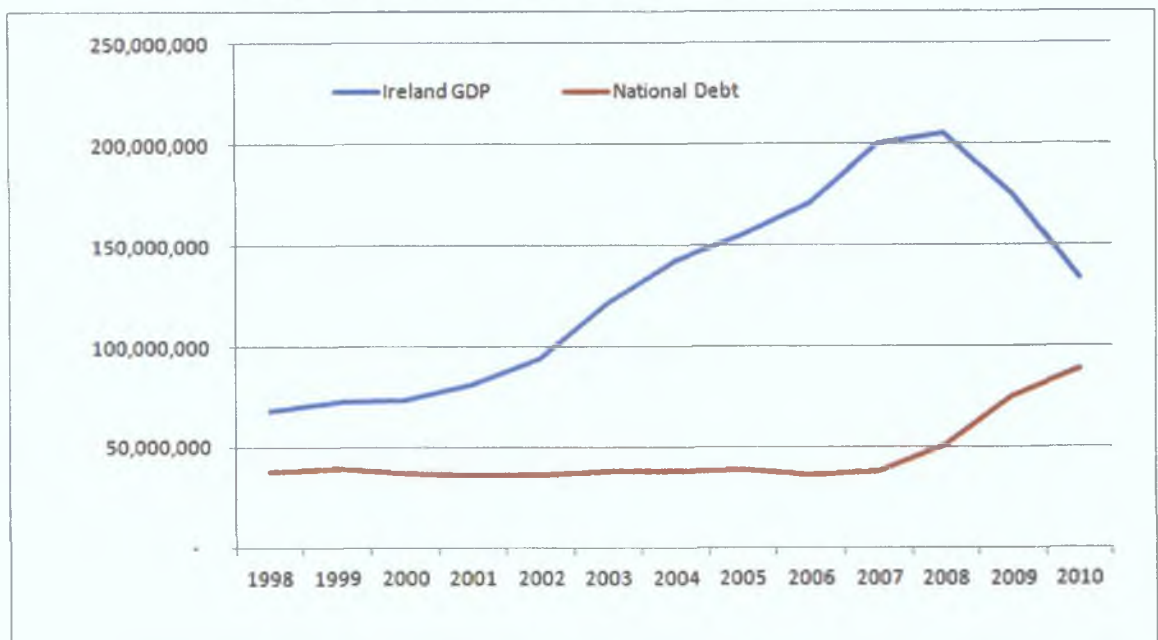
Fig. 4 & 5 are important in understanding the level of unsustainable growth witnessed in Ireland between 1998 and 2007, bank balance sheet growth was greater than GDP growth.

A number of reports were commissioned following the crisis. In March 2011, Patrick Honohan completed a report on the Banking Crisis which became known as the Honohan Report. In 2010, Klaus Regling and Max Watson compiled a report on behalf of the Minister for Finance Brian Lenihan titled A Preliminary Report on The Sources of Ireland's Banking Crisis. In March 2011 Patrick Nyberg completed a report titled Misjudging Risk: Causes of The Systemic Banking

Crisis in Ireland These reports contain numerous observations and explanations regarding the financial crisis

The Nyberg Report identifies a number of key elements leading to the cause of the Irish Banking crisis They include systemic failure of customers in judging true property values, failure of banks to understand true credit quality of customers, failure of investors providing funding to banks in understanding the true nature of risk involved in those banks, failure of a regulator in understanding the changing market risk within the banks, failure of a government in managing the regulator, failure of parliament in recognising the mounting problems, and a failure of media in fully understanding the developing problem, (Nyberg 2011 11) Nyberg also apportions responsibility to what he describes "the presence of a strong personality acting as Chairman, CEO or Executive Director" (2011 48)

The Regling & Watson report found that serious governance issues were breached in at least one major Irish financial institution, and reckless lending, and fraudulent accounting was in operation at some banks Additionally they point out that the regulator should have known about these activities were prudent auditing measures in place, therefore apportioning responsibility to the regulator

The Honohan Report claims the bank management as the first line of defence to protect depositors and investors He also apportions responsibility to intermediaries such as mortgage brokers and auditors He comes down on the central bank in providing key protection in any national system against the emergence of a banking crisis The report claimed that the central bank "supervisory practice focussed on verifying governance and risk management models rather than attempting an independent assessment of risk" (2009 8) Poor regulation driven by a lack of skilled personnel, due to poor wages, was also a factor (Welfens, 2008)

Nyberg looks at 'group think' and a 'herd like' mentality, supported by an overheated property market, and an imbalance of capital funding, as a root cause of the financial calamity. The chart in Fig. 6 shows the Irish property market from the period 1996 to 2010.

Fig. 6 Irish Property Index
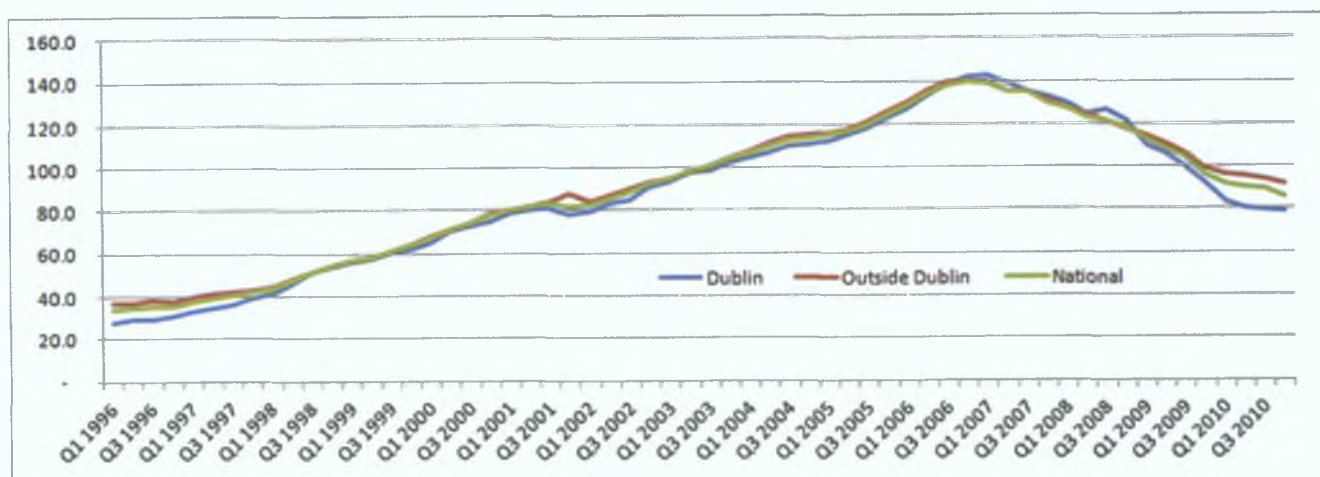
Source: CSO Irish Property Index

The chart from the CSO portrays a clear and sharp rise in property prices in Ireland in the run up to 2007. The market was seeing double-digit increases; these increases should have sounded warnings to the government of an overheating economy. The Nyberg (2010 pp 17) report notes that:

"The rate of increase in property lending was markedly more rapid in Ireland than, for instance, in the UK relative to GDP. The aggregate of the property-related lending to residents by domestic banks stood at over 147% of GDP at the end of 2008 compared to less than 106% of GDP for the UK domestic banking industry"

Patrick Honohan (2010) also alludes to the property boom which was dramatic by international standards, and claims more attention should have been given to the Morgan Kelly warnings in 2007. The Nyberg report finds that banks became

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focused on growth and revenue, and this change in strategy was not addressed in the core governance of risk for the banks resulting in a relaxation of controls

It is clear that Ireland experienced a classic banking crisis Poor internal management decisions were made without control or accountability The structure of banks in Ireland has facilitated a system that has poor planning, control and accountability

2 13 Crisis in the US

The issuance of the Irish bank guarantee in September 2008 occurred in a month of heightened activity in the US This is a clear sign of the interconnectivity in the banking system

- Merrill Lynch was taken over by Bank of America on September 14th
- Fannie Mae and Freddie Mac were taken over by the US Government on September 7th
- Lehman Brothers declared bankruptcy on September 15th
- AIG received $85 billion from the Federal Reserve in emergency funding on September 16th
- Washington Mutual was declared bankrupt on September 25th

These companies were all affected by the subprime mortgage crisis The subprime mortgage crisis first surfaced as an issue in early 2007 when mortgage loan originators began experiencing problems New Century Financial and Countrywide Financial Corporation both failed in 2007 New Century Financial business was to originate mortgages, and sell these mortgages to third parties, through securitised products CDO's Collateralised debt obligations were found to have serious control failures Their legal structures were often more complicated than the intermingled payment streams called waterfall payment flows to bond holders (Ferguson & Johnson 2009 15) According to the bankruptcy report issued by Missal M (2007), New Century Financial was deficient in a number or

areas including, failure to support rapid growth The company grew at rates of over 40% Additionally, the report found that senior members of the management lacked sophistication or experience necessary to perform their job Credit standards were lowered in an effort to keep revenue growth, with the knowledge that these loans were sold on without recourse to stand alone bankruptcy remote special purpose vehicles This practice created moral hazard issues for the originators, who did not keep 'skin in the game' (James 2010) This practice was not limited to private entities, but indirectly supported by the US government Freddie Mac and Fannie Mae were in the business of buying mortgages on the secondary market in the US Fannie Mae was established in 1938 as a government agency It supported the housing market and to have a congressional charter that directs it to channel funds increasing the availability and affordability of home ownership for low income Americans (Yilmaz 2011) Yilmaz contends that Fannie Mae played a critical role in the development of the mortgage securitisation industry The Federal Reserve Board acknowledged that this activity decreased almost all aspects of nsk associated with mortgage lending in 2004 (Yilmaz 2011) Successive governments including Clinton and Bush have supported the aggressive activities of Fannie and Freddie (Yilmaz 2010) As mortgages were sold to special purpose vehicles, the products became attractive to investors who purchased bonds in these vehicles This market grew aggressively with the mortgage related bond market growing from $496 billion in 1998 to $2,231 billion in 2007 according to data from the Securities Industry and Financial Markets Association SIFMA As long as the house market was increasing, this model worked As soon as the market slowed or decreased, the model failed

The US subprime crisis was driven by unsustainable growth, driven by senior management at financial institutions While there is much discussion around CDOs, loan originators, weakening lending practices, rating agencies, regulators etc these are all external issues The primary underlying trend relates to an

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unsustainable growth model driven by aggressive management Without control and accountability, poor management left loan origination run the domestic mortgage market at unsustainable growth levels The financial community that supported the subprime market suffered catastrophic losses

2 14 Summary of History

Our literature review has informed us of a number of key factors These factors are both external and internally driven Understanding these factors will enable us to more accurately diagnose banking failure External factors may suggest a secondary bank crisis This is more typical when the external factors are macroeconomic, such as currency movements or international interest rate movements Internal forces may suggest a classic banking crisis Accurately diagnosing a bank crisis is a critical step which must be taken before an analysis can be conducted Our literature review of past crises found the following factors

1) <u>Continual Evolution of Banking</u> The industry of banking and finance has evolved through history and cannot be attributed to one single event It is the culmination of a series of needs and mechanisms created by different cultures at different periods, to facilitate trade As financial transactions became regulated, the market makers continue to develop processes to overcome restrictions Bank officials today create new and improved products and processes, which is not dissimilar to the bankers of the 18th century While the products have new names, and are more complex, the nature of what bank officials do remains unchanged Banking failures worldwide are filled with examples of new credit products created with good intentions, but left with bad outcomes (Graafland & Van de Ven 2011) Bank failure is not caused by the product or instrument, but the system that lacks organisation, control, and accountability The system enables managers to poorly manage, void of accountability

2) <u>Poor lending Decisions</u> Ireland has a history of bank failures The 1820 failures were caused in part by poor management, reckless lending Banks were found to have made poor management decisions on lending and internal management The Agricultural & Commercial Bank and Munster Bank for example engaged in weak management practices The history of bank failures globally is filled with poor lending decisions

3) <u>Poor structure of banks</u> The structure of Irish banks plays a key role in the cause of bank failures The joint stock system provided accountability and control through the unlimited liability structure for shareholders This system eliminated the agency problem that exists today where managers are not accountable for losses of failed banks It is clear that if we plan on absorbing bank losses through nationalisation, the moral hazard issue will remain in place, resulting in repeating banking failures for future generations

4) <u>Asset appreciation</u> is a major cause of bank failures, with history providing many examples of this The most extreme example is the Japanese banking failure which was a result of an over inflated property sector Asset appreciation is an external factor Bank management however can control asset appreciation by managing their balance sheet effectively History is filled with examples of management who failed to internally manage external asset appreciation by growing unsustainably

5) <u>Growth driven, herd like mentality</u> The external forces of competition and asset appreciation, creates a strong desire for managers to act in a herd like mentality The crisis in Norway provides good example of the herd like mentality that drove asset appreciation within the banks

6) Political involvement with business and banking has historically either influenced decision making at banks and regulators, or delayed decision making in an effort to contain the problem The Japan crisis provides a good example of politics interfering with decision making at the banks In April 2007, Taoiseach Bertie Ahern proclaimed the Irish economy was set for a soft landing, and dismissed claims that there were problems within the economy (Beesley 2007)

7) Poor regulatory framework was evident in most banking failures Typically a liberalisation of banking is politically driven

In summary we see a variety of causes behind bank failures From the reckless and unregulated behaviour of managers in the US in the 1920-30's where bank managers used bank funds to invest in speculative ventures To the weak regulatory environment in Asia coupled with a severe turn from an expansionary to a contractionary economy The Japanese crisis was influenced by political forces in a highly expanding environment The Norwegian crisis was seen as a shift in focus from loan quality to loan growth The Argentinean crisis was a result of years of political mismanagement of fiscal and monetary policy The US Savings and Loan crisis was a result of speculative activity following political deregulation The crisis in Iceland was a result of both reckless managerial decisions and overinvestment by both depositors and bond holders The UK Northern Rock crisis was a result of poor bondholder investment and an over expansion of the bank portfolio

Mayer, (1975) highlights the two primary reasons why banks should be protected by governments, firstly to protect the money supply in the economy, and secondly to protect depositors who would otherwise live in fear of lost savings and move from bank to bank creating an unstable funding source Tussing (2001) notes that in the US, the history of the FDIC has been to prevent depositor loss,

and that through the action of saving depositors, a theory of saving banks from collapse has evolved This theory supports our view that it is critically important to accurately diagnose a bank crisis before we can decide who is saved This has been a difficult task for regulators The majority of bank failures in history are classic bank failures (Marshall 2009) The common trend in classic bank failures throughout history begins with the poor structural nature of banks Structural deficiencies provide room for poor management decisions Structural deficiencies also lead to autocratic leadership styles These management techniques eventually lead to mismanaged banks that ultimately fail It is clear through our research that most banks are supported by regulators and government It has not been common for regulators to close banks in normal trading periods We cannot however conclude that all bank failures are caused by lax regulators and government There are many banks that survived where others failed We can summarise that where all banks have poor structural compositions, not all banks are poorly managed A key indicator therefore of a poorly managed bank with these inherent weak structural compositions, is aggressive growth Equally not all banks with excessive growths are doomed to fail We can summarise, banks with excessive growth in a booming economy should be examined carefully

CHAPTER 3

3 1 Understanding Credit & Banking

In this Chapter we examine the basics of debt and underwriting Making credit or loan decisions, underwriting, has historically been driven by 5 key elements, (Business Credit, 2011)

1) Character
2) Capacity
3) Collateral
4) Conditions
5) Capital

See Appendix G for more detail on the 5 Elements of Credit

These elements include both qualitative and quantitative measures Credit underwriting is not a simple formulaic process Using the measures are dependent on the type of lending involved, and the industry For example short term credit card consumer debt, versus long term mortgage debt In these examples, the elements will apply in different varying levels of importance Collateral is weighted more heavily for mortgage debt than credit card debt One important element in Appendix G relates to the collateral and key factors in securing collateral Irish banks were poor at executing this element effectively

As banks take short term cash (customer deposits) and lend long term (loans) they frequently have short term liquidity requirements, which are received from other banks Confidence is required in the banking system to ensure both depositors are comfortable and not demanding their deposits and short term lenders are willing to provide liquidity (Barrow 1975) Additional confidence is required in customers, who receive loans from the bank, and their ability to repay

using the five elements of credit The conditions determine the level of risk that banks are willing to take and hold An important distinction here is the analysis performed by underwriters in banks who make credit decisions based on making and holding loans As we explored in the US crisis, banks such as Countrywide began making underwriting decisions based on selling loans A key element of the underwriting process is evaluating the ability of a borrower to repay the loan When loan originators like Countrywide sell mortgages, this key component of underwriting, ability to pay, is no longer a critical factor, as loans are sold Traditional lenders who serviced loans to maturity, have more inherent financial incentive to make prudent credit decisions, compared to mortgage originators who sell off portions of mortgages to other financial institutions that eventually ended up on Collateralised Debt Obligations, (James 2010) James discusses the issue of 'Moral Hazard' when discussing the issue of underwriters not utilising the full application of underwriting standards as expressed in the five elements of credit, as they were not holding loans to maturity

The Lehman Brothers collapse on September 15th 2008 causing losses on a balance sheet valued at $650 billion uprooted all confidence in the banking system The collateral, conditions, and capacity elements for Lehman's had all moved so far against the bank, capital was negatively impacted causing the bank to become insolvent As the five elements of credit conditions became eroded, the confidence in the bank was lost causing a liquidity crisis Other banks suddenly stopped lending to Lehman's The Lehman's event was significant, because for the first time in decades, a large global bank with significant overnight liquidity positions had collapsed, causing large losses, and shattering confidence It created fear in the financial world and eroded confidence in the system of banking It was also significant, due to the realisation in the banking industry, that the CDO market was broken This fear and erosion of confidence continues today

Loan origination, COD products, and Securitisation, are all examples of the banking industry evolving The failure was not in the creation of new products, but in the lack of control in fully evaluating new product risk An autocratic leadership style driven by incentives to achieve unsustainable growth was the cause, not the products themselves

It has become popular to apportion partial responsibility on the banking crisis to financial liberalisation, however some disagree, Caprio & Honohan (1999) contend that

> "Financial liberalization has only revealed a longstanding underlying insolvency of the banking system, which became unavoidably clear as banks emerged from the sheltered environment that allowed or required them to cross-subsidize loss making lines of business" (1999 48)

This is a critical point Deregulation and liberalisation was not the cause of the financial crisis The poor structure of banks with deficient control and accountability is the underlying cause Deregulation has allowed banks to grow rapidly and in some cases unsustainably Deregulation did not change the structure or control mechanisms within banks that permitted poor management decisions

In the US, the government was selective when it came to saving banks Bear Sterns and Lehman Brothers were left to fail Many other banks however were saved The Troubled Assets Relief Program (TARP) of October 2008 provided funding of over $700 billion to the US banking system, by purchasing troubled/toxic assets, and providing liquidity Both the TARP and the EFSF are extensions of government monetary policy, embarked on by governments in an effort to maintain or save the money supply in the banking sector The US government has applied a mixed policy in treating bank failure The rationale for

selecting survivors seems to be driven by the effect to the financial system The government appears to ignore the diagnostic process of understanding the reasons for failure The size and speed of the recent crisis facing the US authorities has resulted in this quick decision making process, purely based on impact to the financial community While this is not the ideal solution, the US government has been able to contain the crisis to date, but at what cost? Governments continue to misdiagnose the problem by supporting the patient, based in misguided principles

3 2 Protecting Banks at all Cost

The continued fear is that large scale bank failures could cause a great depression Mayer (1975) Mayer claims that in order to prevent a depression we have fallen into a trap that in the case of large banks we appear to have drifted into a policy of insuring not the depositor, but the banks itself While in the US there have been two noticeable exceptions with Lehman's and Bear Sterns, European authorities have stepped into every banking crisis with the intent to protect the bank from collapse, for fear of contagion With the collapse of Fortis and Dexia in Europe, the contagion continued This policy of protect all banks at all costs created a transfer of risk and indeed debt from the privately owned and managed banks, to the public taxpayer While the first phase of the financial crisis in 2007 in Europe was a liquidity issue beginning with the freezing of redemptions by BNP Paribas in August 2007, Pisani-Ferry & Sapir (2010), the second phase was one of solvency, with the collapse of Lehman's in September 2008, a shock wave was sent through the banking system breaking confidence in the strength and value of bank assets, good loans were now questionable at best and most likely bad, repeating the cycle that fuelled the 1930s crisis, (Calomiris & Mason 1997)

Protecting and preserving the banking system is imperative to a healthy and functioning economy, (Caprio & Honohan 1999) According to Kennedy, & O'Sullivan

"A banking system that is able to operate efficiently is of crucial importance to any economy Poorly operating banking systems can impede economic growth, intensify poverty and destabilise the economy", (2007 113)

The policy of protecting banks at all cost equates to applying treatment of a secondary bank failure, to a classic bank failure patient The incentive in applying this treatment is the fear of contagion The additional fear of a currency crisis as a result of insolvent banks is driving policy While this may appear to be a noble cause, our research suggests this is somewhat misguided A more appropriate measure is to correctly diagnose the crisis as a classic bank failure The treatment required for a classic failure includes ensuring the parties who benefited from profits, bear the cost of loss Additionally, we need to prevent risky institutions lending to insolvent borrowers This is not accomplished by protecting all banks

3 3 Capital Adequacy

In 1988 the Basel Committee in international banking set out rules and requirements relating to minimum capital required for international banks in order to absorb losses The cornerstone of this accord was the Cooke Ratio, the initial standard of 8% of risk weighted assets, based on the level of risk for each asset (Saita 2007) The problem with this approach is that historically, banks with apparent adequate levels of capital continue to fail (Caprio & Honohan 1999) The biggest difficulty for supervisors has been how to determine the true value of a bank's loans Historically banks have used models to value the potential for loan loss These models have been built over time and based on past

experience, using standard deviation stress to forecast either improvement or deterioration in economic indicators The challenges with these models has been that when economic conditions move outside the norm, or when bank approval techniques change the profile of the portfolio, past experience is no longer a useful tool The models become meaningless, resulting in inadequate capital buffers Regulators are usually deficient of information regarding a bank's loan valuations, and left unable to make recommendations to management regarding appropriate capital levels Additionally, banks with insufficient capital can survive for months or years as long as inflows from investments and loans are sufficient to pay expenses and interest for deposits and funding (Caprio & Honohan 1999) Once a bank's management becomes aware they have entered the insolvency stage, it is possible they begin to overstate underperforming loans to conceal problems from the regulator Political pressure may also be placed on regulators to help prevent the bank from collapse 'don the green jersey' Banks can also employ the practice of ever-greening loans to conceal non-performance (Imai 2009), (Caprio & Honohan 1999) The final stage of insolvency is where managers begin looting the bank by extending loans with the knowledge they will not be repaid (Caprio & Honohan 1999) A potential solution is the issuance of subordinated debt by banks with the lowest level of priority equal to equity (Calomiris 1998) This would ensure debt issuers of this priority would represent additional buffers to potential loss, as their positions would be eliminated first These levels of subordinated debt command higher levels of return This was adopted in Argentina in 1997 (Caprio & Honohan 1999) In the recent Irish banking crisis however, subordinated debt was treated pan passu with secured debt and deposits The move to Basel II was an acknowledgement of the limitations in the risk weighted capital requirement (Marrison 2002) The Basel II accord introduced three Pillars of assessment Pillar I involved minimum capital requirements for credit, market, and operational risk, based on a risk weighted basis Pilar II involves a level of assessment on the banks quality of risk management systems and procedures This allows regulators the ability to

assess the quality of risk management within a bank, and determine if additional capital buffers are necessary where banks controls are weak Pillar III provides additional analysis on the pressures of market discipline, and attempts to provide transparency to a bank's risk profile (Saita 2007) The Basel II Accord while agreed on in 1999 has not been adapted by all nations at the same pace The US for example has been slow to fully implement the requirement for Basel II Accord, subscribing to a more neo-liberal approach to government intervention under the belief that free markets are self-correcting and should be left to themselves (Kindleberger 2005) In Europe the Capital Requirement Directive (CRD) which was operational in 2007, incorporates the accord in full, however a provision allowed a delay of one year for implementation (CBOI 2012) The problem with the capital adequacy ratios have been that even when banks conform to the requirements, it may not be sufficient For example in the December 2007 annual report for Anglo Irish Bank, disclosed on page 16 of its report

"The capital base was further added to in June when the Bank raised €510 million of Tier 1 and €750 million of Tier 2 capital Tier 1 and Total Capital ratios are strong at 8 6% and 12 0% respectively, well in excess of minimum regulatory requirements The Bank, given its current excellent position and on-going strong retentions, has sufficient equity for future growth In addition, the Bank will not need to raise Tier 1 or Tier 2 debt capital before the first half of 2009", (2007 16)

The disclosure went on to acknowledge the upcoming enhanced CRD capital requirement

"The Capital Requirements Directive ('CRD'), which implements the provisions of the Basel II Capital Accord in the EU, will come into effect on 1 January 2008 We have invested significantly to ensure the

implementation during 2008 of enhancements to our Group-wide credit grading models to meet the required standards of the Internal Ratings Based approach In the interim period, we will calculate our capital requirements under the Standardised approach We expect some regulatory capital benefit over time following implementation of the CRD", (2007 16)

All covered institutions made similar disclosures It is clear from these disclosures that by adhering to the CRD, proved insufficient for the survival of the banks in Ireland The Irish Regulator noted in its Financial Stability Report on November 14, 2007 on page 18

"The Irish banking sector remains well capitalised with the majority of banks reporting an increase in both their overall solvency and Tier 1 capital ratios Asset quality remains high by historical standards The ratings of Irish credit institutions continue to support the view that the Irish banking system remains healthy", (2007 18)

The central bank was clearly unaware, or, not concerned with the capital adequacy of the Irish banking system in November 2007, less than 12 months before the government guarantee Even adhering to the new capital adequacy requirements proved insufficient to cover losses incurred in 2008/9

The financial sector is so dynamic, that even a well-designed risk-weighting system may soon become obsolete (Estrelle et al 2000) Gross revenue growth rates, of banks as an additional indicator, found that both leverage ratios and capital to revenue ratios were better at predicting bank failures (Estrelle et al 2000) It is clear from our research that capital ratios fall short of providing indicators for bank health A new approach of measuring bank health is urgently needed

CHAPTER 4

4 1 Research Introduction

The purpose of this chapter is to explain the research methodology employed in the study The first question we explore before determining our methodology is to ask why we are conducting this research (Quinlan 2011) The severity of the recent crisis in Ireland was highlighted in chapter one This crisis will have a lasting impact on the economic landscape in Ireland for many years An informant in the interview process described the crisis as

> "Ireland's World War, which will leave an economic scar on the next generation", (Anonymous 2012)

We cannot underestimate the damage caused by the financial industry in Ireland There have been numerous reports completed on this crisis, however few reports have accurately diagnosed the crisis These reports have been commissioned by both government agencies, and international bodies While these reports contribute to the national debate which seems to focus on 'who we can blame?', few reports have completed an objective analysis on the subject incorporating both historical analysis, and current analysis These reports focus on the current events at a point in time, and give little consideration for how the industry has evolved The author believes there is an opportunity to learn from the recent events We have the potential to find a solution to a problem that has eluded economists for over a century The problem as highlighted in chapter one, 'How a system of banking can continue to repeat seemingly systemic collapse' This problem is not unique to Ireland This is a global problem, and we are witnessing the 85th financial crisis as outlined earlier (Persaud 2009) We have the opportunity to become subject matter experts on the topic of banking failure Ireland has invested significant capital into developing a financial services sector over the last two decades, and there exists a unique opportunity to capitalise on the recent shortcomings We should be under no illusion that a nation the size of

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Ireland can change a global industry There is the real possibility however that through research and analysis, an accurate diagnosis of this financial crisis can lead to real and lasting change in the way the industry operates

4 2 Research Objectives

Now that we have determined why the study is being conducting, the next question is to determine the objectives of the study There are a number of reasons why it is important to clearly set out the research objectives A clearly defined research objectives statement will express the purpose of the research and define the variables within the study Additionally it will establish the parameters within which a focused study can be achieved (Wood et al 2000 46) Both objective and hypotheses are included in the research objective

The objective of this study is to determine causes contributing to the recent Irish bank crisis, and, identify common factors evidenced in previous banking crises These factors include the following

- Accurately diagnosing bank failure
- Efficient bank structure
- Autocratic management
- Unsustainable growth

Additionally, we look at identifying other potential factors prevalent in bank failure

4 3 Research Methodology

Understanding our research philosophy will help us develop knowledge and understand the nature of that knowledge (Saunders et al 2007) Once our research philosophy is established, this will lead us to the strategy and methods of research We need to ensure our research philosophy is defendable against alternative approaches The choice of using either an interpretivist philosophy or a positivist philosophy often leads researchers into incorrectly believing one is better than the other Our view here is that both may prove valuable regarding our subject matter Pragmatism, as noted by Tashakkori and Teddlie (1998) put forward the idea that the 'research is a continuum rather than opposite positions' of interpretivist or positivist (Saunders et al 2007 109) Tashakkori and Teddlie also argue that 'pragmatism is intuitively appealing, largely because it avoids the researcher engaging in what they see as rather pointless debates' about concepts and philosophies (Saunders et al 2007 109) Our desire to choose a pragmatic approach is not driven by the reluctance to commit to a 'system of philosophy' We are not ignoring the 'philosophical debate about reality and the nature of knowledge, the weakness of one paradigm over the strengths of another' (Collis & Hussey 2009 66) The pragmatic approach is appealing because it provides us the ability to engage in the academic freedom of exploring both positivist and interpretivist positions, employing a mixture of methods

4 4 Research Methods

The method used to conduct this study is important This method needs to be capable of supporting the research, and capable of enabling and facilitating its completion (Quinlan 2011 177) There exists a wealth of data which can be analysed This data includes reviews of prior financial events and commissioned reports analysing the many crises Additionally, financial data relating to the performance of the covered institutions (their annual accounts), and, there is an abundance of individuals with knowledge and opinion There is also a large amount of literature, both academic and non-academic on this subject Before

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we determine the appropriate data collection methods, we must again consider our objectives The objective of the research is to analyse both the recent financial crisis in Ireland, and, previous crises that occurred globally The analysis of the recent crisis should focus on relevant data available

The study includes both qualitative and quantitative research The quantitative research involves an analysis of the financial statements of the six covered banks from the period 1999 through 2010 This analysis provides a longitudinal, through-cycle view This analysis is vital as it provides actual data points relating to the performance of the covered institutions through the cycle of expansion to failure The analysis is compared to non covered institutions that did not fail The quantitative analysis includes semi-structured interviews with key informants Semi structured interviews were used as the preferred data collection choice for the following reasons It was first determined that a qualitative analysis would complement the quantitative data extracted from the financial statements The pragmatic viewpoint enables both qualitative and quantitative data application It was determined that a broad range of candidates would be selected for the purpose of data collection This included both bank and non bank personnel at varying levels of seniority The range of informants provides a more embedded view, as opposed to a narrowly focused view A focus group was problematic and eventually not possible, as bank personnel were reluctant to meet with regulatory staff Structured interviews and surveys were quantitatively limiting It was determined that semi structured interviews would achieve the optimal results The data from the quantitative financial analysis was triangulated with the data from the qualitative research and literature analysis For example during the semi structured interviews, an informant described how the CEO of Anglo Irish Bank made a commitment to staff to increase profit by 100% between 2005 and 2007 It is possible to validate this statement by looking at the financial statements in the quantitative analysis Additionally, an extensive literature review was conducted on the history of banking, and the history of financial crises Further analysis was conducted on the more recent reports commissioned on the current

financial crisis This literature review has proved valuable in analysing the cause of previous crises, and understanding the importance of accurately diagnosing the cause of financial banking failure

4 5 Research Conclusion

The research philosophy of the study follows a pragmatic approach in using both qualitative and quantitative analysis in order to understand and identify key factors The quantitative analysis will include the financial statements and annual reports for the nine banks in our case study over a period of twelve years from 1999 through 2010 This sample period will provide a longitudinal analysis, or a through-cycle analytical view of the financial performance of all nine banks in the study This analysis is intended to identify trends and ratios that will assist us in understanding key stress indicators In addition to the quantitative analysis, we have used a qualitative analysis approach This is in the form of a semi-structured interview with a number of key informants in the Irish banking industry, both within the banks and also in the regulators office, and a customer in the property development sector The qualitative data is triangulated with the quantitative data from the financial analysis and literature, which provides us the ability to validate our research findings

CHAPTER 5

5 1 Financial Analysis of Banks

This chapter involves an analysis of the financial statements of the six covered institutions The financial review provides a quantitative analysis in our pragmatic approach of using both qualitative and quantitative research (Saunders et al 2007) The financial accounts provide key data points in our effort to fully diagnose the crisis They represent the 'black box' of data points providing vital information regarding the condition of banks during the crisis, as they navigated through the economic environment Our analysis will show that covered institutions grew at unsustainable levels

The analysis of the six covered institutions is compared to three non covered foreign banks operating in a similar business environment that successfully navigated through the financial crisis without failing (Barclays Bank, Santander UK PLC, and CIBC) The intent is to identify key indicators of success versus failure The financial analysis of annual accounts is conducted on a, through the cycle, longitudinal basis as opposed to a point in time basis The through the cycle analysis will incorporate the balance sheet and income statement analysis for the periods 1998 through 2010 providing a 13 year data base Through the cycle analysis will provide higher quality analysis compared to point in time analysis by avoiding temporary changes in banks position, and is considered a superior measurement technique, (Altman & Rijken 2005), (Cantor & Mann 2003) The time period selected allows analysis of the banks prior to the reduction of global interest rates following September 2011, and follows the credit expansion and contraction through 2007 Due to the severe impairment of loans in the periods 2007 through 2010, and the significant transfer of assets to NAMA, and the injection of capital in this period (Honohan 2009), the bulk of analysis will concentrate on the time period 1999 through 2007 This will assist in capturing what is considered normal trading activity The banks under examination in our

analysis were primarily involved in traditional bank lending activities, using a combination of customer deposits and debt to fund traditional lending Lending was concentrated in both the residential mortgage business, and the domestic property business Additionally a number of banks were engaged on international lending both within commercial loan activity, and property development activity Our analysis of the banks will focus on the following key ratios

Profitability	TNW/Total Assets
Total assets	Capital
Revenue	Debt/Equity
Loan book	Leverage
Deposit book	Bad debt
Deposit ratio	Efficiency
Debt	Sustainable growth rate
Equity	

These indicators will provide a key insight into the functioning of the banks The financial statement is spread for all nine banks in our test period and a detailed analysis is attached in Appendix H Summary of Financial Analysis

5 2 Summary of Financial Analysis

The 13 year financial analysis provides some key findings All covered institutions enjoyed profits through 2007 Additionally, the banks enjoyed increasing revenue and asset growth through 2007 The periods from 2007 through 2010 show severe financial distress as expected All institutions experienced heavy losses and dramatic reductions in both revenue and asset value Capital ratios for all institutions as noted earlier were sufficient Due to the severe distress experienced in the industry in the periods 2007 through 2010, we create two views, View A including only through 2007 eliminating the distorted crisis years, and view B including all years This enables us to analyse the data from both perspectives Fig 7 Average Ratio Analysis through 2007

Fig. 7 Average Ratio Analysis Through 2007

	Anglo	AIB	BOI	IILP	EBS	INBS	Barcl	San	CIBC
Profit Margin	23.21%	18.17%	9.33%	33.03%	9.33%	33.59%	12.97%	4.23%	10.69%
Asset Growth	37.56%	12.38%	17.26%	15.42%	17.36%	18.73%	23.00%	2.00%	2.00%
Revenue Growth	35.07%	11.32%	16.05%	18.69%	20.52%	25.14%	14.00%	8.00%	2.00%
Loan Growth	36.61%	14.54%	16.63%	23.04%	16.42%	24.65%	12.00%	8.00%	4.00%
Deposit Growth	32.99%	10.31%	10.98%	19.36%	13.21%	12.15%	11.00%	4.00%	4.00%
AWDC	22.37%	25.81%	23.00%	18.00%	22.96%	18.52%	28.00%	26.75%	63.00%
Debt Growth	79.26%	31.76%	59.01%	26.62%	37.67%	121.14%	26.00%	9.00%	2.00%
Equity Growth	41.89%	12.30%	9.73%	5.68%	16.91%	26.58%	15.00%	-5.00%	3.00%
TNW/Total Assets	3.42%	5.12%	4.00%	4.69%	4.00%	8.48%	2.00%	3.00%	4.00%
CAR	8.28%	7.48%	4.00%	4.72%	11.55%	8.80%	9%	9.33%	9.00%
Debt/Equity	5.06	0.05	4.93	5.06	4.39	2.53	6.10	11.36	3.75
Leverage	29.88	19.65	25.95	23.56	24.99	11.68	51.00	41.00	24.00
Bad Debt/Equity	7.95%	287.94%	1.82%	0.67%	0.81%	3.72%	12.00%	5.00%	7.00%
Efficiency	18.90%	69.76%	58.00%	57.83%	71.52%	40.67%	72.00%		73.80%
Sustainable Growth	25.52%	11.28%	18.20%	3.05%	11.36%	15.29%	19.00%	6.00%	4.00%
Growth Delta	12.04%	1.10%	-0.94%	12.37%	6.00%	3.44%	4.00%	-4.00%	-2.00%
GDP Growth Rate	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%	5%	5%	9%

Fig. 8 Average Ratio Analysis Through 2010

	Anglo	AIB	BOI	IILP	EBS	INBS	Barcl	San	CIBC
Profit Margin	-73%	-9.58%	8.84%	28%	-1.28%	-179.02%	12%	9%	9%
Asset Growth	25.97%	8.22%	11.57%	11.16%	12.97%	9.89%	20.74%	4.85%	2.09%
Revenue Growth	20.77%	3.15%	8.41%	9.24%	13.15%	6.28%	10.42%	5.79%	-0.51%
Loan Growth	21.44%	8.46%	11.49%	17.03%	12.13%	7.38%	11.22%	8.95%	3.73%
Deposit Growth	24.64%	7.20%	9.35%	17.19%	12.09%	-2.81%	9.19%	6.83%	3.85%
AWDC	30.44%	28.13%	24.06%	27.52%	23.47%	24.36%	26.21%	24.78%	60.80%
Debt Growth	50.96%	20.53%	37.33%	17.56%	25.98%	74.14%	22.45%	6.14%	0.47%
Equity Growth	30.48%	6.11%	8.79%	0.87%	10.89%	7.70%	21.21%	10.22%	3.33%
TNW/Total Assets	3.71%	4.92%	3.84%	0.87%	3.75%	7.76%	21.21%	2.60%	3.87%
CAR	8.34%	7.16%	8.08%	4.13%	8.84%	9.92%	9%	0.077531	9.91%
Debt/Equity	4.77	3.20	5.88	5.57	5.08	2.65	5.59	10.20	3.77
Leverage	28	21.48	27.07	28.13	26.77 -	55.79	48.37	38.87	23.57
Bad Debt/Equity	83.53%	24.65%	4.18%	1.21%	13.74%	-248.54%	13.00%	5.97%	7.35%
Efficiency	121.03%	47.15%	60.10%	83.65%	124.46%	-16.88%	33.23%	0.00%	71.24%
Sustainable Growth	-41.65%	-20.98%	14.10%	2.37%	-1.88%	-16.88%	15.77%	9.99%	8.05%
Growth Delta	67.63%	29.20%	-2.53%	8.79%	14.85%	26.77%	4.98%	-5.14%	-5.97%
GDP Growth Rate	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%	4%	4%	8%

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The primary finding from our financial analysis indicates all covered institutions experienced unsustainable asset growth rates when compared to non covered institutions operating in similar environments Bank Growth Rates were high for all periods for the covered institutions

Sustainable growth rates measure the asset growth rates under which financial institutions can expect to grow This represents the maximum growth rate at which the institution can grow (Higgins R , C , 1972) The formula for sustainable growth is shown in Fig 9

Fig 9 Sustainable Growth Formula

$$G = \frac{NI}{R} \times \frac{R}{A} \times \frac{A}{E} \times \frac{RE}{NI}$$

G = Growth   N I = Net Income   R = Revenue   A = Assets   E = Equity

(Higgins R , C , 1972)

The ratio calculates the maximum rate of growth using a multiplier of margin, return on assets, return on equity, and retention Our analysis clearly shows asset growth rates greatly exceeding the sustainable growth indicators for all covered institutions The data provides evidence of a banking industry growing faster than the growth within the economy This is clearly illustrated in the accounts for Anglo Irish Bank for the year ending 2006 The accounts show 81% or €39 million of the loan book was concentrated in the Irish and UK market (Anglo Irish Bank Annual Report 2006 86) Balance sheet and revenue growth exceeded sustainable growth and GDP growth in Ireland, representing a growth focused sales driven industry for all covered institutions Anglo Irish Bank experienced the highest average annual growth rates for asset growth, revenue growth, loan book growth, deposit growth, and debt growth It also experienced

the sharpest decline in the crisis. Fig 10 and 11 shows the annual growth rates
for the covered institutions for the period 1999 through 2008.

Fig. 10 Annual Growth of Covered Institutions
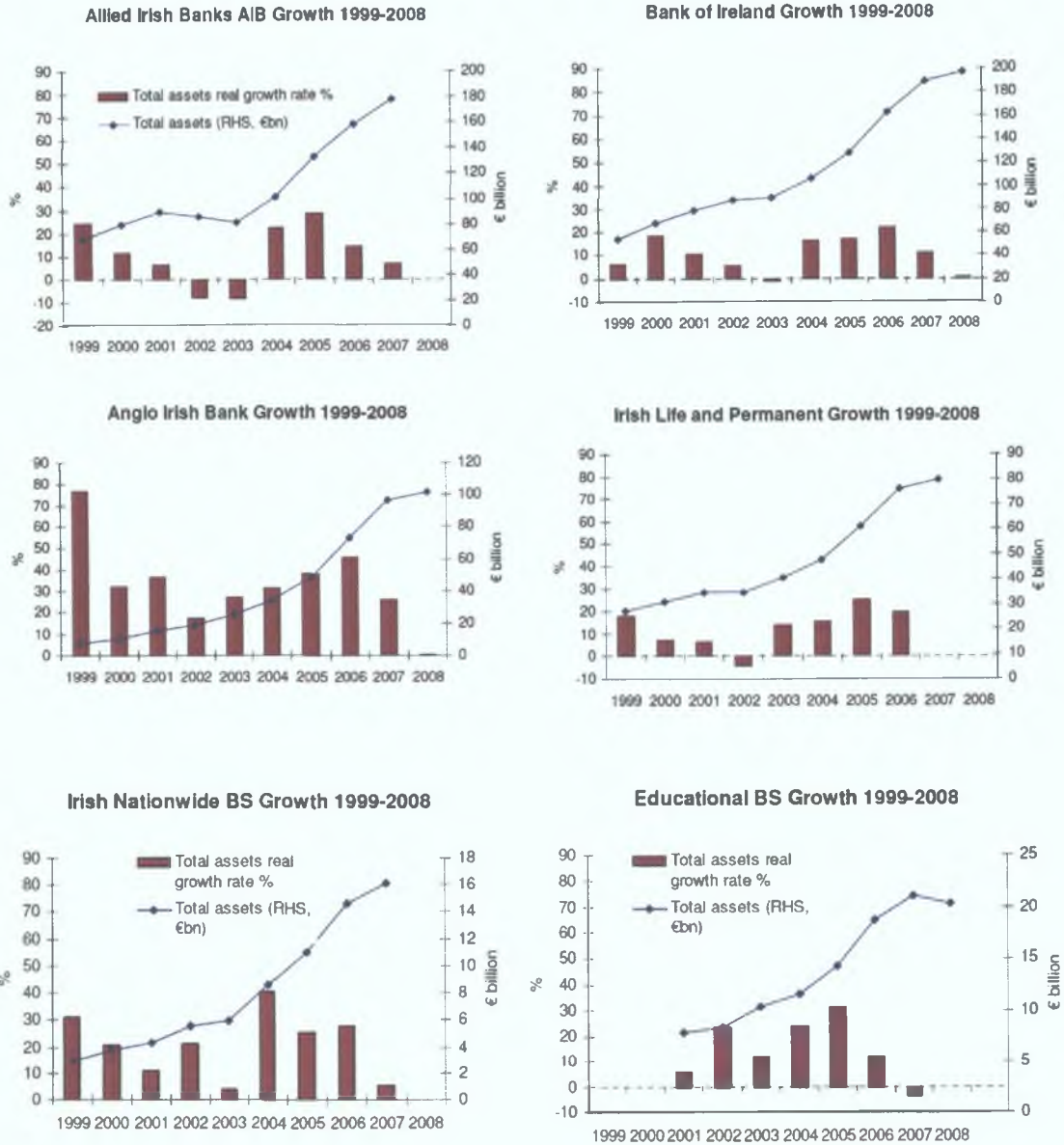
Figure 9: *Growth rates of six Irish banks, 1999-2008*
Line: Total assets at end of each accounting year € billion (RHS)
Bar: % real growth rate (LHS)
Source: Bank Annual Reports

Source: Honohan Report (2009:26).

Fig. 11 Asset Growth of Covered Institutions
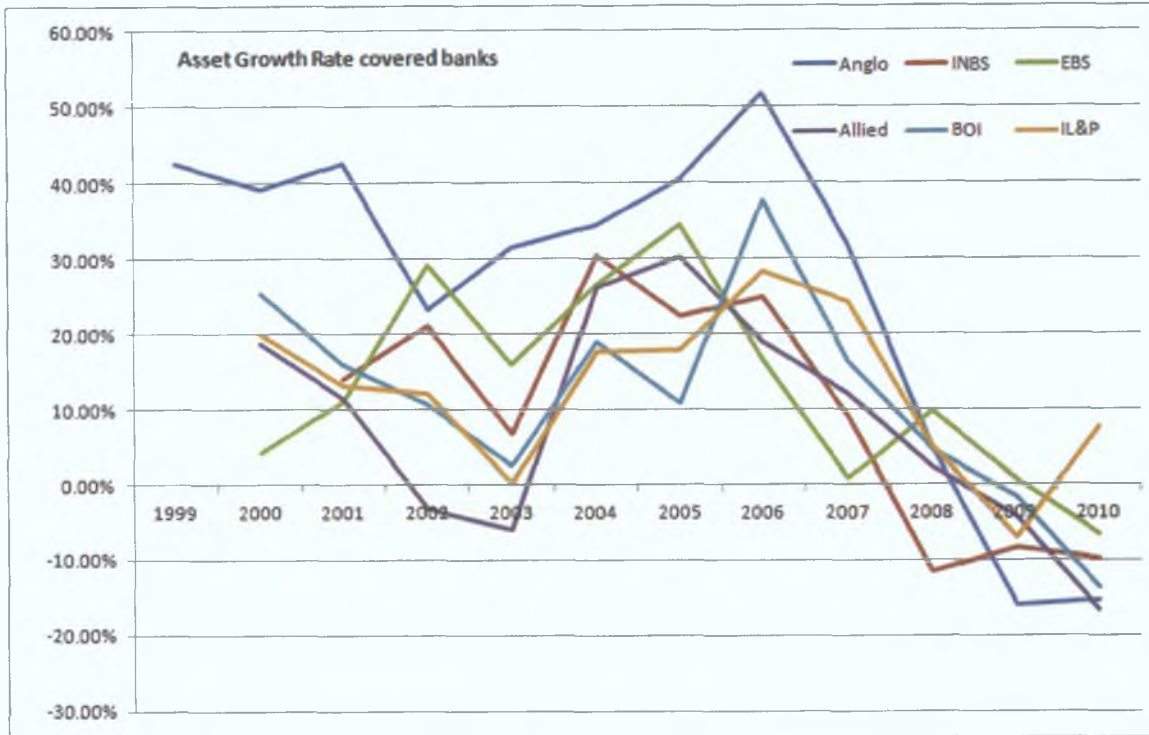
Fig. 11 displays the growth trend of covered institutions. Fig. 12 displays the asset growth rates for the non covered institutions:

Fig. 12 Asset Growth of Non Covered Institutions
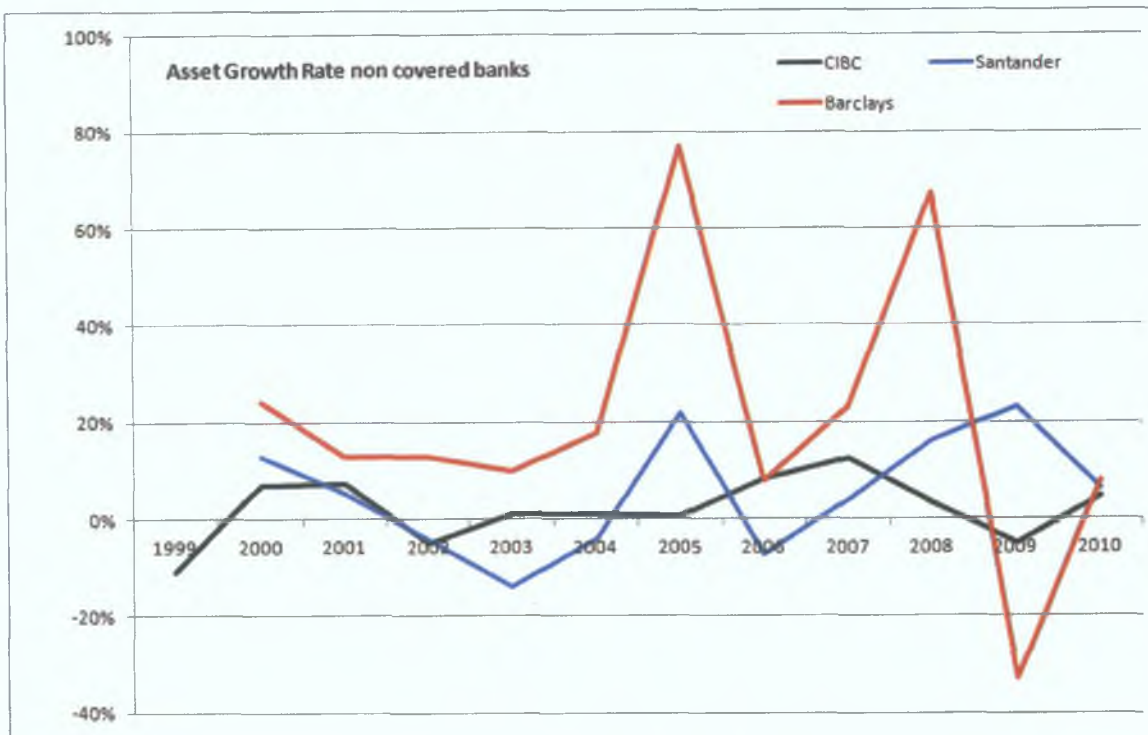
The covered banks are compared to the non covered banks. CIBC displayed the most conservative growth rates, with asset growth below the sustainable growth levels in all periods. Barclays Bank however has experienced high asset and revenue growth rates. Santander UK PLC also experienced modest levels of asset growth. Asset growth for Barclays has exceeded sustainable growth rates. An explanation to this may lie in the acquisitions made by Barclays in this period. As noted in Appendix H, Barclays made a number of large acquisitions. It is therefore put forward these acquired assets were efficient, well managed institutions that did not increase the risk of Barclays by their rapid inclusion. Further analysis may be required relating to Barclays growth rates. It is not clear if this aggressive growth rate will impact the strength of the bank in future periods.

A significant observation from the financial analysis is as follows:

- Bank management supported high levels of asset growth Asset growth levels far exceeded economic growth indicators, and were maintained at unsustainable levels prior to 2007

- Capital adequacy measures are ineffective at measuring the health of banks

The three non covered banks present an inconsistent picture Their ratios show a mixed picture considering the banks survived the crisis Barclays Bank provided the most inconsistent data The bank demonstrated considerable asset and debt growth, consistent with the covered institutions The capital ratio for Barclays is higher than the covered banks Overall Barclays growth was higher than sustainable growth levels, and GDP The observations of Barclays lead to two conclusions

1) Barclays bank has similar problems within its balance sheet and may experience significant asset impairment beyond its capital base at some point in the near future

2) Sustainable asset growth is managed at Barclays bank The bank has superior management skills enabling it to avoid issues experienced in Ireland This is driven by an acquisition of banks that are managed effectively

Santander's numbers are distorted by the acquisition of Abbey National Bank Their loan book grew significantly beginning in 2005 Growth overall however was within both sustainable growth levels and GDP CIBC is the one bank in the sample period that maintained consistent growth levels within sustainable growth and GDP levels CIBC presented the most stable growth rates of all non cover institutions The bank has experienced consistent moderate growth rates of

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between 2-3% for all periods While these rates may seem low, the bank is ranked as one of the top 10 banks globally in terms of credit quality (Bloomberg 2012) Both Santander and CIBC maintained growth levels below their sustainable growth levels, and have survived the financial crisis

The financial data provides evidence that banks that experienced growth rates higher than their sustainable growth rate, are at greater risk of failure (Of the nine banks in the sample, seven banks experienced growth rates above the sustainable growth model Six of the seven banks failed)

CHAPTER 6

6 1 Introduction to Interview Analysis

The previous Chapter focused on quantitative analysis The purpose of this chapter is to focus on qualitative research A detailed description of the informants is attached in Appendix I 'Interview Results'

The objective of the interviews is to gain an insight into behaviour and practice within the sector Our intent is to understand how the actors directly involved in the actions and activities, made decisions An exploratory approach is employed in the interview process This helps in determining an understanding of the actions and decisions made during the period

For a successful qualitative analysis, it is important to understand the various actors in the research (bank managers, regulators, investors, customers, etc) and understanding their role in the process Understand their motivations This qualitative research requires a pragmatic approach in understanding how these actors interact through symbolic interactionism, and how their actions, behaviours and decisions are influences by their environment, (Saunders et al 2009)

6 2 Research Question

Our analysis will highlight the primary factors that cause the financial crisis This research will show that a poorly controlled structure of banks is a primary cause of failure The structure lacks adequate controls required for sound lending Additionally, an autocratic style flourished in this structure External factors contributed to the excessive unsustainable growth levels experienced in the sample period The primary questions proposed for the initial interviews are covered by the following topics

- Understanding the level of commitment the participants had to their organisation

- Identifying key causes to systemic failure within the industry

- Identifying potential solutions to weakness in the industry

- What knowledge did they have of consequences to actions

Appendix J details the interview questions

6 3 Interview Results Observations

The results were into sections The first section is a quantitative section which also covers commitment The second section looks at the predictability of the crisis The third section looks at the causes of the crisis The fourth section looks at the potential solutions Each section will provide some participants quotes, provided anonymously, and followed by a summary

6 4 Results Quantitative Analysis

This includes the total number of years employed in the industry Questions are intended to determine the commitment to the company and the industry of the participants Additionally, questions are used to determine the level of satisfaction achieved in working in their respective industries The participants shared over 158 years of banking industry experience, and a combined 195 years of industry related experience The participants all demonstrated a wealth of experience and knowledge of their respected fields The number of years both collectively and individually, demonstrates a level of job commitment which validates the continuance theory in organisational commitment (Allen & Meyer 1997) The participants also demonstrated levels of normative commitment in their desire to continue to remain employed in their organisations, and affective commitment in their collective emotional attachment both to an industry and their respective organisations Without exception all participants expressed a high degree of

satisfaction to question # 5. Question 4, why did you join the industry received some interesting responses:

> "I joined the bank because I completed my leaving certificate and was always told that the banking industry was a solid career choice. My mother was proud of me when I got my first job at the bank"

> "I joined the bank because my father was employed in the bank, and it was a natural progression for me once I completed University"

> "I joined the bank because it offered a good career path, and was considered a secure working environment"

There is some implication that a sizable group of staff within the bank of a certain age, have been there for their entire career, and have limited exposure to the external non-banking environment. This group may have become somewhat insulated to the workings of the banking industry. Overall there was a high degree of pride and satisfaction from the entire group of the industry.

6.5 Results Predicting the Crisis

Question 8 & 9 ask if the crisis was foreseen and preventable. There was a mixed response to these questions with the majority saying yes. Fig. 13 is a summary of the observations:

Fig. 13 Predicting the Crisis Summary

	Y	N
Predicting The Crisis	9	2
Factros Predicting The Crisis		
Management	10	
Excessive Growth	9	
Regulator	7	
Property	5	
Customers	3	

The majority of informants confirm the crisis was predictable On the yes side the following comments were observed

> "Yes, demand for lending was property driven, we all knew this, credit standards were lowered and losses were low, we should have known this was a concern"

> "The regulator should have had access to the data, the growth was too high however the regulator was more concerned with banks overcharging consumers, than worrying about the solvency of the banks"

> "Regulation was blinkered at the time of the establishment and promotion of the IFSC, which was created as a jobs initiative"

One participant who claimed to have voiced concern over the easing of credit and the rapid growth of the domestic mortgage book said

> "I voiced my concern over the rapid increase in the mortgage book, and the shift from branch control, to head-office credit committee, and I was told I was 'Yesterday's-Man' "

Another common sentiment was the lowering of credit standards

> "Product innovation became a major issue for theee domestic banks, however when new products came on the market, there was little regard for credit quality There was a major change in the credit quality of 100% mortgages, however the bank was sales driven"

"In early 2005 I saw things were out of control, if I saw this, others clearly did also, however I believe our CEO was too far removed from reality to really understand what was going on in the real world"

"The regulator should have been monitoring the changing mortgage business in Ireland with weakening credit standards, 100% mortgages, interest only mortgages, this is something the regulator should have managed"

"The regulator knew of the governance problems at INBS, the problem was the senior executive and board were warned to fix the problem but there was no follow through from the regulator, they did not know how to act strongly Management at the bank were not reacting to threats because they never believe there would be any consequences IBNS thought they were above the law"

On the dissenting side the following comments were observed

"While there were concerns at the time, there was a genuine fear that if you make negative commentary about the domestic banks, you would create a run This was always a very big problem and one which the regulator and the department of finance was keenly aware of"

"We needed to maintain a level of confidence to ensure we did have a soft landing"

"No we could not have prevented the crisis, there was too much going on at the time, we had no idea how the bank was being funded, the model became too complex for any one person to see all the parts and understand the risk, this was the job of the CEO, but he was so far

removed from reality, he did not actually live in the real world, not like the average person"

Another comment on a general discussion also echoed the above statement,

"It is really the job of the CEO to ensure all the risks of the bank are being managed, including the loan book, and funding composition. This was clearly not happening at my bank, but also at the other banks as well"

The commentary on predicting the crisis is heavily focused on regulation and the central bank. Additionally, there are a number of references to government influence. There was a sense the banks were almost out of control, with senior management somewhat out of touch with what was going on. The majority of participants agreed that the crisis was predictable and preventable.

6.6 Results, What Caused the Crisis

This section received the majority of attention from participants, who had clearly considered this question in advance, and were able to communicate significant amounts of information.

Fig. 14 summarises the participant's response to question 10:

Fig. 14 Cause of the Crisis Summary

Cause of Crisis	Participants
Regulator	7
Bank Structure	6
Politics	4
Aggressive Lending	4
Funding	3
Greed	3

Informant comments for question 10 included the following:

"The regulator was clearly not equipped to manage the domestic banks They only had one person dedicated to Bank of Ireland for example How in the world are they supposed to manage such a large bank with only one person?"

"The supervisory department was not talking to the economics department There was no holistic picture of the banking landscape"

"The regulator was focused on getting the returns from the domestic banks The focus was on liquidity ratios There was no big picture view"

"There were clearly not enough people at the regulator to do what was needed, a complete analysis of the solvency of the banks This was not done"

"There was strong reliance on the boards of the banks to ask questions of management and ensure things were running properly This was clearly not happening"

"INBS were operating outside of their charter, the regulator knew this but did not act"

"The regulation from the regulator continues to be poor, for example, the code of conduct restricts banks from contacting customers more than 3 times This restricts banks from going after non-paying customers"

Commentary from 7 of 11 participants discussed the regulator in answering question 10 There was discussion around the lack of resources at the regulator and a lack of focus and power to manage the industry There is also a degree of

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arrogance on the bank level to the extent the domestic banks knew the regulator was powerless in enforcement

> "The bank had a credit policy that set out rules for lending If a deal did not meet policy it was signed by the CEO as an exception Towards the end of 2007 everything went to the CEO for signature Nearly every big deal was an exception Exceptions were never tracked The policy was meaningless"

> "The banks engaged in product innovation This resulted in weakening credit standards There was no structure within the banks to calculate for example what effect tracker mortgages had on the loan loss reserve"

> "Demutualisation was a partial cause of the crisis Once the building societies turned members into shareholders, the management had to provide returns The focus became growth This is also a problem for public banks"

> "The structure of banks continues to be a problem Boards are not independent and therefore have no real power There is no follow through from the board"

> "Banks that were poorly managed should have been allowed to fail INBS and Anglo are good examples of banks that had poor control mechanisms The CEO of both banks were too much involved in decision making They signed deals making exceptions to policy This made a joke of credit committees"

It is clear from the commentary that the bank structure was a major factor Six of the participants indicated bank structure as a problem The issue relates both to

the weakening of controls by senior management, and the lack of independence of boards.

6.7 Results, Solutions

In the final section of the interview we focused on potential solutions, and identified change needed. Key answers are identified from question 11 and 12 and these answers are highlighted below.

In summary, all participants responded to question 11 and 12 with similar answers recorded under question 10. The interview sessions recorded the regulator, bank structure, and politics as the primary reply to these questions. Some surprising replies were recorded that did not fall within the above category mentioned. These included 'technology', and, 'further deterioration in the residential mortgage book'. The technology comments related to the fact that the banks were currently restricted from making any investment in technology, which is much needed given the increased potential for fraud, and data compromise. Answers were collected from question 13 through 22 recording the Yes, No, and, Undecided answers. The results are displayed in Fig. 15. It should be noted that not all participants answered questions 14 to 22.

Fig. 15 Semi Structured Interview Results

	13	14	15	16	17	18	19	20	21	22
Y	4	9	9	8	5	5	5	9	9	9
N	7	1	1	2	3	4	4			
U					2	1	1			
Total	11	10	10	10	10	10	10	9	9	9

6.8 Interview Analysis Conclusion

A summarised review of our findings from the semi structured interviews is displayed in Fig 16. All informants provided commentary on our primary factors

listed in Fig 16 The primary factors are listed as Excessive Growth, Autocratic Management, and Structure The informants also provided additional external factors such as regulation and government as strong influencing factors The regulator was listed as the primary factor causing the crisis, and is categorised as an external factor This research provides evidence that a structural deficiency within the banking industry provided an environment for autocratic leadership Our research concludes that a classic banking failure occurred External factors such as increased asset prices, lower cost funding, weak regulation, and strong political influence, provided the fuel to grow the bank at excessive rates With a lack of control and accountability in place, the banks continued to grow at unsustainable levels for an extended period It might be argued that the external factors caused the crisis which was in truth a secondary crisis Fig 16 provides empirical evidence that internal management decisions were the root cause, resulting in a diagnosis of a classic banking crisis

Fig. 16 Interview Analysis

Excessive Growth

The bank was sales driven

I had a target of loans to sell each month.
Each year the target grew

We had to compete with RBS and Anglo. It
all became so competitive, to keep growing
the book

The focus was all about growing revenue

Sales were driven by bonuses

Ireland's World War, which will leave an
economic scar on the next generation

Autocratic Management

I was told I was yesterdays man

I believe our CEO was too far removed from
reality to really understand what was going
on at the bank

Management at the bank were not reacting
to threats because they never believed
there would be any consequence

They thought they were above the law

Our CEO did not live in the real world

Structure and Control

There was little regard for credit quality

In early 2005 I saw things were out of
control

Nearly every big deal was an exception.
Exceptions were never tracked

There was no structure to calculate the
effect tracket mortgages had on loan loss

When they moved the credit decisions to
the head office, the branch managers
became salesmen

Once the building societies truned
members into shareholders, the
management had to provide returns

CHAPTER 7

7 1 Conclusion

Our study has revealed some interesting findings about the banking industry The financial crisis that hit Ireland in the period 2008/2009 was a severe crisis The results of which may scar those it touched for a generation The Irish crisis was not a unique event There have been many banking failures in history that closely resemble the Irish bank crisis

The study has found it is critically important to accurately diagnose a crisis before a solution or corrective policy can be designed and implemented A critical flaw of many economists is to categorise banking failure as a singular phenomenon (Marshall 2009) Banking crisis however can be categorised into two types, a classic crisis and a secondary crisis The principle difference relates to the level of participation, responsibility and endogeneity of the banking system in the development of the crisis (Marshall 2009) Ireland experienced a classic banking crisis, caused by internal bank management decisions, as opposed to a secondary crisis caused by external macroeconomic factors By misdiagnosing the Irish crisis as a secondary crisis, or a singular phenomenon, we fail to ensure the corrective treatment is applied to the participants responsible, and continue to allow institutions to lend to problematic lenders This failure is a fundamental reason for the continuation of the current financial crisis The crisis has been misdiagnosed resulting in the wrong treatment Corrective policy has not been applied

The structure of banking has shown to be lacking in adequate planning, control and accountability mechanisms Our research in the history of joint stock banking in Ireland have been constructive as it provided data on a system of banking that contained accountability to shareholders The unlimited structure of joint stock banks eliminated the agency problem that exists today (Jensen & Meckling 1976) The Joint stock system was an important era in the history of Irish

banking, as the unlimited liability of shareholders was linked directly to the security of depositors Shareholders were closely involved in the governance of the banks of joint stock companies (Hickson & Turner 2005) Furthermore, the loss to shareholders under bank failure can be less than the total loss to depositors, or even taxpayers, (Walker 2009) It may not be possible however to unilaterally return to the joint stock system in Ireland There are elements of this structure that we can adopt today

The structure of banking has allowed for a style of leadership to emanate This leadership style has been one of an autocratic leader This style was observed through our analysis of historical financial crisis, and was apparent in the semi structured interviews The leadership style involves leaders who eliminate control and independence, in favour for a narrow dictatorial arbitrary management approach These leaders often engage in independent decision making, particularly when it comes to lending decisions Often the line between legal and illegal decision making can get blurred (Kindleberger 2009) Historical records have provided rich evidence of bank leaders who adopted autocratic leadership styles, much to their detriment The structure of banking facilitates this leadership style

Our final observation in our analysis has been the theory of unsustainable growth The quantitative analysis of financial reports for the covered institutions was critically important in completing this observation We can clearly see the asset and revenue growth rates for all institutions during the sample period Both structure and management leadership provide the environment for banks to permit and maintain excessive growth levels Our evidence demonstrates that growth rates above sustainable levels provide increased risk of failure Additionally, external factors such as a lax regulatory environment, liberalised banking laws, asset appreciation, low funding availability, can also accelerate the excessive growth levels within an institution (Kindleberger 2009)

The research has supported the theory of bank structure, autocratic management, and unsustainable growth

The semi structured interviews also produced a surprise finding which may require additional research This finding relates to the comments that bank employees join the banks from school and remain at the bank for life This may contribute to the groupthink and herd mentality issues raised by Nyberg (2011 48) During the interview stage, a number of informants referred to the culture within the bank The "yesterday's man" remark when challenging authority, which created a closed environment, supports our autocratic leader view It is possible that the hiring practice did not promote contrarian expression, and limits challenging authority Further research is required on this theory

7 2 Recommendation

The banking crisis continues to have an impact on the industry and the country of Ireland One participant referred to the banking crisis as

> "Ireland's World War, which will leave an economic scar on the next generation", (Anonymous 2012)

It was evident from all participants interviewed, that the problems within the industry will be difficult to resolve There are three recommendations resulting from this research

The first recommendation is correctly diagnosing banking crises into classic and secondary categories This is achieved by identifying the primary factors causing banking insolvency, and categorising them into internal versus external events Once a bank failure can be accurately diagnosed, a corrective policy can be applied

The second recommendation is to address the structural deficiencies within the banking industry It may not be possible to return to the joint stock system, however it is possible to return accountability to bank leaders Senior executives should be held accountable for management decisions There are a number of areas where this can be achieved

- Grant boards more control into the daily management of banks Non executive board members should attend management meetings on a regular basis
- Decentralisation of some control functions to remove decision making from the head office For example appointing branch managers higher approval authority over lending decisions
- Publish, policy exception tracking, loan approval, loan decline reports This will provide more transparency
- Provide mandatory education for all control functions, in the history of bank failure Begin with the required reading of 'Manias, Panics and Crashes, A History Of the Financial Crisis' by Charles Kindleberger

The third recommendation relates to providing a set of financial ratios that more appropriately reflect the health of banks They should include sustainable growth measures The ratios in Fig 17 provide some indicators that will assist in identifying problems

Fig. 17 Financial Ratios

Ratio	10 year Average
Profit Margin	Positive
Asset Growth	< Sustainable Growth
Revenue Growth	< Sustainable Growth
Loan Growth	< Sustainable Growth
Deposit Growth	< Sustainable Growth
AWDC	<20%
Debt Growth	< Sustainable Growth
Equity Growth	< Sustainable Growth
TNW/Total Assets	< Sustainable Growth
CAR	0.15
Debt/Equity	0.04
Leverage	< 20x
Bad Debt/Equity	>20%

A robust control mechanism providing accountability is required in the banking community. We continue to uncover examples of senior management engaging in management decision making in an uncontrolled and loosely reported environment.

Our recommendation is that an additional set of ratios are included for all banks to include both internal indicators and external indicators. Banks should be as much aware of the external environment as they are about their internal environment. While it will always be difficult to identify a bubble in the future, it should be prudent to expect banks to grow at or below their sustainable growth margin, or GDP rate. It is also recommended that banks employ a through cycle view of their financial performance (10 or 15 years), as opposed to a 2 year view which is currently employed.

CHAPTER 8

Appendix A Irish Banks in 1800

La Touche Bank was established by David Digues La Touche as a private bank in Dublin in 1716 as a result of his business becoming a gathering place for Huguenots who travelled outside Dublin, and left their money with him for security Customers were mainly aristocratic and professional The bank was taken over in 1879 by Munster Bank

Newcomen's Bank, was founded in 1722 in Dublin Customers were mainly aristocratic and professional The bank closed in 1825 following the death of its owner who reportedly committed suicide by shooting himself A creditors committee found the bank was managed 'sovenly and wastefully' with significant defalcations surrounding expenses related to family members (Barrow G L 1975)

Finlay's Bank Founded in 1754, the bank had a mercantile and trade customer base It reportedly closed in 1829 without any outstanding creditors

Ball's Bank, established in 1793 originally as Beresford Bank, was taken over in 1888 by Northern Bank as the Dublin branch

Shaw's Bank founded in 1797 originally as Lighton's Bank, name changed to Shaw in 1804 The bank was taken over by The Royal Bank of Ireland in 1836 In 1966 The Royal Bank, Provincial Bank, and Munster & Leinster bank merged to form Allied Irish Bank

Alexander's Bank, founded in 1810 The bank failed in 1820 with heavy losses

Gordon's Bank (Belfast) was founded in 1808, changed its name to Batt Bank in 1826

Tennent's Bank (Belfast), founded in 1809, and also joined forces with Batt Bank in 1827

Montgomery Bank (Belfast) founded in 1809, was taken over by the Northern Bank in 1824

Malcolmson's Bank (Belfast) founded in 1804, closed in 1820

Leslies Bank (Cork) founded in 1789, closed in 1826 with outstanding debts owed

Roches Bank (Cork) founded in 1800 Closed in 1820 following poor property loans when land prices fell

Neweham's Bank (Cork) founded in 1799 closed in 1824 satisfying all outstanding liabilities

Maunsell's Bank (Limerick) founded in 1789, AKA Bank of Limerick The bank closed in 1820 following a run on several other private banks

Roches Bank (Limerick) founded in 1801, it survived the 1820 banking crisis and was finally closed in 1825 when its business was acquired by Provincial Bank of Ireland

Bruce's Bank (Limerick) founded in 1808 the bank closed in 1820 with no outstanding liabilities

Delacour's Bank (Cork) founded in 1801 and closed in 1835, surviving the 1820 crisis

Scully's Bank (Tipperary) founded in 1803, closed in 1838 and taken over by Tipperary Bank

Riall's Bank (Clonmel) founded in 1754, closed in 1820 following the closure of Newport's whom there were close ties

Watson's Bank (Clonmel) founded in 1800, closed in 1809

Sausse's Bank (Carrick-on-Suir) founded in 1894, closed in 1823

Newport's (Waterford) founded in 1760, closed in 1820

Hayden & Rivers (Waterford) founded in 1816, closed in 1824

Scott's Bank (Waterford) founded in 1816, closed in 1824

Redmond's (Wexford) founded in 1770, in 1829 it closed and was taken over by Bank of Ireland

Loughnan's Bank (Kilkenny) founded in 1800, closed in 1820

Williams & Finn (Kilkenny) founded in 1800 closed in 1805   (Barrow 1975)

Appendix B The History of Joint Stock Banks

Agricultural & Commercial Bank was established as a joint stock company in 1834, and collapsed in 1836, as mentioned above

The Belfast Banking Company was established in 1827 as a joint stock company, merged with Northern Banking Company in 1970 to form Northern Bank, and is presently owned by Danske Bank of Denmark (since 2005)

The Hibernian Bank Company was established in 1835 as a joint stock company, and was taken over by the Bank Of Ireland in 1958 (Bankofireland com)

National Bank of Ireland was established in 1825 as a joint stock company, and was taken over by the Bank Of Ireland in 1965 (Bankofireland com)

Northern Bank Company was established in 1825 as a joint stock company, merged with the Belfast Bank Company in 1970 to form Northern Bank, and is presently owned by Danske Bank of Denmark (since 2005)

Provincial Banking Company was established in 1825 as a joint stock company and merged with the Royal Bank of Ireland, and Munster & Leinster Bank in 1966 to form Allied Irish Bank

Royal Bank of Ireland was established in 1836 and was merged with the Provincial Banking Company and Munster & Leinster Bank in 1966 to form Allied Irish Bank

Ulster Banking Company was established in 1836 as a joint stock company, and continues to operate today It was taken over by the Royal Bank of Scotland in 2000

Munster Bank was established in 1864 as a joint stock company The bank had 3,800 shareholders, and is reported to have a 9% share of Irish bank deposits O'Grada, C (2010) The bank operated as a non-note issuing bank The bank collapsed on July 15th 1885, Garda C , (2010) The failure of the bank was due to corruption Loans to directors used in property speculation O'Grada notes that 'sums to a very large amount had been lent to directors on inadequate security' One of the banks senior managers George Farquharson, absconded the country with large outstanding debts The Bank Of Ireland had supported Munster Bank for some time, however in a letter dated July 11th 1885 the Bank of Ireland declared it was withdrawing credit for the bank, Following the bank's collapse, the assets were purchased and a new bank was opened under the name Munster & Leinster Bank, which survived until it merged into Allied Irish Bank in 1966

(Barrow 1975)

Appendix C Summary of the Six Covered Institutions

The Central Bank of Ireland was established in 1943 (CBOI ie) under the Central Bank Act 1942 And in 1971 became the banker for the Irish government

The Bank of Ireland, as discussed in detail earlier, the bank was established as an Act of Parliament in 1782 It is the oldest remaining bank in Ireland

Allied Irish Bank, established in 1966 with the merger of Provincial Bank of Ireland, the Royal Bank of Ireland, and the Munster & Leinster Bank The origins of Allied Irish Bank date back to 1825 with the opening of the Provincial Bank of Ireland Allied Irish as previously noted, evolved from adversity with the troublesome history of Munster Bank in 1885 This adversity resurfaced in recent years with the £200 million loss of Insurance Corporation Of Ireland in 1985, the trading losses of John Rusnak, who lost the bank $700 million in 2002, the €90 million tax settlement in 2000 relating to Deposit Interest Retention Tax, the Moriarty Tribunal into the affairs of Charles Haughey found that AIB had offered debt relief to Mr Haughey shortly after becoming Taoiseach in 1979, the bank has never been far from adversity

Anglo Irish Bank, was established in Dublin in 1964 The bank grew in the early years through acquisition, with the purchase of Irish Bank Of Commerce in 1988, The Royal Trust Bank Austria in 1995, Ansbacher Bank in 1996, and Smurfit Paribas Bank in 1999, in 1998 it bought Credit Lyonnais Austria The bank also bought a number of loan portfolios mainly in the property sector (Lyons, & Carey, 2011) In January 2010 the bank was nationalised, and the bank was merged with Irish Nationwide Building Society

Irish Nationwide Building Society was established in 1873 under the name Irish Industrial Building Society, and changed its name in 1975 In August 2010 the bank was nationalised following a capital deficiency of €5 billion

Irish Life and Permanent can trace its origins back to 1884 with the creation of The Irish Temperance Permanent Benefit Building Society, in 1940 the name was changed to the Irish Permanent Building Society, the Society demutualised in 1994 The bank purchased the Trustee Savings Bank in 2001, which had established as a savings bank in Ireland in 1816 The bank's history was also in life assurance with the state creating Irish Life Assurance Company in 1939 following the collapse of a number of life assurance companies during the great depression In 1999 the assurance company merged with the bank to form Irish Life and Permanent

Educational Building Society was established in 1935 The bank was merged into Allied Irish Bank in July 2011 following the collapse of the bank

Appendix D Japanese Banks

An article in the Economist in 1998, sourced by Business Source Complete, suggests that political pressure, a tradition of social responsibility and a fear that bankruptcies would worsen the economy, all contributed to a delay in cleaning the bank's balance sheets from bad loans Hokuyo Bank, which was managing assets acquired from one of the largest banks in Japan, struggled to manage debts from a large construction company 'Chizaki Kogo' located in Hokkaido, a sparsely populated island north of Tokyo The construction company was run by Mr Usaburo Chizaki who was a former minister for Transport in the influential LDP (Sugawara S, 1998) A clear example that politicians influenced decisions at major banks for apparent personal reasons

Appendix E Author's Personal Perspective on Argentina

The author has firsthand knowledge and experience of the Argentina crisis having spent some weeks in Buenos Aires in 2002 negotiating a debt repayment schedule on behalf of PanAmSat Inc a telecommunications satellite provider, who was attempting to recover outstanding fees from Impsat, an Argentinean Satellite provider The fees related to unpaid transponder services provided on PAS 1-R satellite, amounting to several million USD The experience gained while resolving this debt payment is important While both companies had a need to maintain a business relationship beyond the payment difficulties, PanAmSat had to ensure precedence was not established regarding non-payment of transponder fees around the world as it had many global customers in similar economically challenging environments Finding a solution to this problem that avoided any form of forgiveness was of critical importance The government in Argentina had implemented restrictions on exporting capital from the country Our dilemma was how to move a payment from Impsat made in Buenos Aires, back to PanAmSat in New York The Bank Of New York provided the solution They set up a mechanism which involved using the payment made in Buenos Aires to buy shares in Telefonica SA on the Buenos Aires stock exchange 'Bolsa de Comercio de Buenos Aires' and selling these securities as ADR's on the New York Stock Exchange The Bank Of New York had a trading desk on both exchanges and were able to facilitate the transaction, and the process from buy to sell took 7 minutes The transactions were all legal, although clearly taking advantage of a loophole which the government had not identified The mechanism worked for several weeks until the government noticed a sizable increase in the volume of trading in Telefonica shares, and other Spanish equities, and quickly closed this avenue of extracting a currency from the country through the trading of equities My time in Argentina was enriched with stories of business professionals buying and selling various commodities and products including yachts and high-end automobiles, in an effort to extract wealth from the country It was clear that in an open society like Argentina, the government was ill

equipped with containing the flight of capital, even though the extreme measures that were implemented at the time in the Corralito A lesson that needs to be remembered today as we navigate through the current economic turmoil

Appendix F Summary of IBF Findings

The IBC Report identified reasons for the UK banking failures as follows HBOS had 56% of its funding requirements from the wholesale market, which froze once the subprime market collapsed Additionally, its capital levels of 6% were insufficient Lehman Brothers UK was overexposed to subprime mortgage bonds, and over 30 times leveraged, it was unable to access wholesale funding, Northern Rock had aggressive balance sheet growth of over 20% per year, and only 23% funding from retail deposits, and it was also unable to prevent a sudden loss of wholesale funding RBS which bought ABN AMORO in 2007, was left with heavy debt and low capital of 4% It experienced heavy write downs resulting from the acquisition, and also was unable to access sufficient wholesale funding These were a combination of liquidity problems created by erosion of capital, resulting in insolvency At the time the banks were claiming only to have short term liquidity problems, unaware, or perhaps over daunted by the escalating scale of their loss of equity It is noted that Barclays Bank, Standard Chartered Bank, and HSBC were not affected by the crisis as they did not require government support, Bradford & Bingley on the other hand was nationalised in September 2008, and split in two, the retail business sold to Santander UK PLC

Appendix G The Five Elements of Credit

Character refers to the reputation of the borrower, and their willingness to pay an obligation This analysis varies depending on size of a borrower and their management reputation Additionally, ethics, integrity, and trust are an integral component of character This may be established by evaluating the history of the borrower and understanding how they have honoured obligations in the past Both people and industry can convey varying styles of character

Capacity refers to cash flow or the ability to repay The ability of a borrower to maintain sufficient profits or cash flow streams enabling it to repay the debt Capacity may derive from either existing commitments, or from future commitments The construction and property development industry is heavily dependent on future events The ability of a developer to sell property at some future date will dictate the ability to satisfy a debt In these circumstances, capacity will be influenced by present and future conditions, and past experiences The success of a developer in prior projects will help underwriters evaluate a borrowers capacity potential

Collateral refers to the assets used as security in the event of default This is important analysis for underwriters in evaluation options for converting collateral into cash in the event of a default or workout This is typical in asset backed lending The size and value of collateral will vary on the type of loan For example a typical consumer mortgage involves securing a home as collateral In the event the borrower is unable to repay the debt, the lender can take possession of the home and resell the asset in order to satisfy the loan Typically credit card debt does not include collateral due to the short term nature of the debt, and the revolving balances involved Underwriters may request the borrower to provide personal guarantees as collateral to ensure the borrower is held personally liable for the loan, in the event the existing collateral is in a pre-development stage In

workout stages, lenders may seek collateral from a borrower through a lien or judgment. The key factors for banks in securing collateral are:

1) Determining the true cash value of collateral
2) Ensuring the asset is free and clear from other lenders
3) Ensuring clean documentation in registering the security interest

Conditions: refers to the environment the borrower operates within. Events that may have an impact on the performance of the borrower and their ability to honour the obligation are considered conditions. These include the interest rate, the economic environment, political environment, business environment, weather etc. For example the Eyjafjallajökull volcano in Iceland caused business interruption for several airlines including Ryanair, which estimated an additional cost of £88 million due to the volcano (www.ryanair.com/en/investor/investor-relations-news). This may impact their ability to repay debt. It is therefore important for underwriters to continuously monitor industry indicators to ensure conditions support a borrower's ability to pay. For example an increase in the unemployment rate will have a negative impact on the ability of mortgage holders to pay. Demographic and economic conditions such as unemployment, divorce, increase in dependencies, all increase the probability of default, (McCarthy 2011).

Capital refers to the down-payment, or investment the borrower makes. This is also referred to net worth for companies, or equity for property investments. Not all capital is cash specific. Many companies may have significant equity in their business represented by low levels of debt over assets. These assets may not always be represented in the form of cash or liquid assets. The underwriter must evaluate the value of equity as it relates to the borrower's ability to fulfil the obligation.

Appendix H, Summary of Financial Analysis

It should be noted that two of the entities in our study operated outside the normal banking charter, both EBS and INBS operated as building societies Irish Life and Permanent operated both banking and life assurance operations, resulting in a somewhat uneven comparison when analysing financial performance Every effort is made to focus on the banking side of the financial analysis Data was extracted from Annual Reports

Anglo Irish Bank

Anglo Irish bank presented profits for all periods leading up to 2009, when the bank encountered difficulty The bank displayed a healthy increase in profit from 58 million in 1998 to 1,219 million in 2007 Profits peaked in 2007 at 1,219 million Profit margin for the bank hit a max of 30% in 2004, and averaged 23% through 2007 In 1998, Anglo Irish Bank had a total asset balance of €5,561 million This increased to €73,128 million in 2010, and peaked at €101,321 million in 2008 at the height of the boom, an increase of 1,722% The average annual growth rate for the period 1999 through 2010 was 26%, the average annual growth rate for the period 1999 through 2007 was 38% The annual revenue for the bank was €123 8 million in 1998 Revenue increased to €2,152 0 million in 2010, and peaked at €2,700 0 million in 2009 The 13 month revenue increase was 29%, compared to the 10 month increase of 35% through 2007 Total loan balance in 1998 was €4,816 million, compared to €27,889 million in 2010, an average annual increase of 21% Loans peaked in 2008 at €86,153 million The 13 month annual loan growth rate was 21%, the 10 month loan growth rate through 2007 was 37% Loans were funded by customer deposits (including bank) totalled €4,781 million in 1998, increasing to €57,658 million in 2010 Deposits peaked at €71,952 million in 2008 The 13 month annual average growth was 25%, the 10 month growth rate was 33% Wholesale deposit ratio was on average 22% through 2007 Loan growth was also funded by external

debt, which was at €361 million in 1998, and ended 2010 at €7,421 million Debt peaked at €28,862 million in 2007 Average annual debt growth was 51%, with the 10 year average debt growth rate at 71% through 2007 This increase in external debt represents the single largest balance sheet growth for all classes, with funding for the banks operations clearly shifting from deposits to debt between 1998 and 2007 Between 1999 and 2000 debt grew by 321%, while the total balance sheet grew by 39% Further analysis of this will be required Equity was at €181 million in 1998, and ended 2010 at €3,518 million Equity peaked at €4,148 million in 2009 The annual average growth rate for equity was 30% for 13 years, and 42% for the 10 year period through 2007 Tangible net worth was on average at 4% for the 13 year period and 3% for the 10 years through 2007 Capital Adequacy was on average at 8% for the entire sample period with reported Tier 1 capital adequacy falling within the Basel requirements Efficiency ratios were low at 53% in 1998 and averaging at 40% through 2007 The 13 year efficiency ratios are skewed by severely underperformance in 2009 and 2010 Bad debt was at 10% of equity in 1998, and averaged 8% of equity through 2007 The bank incurred massive ban debt in the period 2009 and 2010 of €15,105 million and €19,314 million respectively Anglo incurred the largest impairment of all covered institutions, and had a total asset write down of €35,143 million through 2010 Within a three year period the bank impaired over three times the total asset value of the bank based on valuations at the beginning of 2000 Average leverage ratio through 2007 was 30x Average sustainable growth rates for the period 2000 through 2007 was 24% The financial data represents a bank growing at high rates, significantly higher than the sustainable rate for all periods leading up to 2007 Anglo displayed the highest growth rates for all 6 covered institutions The bank was also growing at rates significantly higher than the GDP growth rate for Ireland which averaged at 13% through 2007, compared to asset growth of 38% and debt growth of 78% In summary the bank was expanding at rapid rates for an extended period, from 1998 through 2007 The bank was shifting its funding source away from traditional customer deposits, and obtaining

higher levels of debt funding, additionally as the balance sheet grew, the levels of bank deposits grew, although wholesale deposits did not grow at a higher rate compared to customer deposits This is surprising considering the observations made reviewing other similar events such as Northern Rock which had experienced higher levels of growth in the bank deposit category compared to the customer deposit sector In summary the bank was growing at levels that exceeded its sustainable growth rate The quality of assets was reported as healthy both by the bank reports and by the regulator CBOI reports at the end of each year when assessing the financial health of bank assets It is also noted that Anglo displayed the highest average leverage through 2007 of 30

Irish Nationwide Building Society

Annual financial reports for INBS are available for the periods 2000 through 2010 At the time of publishing this report, I was unable to obtain the 1999 and 1998 annual report for this bank The bank reported profits for all periods through 2008, with profits of €48 million in 2000 increasing to €309 million in 2007 Profits peaked at €378 million in 2005 Total assets were at €3,759 million in 2000, and increased to €16,096 million in 2007, with an average annual increase of 18% 2004 experienced the highest growth rate in the period at 30% Total revenue grew from €127 million to €483 million in 2007, with an average increase of 22% through 2007 The highest growth rate was experienced in 2005 at 37% Total loan balance was €3,421 million in 2000, increasing to €15,458 million in 2007, an annual average increase of 24% The highest loan growth period was in 2004 at and 45% Total deposit balance was €3,358 million, increasing to €7,667 million in 2008, with an average annual increase of 12% through 2007 The wholesale deposit ratio was on average 18% through 2009, with a high of 38% in 2001 Debt increased from zero in 2001 to €7,067 million in 2007, an average increase of 121% Equity grew from €297 million in 2000, and increased to €1,510, million in 2007 The average annual equity increase was at 26% through 2007 Tangible Net Worth ratio was 7 9% in 2000 and averaged 8 4% through

2007 Tier 1 Capital ratio was reported at 10 03% through 2009, however it should be noted that Tier 1 Capital ratios were decreasing for INBS for the periods, decreasing from 11 6% in 2003 to 7 2% in 2008 Capital was decreasing at the same time assets and debt was increasing Efficiency rates were high in 2000 at 83% driven by high bad debt expense Average efficiency rates were 40 7% through 2007 Bad debt was reported at 11% of equity in 2000 or at €31 million, and averaged 3 7% through 2007 Average leverage ratio was 12 through 2007 INBS surprisingly displayed the lowest leverage ratio for all banks in our study Average sustainable growth rates for the period 2000 through 2007 was 15%

INBS displayed the second highest growth rates for all 6 banks in our study The bank had an average asset growth rate of 18 37% compared to a sustainable growth rate of 15% This growth rate is also dramatic considering the society was limited in its ability to grow the balance sheet to domestic residential mortgage business INBS clearly grew the balance sheet beyond residential mortgages, and moved into property development lending both domestically and on the international market This issue will be expanded on as we move into the IILP displayed a more dramatic increase in debt, with debt increasing from €251 million in 2002 to €7,067 million in 2007 This represents a dramatic increase in funding composition for a bank that was operating under the charter of a building society Debt was also growing substantially in this period, with debt increasing by 87% and 80% in 2005 and 2006 respectively IILP also incurred some of the heaviest bad debt impairment among the banks in our study, with total impairment of €3,791 billion in the three years leading up to 2010, which represented more than the total asset value of the building society in 2000

EBS

The EBS as previously noted operated as a building Society until it was merged with AIB in July 2011 The society displayed profits for all periods in our analysis from 1999 through 2008, at which point it began incurring losses At the end of

1999 EBS had a total asset balance of €5 613 million, by 2009 this had grown to €21,505, an increase of 283%, or an average annual increase of 13% The society reported the third largest asset growth through 2007 for all banks in our study, with an average increase of 17 36% In 2005 the society experienced its largest asset growth of 35% Revenue for the company grew from €93 million to €193 million between 1999 and 2007, an average of 10% annually Total loan balance in 1999 was €4,993 million, which increased to €18,181 million in 2009, an average annual increase of 16% during the period Total deposits were €4,716 million in 1999 and grew to €16,230 million in 2008, and average annual increase of 13% Wholesale deposit ratio was on average 23% through 2007 The wholesale deposit ratio remained constant through all periods Total debt grew from €548 million in 1999 to €6,105 million in 2008, an average annual increase of 37% through 2007 Total equity grew from €243 million in 1999 to €829 million in 2007, and annual average increase of 16% through 2007 Tangible Net Worth ratio was at 4% in 1999, and averaged at 4% through 2007 Reported Tier 1 Capital ratios were 13% in 1999 and averaged at 11 5% through 2007 Efficiency ratio was Efficiency ratios were at 78% in 1999 and averaged at 71% through 2007 EBS had displayed the highest Efficiency ratios which represented the poorest efficiency levels of all banks in our study Bad debt was at €4,300 million in 1999 or 1 77% of equity The bank had an average bad debt of 81% of equity through 2007, however the bank incurred €981 million in bad debt in the period 2008 through 2010 The average leverage ratio through 2007 was 25x Average sustainable growth rates for the period 2000 through 2007 was 11% The EBS experienced the third largest asset growth rates from the period 1999 through 2007 at 17 36% This is a considerable growth rate over this period considering the bank is a building society which was restricted to domestic residential mortgage lending

Bank of Ireland

BOI is the oldest bank in our study, established in 1782 The bank enjoyed profits through 2012 Profits peaked in 2007 at €1,914 million In 1998 BOI had total assets of €54,314 million This increased to €167,473 million in 2010, and peaked at €197,432 million in 2008 Annual average growth was 12% for 13 years and 17% for 10 years through 2007 Revenue was €1,918 million in 1998 and grew to €5,864 million in 2010 with a peak of €6,389 million in 2007 Annual average revenue growth was 14% for 13 years and 17% for 10 years through 2007 Total loan balance was €39,640 million in 1998 and grew to €121,915 million in 2010, with a peak of €145,147 million in 2008, average annual loan growth was 11% for 13 years and 17% for 10 years through 2007 Deposits were at €41,336 million in 1998, and grew to €106,518 million in 2010, with a peak of €111,518 million in 2009 The 13 year average annual growth rate was 9% compared to 11% for the 9 year average through 2007 Wholesale deposit ratio was on average 23% through 2007 BOI displayed a steady growth in wholesale deposits through 2007 Debt was at €1,930 million in 1998, and grew to €31,468 million in 2010, with a peak of €68,650 million in 2008 Average annual debt growth was 37% for the 13 year period or 57% for the 9 year period through 2007 This increase in debt represents the single largest balance sheet growth for all periods Equity in 1998 was at €2,854 and grew to €6,899 in 2010 The total annual average growth rate was 9%, or 10% through 2007 Tangible net worth was 5 25% in 1999 and on average was 4% for all periods Tier 1 Capital was also reported at an average of 4% for all periods Efficiency ratio was 55% in 1999 and averaged at 49% through 2007 Bad debt over equity was at 1 96% in 1999, and averaged at 1 81% over the period Average leverage ratio through 2007 was 26 x Average sustainable growth rates for the period 2000 through 2007 was 18% As a well-established bank, BOI experienced considerable growth in the sample period, with total assets increasing by 364% between 1999 and 2009 This represents a significant increase in assets for a mature bank The

bank also experienced the third largest increase in debt in the period at 59% The total average sustainable growth rate was at 18%

Irish Life & Permanent

IL&P experienced profits through all periods through 2008 It should be noted that the Total asset balance for IL&P also include the Assurance portfolio for Irish Life, a non-banking entity were €22,559 million in 1998, and grew to €75,705 million in 2010, with annual average growth rates of 11% for 13 years and 15% for 9 years through 2007 Revenue for the period ending 1998 was €208 million, this grew to €259 million in 2010, with a peak of €649 million in 2006 Annual average revenue growth was 5% for 13 years and 11% for 9 years ending 2007 Loan balance was €6,905 million in 1998 grew to €40,146 million in 2010, with a peak of €44,850 million in 2008 The average annual growth rate was 17% for 13 years and 23% for the 9 year period ending 2007 Deposits were at €5,246 million in 1998 and grew to €30,527 million in 2010, with a peak of €33,275 million in 2009 The annual average growth of deposits was 17% for 13 years and 19% for the 9 year period ending 2007 Wholesale deposit ratio was on average 18% through 2007 Total debt was €2,377 million in 1998 and grew to €11,720 million in 2010 Debt peaked at 19,823 million in 2006, with the average annual growth rate at 18% for 13 years and 27% for the 9 year period ending 2007 Debt growth represented the largest growth rate on the balance sheet for IL&P for all periods Total equity was at €1,550 million in 1998 and grew to €1,522 million in 2010, with a peak of €2,370 million in 2007 The annual average equity growth was 1% for 13 years and 6% for 9 years through 2007 Leverage ratio was 15%, increasing year over year to 36 in 2006 Capital adequacy ratios for all periods averaged between 4-5% Average leverage ratio through 2007 was 24x Average sustainable growth rates for the period 2000 through 2007 was 3%

Allied Irish Bank

Allied Irish Bank experienced profit for all periods in the sample period Total asset values for AIB in 1998 were €67,070 million, which grew to €145,222 million in 2010 The assets peaked in value in 2008 at €182,143 million The annual average growth rate was 8% for 13 years, and 12% through 2007 Total revenue was €2,822 in 1998 and grew to €4,859 in 2009 with annual average growth of 7% (NAMA transfers were taken to income in 2010 skewing the revenue line for 2010) Loan balance was at €43 002 million in 1998 and grew to €89,293 million in 2010, with a peak of €137,068 million in 2007 Annual average loan growth was 8% for 13 years, and 14% for the 9 year period ending 2007 Deposits balances were €50,943 in 1998 and grew to €102,258 in 2010, with a peak of €118,182 in 2008 The annual average growth was 7%, with the 9 year average at 10% through 2007 Wholesale deposit ratio was on average 25 8% through 2007 Total debt was at €6,282 in 1998 and grew to €19,995 million in 2010 Debt peaked at €46,471 million in 2007, with an annual average growth rate of 20% for 13 years, and 31% for 9 years through 2007 Debt growth represents the single largest growth on the balance sheet for AIB for all periods with growth exceeding 159% in the period 2003 2004, when total assets were growing at 26% Equity was €3,183 million in 1998 and grew to €3,466 million in 2010, with a peak of €9 191 million in 2007 Annual average growth was 6% for 13 years and 12% for 9 years through 2007 Capital adequacy averaged between 4-5% for all periods Average leverage ratio through 2007 was 20x Average sustainable growth rates for the period 2000 through 2007 was 11%

Barclays Bank

All balances for Barclays and Santander in this report are expressed in Great Brittan Pound '' Barclays displayed profits for all periods Profits grew from £2,460 million in 1999 to £7,107 million in 2007 Balance sheet grew from £254,793 million in 1999 to £2,053,239 million in 2008 The large growth was

partially due to some acquisitions made in the period including Absa Group South Africa, Juniper Bank in the US, and the acquisition of HomeEq Servicing USA from Wachovia Total average balance sheet growth through 2007 was 23% Revenue increased from £8,363 million to £23,523 million in 2007, with an average annual increase of 14% Loan book grew from £156,194 to £385,518, or an annual average growth rate of 12% Deposits grew from £168,452 to £386,396 with an annual increase of 9% The average wholesale deposit composition AWDC was 28% Total debt grew from £23,329 million in 1999 to £138,378 million, with an average annual growth rate of 26% It is clear that debt provided the bulk of capital for Barclays through the asset acquisition during the sample period Total equity grew from £8,300 million in 1999 to £21,575 million, with an average equity increase of 15% Total average capital ratio was 2% for the period through 2007 Barclays had a bad debt average ratio to equity of 12% through 2007, with significant bad debt for all periods Average efficiency ratio was 72% through 2007 Sustainable growth rate for all periods through 2007 was 19%

Over all, Barclays experienced high growth rates in the sample period These growth rates were driven by an aggressive acquisitions program The bulk of growth was debt funded The deposit composition was 28% wholesale driven, which was higher than any Irish bank in the sample period The bank displayed the higher efficiency ratio compared to the Irish banks which portrays the Irish banks had a more efficient return Barclays grew at 4% above the sustainable growth rate, compared to 12% at Anglo and II&P

Santander UK PLC

Santander UK PLC is the only bank in our sample that did not enjoy profits for all periods through 2007 The bank experienced net losses in both 2002 and 2003 These losses were a result of the company absorbing the Abbey National Bank in 2004, and the losses incurred by Abbey prior to the purchase Total assets for

Santander in 1999 were £180 million, with an asset balance of £200 million in 2007 The asset value of Santander decreased in the sample period, during the years 2002, 2003, 2004, and 2006, again due to a write-down of assets following the acquisition Revenue decreased from £10,616 million to £8,156 million in 2007 Santander is the only bank in the sample group that experienced a reduction in revenue in this period As Abbey national bank, before the Santander acquisition, the bank went through a major reorganisation in 2002 and 2003 before the bank merged with Santander in 2004 This reorganisation resulted in reduced revenue as unprofitable business were sold This skews the numbers during the period 2002-4 Loans grew from £86,693 million to £147,391 million in 2007 representing an annual increase of 8% Total loans grew from £89,735 million in 1999 to £117,703 million in 2007 representing an annual average increase of 4%, however the wholesale deposit rate grew by 26%, demonstrating the bank was relying more on bank deposits for expansion, than traditional customer deposits Total debt was at £56,048 million in 1999 and grew to £64,187 million in 2007, an average annual increase of 9% Equity in 1999 was at £6,078 and ended 2007 at £3116 million Santander is the only bank in the sample period consistent equity reduction, and the parent company in Spain has been forced recently to inject additional capital The bank has an average annual leverage of 41, and an annual sustainable growth rate of 6% The bank has a strong credit rating today compared to the six Irish banks, an apparent reflection of the increasing profit and the injection of £7,500 million of fresh capital

CIBC

CIBC (Canadian Imperial Bank of Canada) is the highest rated bank in the sample group, and one of the highest rated banks in the world, Bloomberg, (Doug A and Pasternak S B 2012) According to Bloomberg, the conservative nature of the Canadian system, and Canada's Regulator, the 'Office of the Superintendent of Financial Institutions Canada', required all Canadian banks to hold a minimum of up to 10% of total capital as a cushion to absorb losses, as far

back as 1999 All balances for CIBC in this report are expressed in Canadian Dollars '$' CIBC enjoyed profits in all periods leading up to 2007, however the bank incurred losses in 2008 Total assets in 1999 were $250,331 million, increasing to $342,177 in 2007 Annual average asset increase was a modest 2% through 2007 Revenue was at $20,133, increasing to $23,287 in 2007 with an average annual increase of 2% Total loan balance in 1999 was at $118,192 and increased to $164,097, with an annual average increase of 4% Deposits for CIBC were $160,041 in 1999, increasing to $231,672 in 2007 with an annual average increase of 4% through 2007 The average wholesale deposit composition was at 63%, which is the highest in the sample group The high wholesale deposit composition includes a large portion of Sovereign deposits, and is a reflection of the flight to quality on the international markets for corporations and governments seeking safe havens for deposits Total debt in 1999 was $43,043 million, and increased to $55,855 in 2007, with an annual average increase of 2% Equity for CIBC was $11,058 million, increasing to $13,489 million in 2007, an annual average increase of 3% Equity for CIBC decreased by $2 492 million, or 19%, due to a provision related to claims related to the Enron bankruptcy Total average Tier 1 Capital through 2010 was 10% This represented the highest Tier 1 Capital ratio for all banks in our report sample The ratios actually hit a maximum of 13 9% in 2010 Total average efficiency ratios for CIBC are at 73 8%, the highest ratio of all banks in the sample period Bad debt in 1999 was at 7% of equity which equalled the total annual average rate through 2007 Leverage for CIBC through 2007 was 24, on an annual average basis Sustainable growth ratios for CIBC for the period 1999 through 2007 averaged 4% per year, higher than the actual balance sheet growth experienced in the same of 2% While some critics, including some of the interviewees (see interviews in research analysis in section 5) claim that the Canadian banks were overly conservative and lost out on potential business The total average annual GDP growth rates for the sample period for Canada was 8%, compared to 13% for Ireland and 5% for the UK

Summary

The following observations were recorded from our analysis

1) Loan books for all banks grew at unsustainably large rates, with significant concentration issues in the loan books for all banks

2) Losses incurred in the 3 year period 2007 to 2010, greatly exceeded the Basel capital ratio requirements Losses for all banks were significantly higher than available capital

3) Debt grew on average three times the rate of equity growth for all six covered institutions, and debt represented the largest average growth of all indicators in our analysis Funding models moved from traditional deposit funding to debt funding, with secured and subordinated debt increasing significantly in the period 1999 through 2007 Additionally, wholesale deposits grew faster than customer deposits This represented a significant shift in how the banks managed their business model

4) The Building Society's operated outside their mandated charter, and operated outside their regulated market limitations As the competitive landscape changed and other Societies demutualised, both IBNS and EBS expanded beyond their charter This is evident in the balance sheet expansion and debt growth

5) Debt to equity ratios increased leading up to 2007

6) Balance Sheet and Income presentations were inconsistent for all banks in the sample period 1999 through 2010, allowing for changes to Irish GAAP and IFRS accounting rule changes Banks regularly changes the format of their presentations, resulting in difficulty when comparing historical analysis

Appendix I Key Informants Detail

The interviews were held over a period between April 25th and July 27th

This interview process is recognised as being somewhat problematic due to the nature of the research, and the popular blame game that has progressed through the media in recent years We encountered difficulty successfully engaging with key personnel for a successful outcome, specifically at the regulators office The participants who we interviewed however provided valuable information, and were extremely forthcoming and generous with their time While it would be ideal to engage the field of socio-cultural anthropology in an ethnographic study of the banking industry by spending long periods of time immersed in the subject matter This process would consume excess time and resources beyond what is currently available

A total of eleven interviews were held Three informants did not wish for their name to be disclosed in this document All participants requested that quotes would not be directly identified, and a number of participants made comments which they did not want disclosed The participants included the following

- John McNally was CEO of Ulster Bank, retired in 2004, also held title of President of the Dublin Chamber of Commerce
- Alan Dukes currently holds the position of Chairman of Anglo Irish bank (IBRC), and former leader of the Fine Gael Party
- Pat Farrell, President of the Irish Banking Institute
- Clark McGinn, Author of 'Out Of Pocket' and senior executive of RBS Ireland
- Patrick Peake, current senior manager for Anglo Irish Bank, 17 years
- Russell Waide, former senior manager at Anglo Irish Bank
- Anonymous, current senior lender at Bank of Ireland, 23 years

- Mike Shea, current European Chief Counsel, Elavon Financial Services, 5 years
- Anonymous, former director of a large Irish property developer
- Marie Mangan, former senior manager in the Central bank Of Ireland, 17 years
- Anonymous, Chief Financial Officer a large Irish bank

Politics

"The IFSC was created as a jobs initiative by Charles Haughey The design of the financial services sector has always been supported and influenced by politicians as a way to create jobs Once it was successful, it was protected by government "

"The Finance Act of 1986 established a 10% corporate tax rate for financial institutions operating within the IFSC This was the government's way of attracting foreign banks to Dublin This officially ended in 2005 "

"The government was pushing and supporting the growth of banking in Ireland to become a second smaller version of London An example was the CEO of Depfa bank pushing for the 2001 Assets Covered Securities Act in 2001 which copied the German Law on securing loans and converting into SPV's and selling bonds "

"The government in Ireland should be ashamed of the fact that there is not one single person in prison, or being charged in connection with the financial crisis Either the laws are inadequate, or the enforcement is inadequate Either way, this should have been addressed in 2008 The government does not view this as a priority, because they are part of the problem "

"The rural renewal scheme created by the government was the catalyst for the current partially developed housing projects around the country The government fuelled the property boom "

"Personal insolvency law and bankruptcy law in this country is inadequate The government should have addressed this issue a long time ago "

"Ireland is one of the few countries in the world that still has a debtor's prison This is archaic "

"A lively economy is good for the construction industry however in Ireland the governments view was that a lively construction industry was good for the economy "

Politics and government were discussed by all participants in various sections of the interview In total, 4 cited politics in answering question 10 The answers range from the political influence over the creation of a banking environment, to the political influence over protecting particular groups

Regulator Comments

"The Regulator was clearly not equipped to manage the domestic banks They only had one person dedicated to Bank of Ireland for example How in the world are they supposed to manage such a large bank with only one person?"

"The supervisory department was not talking to the economics department There was no holistic picture of the banking landscape "

"The Regulator was focused on getting the returns from the domestic banks The focus was on liquidity ratios There was no big picture view "

"There were clearly not enough people at the Regulator to do what was needed, a complete analysis of the solvency of the banks This was not done "

"There was strong reliance on the boards of the banks to ask questions of management and ensure things were running properly This was clearly not happening "

"INBS were operating outside of their charter, the Regulator knew this but did not act "

"The regulation from the Regulator continues to be poor, for example, the code of conduct restricts banks from contacting customers more than 3 times This restricts banks from going after non-paying customers "

Commentary from 7 of 11 participants discussed the regulator in answering question 10 There was discussion around the lack of resources at the Regulator and a lack of focus and power to manage the industry There is also a degree of arrogance on the bank level to the extent the domestic banks knew the regulator was powerless in enforcement

Appendix J Interview Questions

Section A

1. What is your position in your Organisation?
2. How long have you been employed in your Organisation?
3. How long have you been employed in your industry?
4. Why did you join the industry?
5. Have you enjoyed your career in the industry?
6. Have you thought of leaving the industry?
7. Have you thought of leaving your present employer?

Section B

8. Do you think the recent crisis was foreseen?
9. Do you think the recent crisis was preventable?
10. List three areas that you believe were the primary cause of the crisis?
11. List three areas that you believe need to change
12. What do you believe are the biggest risks?

Section C

13. Do you believe the financial industry in broken in Ireland?
14. Do you believe the Irish banks can survive?
15. Do you believe the Irish banks require additional operational change?
16. Do you believe the banks need to change control mechanisms?
17. Do you believe the banks need to change reporting?
18. Do you believe the banks need to change Senior management?
19. Do you believe the banks need to change Middle management?
20. Do you believe the regulator needs to change?
21. Do you believe the Government Bodies need to change?
22. Do you believe the customer behavior needs to change?

Appendix K Chronology of Events

2007

January

- World Economic Forum, Oliver Wyman claims Anglo Irish Bank as the best managed bank in the world
- Anglo Irish Bank disclose Sean Quinn purchased 5% equity stake of the Bank

March

- The Index of House Prices shows a decline for the first time

April

- New Country Financial USA files Bankruptcy

June

- Bear Stearns announces problems with hedge funds in subprime market at a value of $3 2 billion
- SEC begins investigating 12 CDO issuers

August

- BNP announces freezing of three funds due to subprime valuations of $2 2 billion following a decrease in value of 20% in 2 weeks
- IKB Bank Germany fails
- Sachsen LB received, German 17 billion bailout, following the collapse of its investment vehicle Ormond Quay Funding Plc, a property company based in Dublin, guaranteed by Sachsen LB, which bought subprime assets from Lehman Brothers
- ECB announces Euro 40 billion LTRO
- Warren Spector resigns at Bear Stearns amid growing concern over hedge fund exposure to sub prime
- Bear Stearns cuts 420 jobs in mortgage origination unit

September

- Victoria Mortgage UK fails

- Lines form outside Northern Rock on the 14th, as customers demand deposits, first run on a Bank in the UK in over 100 years
- Bank Of England provides emergency funding to Northern Rock

October

- Citigroup begins write down of subprime investments

November

- US Term Auction Facility announced with $20 billion of 28 day credit

December

- Bear Stearns announces first loss in its history with a $2 billion write down on subprime assets

2008

January

- Bear Stearns CEO steps down
- Two US bond insurers, Ambac and MBIA at risk of downgrade

February

- TAF program increased to $30 billion
- Bear Stearns and Citi agree a swap deal on subprime assets
- Northern Rock Nationalised by UK government

March

- Bear Stearns reports $15 billion drop in liquid assets
- Carlyle Capital Corporation a $22bn hedge fund exposed to mortgage-backed securities, suspended in Amsterdam, Bear Stearns is heavily exposed
- Carlyle Capital Collapse, Bear stock falls dramatically
- JPMorgan buys Bear Stearns for $2 per share
- US introduces Primary Dealer Credit Facility
- Fannie Mae & Freddie Mac capital requirements eased to allow increased lending

- Anglo Share Price falls 18% over one week due to concerns over property exposure
- ECB announces 6 month LTRO of 25 billion

April

- Bank Of England announces 50 billion liquidity fund

May

- Bank Of America purchases' Countrywide Financial mortgage company

June

- S&P downgrades the two largest monoline bond insurers with €1trn of debt from AAA to AA
- US Lehman reports second quarter loss of $2 8bn

July

- FDIC takes over IndyMac which then experiences a run on deposits
- Treasury requests Government funds to potentially support Fannie Mae & Freddie Mac
- 84-day TAF auctions introduced and ECB swap line increased

September

- Fannie Mae & Freddie Mac placed in Federal conservatorship
- Lehman reports third qtr loss of $3 9bn
- Eligible collateral for TSLF & PDCF expanded 10 banks create $70bn liquidity fund
- Lehman's files bankruptcy
- AIG Debt downgraded by S&P, Moody's & Fitch
- Bank of America purchases Merrill Lynch
- AIG given $85bn loan from Government US
- ECB announces 6 month LTRO's of €25bn each for 2 Apr & 9 Jul
- Lloyds TSB agrees to rescue HBOS
- Treasury calls for government plan to purchase troubled assets (TARP)
- France & US restrict short selling
- Goldman Sachs & Morgan Stanley approved as bank holding companies

- Washington Mututal is acquired by OTS & FDIC, closed and its banking assets sold to JP Morgan for €1 19bn
- Ireland officially in recession
- Hypo Real Estate receives €35bn guaranteed financing
- Bradford & Bingley nationalised and partial sale of assets to Banco Santander
- Wachovia assisted
- US Treasury $700bn bailout plan (TARP) rejected - Dow Jones falls 7%
- Listed covered institutions shares decline 27% ISEQ declines by 13%
- Irish State Guarantees €375bn of the liabilities of 7 domestic banks for a two year period
- Govt recapitalises Dexia with €3bn
- Italy adopts temporary short selling ban
- UK Deposit Insurance upped to £50k
- US TARP$700bn bailout plan passed raising deposit protection to $250k
- Netherlands Government nationalises banking and insurance activities of Fortis
- Germany Government guarantees all private bank accounts
- Germany Hypo Real Estate Guarantee set at €50bn
- UK £500bn bank rescue package announced - lending £200bn , short term guarantees £250bn, capital £50bn
- France Govt guarantees 36 5% of €150bn Dexia re-financing
- Italy Govt states no banks will fail, no depositors to suffer losses
- UK £37bn capital injected into Lloyds/HBOS, RBS
- France €320bn loan fund & €40bn recapitalisation fund announced
- Germany €400bn loan fund & €70bn recapitalisation fund announced
- Italy Unspecified bank financing guarantee passed
- France Govt subscibes to €10 5bn sub debt of 6 banks
- Germany Rescue fund SoFFin begins operation - powers to guarantee financing, buy assets and recapitalise firms

- Germany SoFFin provides Hypo Real Estate with €35bn in guarantees
- US TARP$700bn bailout plan passed raising deposit protection to $250k
- US TAF increased to provide $900bn of funding over year end
- France BNP Paribas takes 75% stake in Fortis
- US Commercial Paper Funding Facility (CPFF) established
- Iceland Landesbanki nationalised

October

- UK £500bn bank rescue package announced - lending £200bn , short term guarantees £250bn, capital £50bn
- Govt states no banks will fail, no depositors to suffer losses
- Govt guarantees 36 5% of €150bn Dexia re-financing
- Wells Fargo purchase of Wachovia approved
- France €320bn loan fund & €40bn recapitalisation fund announced
- Germany €400bn loan fund & €70bn recapitalisation fund announced
- Unspecified bank financing guarantee passed
- £37bn capital injected into Lloyds/HBOS, RBS
- Emergency Budget Introduced
- Caps removed on swap lines with ECB, BoE & SNB
- Treasury $250bn capital injection plan, 9 banks sign-up, FDIC insures senior debt of regulated institutions
- ECB widens collateral rules and slashes required ratings
- France Gov subscribes to €10 5bn sub debt of 6 banks
- Money Market Investor Funding Facility (MMIFF) is established
- UK £23bn stimulus package announced
- Germany Rescue fund SoFFin begins operation - powers to guarantee financing, buy assets and recapitalise firms
- UK Government acquires 58% stake in RBS for £15bn

November

- Germany SoFFin provides Hypo Real Estate with €35bn in guarantees
- Germany SoFFin provides Commerzbank with €8 2bn of loan

- China Government announces $586bn fiscal stimulus package
- Iceland The IMF approves a loan to Iceland for $2 1bn following the collapse of its banking system
- US Citigroup receives $20bn in government assistance from Fed, FDIC & Treasury
- Troubled Asset Lending Facility (TALF) established for $600bn to provide loans collateralised by ABS $200bn
- US Treasury allocates $200bn to target unfreezing of consumer credit
- Germany BayernLB receives €7bn in capital from Bavaria

December

- Germany SoFFin provides BayernLB with €15bn in guarantees
- Irish Government announces €10bn allocated to recapitalisation of domestic banks
- UK Credit Guarantee Scheme lengthened to 5 years
- Anglo's Chairman and CEO resign following disclosures over directors loans
- International Eleven of the world's largest banks are downgraded by S&P
- Government announces €5 5bn to be invested in preference shares in AIB, Anglo & BoI
- Germany SoFFin provides IKB with €5bn in guarantees
- UK Bank of England estimates world credit loss at £1 8trn
- Treasury injects $5bn into GMAC

2009

January

- Germany SoFFin provides a further €8 2bn of loans to Commerzbank and buys €1 8bn of equity
- Minister for Finance announces the re-appointment of the Governor of the Central Bank

- The Chief Executive of the Financial Regulator announces intention to retire on 31-Jan-10
- Germany €50bn economic stimulus package unveiled
- Gov t announces intention to nationalise Anglo due to weak funding position & "unacceptable practices"
- US Fed, FDIC & Treasury aid Bank of America
- UK Asset Protection Scheme (APS) announced where Treasury will cover 90% of losses over initial provision
- UK Credit guarantee Scheme extended to debt issued up to year end 2008
- UK BoE to purchase £50bn of private sector assets
- UK Full or partial guarantee available to CGS eligible firms on AAA-rated ABS
- BoI announces retirement of CEO with effect from summer of 2010
- Germany SoFFin provides Hypo Real Estate additional €12bn in guarantees
- France Second round of recapitalisation for another €10 5bn
- US Citigroup sells $12bn in bonds guaranteed by US Government
- US Fannie Mae & Freddie Mac state $51bn required from government to continue operations
- Sean Quinn reveals losses of €1bn arising from speculative trading on Anglo Irish stocks

February
- IL&P CEO & 2 directors resign over €7bn placed with Anglo in Sep-08 to boost Anglo's Balance Sheet
- Fed expresses willingness to expand TALF to $1tn and accept wider set of collateral
- Recapitalisation plans amended to invest €7bn in AIB & BoI from the National Pensions Reserve Fund
- Chairman of INBS resigns

- Germany €50bn economic stimulus package unveiled
- US President signs $787bn economic stimulus plan into law
- Germany Two German states recapitalise HSH Nordbank
- Italy €12bn recapitalisation plan approved
- France Government provides €5bn in preference shares to two merging banks
- UK RBS agrees to participate in APS and receives captial injection of £13bn giving govt 84% ownership

March

- UK LBG agrees to participate in APS and government preference shares are converted to common equity
- Germany SoFFin provides HSH Nordbank with €30bn in guarantees
- US AIG receives $30bn in capital in exchange for government control of two divisions
- US AIG announces fourth quarter loss of $61 7bn - Fed & Treasury announce AIG restructure
- US TALF launched
- Germany SoFFin purchases 8 7% of Hypo Real Estate for €60m
- Standard & Poor's cut Ireland's long term rating by one notch to AA+ on back of deteriorating public finances

April

- International Mark-to-market accounting rules relaxed by Financial Accounting Standards Board (FASB)
- INBS announces the resignation of the its CEO at the end of the month
- National Asset Management Agency (NAMA) announced €90bn of toxic assets to be swapped for bonds
- Germany SoFFin makes bid for Hypo Real Estate - will nationalise bank in May if bid is not accepted
- Germany Finance Minister proposes "bad bank" plan to take illiquid assets

- Germany SoFFin extends €52bn in guarantees to Hypo Real Estate until mid-August
- AIB announces the resignations of the its Chairman, CEO & Finance Director

May

- ECB announces €60bn in purchases of covered bonds UK Asset Purchase Plan increased to £125bn
- BoI announces resignation of Chairman with effect from Jul-10

June

- Germany Hypo Real Estate taken under full government control with €3bn capital injection
- Standard & Poor's cut Ireland's long term rating by one notch to AA due to costly bank rescue package
- Governor of Central Bank announces retirement with effect from Sep-10
- US President proposes a comprehensive regulatory reform plan
- 10 banks including US Bank repay $68 billion TARP

July

- Germany IKB receives a further €3bn in guarantees
- Irish Government injects €4bn of funds in Anglo
- Germany Bad Bank bill passed - trades toxic assets for guaranteed debt but firms must repay losses over 20 years
- TAF offer amount reduced to $100bn
- NAMA draft proposal released
- Italy Banco Popolare becomes first bank to use the Italian bank liability guarantee programme

August

- UK Asset Purchase Plan increased to £175bn
- TAF offer amount reduced to $75bn for September auctions
- International Mark-to-market accounting rules relaxed by Financial Accounting Standards Board (FASB)

September

- Germany Commerzbank announces it will return all of its unused debt guarantees
- NAMA Bill Published forecasting €77bn in loans to be acquired from 5 domestic banks
- US SEC approves new rules to govern rating agencies
- US TSLF & TAF offer amount reductions announced
- Italy Unicredit to raise capital rather than avail of Gov t funds France BNP announces rights offer to repay state aid

October

- France Societe Generale announces rights offer to repay government aid

November

- UK LBG exits Asset Protection Scheme for a fee
- UK Asset Purchase Plan increased to £200bn

December

- Cost cutting budget announced targeting savings of over €4bn per annum
- US Treasury extends TARP to Oct-10 - Bank of America repays TARP funds
- Germany Hypo Real Estate €43bn liquidity facility extended until Dec-10, €52bn in guarantees to expire Jun-10
- US Citibank & Wells Fargo repay TARP funds

2010

February

- US The AMLF, CPFF, PDCF & TSLF are closed
- US PNC Bank repays TARP funds

March

- US Senator Dodd introduces the financial regulation bill to senate
- US Senate Banking Committee passes the financial regulation bill

- Central Bank Reform Bill 2010 presented to unify CB & FR and confer additional powers to the CB
- NAMA Tranche 1 announced - €16bn at average discount of 47% to be transferred in Apr-10
- After CB review (PCAR), revised recapitalisation plan announced and intention to take control of INBS & EBS
- Capital requirements for AIB (€7 4bn) & BoI (€2 7bn) to be raised through share issue & asset sales
- Promissory notes to be issued to Anglo (€8 3bn) & INBS (€2 6bn) & investment shares in EBS & INBS
- Anglo announces largest corporate loss in Irish history of €12 7bn

April
- EU European finance ministers finalise European Stability Facility to assist countries in financial distress
- BoI announces plans to raise €3 4bn in capital through rights issue and placing's with government backing

May
- Greece receives a bailout package of €110bn from the EU & IMF
- Government issues further promissory notes to Anglo for €2bn
- US Senate passes Restoring American Financial Stability Act
- Government takes control of EBS with purchase of €100m in special investment shares
- Further promissory notes issued to Anglo for €6 4bn and buys special investment shares in EBS for €250m

June
- BoI completes capital raising programme, raising over €3 5bn
- US Dodd-Frank Wall Street Reform and Consumer Protection Act passed

July
- Central Bank Reform Act 2010 signed into law - to take effect Oct-10

August

- NAMA Tranche 2 €12bn of loans acquired at average discount of 56%
- Standard & Poor's cut Ireland's long term rating by one notch to AA- with a negative outlook
- Anglo's interim accounts show losses for the six months of 2010 of €8 2bn

September
- AIB agrees sale of Polish units to Santander improving it's capital position by €2 5bn
- Government announces costs of Anglo at least €29bn possibly rising to €34bn
- CB confirms further capital requirement for AIB of €3bn following update of PCAR in light
- AIB announces termination of CEO's contract and resignation of Chairman

October
- German Chancellor suggests holders of sovereign debt should take losses as part of any debt restructuring

November
- Spreads on 10 year Government bonds over German equivalents reach a new high of 6 65%
- Minister for Finance to recommend to Government that the country formally request a bailout package
- Standard & Poor's cut Ireland's long term rating by two notches to A on back of escalating bank bailout costs
- IMF/EU bailout deal announced giving Ireland access to €85bn in funding

December
- Budget presented targeting initial €6bn in annual savings rising to €15bn over 4 year plan
- NAMA Tranche 3 €43bn of loans acquired at discount of 61%, Cumulative bank losses amount to €41bn
- Gov t to inject €3 7bn into AIB bringing its ownership to 93%

- Further promissory notes issued to Anglo €6 4bn and INBS €2 7bn - Total gov t capital in banks now €46bn

(Nyberg 2011,150)

ANGLO IRISH BANK	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 12	Average 2007
Profit	58,559	89,100	133,600	194,800	261,300	346,500	504,100	685,200	846,000	1,219,000	765,000	12,711,000	17,515,000		
Margin	14.47%	16.50%	16.50%	18.23%	23.20%	28.16%	30.21%	29.08%	25.22%	21.84%	11.68%	-297.89%	-802.34%	-73%	23.21%
Assets	5,561,413	7,935,400	11,047,300	15,757,700	19,417,800	25,526,300	34,339,800	48,263,600	73,290,000	96,652,000	101,321,000	85,212,000	72,183,000		
Asset Growth		43%	39%	43%	23%	31%	35%	41%	52%	32%	5%	-16%	-15%	26%	37.56%
Revenue	404,679	540,100	809,600	1,068,700	1,126,300	1,230,500	1,668,900	2,356,100	3,354,000	5,582,000	6,547,000	4,267,000	2,183,000		
Revenue Increase		33%	50%	32%	5%	9%	36%	41%	42%	66%	17%	-35%	-49%	21%	35.07%
Loans	4,816,861	7,082,200	10,006,700	14,338,700	17,244,300	23,067,300	29,934,400	40,352,600	61,566,000	78,000,000	86,153,000	38,212,000	27,889,000		
Loan Growth		47%	41%	43%	20%	34%	30%	35%	53%	27%	10%	-56%	-27%	21%	36.61%
Deposits	4,761,055	6,928,400	8,923,900	12,626,100	14,933,500	17,867,700	22,151,900	31,310,400	47,133,000	60,287,000	71,952,000	60,185,000	57,658,000		
Deposit Growth		45%	29%	41%	18%	20%	24%	41%	51%	28%	19%	-16%	-4%	25%	32.99%
Deposit Ratio	32%	36%	27%	30%	21%	18%	12%	23%	22%	13%	28%	55%	81%	30%	22.37%
Debt	361,738	298,300	1,257,100	1,694,000	2,386,500	4,986,900	8,077,800	10,586,800	19,265,000	28,862,000	22,228,000	17,531,000	7,421,000		
Debt Growth		-18%	321%	35%	41%	109%	62%	31%	82%	50%	-23%	-21%	-58%	51%	79.26%
Equity	181,059	258,100	324,200	409,500	648,100	843,600	1,170,200	2,046,600	2,594,000	3,989,000	4,104,000	4,148,000	3,518,000		
Equity Growth		43%	26%	26%	58%	30%	39%	75%	27%	54%	3%	1%	-15%	30%	41.89%
Capital Ratio															
TNW/Total Assets	3.26%	3.25%	2.93%	2.60%	3.34%	3.30%	3.41%	4.24%	3.54%	4.13%	4.05%	4.87%	4.87%	4%	3.42%
CAR (Tier I)	8.00%	8.00%	8.00%	8.00%	8.20%	8.50%	8.40%	8.40%	8.40%	8.60%	8.40%	6.30%	10.90%	8%	8.28%
Efficiency	16.13%	19.50%	17.27%	17.57%	18.66%	18.26%	13.13%	29.00%	27.00%	9.71%	18.44%	362.90%	900.92%	121%	18.90%
Bad Debt	18,030	36,700	51,000	69,700	65,600	57,500	19,100	29,400	66,000	82,000	724,000	15,105,000	19,314,000		
Bad Debt/Equity	9.96%	14.22%	15.73%	17.02%	10.12%	6.82%	1.63%	1.44%	2.54%	2.06%	17.64%	364.15%	549.01%	84%	7.95%
Leverage	31	31	34	38	30	30	29	24	28	24	25	21	21	28	29.88
Leverage ratio	3%	3%	3%	3%	3%	3%	3%	4%	4%	4%	4%	5%	5%	4%	3%
Debt/Equity	2.00	1.16	3.88	4.14	3.68	5.91	6.90	5.17	7.43	7.24	5.42	4.23	2.11	4.77	5.06
Ireland GDP	67,782,000	72,632,000	73,535,000	80,529,000	94,246,000	121,065,000	142,408,000	155,058,000	170,570,000	199,774,000	204,868,000	174,764,000	133,846,000		
Ireland GDP Growth		7%	1%	10%	17%	28%	18%	9%	10%	17%	3%	-15%	-23%	-100%	13.00%
Sustainable Growth	15.21%	17.84%	25.62%	22.40%	26.09%	26.81%	31.20%	23.79%	28.69%	27.22%	14.13%	-304.89%	-495.61%	-42%	25.52%

Irish Nationwide B. Society	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 12	Average 2007
Profit		48.729	63.421	70.600	95.800	107.300	378.700	186.500	309.100 -	242.900 -	2,487,500 -	3,291,400		
Margin		20%	23%	24%	33%	28%	73%	27%	28%	-24%	-451%	-1551%	-179.02%	33.59%
Assets	-	3,759.975	4,374.045	5,547.700	5,953.200	8,551,900	10,998,600	14,629,000	16,096,000	14,429,300	13,315,500	12,131,800		
Asset Growth			14.04%	21.16%	6.81%	30.39%	22.25%	24.82%	9.11%	-11.55%	-8.36%	-9.76%	9.89%	18.37%
Revenue		245.366	281.788	298.000	290.300	381.900	521.200	695.700	1.088.700	1.032.700	551.800	212.200		
Revenue Increase			14.84%	5.75%	-2.58%	31.55%	36.48%	33.48%	56.49%	-5.14%	-46.57%	-61.54%	6.28%	25.14%
Loans		3,421.982	4.060.441	5.268.700	5.640.700	8.200.300	10,530,300	13,965,100	15,458,100	13.517.100	3.589.600	3,130,700		
Loan Growth			18.66%	29.76%	7.06%	45.38%	28.41%	32.62%	10.69%	-12.56%	-73.44%	-12.78%	7.38%	24.65%
Deposits		3,358.251	3.927.081	4.780.600	5.030.600	5.843.100	6,340,200	6,691,100	7,424,600	7,667,700	6,327,600	65,500		
Deposit Growth			16.94%	21.73%	5.23%	16.15%	8.51%	5.53%	10.96%	3.27%	-17.48%	-98.96%	-2.81%	12.15%
Deposit Ratio (W)		36.77%	38.44%	28.57%	31.12%	18.27%	9.57%	1.32%	2.35%	11.51%	15.60%	86.87%	24.36%	18.52%
Debt		-	-	251.000	250.700	1.936.100	3.626.000	6,549,900	7,067,000	5.497.300	5.578.400	791.800		
Debt Growth			0.00%	0.00%	-0.12%	672.28%	87.28%	80.64%	7.89%	-22.21%	1.48%	-85.81%	74.14%	121.14%
Equity		297.422	360.734	438.200	532.100	639.800	983.700	1,237,700	1,510,300	1.189.100	1,350,300 -	18,300		
Equity Growth			21.29%	21.47%	21.43%	20.24%	53.75%	25.82%	22.02%	-21.27%	13.56%	-101.36%	7.70%	26.58%
Capital Ratio														
TNW/Total Assets		7.91%	8.25%	7.90%	8.94%	7.48%	8.94%	8.46%	9.38%	8.24%	10.14%	-0.15%	7.76%	8.48%
CAR (Tier I)		13%	9.70%	11%	9.00%	8.00%	7.40%	7.50%	9.00%	7.90%	6.70%	23%	9.92%	8.80%
Efficiency		86%	50%	52%	45%	29%	15%	25%	24%	-193%	-115%	-101%	-16.88%	40.67%
Bad Debt		31.743	14.500	17.000	14.800	6.500	27.200	17,600	48.800	495.200	2.792.400	503.800		
Bad Debt/Equity		11%	4%	4%	3%	1%	3%	1%	3%	42%	207%	-2753%	-248.54%	3.72%
Leverage		13	12	13	11	13	11	12	11	12	10 -	663 -	56	11.86
Debt/Equity		-	-	1	0	3	4	5	5	5	4	-	3	2.53
Ireland GDP	67,782,000	72,632,000	73,535,000	80,529,000	94,246,000	121,065,000	142,408,000	155,058,000	170,570,000	199,774,000	204,868,000	174,764,000	133,846,000	
Ireland GDP Growth		7%	1%	10%	17%	28%	18%	9%	10%	17%	3%	-15%	-23%	-100%
Sustainable Growth		12.62%	13.54%	12.41%	13.86%	12.91%	29.64%	11.60%	15.76%	-20.43%	-0.18%	17.99%	10.71%	15.29%

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EBS	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 12	Average 2007
Profit	22.900	20.700	30.100	35.700	59.400	48.300	38.700	57.700	55.900	37.800 -	78.800 -	589.600		
Margin	10%	7%	8%	10%	16%	12%	8%	8%	6%	-4%	-9%	-76%	-1.28%	9.33%
Assets	5.613.000	5.846.500	6.490.800	8.381.300	9.717.400	12.301.100	16.556.300	19.306.000	19.475.800	21.374.200	21.505.600	20.086.900		
Asset Growth		4.16%	11.02%	29.13%	15.94%	26.59%	34.59%	16.61%	0.88%	9.75%	0.61%	-6.60%	12.97%	17.36%
Revenue	235.100	291.900	378.100	370.000	372.800	403.900	483.800	692.300	973.700	1.065.800	853.500	776.500		
Revenue Increase		24.16%	29.53%	-2.14%	0.76%	8.34%	19.78%	43.10%	40.65%	9.46%	-19.92%	-9.02%	13.15%	20.52%
Loans	4.993.400	5.463.700	6.070.100	7.989.500	9.180.000	11.191.600	13.638.200	15.907.100	16.531.600	18.560.700	18.181.800	16.691.600		
Loan Growth		9.42%	11.10%	31.62%	14.90%	21.91%	21.86%	16.64%	3.93%	12.27%	-2.04%	-8.20%	12.13%	16.42%
Deposits	4.716.700	4.879.000	5.338.100	7.125.400	8.056.900	9.868.400	12.119.500	12.815.100	12.200.800	16.230.000	14.264.100	15.177.000		
Deposit Growth		3.44%	9.41%	33.48%	13.07%	22.48%	22.81%	5.74%	-4.79%	33.02%	-12.11%	6.40%	12.09%	13.21%
Deposit Ratio (W)	25.51%	19.04%	15.30%	24.77%	27.18%	26.39%	27.79%	21.41%	21.78%	37.61%	31.08%	5.77%	23.47%	22.96%
Debt	548.300	599.700	746.000	799.400	1.104.900	1.811.700	3.536.900	5.450.600	5.937.000	3.895.200	6.105.000	3.786.200		
Debt Growth		9.37%	24.40%	7.16%	38.22%	63.97%	95.23%	54.11%	8.92%	-34.39%	56.73%	-37.98%	25.98%	37.67%
Equity	243.100	263.800	293.900	328.300	417.300	459.800	605.400	659.700	829.500	668.200	640.500	692.300		
Equity Growth		8.52%	11.41%	11.70%	27.11%	10.18%	31.67%	8.97%	25.74%	-19.45%	-4.15%	8.09%	10.89%	16.91%
Capital Ratio TNW/Total Assets	4.33%	4.51%	4.53%	3.92%	4.29%	3.74%	3.55%	3.33%	4.15%	3.00%	2.86%	3.34%	3.75%	4.00%
CAR (Tier I)	13.00%	13%	9.70%	11%	9.00%	8.00%	7.40%	7.50%	9.00%	7.90%	6.70%	8%	8.84%	9.33%
Efficiency	78%	77%	78%	81%	67%	65%	67%	67%	70%	126%	158%	513%	124.46%	71.52%
Bad Debt	4.300	2.400	2.900	4.000	1.100	200	400	4.600	19.100	110.000	194.900	677.000	9241818.18%	
Bad Debt/Equity	1.77%	0.91%	0.99%	1.22%	0.26%	0.04%	0.07%	0.70%	2.30%	16.46%	30.43%	97.79%	13.74%	0.81%
													#DIV/0!	
Leverage	23	22	22	26	23	27	27	29	23	32	34	29	27	24.99
Debt/Equity	2.26	2.27	2.54	2.43	2.65	3.94	5.84	8.26	7.16	5.83	9.53	5.47	5	4.39
Ireland GDP	67.782.000	72.632.000	73.535.000	80.529.000	94.246.000	121.065.000	142.408.000	155.058.000	170.570.000	199.774.000	204.868.000	174.764.000	133.846.000	
Ireland GDP Growth		7%	1%	10%	17%	28%	18%	9%	10%	17%	3%	-15%	-23%	-100%
Sustainable Growth	12.01%	10.26%	12.41%	12.90%	15.95%	11.79%	8.89%	9.99%	8.03%	-5.72%	-15.50%	-89.64%	-1.88%	11.36%

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Allied Irish Bank	1999	2000	2001	2002	2003	2004
Profit	1,112,000	1,130,000	509,000	1,361,000	1,039,000	1,243,000
Margin		17%	7%	21%	21%	23%
Assets	67,070,000	79,688,000	88,837,000	86,049,000	80,960,000	102,240,000
Asset Growth		18.81%	11.48%	-3.14%	-5.91%	26.28%
Revenue	4,987,000	6,539,000	6,967,000	6,470,000	4,977,000	5,365,000
Revenue Increase		31.12%	6.55%	-7.13%	-23.08%	7.80%
Loans	43,002,000	50,073,000	57,263,000	58,235,000	53,123,000	67,156,000
Loan Growth		16.44%	14.36%	1.70%	-8.78%	26.42%
Deposits	50,943,000	60,915,000	67,780,000	69,113,000	62,706,000	71,825,000
Deposit Growth		19.57%	11.27%	1.97%	-9.27%	14.54%
Deposit Ratio	16.90%	20.48%	19.51%	23.35%	28.86%	28.44%
Debt	6,282,000	6,544,000	7,053,000	5,249,000	5,619,000	14,570,000
Debt Growth		4.17%	7.78%	-25.58%	7.05%	159.30%
Equity	3,183,000	3,830,000	5,131,000	4,186,000	4,718,000	5,201,000
Equity Growth		20.33%	33.97%	-18.42%	12.71%	10.24%
Capital Ratio						
TNW/Total Assets	4.75%	4.81%	5.78%	4.86%	5.83%	5.09%
CAR (Tier I)	6.40%	6.30%	6.50%	6.90%	7.10%	8.20%
Efficiency	63.89%	68.19%	87.29%	68.88%	71.22%	65.93%
Bad Debt	85,000	133,000	179,000	194,000	152,000	116,000
Bad Debt/Equity	2.67%	3.47%	3.49%	4.63%	3.22%	2.23%
Leverage	21	21	17	21	17	20
Debt/Equity	1.97	1.71	1.37	1.25	1.19	2.80
Ireland GDP	67,782,000	72,632,000	73,535,000	80,529,000	94,246,000	121,065,000
Ireland GDP Growth		7%	1%	10%	17%	28%
Sustainable Growth	16.19%	11.45%	0.67%	12.00%	5.08%	9.82%

2005	2006	2007	2008	2009	2010	Average 12	Average 2007
1.493.000	1.908.000	2.248.000	862.000	2.418.000 -	12.124.000		
23%	23%	20%	7%	-31%	-238%	-9.58%	18.17%
133.214.000	158.526.000	177.862.000	182.143.000	174.314.000	145.222.000		
30.30%	19.00%	12.20%	2.41%	-4.30%	-16.69%	8.22%	12.38%
6.413.000	8.416.000	10.987.000	11.571.000	7.834.000	5.093.000		
19.53%	31.23%	30.55%	5.32%	-32.30%	-34.99%	3.15%	11.32%
92.361.000	120.015.000	137.068.000	135.755.000	112.434.000	89.293.000		
37.53%	29.94%	14.21%	-0.96%	-17.18%	-20.58%	8.46%	14.54%
91.909.000	108.308.000	111.697.000	118.182.000	117.286.000	102.258.000		
27.96%	17.84%	3.13%	5.81%	-0.76%	-12.81%	7.20%	10.31%
31.91%	30.87%	27.21%	21.64%	28.42%	48.77%	28.13%	25.81%
21.367.000	33.275.000	46.471.000	42.340.000	35.240.000	19.995.000		
46.65%	55.73%	39.66%	-8.89%	-16.77%	-43.26%	20.53%	31.76%
6.652.000	8.055.000	9.191.000	8.164.000	9.927.000	3.466.000		
27.90%	21.09%	14.10%	-11.17%	21.59%	-65.09%	6.11%	12.30%
4.99%	5.08%	5.17%	4.48%	5.69%	2.39%	4.92%	5.12%
8.20%	8.20%	7.50%	8.40%	7.20%	4.30%	7.16%	7.48%
63.04%	59.62%	57.87%	85.79%	154.60%	-263.78%	47.15%	69.76%
115.000	118.000	106.000	1.822.000	5.355.000	6.015.000		
1.73%	1.46%	1.15%	22.32%	53.94%	173.54%	24.65%	4.86%
20	20	19	22	18	42	21	19.65
3.21	4.13	5.06	5.19	3.55	5.77	3	2.88
142.408.000	155.058.000	170.570.000	199.774.000	204.868.000	174.764.000	133.846.000	
18%	9%	10%	17%	3%	-15%	-23%	-100%
10.68%	19.73%	15.92%	0.66%	-22.58%	-331.35%	-20.98%	11.28%

Bank of Ireland	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 12	Average 2007
Profit	802.000	919.000	1.081.000	1.121.000	1.155.000	1.238.000	1.270.000	1.554.000	1.914.000	1.848.000	35.000 -	999.000		
Margin	20%	13%	9.70%	11%	9.00%	8.00%	7.40%	7.50%	9.00%	7.90%	6.70%	8%	8.84%	9.33%
Assets	54.314.000	68.017.000	78.875.000	87.325.000	89.505.000	106.431.000	117.935.000	162.354.000	188.813.000	197.432.000	194.116.000	167.473.000		
Asset Growth		25%	16%	11%	2%	19%	11%	38%	16%	5%	-2%	-14%	11.57%	17.26%
Revenue	3.977.000	4.014.000	5.317.000	5.363.000	5.019.000	5.065.000	5.653.000	8.984.000	11.599.000	12.319.000	9.699.000	7.679.000		
Revenue Increase		1%	32%	1%	-6%	1%	12%	59%	29%	6%	-21%	-21%	8.41%	16.05%
Loans	39.640.000	51.816.000	59.262.000	64.962.000	64.367.000	75.293.000	87.700.000	111.822.000	132.258.000	145.147.000	141.626.000	121.915.000		
Loan Growth		31%	14%	10%	-1%	17%	16%	28%	18%	10%	-2%	-14%	11.49%	16.63%
Deposits	41.336.000	51.296.000	57.294.000	63.694.000	61.113.000	71.455.000	80.519.000	94.022.000	92.682.000	100.364.000	111.933.000	106.518.000		
Deposit Growth		24%	12%	11%	-4%	17%	13%	17%	-1%	8%	12%	-5%	9.35%	10.98%
Deposit Ratio	17%	20%	20%	20%	21%	24%	25%	34%	22%	14%	26%	39%	24.06%	23%
Debt	1.930.000	4.691.000	6.933.000	8.898.000	12.355.000	16.599.000	24.625.000	43.307.000	67.331.000	68.650.000	53.075.000	31.468.000		
Debt Growth		143%	48%	28%	39%	34%	48%	76%	55%	2%	-23%	-41%	37.33%	59.01%
Equity	2.854.000	3.270.000	3.571.000	3.929.000	3.929.000	4.317.000	4.679.000	4.363.000	5.781.000	5.621.000	6.320.000	6.899.000		
Equity Growth		15%	9%	10%	0%	10%	8%	-7%	33%	-3%	12%	9%	8.79%	9.73%
Capital Ratio														
TNW/Total Assets	5.25%	4.81%	4.53%	4.50%	4.39%	4.06%	3.97%	2.69%	3.06%	2.85%	3.26%	4.12%	3.84%	4.00%
CAR (Tier I)	9.00%	7.40%	7.80%	7.60%	8.00%	7.20%	7.90%	7.50%	7.90%	8.10%	9.80%	9.70%	8.08%	8%
Efficiency	60.8%	62.3%	60.0%	62.9%	65.2%	65.1%	66.2%	42.9%	37.9%	50.4%	121.5%	26.5%	60.10%	57.83%
Bad Debt	56.000	56.000	72.000	102.000	100.000	86.000 -	21.000	103.000	103.000	232.000	1.513.000	229.000		
Bad Debt/Equity	1.96%	1.71%	2.02%	2.60%	2.55%	1.99%	-0.45%	2.36%	1.78%	4.13%	23.94%	3.32%	4%	1.82%
Leverage	19	21	22	22	23	25	25	37	33	35	31	24	27	25.95
Debt/Equity	0.68	1.43	1.94	2.26	3.14	3.85	5.26	9.93	11.65	12.21	8.40	4.56	6	4.93
Ireland GDP	67.782.000	72.632.000	73.535.000	80.529.000	94.246.000	121.065.000	142.408.000	155.058.000	170.570.000	199.774.000	204.868.000	174.764.000		
Ireland GDP Growth		7%	1%	10%	17%	28%	18%	9%	10%	17%	3%	-15%	10%	12%
Sustainable Growth	19.79%	15.76%	13.95%	15.59%	14.63%	14.51%	14.75%	24.90%	29.94%	19.26%	0.55%	-14.48%	14.10%	18.20%

IL & P	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 12	Average 2007
Profit	290,400	259,300	316,800	214,100	250,400	327,300	411,100	367,000	386,000	448,000	245,000	75,000	284,000		
Margin	50%	47%	44%	26%	28%	41%	45%	28%	20%	19%	11%	6%	24%	28%	33.03%
Assets	22,559,300	27,095,200	30,660,200	34,406,900	34,448,600	40,510,200	47,752,800	61,242,000	76,136,000	80,062,000	74,349,000	80,021,000	75,705,000		
Asset Growth		20%	13%	12%	0%	18%	18%	28%	24%	5%	-7%	8%	-5%	11%	15.42%
Revenue	580,700	553,800	717,800	838,400	891,400	797,700	907,900	1,313,000	1,939,000	2,414,000	2,257,000	1,354,000	1,207,000		
Revenue Increase		-5%	30%	17%	6%	-11%	14%	45%	48%	24%	-7%	-40%	-11%	9%	18.69%
Loans	6,905,400	8,449,900	10,529,900	14,390,100	14,895,800	18,808,700	21,633,700	32,761,000	42,161,000	41,648,000	44,850,000	43,517,000	40,146,000		
Loan Growth		22%	25%	37%	4%	26%	15%	51%	29%	-1%	8%	-3%	-8%	17%	23.04%
Deposits	5,246,700	5,226,400	6,575,000	10,610,600	11,929,700	12,819,400	13,009,300	15,089,000	19,169,000	23,587,000	32,664,000	33,275,000	30,527,000		
Deposit Growth		-0.39%	25.80%	61.38%	12.43%	7.46%	1.48%	15.99%	27.04%	23.05%	38.48%	1.87%	-8.26%	17%	19.36%
Deposit Ratio	21%	11%	9%	11%	14%	22%	8%	15%	29%	42%	57%	56%	56%	28%	18%
Debt	2,377,800	3,964,500	4,200,000	5,417,600	5,910,900	8,875,300	11,878,000	16,611,000	19,823,000	16,970,000	12,598,000	14,906,000	11,720,000		
Debt Growth		66.73%	5.94%	28.99%	9.11%	50.15%	33.83%	39.85%	19.34%	-14.39%	-25.76%	18.32%	-21.37%	18%	26.62%
Equity (TNW)	1,550,700	1,805,800	1,898,300	1,721,100	1,900,200	2,103,900	2,365,300	1,817,000	2,124,000	2,370,000	2,222,000	1,889,000	1,522,000		
Equity Growth		16.45%	5.12%	-9.33%	10.41%	10.72%	12.42%	-23.18%	16.90%	11.58%	-6.24%	-14.99%	-19.43%	1%	5.68%
Capital Ratio TNW/Total Assets	6.87%	6.66%	6.19%	5.00%	5.52%	5.19%	4.95%	2.97%	2.79%	2.96%	2.99%	2.36%	2.01%	4%	4.69%
CAR (Tier I)	12.30%	12.30%	12.20%	12.10%	10.00%	11.10%	11.20%	12.60%	10.40%	10.40%	9.20%	9.20%	10.60%	11%	11.37%
Efficiency	57%	70%	71%	74%	79%	75%	78%	93%	93%	72%	102%	102%	95%	84%	78.30%
Bad Debt	7,800	9,600	10,700	11,700	13,300	13,400	9,300	12,000	14,000	28,000	170,000	11,000	5,000		
Bad Debt/Equity	0.50%	0.53%	0.56%	0.68%	0.70%	0.64%	0.39%	0.66%	0.66%	1.18%	7.65%	0.58%	0.33%	1%	0.67%
Leverage	15	15	16	20	18	19	20	34	36	34	33	42	50	28	23.54
Debt/Equity	1.53	2.20	2.21	3.15	3.11	4.22	5.02	9.14	9.33	7.16	5.67	7.89	7.70	6	5.06
Ireland GDP	67,782,000	72,632,000	73,535,000	80,529,000	94,246,000	121,065,000	142,408,000	155,058,000	170,570,000	199,774,000	204,868,000	174,764,000	133,846,000		
Ireland GDP Growth		7%	1%	10%	17%	28%	18%	9%	10%	17%	3%	-15%	-23%	0	13%
Sustainable Growth	3.81%	2.42%	2.61%	3.85%	3.70%	4.21%	3.56%	1.47%	1.74%	4.19%	-0.46%	0.19%	0.95%	2.37%	3.00%

Barclays	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 12	Average 2007
Profit	2,460,000	3,290,000	3,608,000	3,218,000	3,779,000	4,502,000	5,280,000	7,136,000	7,107,000	3,136,000	5,585,000	6,065,000		
Margin	12%	13%	12%	12%	13%	14%	13%	14%	13%	6%	9%	10%	12%	13%
Assets	254,793,000	316,190,000	356,649,000	403,066,000	443,361,000	522,089,000	924,357,000	996,787,000	1,227,583,000	2,053,029,000	1,378,565,000	1,489,645,000		
Asset Growth		24%	13%	13%	10%	18%	77%	8%	23%	67%	-33%	8%	21%	23%
Revenue	20,894,000	25,075,000	29,006,000	27,825,000	29,734,000	33,282,000	39,910,000	49,958,000	55,286,000	55,225,000	59,659,000	59,993,000		
Revenue Increase		20%	16%	-4%	7%	12%	20%	25%	11%	0%	8%	1%	10%	13%
Loans	156,194,000	198,536,000	228,382,000	260,572,000	288,743,000	330,077,000	300,001,000	313,226,000	385,518,000	509,522,000	461,359,000	465,741,000		
Loan Growth		27%	15%	14%	11%	14%	-9%	4%	23%	32%	-9%	1%	11%	12%
Deposits	168,452,000	208,724,000	231,195,000	258,932,000	278,960,000	328,742,000	313,811,000	336,316,000	386,395,000	450,443,000	398,875,000	423,763,000		
Deposit Growth		24%	11%	12%	8%	18%	-5%	7%	15%	17%	-11%	6%	9%	11%
Deposit Ratio (W)	26%	24%	29%	34%	34%	34%	24%	24%	23%	26%	19%	18%	26%	28%
Debt	23,329,000	31,883,000	41,846,000	45,885,000	49,569,000	67,806,000	115,791,000	124,923,000	138,378,000	183,268,000	161,718,000	185,122,000		
Debt Growth		37%	31%	10%	8%	37%	71%	8%	11%	32%	-12%	14%	22%	26%
Equity (TNW)	8,300,000	8,918,000	10,417,000	11,271,000	12,067,000	13,122,000	10,135,000	12,492,000	21,576,000	30,800,000	49,683,000	53,565,000		
Equity Growth		7%	17%	8%	7%	9%	-23%	23%	73%	43%	61%	8%	21%	15%
Capital Ratio TNW/Total Assets	3 26%	2 82%	2 92%	2 80%	2 72%	2 51%	1 10%	1 25%	1 76%	1 50%	3 60%	3 60%	2%	2%
CAR (Tier I)	11 00%	13%	9 70%	11%	9 00%	8 00%	7 40%	7 50%	9 00%	7 90%	6 70%	8%	9%	9%
Efficiency	29%	26%	28%	31%	31%	30%	32%	31%	30%	39%	42%	44%	33%	30%
Bad Debt	622,000	816,000	1,150,000	1,485,000	1,346,000	1,093,000	1,571,000	2,154,000	2,795,000	5,419,000	8,071,000	5,672,000		
	7%	9%	11%	13%	11%	8%	16%	17%	13%	18%	16%	11%	13%	12%
Leverage	31	35	34	36	37	40	91	80	57	67	28	28	48	51
Debt/Equity	2 81	3 58	4 02	4 07	4 11	5 17	11.42	10 00	6 41	5 95	3 25	3 46	6	6
UK GDP	929,470	975,294	1,019,839	1,068,601	1,136,597	1,199,883	1,262,710	1,333,158	1,412,118	1,440,929	1,401,864	1,466,569		
GDP Growth Rate	5%	5%	5%	5%	6%	6%	5%	6%	6%	2%	-3%	5%	4%	5%
Sustainable Growth	15 27%	18 41%	17 46%	14 05%	15 68%	17 14%	26.53%	29 11%	16 63%	6 10%	6 36%	5 94%	16%	19%

Santander UK	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average 2011	Average 2007
Profit	1,783	1,975	1,974 -	984 -	754	252	596	428	864	1,094	1,690	2,125	1,261		
Margin	17%	15%	16%	-28%	-11%	4%	8%	7%	11%	13%	20%	27%	14%	9%	4%
Assets	180,744	204,391	214,906	205,721	176,775	169,741	207,034	191,805	199,623	231,742	285,291	302,860	297,574	220,631	194,527
Asset Growth		13%	5%	-4%	-14%	-4%	22%	-7%	4%	16%	23%	6%	-2%	5%	2%
Revenue	10,616	13,093	12,359	3,565	6,754	6,153	7,656	6,568	8,156	8,683	8,304	7,949	8,756	8,355	8,324
Revenue Increase		23%	-6%	-71%	89%	-9%	24%	-14%	24%	6%	-4%	-4%	10%	6%	8%
Loans	86,693	93,920	88,524	88,513	91,643	89,479	127,094	140,528	147,391	165,490	218,214	221,403	222,763	137,050	105,976
Loan Growth		8%	-6%	0%	4%	-2%	42%	11%	5%	12%	32%	1%	1%	9%	8%
Deposits	89,735	101,791	99,204	100,940	96,526	97,262	102,958	114,413	117,703	141,546	194,643	202,136	184,958	126,447	102,281
Deposit Growth		13%	-3%	2%	-4%	1%	6%	11%	3%	20%	38%	4%	-8%	7%	4%
Deposit Ratio	33%	34%	25%	24%	23%	19%	27%	32%	23%	27%	24%	17%	14%	25%	26.75%
Debt	56,048	62,949	61,003	55,382	31,171	27,329	58,885	60,190	64,187	55,802	60,343	62,960	66,742	55,615	53,016
Debt Growth		12%	-3%	-9%	-44%	-12%	115%	2%	7%	-13%	8%	4%	6%	6%	9%
Equity	6,078	6,830	8,051	7,019	5,331	4,924	3,110	3,116	3,442	4,811	7,222	12,274	12,666	6,529	5,322
Equity Growth		12%	18%	-13%	-24%	-8%	-37%	0%	10%	40%	50%	70%	3%	10%	-5%
Capital Ratio TNW/Total Assets	3%	3%	3%	3%	3%	3%	1%	2%	2%	2%	2%	3%	4%	3%	3%
CAR (Tier I)		13.0%	9.70%	11.0%	9.00%	8.00%	7.40%	7.50%	9.00%	7.90%	6.70%	8.0%	-4%	8%	0
Efficiency	20.9%	19.4%	21.1%	7.9%	45.9%	38.4%	29.4%	28.2%	22.1%	20.6%	34.3%	34.1%	31.7%	27%	26%
Bad Debt	303	273	263	-	474 -	35	218	344	344	348	842	712	565	358	243
Bad Debt/Equity	5%	4%	3%	0%	9%	-1%	7%	11%	10%	7%	12%	6%	4%	6%	5%
Leverage	29.74	29.93	26.69	29.31	33.16	34.47	66.57	61.55	58.00	48.17	39.50	24.67	23.49	39	41
Debt/Equity	9.22	9.22	7.58	7.89	5.85	5.55	18.93	19.32	18.65	11.60	8.36	5.13	5.27	10	11
UK GDP	929,470	975,294	1,019,839	1,068,601	1,136,597	1,199,883	1,262,710	1,333,158	1,412,118	1,440,929	1,401,864	1,466,569	1,516,000		
UK GDP Growth	5%	5%	5%	5%	6%	6%	5%	6%	6%	2%	-3%	5%	4%	4%	5%
Sustainable Growth		7.47%	4.07%	-14.02%	-14.14%	5.12%	19.16%	13.74%	25.10%	22.74%	23.40%	17.31%	9.96%	9.99%	5.81%

CIBC	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 2010	Average 2007
Profit	1,536	1,388	2,763	1,836	412	2,305	3,004	927	3,315	3,851	4,229	1,650	4,047		
Margin	8%	7%	12%	9%	2%	13%	18%	5%	16%	17%	-33%	12%	27%	9%	11%
Assets	281,430	250,331	267,702	287,474	273,293	275,871	278,764	280,370	303,984	342,177	353,930	335,944	352,040	298,716	284,140
Asset Growth		-11%	7%	7%	-5%	1%	1%	1%	1%	8%	13%	3%	5%	2%	2%
Revenue	19,804	20,133	23,124	21,387	17,055	17,122	16,705	18,792	20,185	23,289	12,670	13,831	14,976	18,390	19,760
Revenue Increase		2%	15%	-8%	-20%	0%	-2%	12%	7%	15%	-46%	9%	8%	-1%	2%
Loans	115,964	118,192	126,441	132,811	139,357	135,931	139,329	143,419	147,067	164,097	172,921	169,172	178,612	144,870	136,261
Loan Growth		2%	7%	5%	5%	-2%	2%	3%	3%	12%	5%	-2%	6%	4%	4.00%
Deposits	159,875	160,041	179,632	194,352	196,630	188,130	190,577	192,734	202,891	231,672	232,952	223,117	246,671	199,944	189,653
Deposit Growth		0%	12%	8%	1%	-4%	1%	1%	5%	14%	1%	-4%	11%	4%	4.36%
Deposit Ratio	62%	62%	65%	66%	65%	63%	62%	62%	60%	60%	57%	51%	54%	61%	63%
Debt	64,368	43,043	41,697	44,715	28,556	39,296	37,677	39,429	56,113	55,855	60,453	56,923	50,350	47,575	45,075
Debt Growth		-33%	-3%	7%	-36%	38%	-4%	5%	42%	0%	8%	-6%	-12%	0%	2%
Equity	11,136	11,058	11,369	11,900	12,333	13,778	13,223	10,731	12,322	13,489	13,831	14,279	15,790	12,711	12,134
Equity Growth		-1%	3%	5%	4%	12%	-4%	-19%	15%	9%	3%	3%	11%	3%	3%
Capital Ratio															
TNW/Total Assets	4%	4%	4%	4%	4%	5%	4%	3%	4%	3%	3%	3%	4%	4%	3.99%
CAR (Tier I)	7.7%	8.3%	8.7%	9.0%	8.7%	10.8%	10.5%	8.5%	10.4%	9.7%	10.5%	12.1%	13.90%	10%	9%
Efficiency	77.1%	78.9%	67.0%	74.4%	83.5%	70.9%	70.1%	86.9%	66.0%	63.1%	63.0%	67.1%	58.1%	71.2%	73.8%
Bad Debt	480	750	1,220	1,100	1,500	1,143	628	706	548	603	773	1,649	1,046	934	868
Bad Debt/Equity	4%	7%	11%	9%	12%	8%	5%	7%	4%	4%	6%	12%	7%	7%	7%
Leverage	25	23	24	24	22	20	21	26	25	25	26	24	22	24	24
Debt/Equity	5.78	3.89	3.67	3.76	2.32	2.85	2.85	3.67	4.55	4.14	4.37	3.99	3.19	4	4
Canada GDP	616	661	724	715	734	865	992	1,133	1,278	1,424	1,502	1,337	1,577	1,043	914
Canada GDP Growth	-3%	7%	10%	-1%	3%	18%	15%	14%	13%	11%	5%	-11%	18%	8%	9%
Sustainable Growth	5.92%	10.28%	13.88%	12.32%	-0.85%	6.23%	5.25%	13.13%	8.92%	8.79%	12.42%	0.33%	0.16%	7%	8.39%

CHAPTER 9

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