

Principles of Crisis Management Revisited:
The Bank of England in the 1970s

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POLITICAL SCIENCE ■

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Abstract

The relationship between central banks and the financial sector has received renewed attention following the global financial crisis that started in 2007. This thesis represents an attempt to shed further light on this relationship by looking at the Bank of England's relationship with the British financial sector in the 1970s - a decade that saw the return of financial volatility and crises.

While the previous literature on this period has focused on explaining the causes and build-up to the increase in volatility and crises, the approach taken in this thesis is more analytical. This is done by looking at the role, implementation and effect of the Bank of England's crisis management policies. To tackle these issues, I use quantitative methods, such as non-Normal option pricing models and time series econometrics, on the one hand and qualitative data looking at the institutions involved on the other. As such, the thesis benefits from a multitude of primary data sources, including the Bank of England Archives, the National Archives and the archives of the largest financial institutions of the time.

The main conclusion of the thesis is that the Bank of England's attempts to stabilize the financial system at times of turbulence were more costly than has previously been argued in the literature. As such, the Bank in all likelihood underpriced its assistance to the financial system. Channels of interconnectedness are also documented with no evidence found of increased interdependence during crises. Finally, a closer look at the Bank's rescue operations during the crisis shows the extent to which its staff was unprepared to tackle the issues involved and had neglected issues of financial stability in the lead up to the crisis.

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Chapter 1

Introduction

1.1 Disentangling Financial Institutions and Government

The study of the financial sector arguably represents the greatest linkage between micro- and macroeconomics. On the micro side, studies of the sector involve addressing inherent issues regarding market imperfections - both informational and other.¹ As for macro, the financial sector serves represents the machine whereby the all-important preferences for present versus future consumption are matched. As such, the sector stands as an element of macroeconomics that can be forgotten at times but always returns. That is to say, while financial intermediation can be dismissed for certain purposes within macroeconomics, such as business cycle fluctuations under certain conditions, no complete account of the macroeconomic framework, or the

¹The reason for this of course being that if the financial sector worked in the same way as traditional markets for goods there would be need to direct special attention to it.

macroeconomic history of any country, can be laid out without accounting for the role of the financial sector.

It is, however, in the sector's nature that any modelling or estimation of its effects and role contains several complications. Measuring the value added by the sector, for example, is no straightforward task. While traditional sector values can be calculated by subtracting each sector's input from its output, such calculations are not feasible for the financial sector due not to only its intermediary role but the wide range of information imperfections, externalities and other market failures which accompany it.

As pointed out by Haldane et al (2010), according to traditional calculations of value-added from intermediaries, the financial sector's largest contribution to value in recent years came during the height of the global financial crisis, in the autumn of 2008.² This is due to the fact that the calculation of a sector's value is estimated by looking at the differences between the resources used and the resources produced. For the financial sector, this involves calculating the difference between an institutions' cost of funding and its charge for services provided, also known as the spread. Financial market spread is however also an indicator of stress in the system, as increased volatility leads to financial institutions increasing its spread in the face of uncertainty, rendering simplistic value-added calculations meaningless.

In fact, any estimation of the effect and contribution of the financial sector runs into similar difficulties due to the sector's intrinsic information imperfections and externalities. Another complicating factor when studying the financial system is calculating the efficiency by which firms use their capital. This is commonly, and simplistically, measured by calculating firms' return on equity or return on assets.

²Turner (2010) also provides an overview of the challenges facing researchers on the financial system and the multitude of potential difficulties.

However, such calculations do not take into consideration the risk or uncertainty involved which are fundamental elements of bank operations. This is an example of Arrow's classic argument that producers that specialize in information cannot exhibit their true value without rendering themselves redundant.³

An additional, non-trivial element that introduces opacity into the analysis of the financial sector is the government's extensive role in the sector. This role, which is intended to combat problems that arise due to the aforementioned market failures in the financial system, has traditionally involved a carrot-and-stick approach whereby the sector is provided with services to ameliorate the market failures at hand but in turn has to abide by restrictive rules regarding funding, asset selection and other related restraints. This government involvement makes any kind of assessment of broadly defined underlying value, or worth, trickier still.

The aim of this thesis is to take a closer look at this last peculiarity of finance, namely the interplay between the public sector and the financial sector. The thesis represents an attempt to untangle the outcome, or value, of financial market activity that is due to the presence of the public sector and the core value which can be said to be attributable to the sector as a standalone one. It is perfectly possible that the aggregate value added of the financial sector as a stand-alone sector would be exactly the same as it is now, leading to the conclusion that public intervention in the sector is revenue neutral. However, it is also a real possibility that the value would be greater - due to distortions created - or less - due to subsidies involved - as the two are closely integrated.⁴

Such a separation of activities between public and financial sectors can, however,

³See Arrow (1962) and Arrow (1963).

⁴This echoes Stiglitz (1994), who covers the role of the state in financial markets and emphasizes government's imperfect resolution of market failure (p. 32).

be only imprecise at best due to the lack of counterfactuals and the interconnect-
edness of the two sectors. Nonetheless, despite the inevitable imprecision of any
conclusions, the task remains a crucial one to undertake if one is to gain an un-
derstanding of the financial sector and its underlying social value. In this thesis I
approach the task of disentangling government from the financial sector through two
different, but related, disciplines; history and economics. The former provides us
with the necessary institutional context and empirical data while the latter is useful
in thinking about the quantities involved and dynamics at play.

The period and country chosen to address these issues is Britain in the 1970s.
Britain possessed during this period, as it still does, a major financial centre and was
at the forefront of financial development. It had not experienced a banking crisis
for decades and financial crises were a phenomena that was thought to be consigned
to the past.⁵ This all changed with the onset of the often overlooked secondary
banking crisis of 1973-1975.⁶ While the crisis caught both market participants and
policymakers off guard, it was preceded by a narrative familiar to anyone with passing
knowledge of a typical financial crisis, namely easy access to credit, a run-up in
property prices and the emergence of new types of financial institutions.

The narrative surrounding the secondary banking crisis in the historical litera-
ture is generally threefold with the main emphasis on the aforementioned property
bubble, lax regulation and accommodative economic policy. Reid (1982) provides

⁵In fact, Turner (2012) argues that there were no systemic crisis in Britain between 1826 and 2007. Furthermore, even non-systemic crises were absent between 1914 and 1974. This stylized fact of a calm period in British banking leading up to the 1970s was also to some extent the experience of other advanced economies although the calm period was in certain cases shorter than in Britain.

These developments are covered later in the thesis.

⁶As stated by Kynaston in the preface to Reid (1982), "[t]he mid-1970s are now depicted, invariably in near apocalyptic brushstrokes, as the time of Britain's most severe political, social and economic peacetime crisis since the immediate aftermath of the Napoleonic Wars, if not earlier. [...] Yet one episode, arguably just as important and pregnant with possibilities as at least most of the others, has gone strangely missing from our collective memory: the secondary banking crisis".

one of the best overviews of the crisis and emphasizes all three factors.⁷ The Bank of England itself reached a similar conclusion in a post-mortem of the crisis in its *Quarterly Bulletin*. It concluded that the causes of the crisis could be categorized into two groups; structural issues in the financial system and the economic conjuncture.⁸ The former included limits to the Bank's supervisory function and the misapplication of credit control while the main components of the latter were property developments and the increase in money supply.

Furthermore, as the crisis was the first of its kind for a long time - both domestically and globally - central banks' role when it came to financial stability had taken a backseat to the management of the business cycle via' monetary policy and governments' fiscal policy.⁹ These circumstances provide us with vast amounts of archival data that shows how policymakers moulded their role in stabilizing the financial sector on the go and reinvented themselves as crisis managers.

An additional advantage of focusing on one of the world's major financial centres is that it can be isolated better than many less developed financial systems that are or were not at the forefront. The framework in place in the latter type of systems is often based on the more developed systems, with regard to both the legal and institutional environment, and their policymakers can also try to manage their development towards the frontier by learning from those at the frontier. The leading countries, like Britain, on the other hand, must generally put up with a learning-by-doing type mechanism. When trying to ascertain how decisions are made it is thus more often the case that it is done internally, rather than gaining insight from

⁷Reid was helped by the fact that she was assisted by, amongst others, Eric Faulkner, Chairman of Lloyds at the time who also served as Chairman of the Committee of London Clearing Bankers through much of the secondary crisis. (Lloyds Archives, HO/Ch/Fau/5, document dated 09/02/83).

⁸Bank of England (1978)

⁹Chapter 2 reviews the evidence of the unusual absence of crises leading up to the period.

abroad.

This is an important point as one objective of this thesis is to gain insight into how policymakers managed the crisis and whether one can credibly state whether a clear, preferable alternative was viable. The intention of this thesis is thus not to accept or reject the consensus view of the causes of the crisis. Instead, the topic of interest is altered somewhat so that instead of looking at the causes, the focus is on the specifics of policymakers' decision-making process, their actions and the intangible effect of these actions.

Placing the period in question further in context, the 1970s also signify the return to volatility within the financial markets of developed countries. The post-war period up until the 1970s was largely crisis free and stands out in financial history as an uncharacteristically calm period.^{10,11} This had major repercussions with regard to the reaction of policymakers when volatility returned as institutional experience in dealing with these issues was almost nonexistent and the focus had shifted to other matters.

As indicated above, there is general agreement on the crisis narrative, both as regards to causes and consequences. This familiar narrative, however, circumvents three important issues which this thesis attempts to deal with:

- While the reaction by the Bank of England may have been necessary when looked at at the time of the intervention, it was also the role of the Bank to prevent the need for such action in the first place. In Chapter 4 I thus ask if, and when, the crisis could have been mitigated or dampened, as well as analyzing the risks involved in the Bank's policies. This is done via a case

¹⁰See Bordo et al (2001) who document the vast difference in the number of crisis periods during the 20th century.

¹¹This return to volatility is covered in greater detail in Chapter 2.

study of the most famous casualty of the crisis, Slater Walker. One possibility is that preventing the developments that are thought to have led to the crisis was impractical, or even impossible, for the Bank, but such questions have mostly been ignored in the literature.

- Analysis of the Bank of England's role as crisis manager is often given a binary role; that the Bank could have done what it did or alternatively been completely hands off. In Chapter 3 the Bank's role is tackled in a different manner, by looking at the potential for subsidies in the Bank's actions and whether its crisis management activities, when deemed necessary, were priced correctly.
- Amongst the most common rationales given for intervention by central banks, including that during the secondary crisis, is the threat of contagion, or more generally that interconnectedness means that action must be taken. That is to say, perceived problems of one institution can have adverse effects on other institutions whether their fundamentals warrant these effects or not. This was most definitely a worry for policymakers during the secondary crisis. In Chapter 5, we thus look at interdependence both within the core of the system as well as from the fringe to the core. Policymakers' and banks' views on these issues are also discussed to shed light on how serious the threat was.

By tackling these specific questions, the aim is to provide added depth to the literature via two distinct channels. Firstly, the thesis moves away from the aforementioned traditional narrative approach of the literature on the secondary crisis. This entails asking different questions than previous research and moving towards a more analytical view of governments' role in the financial sector. Secondly, previously confidential data is used which allows coverage of specific aspects of the

financial sector in greater detail than in earlier attempts.

The contribution of this thesis is thus primarily a deepening of the discussion on the state's role in financial markets. This is achieved in several ways. Firstly, Chapter 3 sheds new light on the effect of mechanisms such as deposit insurance by moving away from the assumption of Normal distribution and highlights that it is indeed the possibility of unusually large negative returns that introduces pricing issues.¹²

Another contribution, found in Chapter 5, is an alternative look at interconnectedness than is usually found in the literature. This is achieved by looking more closely at how both public and private parties viewed the system as the crisis played out and how the former was thought to be alleviating problems without putting itself at risk. It is also achieved by looking at different indicators than many of the other quantitative pieces of the literature with emphasis on high frequency balance sheet data, in addition to the more traditional focus on equity prices.

Finally, all the main chapters look in detail at decision making, constraints and possible consequences of policymakers and their actions. This is not often the case in the economic literature and while it is the case in the historical literature, there are few recent works on the period in question which means that the archival data used was not often available for prior studies. For example, the main reference in the literature remains Reid (1982) which did not have access to the material involved. More recently, Capie (2010) does include coverage of the secondary crisis but does so both in less detail, as the topic covered is broader, as well as from a different perspective.

¹²While some prior research has used non-Normal option pricing to look at put options, e.g. Kou (2002), the subset of detailed empirical studies of deposit insurances as put options has by and large involved Normally distributed asset returns.

1.2 Methods and Sources

[W]e cannot aspire to know the world with complete precision; [...] no single parameter will measure with precision how our economy is going to respond to a policy or a shock. Rather, what we can aspire to establish is a combination of logic, modelling, suggestive anecdote and experience, and empirical measurements from multiple different perspectives that lead to an overall view on economic phenomena. That kind of overall view on economic phenomena moves the world forward much more than a precise estimate of a single parameter.

Larry Summers¹³

One explicit goal of this thesis, as mentioned above, is to blend together the various strands of the economic and historical literature. There is currently, and has been for some time, a well known disconnect between both the approach and methods used by economists and historians.¹⁴ The former group tends to emphasize the analytic aspect via models, quantitative estimation and calibration whereas the latter are more context specific, focusing on more of a narrative angle and qualitative evidence.

Neither approach is thus without merit and are in the view of the author not only complementary but neither alone sufficient to study matters such as the one at hand. This thesis consequently attempts to employ both approaches in an attempt

¹³Summers (2013) p. 1.

¹⁴The divide has in some sense narrowed with the Cliometric 'revolution' in recent years although skepticism still remains between the neighbouring camps. Solow (1985) provides a lucid account of the differences and complementarities between the two disciplines. Crafts (2011b) argues for a synergetic relationship between history and economics. Gorton (2012) argues along similar notes, stating that economists without a historical perspective are myopic (p. 96). Eichengreen (2011) argues indirectly that a partial convergence has taken place with the so-called new monetary and financial history. Cairncross (1996) pp. 1-16 provides an optimistic, albeit slightly dated, view.

to analyze the subject with all available tools so as to give the topic as complete a treatment as possible.

Starting with the quantitative methods, regression analysis is employed and asset pricing models to estimate the extent of important aspects of the financial sectors. The asset pricing model drawn on is an option model used in Chapter 3 to estimate the extent of implicit subsidies from the Bank of England to the financial sector's most central institutions. We start with a traditional Black-Scholes model before constructing a Jump-Diffusion model to account for distributional issues and to introduce the possibility of crises. The data used for this model consists of equity prices as well as financial data from annual reports including numbers for debt and equity.

The motive for such an approach is the general infallibility of these institutions and the perceived, and by no means unwarranted, perception that the Bank of England would not let these institutions fail if their existence was threatened. There is a long tradition of using option pricing in such calculations although the chapter deviates from the literature by altering the traditional distribution assumption and placing the results in historical and institutional context.¹⁵ The model's parameters are also calibrated in an attempt to see how conservative the values need to be for the subsidy to be trivial.

The regression analysis, introduced in Chapter 5, serves as an attempt to look at interdependence within the financial system and the sector's vulnerabilities during a financial crisis. Quantitative data from Britain's clearing banks, that is available at a higher frequency than in most other cases, is used to estimate the amount of

¹⁵The original studies include Marcus and Shaked (1984) and Ronn and Verma (1986).

interdependence within the system in both normal times and during crises. As with the option pricing method, there is also a long tradition of looking at the effect of crises on co-movements of financial data. Various cuts of the data are looked at in the chapter, including volatility and the link of balance sheet movements with market prices, in an attempt to shed greater light on the operations of the banks during the crisis.

One drawback of a bulk of the previous literature is that it is mostly focused on publicly available data such as equity prices and bond yields.¹⁶ The reason for this is that balance sheet data is usually at best only available at quarterly intervals via published company accounts. This makes it hard to map the dynamics of balance sheet variables over times, as crises tend to happen suddenly and over shorter intervals. The collection of the data used therefore represents a different take than is usually taken in the interdependence literature.

This applies to the qualitative sources as well, which are used throughout and form an integral part of the thesis. The primary sources used are first and foremost archival material, retrieved from public institutions. Chief amongst these is the Bank of England, although extensive material is also used from the National Archives and the London Metropolitan Archives, as well as private financial institutions, most notably HSBC and Lloyds. This historical material is particularly central in Chapter 4 as the chapter serves as a case study into one of the 1970s most iconic firms, Slater Walker. The historical material is nonetheless also critical in the other main chapters as well and serves as a pillar to complement the quantitative material of

¹⁶Recent studies, reviewed in Chapter 5, have attempted to tackle this problem by using interbank deposits to measure stress and contagion. Generally, however, higher frequency data on aggregate balance sheet data has not been available.

those chapters.

This qualitative material comes in various guises. These include internal and external correspondence of particular institutions, minutes of meetings and various types of financial data. In addition to these primary sources and the relevant secondary material, extensive use is also made of contemporary newspapers and trade magazine to both gauge the view of the time as well as to further deepen the analysis in each chapter.

A particularly important point regarding the primary sources is the so called 30-year rule in place within British public institutions and many private ones as well. This rule states that records be made openly available for research by the time they are 30 years old.¹⁷ This means that at the time of writing this thesis, the documents created during the 1970s had just recently been opened for researchers. There is thus a wealth of newly available information which, in the context of financial history, should shed much needed light on the decade in question, especially the secondary banking crisis. As mentioned above, many private institutions also operate under a similar rule regarding access to their archives and this material is used extensively in this thesis.

There has been a large boom in the attempt to better understand the issue of lender of last resort (LOLR) and financial stability issues more broadly following the global financial crisis.¹⁸ New empirical techniques and theoretical frameworks have taken centre stage as researchers attempt to untangle the various aspects involved.

¹⁷The rule was in fact amended recently and has since become a 20 year rule. These changes came following an independent review of the rule, chaired by Paul Dacre and released in 2009. A large part of the new material in this thesis was made available due to the 20 and 30 year rules. This includes high frequency balance sheet data for the Big Four, used in Chapter 5.

¹⁸There are various different uses of these terms in the recent literature. Chapter 2 discusses these issues and the definition used in this thesis.

It is, however, an underlying assumption of this thesis that greater understanding of these issues can most readily be gained by increased data and information on previous crises episodes. By looking at actual crisis responses of policymakers and what actually happened is arguably the most direct path to deepening understanding. This framework is the guiding light of this thesis, the contents of which are outlined below.

1.3 Thesis Outline

This thesis addresses the research topic outlined above with three main chapters, outlined below. The chapters are interdependent and involve looking at different aspects of the British financial sector in the 1970s, but all fall under the main theme of the thesis and serve to shed light on this complex topic through distinct channels. They each deal with separate, but connected, parts of the financial sector that all played a central role in the secondary crisis. These three parts are the central bank, the largest commercial banks and the newly established secondary banks. Following this introduction, the thesis starts with a chapter on its context, including historiographical and economic literature. The three main chapters then follow while a concluding chapter attempts to tie the results of the chapters together and discusses the thesis' potential findings.

Chapter 2: Context and Literature Review

This chapter serves as the motivator for the thesis and puts the topic into perspective. It does this via two channels; the historical and economic literature. The historic section looks at the pre-existing literature on British banking in the 1970s and the

current view on matters such as the causes and consequences of the secondary banking crisis. It also sketches a broad outline of the economic framework of the time, both domestic and international. An important conclusion reached in this part of the chapter is that, in a broad sense, the 1970s represent a return to volatility in financial markets following the famous post-war banking stability. This has implications when attempting to interpret the reaction of policymakers as institutional knowledge on crises tools had diminished.¹⁹

The economic section of the chapter surveys the literature on implicit subsidies, lender of last resort facilities and financial crises in general. This is done by looking at the theoretical work in the field, the empirical results of the literature as well as the methods used and the rationale behind them. Great strides have been made in the past decades in analyzing the financial sector and its inherent, unique complications. This has primarily come about via a better recognition of the importation of information and expectations, starting in the 1970s, as well as increasingly sophisticated models dealing with both economic theory and empirics.

Chapter 3: Subsidies and Stability

The secondary banking crisis in 1970s Britain was amongst the first crises following the breakdown of the widespread post-war stability in the global financial sector. It can be said to represent the return to volatility as the decades following the crisis witnessed a dramatic increase in financial and banking crises, culminating in the 2008 global financial crisis. In this chapter, we look at the relationship between policymakers and the financial system leading up to, during, and following the secondary

¹⁹Goodhart (2011) p. 140 for example claims that "the general absence of financial stability problems meant that experience and interest in this field in central banks eroded".

crisis. The chapter focuses on how institutional knowledge regarding financial stability policies and banking regulation had somewhat wilted away and failed to keep up with the changing nature of the financial system.

The primary focus is through the lens of the Bank of England with the aim of answering two overarching questions: How did the Bank approach its financial stability policy and was there potentially an implicit subsidy involved with the way the financial system was set up at the time? It is concluded that the Bank tackled each episode of financial turmoil with an ad hoc approach and in all likelihood seriously underpriced financial institutions for its guardian services.

Chapter 4: Simplistic Approaches to Regulation

One reason regularly cited for the tumultuous nature of 1970s banking in Britain is the emergence of new types of financial institutions known as secondary banks. These banks had certain distinct characteristics which increased the likelihood of a systemic financial crisis including rapid growth and extensive maturity transformation, limited banking expertise compared to more traditional banks, and a stand-off approach from regulators, namely the Bank of England. The most famous of these secondary banks was Slater Walker, which exhibited dramatic growth in the mid to late 1960s, enabled by cheap funding and asset price increases, before collapsing dramatically towards the end of the crisis in 1975. The Bank of England reluctantly orchestrated a complex and involved rescue of the bank to protect depositors and prevent contagion. Using newly available data, the chapter charts the spectacular rise of the bank as well as its demise and bailout, all through the lens of the Bank of England. The conclusion is that the BoE's policy of detachment from firms such as Slater Walker during their rise proved crucial and its approach once a bailout was

required fuelled expectations of government assistance to private institutions.

Chapter 5: Interdependence and Interconnectedness

While Chapter 3 covers the *what* of the crisis management policies, and Chapter 4 covers the *how*, this chapter will focus on the *why*. That is to say, what motivates public authorities in their rescue of private institutions and why can't they be allowed to fail like other private firms? One of the findings of other chapters of the thesis is that fear of a domino effect, whereby a small and containable problem starts to spread through the system, was a large motivator in the rescue attempts made during the secondary crisis. This chapter therefore goes deeper behind this motivation and looks at whether such a domino effect is to be found during the period for the largest banks. We also look at the response to the crisis from the point of view of the big banks, as opposed to the Bank of England as in the previous chapters, and their relationship with policymakers during the crisis. New light can be shed on these matters in the chapter using high frequency data. For the interdependence study, monthly balance sheet data is used for the most part of the 20th century with additional comparisons made to equity price data for both the core and the fringe of the system. For the banks' crisis response, historical evidence is used, including minutes of meetings and letters between the banks and the Bank of England.

Chapter 6: Conclusions

The concluding chapter summarizes the results from the preceding chapters before connecting the individual chapters to form a coherent entity. More concretely, the individual chapter conclusions are categorized via the implementation, effect and role of the Bank of England's financial stability measures. Regarding the implementation of the policies, one of the principal conclusions is that a greater understanding

from within the Bank of England on day-to-day banking operations would have been required prior to the crisis for the Bank to perform its regulatory role. However, even if this knowledge had been in place, actions would also have needed to be taken much sooner than they ultimately were in order to adequately implement the Bank's functions. As for the effect of the Bank's intervention, the conclusion is that both the qualitative and quantitative evidence points to potential subsidy effects. The Bank of England took its role of shielding creditors very seriously and with much greater emphasis than that of subsidy prevention. Furthermore, the quantitative evidence shows that only in the case of extremely conservative parameter values would the cost of providing the services be trivial according to the model used.

Finally, as for the role Bank's activities, the conclusion reached is that balance sheet data for the largest and most shielded banks does not imply interdependence, which was a primary reason for intervention by the Bank of England. Another property of the data is that equity interdependence is much greater than debt interdependence while equity price data shows that the secondary banks had an effect on the core banks but not vice versa. An important caveat here is that equity represents a small fraction of bank's balance sheets and the effect of the debt performance is less clear. As for the qualitative evidence, it is concluded that the Bank's role in the Lifeboat operations was perhaps greater than previously indicated in the literature. Following these individual chapter summaries, the concluding section then mentions possible policy implications and places the results in the context of the prior literature.

Chapter 2

Context and literature review

2.1 Introduction

The goal of the thesis is to shed light on the government's role in the financial sector through the lens of the secondary banking crisis of 1973-1975. While the thesis uses the crisis as a focal point, it will also cover earlier and later years in an attempt to compare calm periods with volatile ones, place the crisis in context, and possibly to try to pinpoint previously overlooked developments that led to the crisis. The crisis itself came amidst radical changes in the British financial sector's internal and external environment. These changes were multifaceted, coming both domestically and internationally as well as stemming both from developments within the financial sector itself and through changes in the structure of the broader economy.

This chapter has two overriding goals. The first is to set the stage for the crisis and contextualize the scene for the financial system in the early 1970s both with regard to the aforementioned developments and the historiography of the period.

The second goal is to place the crisis in context regarding the relevant economic literature and the analytic framework used in the main chapters. However, the literature review is not exhausted in this chapter. Instead the focus here is on material and developments relevant for the thesis as a whole while chapter specific literature is dealt with in each subsequent chapter. We thus try to remain in touch with the literature throughout the thesis while keeping this chapter more general in nature.

The story of post-war banking in Britain has traditionally been seen as two-fold; the calm continuation of pre-war banking based on informalities, traditions and relationship building followed by the evolution towards a more competitive, global environment with tremendous financial innovation and new types of financial institutions.²⁰ A well documented property of this two-fold story is that the former period was accompanied by greater financial stability while instability started to reappear alongside the latter period.

This is in line with global developments, for example empirical studies on crisis frequency, (e.g. Laeven and Valencia (2010) and Reinhart and Rogoff (2008)), that find that post-war financial markets were remarkably stable up until the 1970s when the occurrence of crises started increasing again. Bordo et al (2001) also note that crises became much more frequent in the 1970s and in fact doubled in frequency from that of the Bretton Woods and classical gold standard periods. Bordo and Eichen-

²⁰This distinction is a common one, see e.g. Grady and Weale (1986) and Capie (2010). Goodhart (1986) details the various financial innovations in the British financial system starting in the late 1960s. He splits them into two categories, monetary and credit innovations and goes on to argue for four developments as a consequence of these innovations; increased competition, changing characteristics of instruments and rates, growing unification of the global financial system and the development of the payments' system. Cobham (2002) details the stages of financial innovation in Britain in the 1970s and 1980s. He emphasizes the lead to more competition on both sides of the balance sheet during the period as well as narrower margins and lower costs.

green (2002) count 18 banking crises in industrial and emerging markets between 1919 and 1939, none between 1945 and 1971, and 26 between 1973 and 1997.²¹

The development from the post-war stability to the more recent instability can be said to have started to take place in the late 1960s, and while these developments were partially global in nature, Britain's position as a global financial centre meant that many of the symptoms that accompanied greater innovation and fewer restrictions were felt sooner and to a greater extent within the country. The global developments that applied more generally to global markets, as opposed to specifically to Britain, include the opening of markets and the gradually more positive attitude towards competition within banking which lead to a transformation of the way banks operated, both regarding incentives and constraints.

Following this change in the landscape, the economic literature has in turn evolved a great deal with increasingly added emphasis on the nuances within finance such as the non-linearities involved, informational issues including adverse selection and moral hazard, and contagion within financial networks. These threads between the historical developments of the sector and the economic and analytic literature are the key drivers of the chapter which proceeds as follows. Section 2 provides the historical context of the thesis. This includes both tracing the economic and financial sectors and previous work on the interpretation of the sectors' developments. In Section 3 the focus turns to the economics with a review of both the theoretical literature as well as the empirical. I seek to give a comprehensive view of the knowledge on financial crises and the role that the public sector plays in them. Section 4 points the way forward by reconciling the economic and historic literature.

²¹Bordo and Eichengreen (2002), Table 6. As for domestic developments in Britain, Metcalfe (1982) indirectly addresses this by calling the secondary crisis "the most serious to hit the industry in this century" (p. 75).

2.2 Historical and Historiographical Context

This section focuses on the macroeconomic and financial developments during and surrounding the secondary crisis as well as the related literature. I start by briefly discussing the main macroeconomic developments of the time and how policymakers approached these issues before moving towards the financial system and more narrowly to the topic at hand. The literature on British post-war economic history is vast, to say the least, and has been covered in detail from many angles. Chief amongst these angles is the growth story which has even been given its own term; the British disease. This phenomena points to the fact that post-war growth in Britain was substantially lower than that of its neighbouring countries, leading to convergence - and in some cases overtaking - by its rivals.

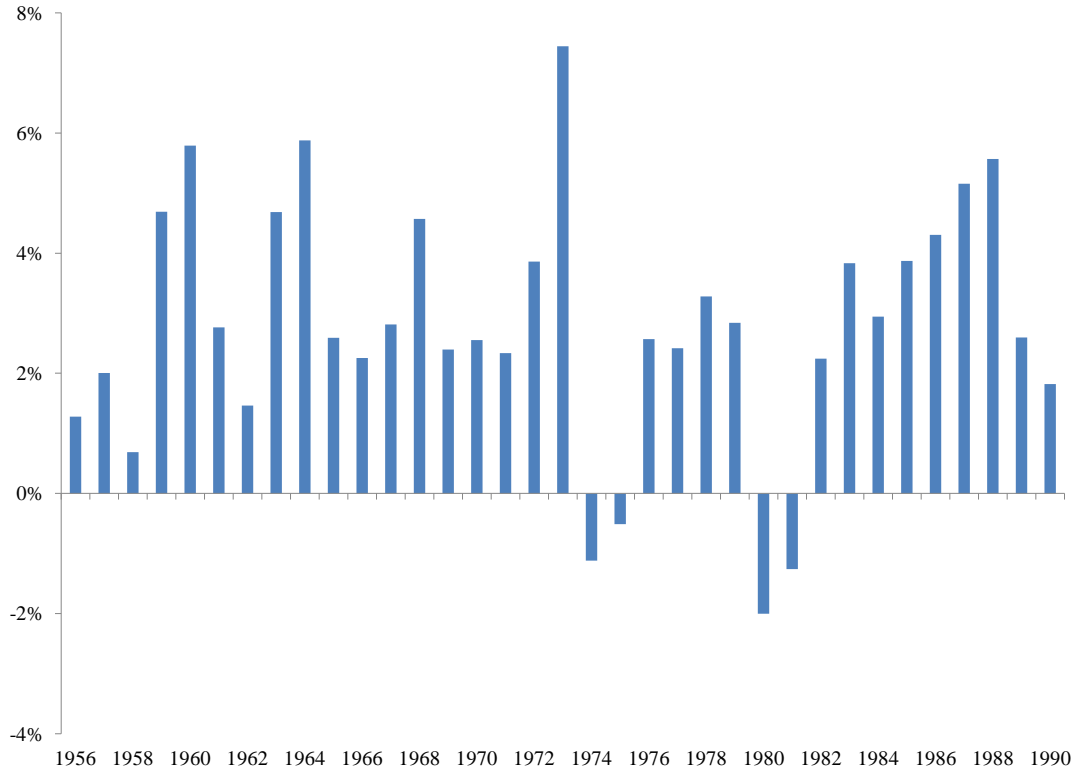
As an example, real GDP per capita was 33% higher in the U.K. than in Germany in 1937 but by 1979 the U.K. had fallen 14% behind the Germans. A similar story applies to Britain's other European rivals, such as France, while the U.S. increased its advantage during the period.²² Figure 2.1 shows British quarterly real GDP growth from 1956. As can readily be seen, GDP growth was negative on a yearly basis for the first time in a very long time during the crisis studied in this thesis, namely 1974 and 1975. On a quarterly basis, the economy experienced negative growth during seven quarters from 1956 to 1979 - four of which were in 1974 and 1975.

Temin (2002) provides a comparison of 15 Western European countries between 1935 and 1975 showing that growth was lowest in Britain at 2.1% compared to an average growth rate of 3.7%. The extent to which this development was a result of

²²Numbers from Maddison's database as quoted by Crafts (2011a).

a normal convergence story or whether sub-optimal policies in Britain were at play is debatable.²³

Figure 2.1: Real GDP Growth In Britain In The Post-War Period



Source: Office for National Statistics, author's calculations.

²³Vonyo (2008) is one of many arguing for this explanation. He finds that convergence was "central to the growth performance of western industrialised nations in the post-war era" (p.239) while also highlighting labour force expansion. For a concise overview of the various explanations for the rapid post-war growth see Alvarez-Cuadrado and Pinteá (2009).

As noted by Kitson (2008):

Explaining Britain's poor economic performance has been, and continues to be, a growth industry [...] new – or in most cases newly resurrected – culprits include poor entrepreneurship, low levels of innovation and in particular a failure to commercialise science, a paucity of high-technology clusters and low levels of social capital. ²⁴

As mentioned above, this topic has received arguably the greatest amount of attention in the post-war economic history of Britain and, as noted by Kitson, there are many competing arguments. Due to space limitations, the topic is not discussed further here but Crafts (2012) provides a recent take on the issue.²⁵ The other prominent contextual issue of an international nature during the period was that of Sterling's position in the global economy. Sterling's journey following WW2 was famously dramatic despite the nominal peg accompanying the Bretton-Woods era.²⁶

Preventing devaluation was no mean task as the currency came under repeated pressure, especially in the 1960s. In fact, Sterling came under sustained pressure in four separate years during the 1950s and continuously from 1961 to 1968, according to Oliver and Hamilton (2002).²⁷ The difficulties of maintaining the peg are generally linked with underlying fundamentals of the economy, such as the aforementioned lack of growth. One main line of argument is the adverse effects on the balance of payments due to the continual policy of high demand pursued by the government,

²⁴Kitson (2008) p. 42

²⁵For further discussions see for example Broadberry (2004) who compares Britain to Germany, Booth (2003) who tackles the sectoral decomposition and Cairncross (1996) who in fact emphasises the sea-change that occurred during the period studied in this thesis, the 1970s.

²⁶The history of Sterling's plight is one of the deepest literatures in Britain's post-war economy. The chapter will however only briefly touch upon the main developments as they relate to the topic at hand and provide references to the main works and debates in the area.

²⁷Newton (2009) examines the reasons why the decision was made not to devalue prior to 1967.

which in turn was motivated by the perceived lack of growth in Britain relative to that of what were seen as its rival countries.

These issues of preserving stability in the currency amidst a perceived persistent lack of growth were at the forefront of policymakers' mind during the period studied in this thesis.²⁸ They should therefore be kept in mind although a closer look at the linkages between macroeconomic policy and Sterling's problems are beyond the scope of this thesis.²⁹

The effect of the increased turmoil in currency markets and balance of payment developments should, however, briefly be mentioned due to their relevance to the thesis topic. While the focus of this thesis is on the secondary crisis of 1973-1975, which was indeed a relatively pure banking crisis, the interplay between the financial system and the exchange rate system remained important. The literature on twin crises and the interplay between banking and currency crises can thus prove relevant. This topic became increasingly popular following the plethora of emerging market crises around the world in the 1990s. In that vein, Kaminsky and Reinhart (1999), in a widely cited paper, look at the connection between the two types of crisis and conclude that they are often closely linked although banking crises generally precede currency crises.

This pattern does not fully match that of our case, as the currency can be seen to have been in crisis regularly for a long period before the banking crisis hit. Furthermore, emerging market crises are often twin crises due to the fact that the inflow of money raises credit which increases leverage, affecting both the currency and the banking system. This is not the case for 1970s Britain as the bank's could

²⁸The goals and priorities of policymakers is discussed explicitly in Chapter 3 of this thesis.

²⁹Bordo (1993) includes an overview of Sterling's plight in the context of its role as a reserve currency.

generally rely on domestic funding and there wasn't a rapid inflow of external credit leading up to the secondary crisis. Foreign lending wasn't a prevalent factor in the crises either so the currency wasn't a main actor on either the inflow or outflow side. The link between the two types of crises is thus weaker than in the Kaminsky-Reinhart framework.³⁰ Note also the fact, highlighted in the twin currency literature, that the linkages between currency and banking crises are very complex and would require a stand-alone study to gain any substantial insight into the relationship between the two. The focus in the thesis is thus on the banking side throughout while keeping in mind the possible effects felt by any potential balance of payment stress.

As for the Bretton Woods period specifically and its gradual breakdown, a common theme in the literature has been to compare the development of macroeconomic variables before and after the breakdown. Eichengreen (1993) breaks down the period into two sub-periods, and concludes that output was remarkably stable during the second half, or 1959-1971. This applies to both the supply side, which he uses as a proxy for the underlying environment, as well as the demand side which he interprets as the influence of policy. The floating of exchange rates also coincided with the pickup in inflation during the early 1970s which was to be, along with the slowdown in growth, the dominant global theme of the decade. These global shifts will not be covered in any great detail here due to lack of space but Eichengreen (2007) provides a concise overview of post-war developments in Europe with considerable material on Britain and its changing role in the global economy.³¹

³⁰One factor that is comparable is the fact that crises tend to occur at the turning of the business cycle, as was the case for the secondary crisis.

³¹For the more recent period, from 1960 to 2000, Enflo (2011) looks at the change in European policies and institutions that coincided with the region's increase in unemployment from the 1970s onwards and highlights labour market rigidities.

The most striking macroeconomic development in Britain, as elsewhere, during the sample period was arguably the rapid acceleration of inflation. This acceleration was generally seen as a combination of three factors; policy errors, the breakdown of Bretton-Woods and the ongoing energy crises.³² Figure 2.2 shows monthly inflation in Britain in the post-war period through to the end of the sample period in 1979. Inflation remained manageable - albeit by no means trivial - throughout the first two decades of the first-war period. However, it started to rise dramatically in the early 1970s and peaked at just under 25% in 1975.³³

Deciding weights on each contributing factor to the increase in inflation is tricky. A comprehensive discussion on the literature of the inflation of the 1970s is also beyond the scope of this thesis but the role of policy should briefly be highlighted as it relates to the policy environment during the period. Stripped to its bare bones, the contribution of policy errors to the increase in inflation lay in the previously mentioned accommodative stance of policy due to what was perceived as lacklustre growth.

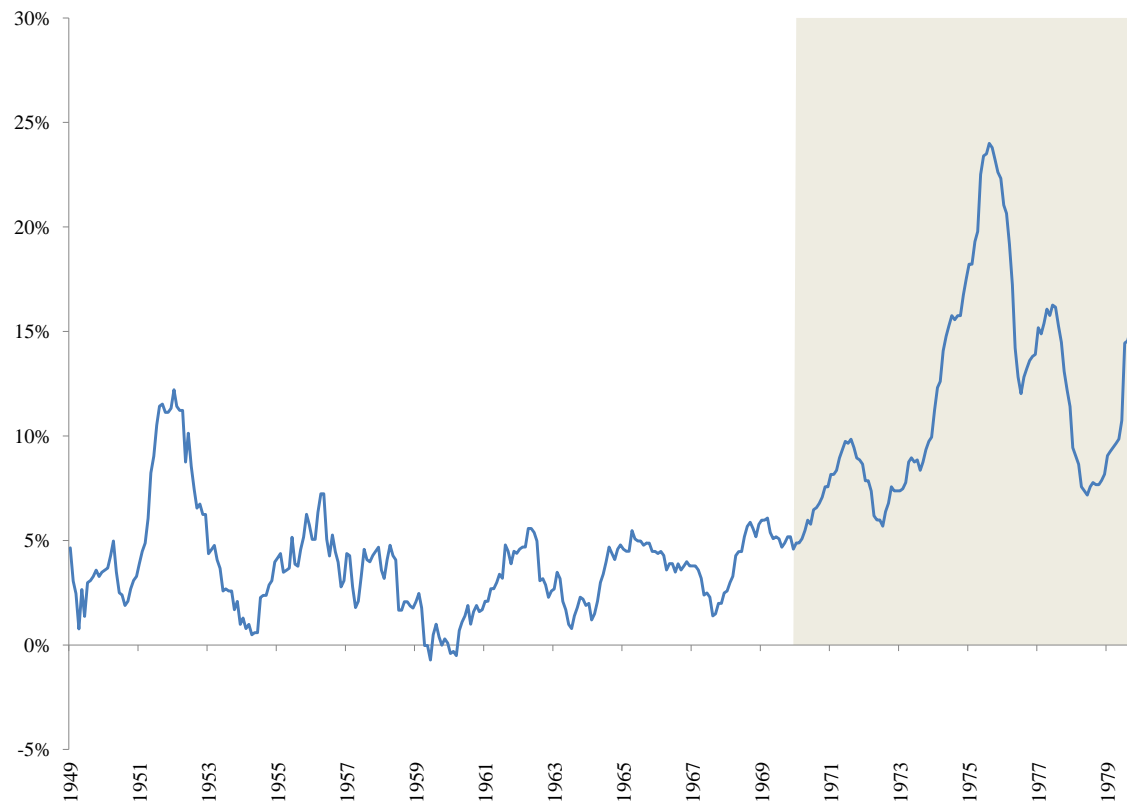
A larger fiscal deficit than could be considered prudent and the rapid increase in money supply thus both played a role in the domestic setting, as argued for example by Goodhart (1989). Another aspect, noted by Burk and Cairncross (1992), is the extent to which financial innovation, highlighted elsewhere, complicated matters when it came to conventional monetary policy. Monetary targets, as were popular at

³²See Bruno and Sachs (1985).

³³This rise in, and volatility of, inflation heightens the importance of distinguishing between real and nominal variables for many parts of the thesis. Care is therefore taken through the thesis in looking at both and determining whether any results are possibly due not to the underlying variables but the common effect of inflation. This factor is most important in Chapter 5 where the focus is on developments of balance sheet variables across banks. The common inflation experienced by the banks could potentially lead to a relationship being found between the different banks so extra care is taken in looking at this possibility.

the time, thus only represented a portion of outstanding money or as put by Cairncross and Burk, "When it was sought to control one version of the money supply, other versions could expand and substitute for it."³⁴ These internal factors are in addition to the rising oil prices and possible effect of floating exchange rates which can be considered external factors that affected other countries as well as Britain.

Figure 2.2: RPI Inflation In The Post-War Period



Source: Office for National Statistics, author's calculations

In addition to the difficulties of setting the right tone with regard to traditional economic policy, i.e. standard fiscal and monetary policy measures, these adverse

³⁴Burk and Cairncross (1992) pp. 204-205. While focusing on circumstances around the IMF rescue package, Burk and Cairncross also analyze the rise in inflation and its main causes.

developments were also accompanied by the widely discredited policy of Competition and Credit Control (CCC) in the early 1970s. CCC was a group of measures taken in a move away from credit ceilings and to attempt to level the playing field in banking so as to increase competition.³⁵ Richardson (2001) names two main tenants of CCC; a move away from direct controls in the monetary sphere and towards "a system in which market forces could play a predominant role".³⁶ Ultimately CCC had the effect of drastically increasing the money supply, by over 20% a year, and is generally considered to have been a substantial factor in the property bubble and secondary crisis (see Reid (1982) and Capie (2010)).³⁷ Howson (2008) described CCC as "the most spectacular failure to control monetary growth".³⁸

These attempts at controlling inflation proved equally difficult in the sphere of the labour market. Unemployment had been favourable in Britain in the immediate post-war period as indeed in other major economies. However, the persistently low unemployment of the 1950s and 1960s was somewhat anomalous when compared to the experience of later decades, both cyclically and structurally. Broadberry (1994) makes this point and argues further that the wage restraint which contributed to low unemployment was partially responsible for the lack of productivity growth and thus Britain's relative decline. Hatton and Boyer (2005) focus on unemployment in the immediate post-war phase and contrast it to other periods. They conclude that the

³⁵Moran (1984) describes in detail the events leading up to CCC and how the policy affected the banking system.

³⁶Richardson (2001) p. 17.

³⁷Needham (2012) provides an alternative view of early 1970s' monetary policy and the differing stances of Treasury and the Bank of England towards monetarism. Griffiths (1973) provides a view as of the time, arguing that the reforms to the monetary system that were by then underway, including CCC, represented "the most fundamental change since the end of cheap money policy in 1951". (p. 76). Chrystal and Mizen (2011) also provide an account of monetary developments in post-war Britain, including CCC.

³⁸Howson (2008) p.152.

main reason for the low post-war unemployment was not lower real wages relative to productivity, but rather an outward shift in the labour demand curve.³⁹

The re-emergence of unemployment was, alongside the surge in inflation, the other major concern of policymakers during the 1970s. There are many different strands in looking at this combination of high unemployment and inflation during the period. In the economic sense, the breakdown of the short-run trade-off between the two variables was central to economic thinking at the time.⁴⁰ These events were in the main predicted by Friedman (1968) and Phelps (1967) - a rare case of foresight by the profession. The aforementioned downfall of Bretton Woods amidst exchange rate problems is another lens through which one can look at the unemployment-inflation dynamics, as are the energy crises of the decade.⁴¹ Hatton and Boyer (2005) argue for labour demand shifts in the return to unemployment as well as the adverse economic conditions, depicted above. Tomlinson (2008) implies that the increase in unemployment was mainly exogenous and outside of the control of policymakers. Full employment was indeed downgraded as a policy goal during the 1970s but Tomlinson makes the point that the rhetoric - "served up to maintain confidence in the financial markets" - was stronger than actual policy measures.⁴²

As for the role of the central bank in management of the economic cycle, the Bank of England's post-war goal was generally seen to be that of maintaining the value of currency and increasingly to foster high employment and growth as well

³⁹See also Hatton (1988) for a longer term analysis of this view with emphasis on wages.

⁴⁰As mentioned by Howson (2008), "In the years since the Second World War the role of money, and the use of monetary policy, has been peculiarly subject to the whims of intellectual fashion in economic thought, in Britain as elsewhere" (p. 134). See also Booth (1983) and Tomlinson (1983) for a discussion of the interplay between theory and policy as it related to Britain during the period.

⁴¹Capie et al (1994) cover these multiple angles and put them in historical perspective. Capie and Goodhart (1995) recite the view that approval for the continued maintenance of fixed exchange rates under Bretton Woods started dwindling in the late 1960s.

⁴²Tomlinson (2008) p.204.

(see Capie et al (1994)). These ambitious goals changed gradually from the late 1960s onwards as emphasis on competition started to increase and monetary targets became more popular, especially following the float of Sterling in the early 1970s. On the financial side, as noted earlier, moves were made to rely more on market prices and competition instead of direct credit control. Policy during the second half of the decade was "a continual struggle against inflation and unemployment".⁴³ This volatility in turn paved the way for the height of monetarism in the early 1980s.⁴⁴

The challenge of dealing with multiple adverse economic developments certainly took its toll on both policymakers and the economy. Not only did unemployment and inflation remain stubbornly high - the latter approaching 25% in 1975 - but the balance of payments also proved difficult to handle after the breakdown of Bretton Woods. Sterling struggled to keep up in the mid-1970s amidst concerns over government finances as well as the difficulties involved with the energy crisis.⁴⁵ The government, struggling to raise funds to cover its expenses and having lost control of the currency, was ultimately forced to request assistance from the IMF in September of 1976 - a move that was considered highly humiliating for all involved.⁴⁶

Moving closer in theme to this thesis, Britain's financial sector was at the time considered, as it still is, a global financial centre despite the aforementioned problems

⁴³Howson (2008) p.158.

⁴⁴See Goodhart (1989). He divides the structural changes of monetary policy in the 1970s and 1980s into four periods: The shift of policy towards Monetarism 1970-79, the high tide of Monetarism, 1979-82, the return to pragmatism 1982-85, the increasing concern with exchange rate regimes, 1985 onwards (p. 297, pp. 300-311).

⁴⁵Neal (2008) points out that the oil shock hit Britain harder than the other large European economies.

⁴⁶Floud and Johnson (2008) covers the build up to the IMF agreement from various perspectives. Neal (2008) covers the energy angle and the European side of things, Clark and Dilnot (2008) through the lens of fiscal policy and Howson (2008) looks at the episode in connection with monetary policy. See also Burk and Cairncross (1992), which cover the crisis in great detail, and Wass (2008), who covers the lead up to the IMF package from the Treasury's point of view.

with the macroeconomic environment.⁴⁷ Amidst the country's aforementioned relative decline and struggles, the City of London remained a beacon of pride. Kynaston (2002) remains the seminal work in this area and covers the sector's developments extensively. While taking a longer term view than this thesis, Kynaston's focus is very much on the gradual structural shift from old-school banking to the modern financial system, including during the 1970s.

Watson (2008), surveying post-war British banking, documents this trend as well and points to the increasing scale of the financial sector throughout the period. She notes that banking and finance comprised 3% of GDP at factor cost in 1948, 7% in 1975 and 20% in 1995, while similar trends can be seen in other measures of resource utilization such as employment. Turner (2012) takes a longer term view and looks at British banking in the 19th and 20th centuries. He concludes that only two severe and systemic banking crisis took place during the period - in 1825 and 2007 - while the bulk of the interim period coincided with relative stability due to either high capitalization levels or substitutes for bank capital such as government constraints.⁴⁸

Another long-term view is provided by Capie and Goodhart (1995) who, similarly to this thesis, look at the relationship between commercial and central banks. With the main emphasis on the U.K. and the U.S., they divide the relationship

⁴⁷The story of London as an international financial centre is not, however, an uninterrupted one. As covered in Cassis (2006), the City experienced a decline following the reversal of the so-called first period of globalization. Cassis attributes this to the state of the economy as well as strict regulation. The City then re-emerged from the early 1960s onwards, a period which he talks of as "the City's rebirth". Baker and Collins (2005) chronicle London's role as an international financial centre in the post-war period. They document the increase in foreign banks operating in London and the importance of the Eurodollar market - a point highlighted as well by Cassis. Baker and Collins also briefly mention the positive attitude of the authorities towards these developments.

⁴⁸Additionally, Turner's conclusions are in line with the literature more generally as regards to the informality of the regulation imposed on the banks during the bulk of the period.

between central banks and commercial banks into three periods; a shift from a competitive relationship between the two towards the central bank accepting its lender of last resort responsibilities, a second period whereby the central bank maintained this role with "a very limited hands-on, direct regulatory or supervisory function",⁴⁹ and finally a new era wherein central banks are struggling with the appropriate response to the return of volatility.⁵⁰

Grossman (2011) in turn points to several financial developments which were complementary to the macro features mentioned above. These include the gradual elimination of interest rate controls, the growth of market-oriented mechanisms for the allocation of capital, and the elimination of direct controls on bank lending.⁵¹ Capie et al (1994) show the return of volatility via trends in interest rates. Comparing four periods, from 1870 to 1991, they find that the volatility of both short-term and long-term nominal rates was unusually low in the post-war period up until 1971 and then increased again in the period 1972-1991.

Britain's position as a global financial centre has resulted in several similar studies on the long-term history of British banking. Britain also figures prominently in the literature of lender of last resort, due not only to Thornton and Bagehot's role in developing the concept, but also because of the fabled crises of the late 1890s. The Bank of England's operations during this period are indeed generally considered a classical case of the lender of last resort (LOLR). That is to say, the Bank stepped

⁴⁹Capie and Goodhart (1995) p.160.

⁵⁰Janssen (2009) provides an overview of many interesting aspects of British banking. He covers the legal definition of banks in the U.K. from the 1970s onwards, as well as the supervisory framework. He also gives a rundown of the largest British banks via case studies, many of which feature in this thesis. The period used for the case studies is, however, more recent than that of this thesis.

⁵¹The extent to which the secondary crisis has been forgotten can be seen in Grossman's review as he omits the crisis from the events that signified the return to instability, mentioning instead only the Herstatt crisis in Germany and Franklin National in the U.S.

in to avert collapses of the money stock by making temporary loans to solvent but illiquid institutions against good collateral.⁵²

More recently, the practicalities of such operations have been questioned, for example with respect to the plausibility of determining insolvency during a crisis and whether interventions into specific institutions, as opposed to the market as a whole, constitute lender of last resort policies.⁵³ These issues are discussed further below but it is pertinent here to note that, during the episode being examined in this thesis, the operations performed would not fall under the definition of the classic LOLR. The Bank undertook many different types of idiosyncratic interventions during the crisis, both in collaboration with the clearing banks as well as unilaterally, with different justifications and different results. It even intervened in cases where it knew there was a capital shortfall due its worries that failure of many fringe institutions could both entail unacceptable losses and lead to knock-on effects on other institutions.⁵⁴

To avoid misunderstanding or points of misapprehension, the more general term of crisis management is used to describe these actions.⁵⁵ This term is taken to encompass action on behalf of the central bank to avoid not only a systemic crisis but also an episode that would result in unacceptable loss -as defined by the central bank - to either direct stakeholders, such as creditors or shareholders, or indirect stakeholders including the general public. While LOLR operations could be interpreted as a case

⁵²This definition is often appended with a reference to a penalty rate, although views differ on whether such a term is called for. See Humphrey (1989) for a review of the classic concept.

⁵³See also Freixas et al (2000) and Humphrey and Keheler (1984).

⁵⁴See the discussion in the next three chapters for examples of this thinking. Kosmetatos (2014) looks at the 1772-1773 crisis and the extent to which typical lender of last resort policies applied. He discusses measures defined as applying to the market as a whole as well as targeted at specific firms through direct lending.

⁵⁵This is in line with Capie (2014) who contrasts the secondary crisis, covered here, and the Barings rescue in 1891 with typical lender of last resort operations. Bordo (1990) covers the various different arrangements and views of the LOLR. He also mentions the episode under scrutiny in this thesis as one that differed significantly from the classical doctrine (p.26).

of such crisis management, in the sense that the central bank intervenes at times of stress to avoid crises, the opposite is not necessarily true and that is certainly the case for the secondary crisis.

While the aforementioned crises of the 19th century have received considerable exposure in the literature, much less attention has been given to the secondary banking crisis (SBC) of the 1970s, however - possibly due to the fact that it did not involve dramatic failures of household names.⁵⁶ One interesting aspect of this crisis is the fact that British banking had remained crisis free for an extended period of time leading up to the SBC whereas the period following it exhibited periodic stress periods. There is general agreement within the literature that a multi-faceted explanation is necessary to explain why volatility increased following the calm period.

The most popular culprits for the end of the calm period are first and foremost financial innovation, especially in the form of money market funding and new institutions, regulatory inattention towards these developments, and macroeconomic policies that led to rapid rises in money supply and distortions in the financial system.⁵⁷ As for the secondary crisis itself, Kynaston (2002) highlights the property bubble at the beginning of the decade, fuelled in part by CCC, as well as the regulatory angle as contributing factors that would lead to the crisis.

Another prominent account of the financial sector at the time is Revell (1973) who provides a detailed overview of the structure of the financial system as it stood

⁵⁶Kindleberger (1984), for example, covers the Bank of England's historical role as lender of last resort but makes no mention of the renewed concerns that arose due to the secondary crisis. In fact, his coverage ends in the 19th century despite the recency of the crisis at the time of writing. Watson (2008) also omits the secondary crisis from her overview of the financial services sector in Britain since 1945.

⁵⁷The main works mentioned here, including Reid (1982), Kynaston (2002) and Capie (2010) all agree on these main developments as catalysts. Moran (1984b) highlights the regulatory problems that financial innovation can introduce.

at the time of writing. Little attention is, however, given to ongoing developments at the time with the focus being on categorization of institutions, markets and products. Grady and Weale (1986), on the other hand, provide both an overview of the structure and narrative of the development of the financial system between 1960 and 1985. They argue, similarly to the literature in general, that British banking changed radically during the period, with a regulatory system that didn't deal with the introduction of new players on the scene playing a large role.

Moran (1984) represents perhaps the approach that is closest in nature to this thesis as he focuses on the connection between the public sector - primarily through the lens of politics - and finance. He also looks at the relationship between the Bank of England and the commercial banks, and the changing dynamics within the British financial system during the 1970s. He does this from the perspective of complexity theory and puts the problems of banking policy in the wider context of general public policy.

Capie and Billings (2004) provide supporting evidence for the consensus in the literature on the structure of British banking. Looking at the period from 1920 to 1970, they review the narrative of the cosy relationship within the system and the lack of competition which was to change with the financial innovation and arrival of foreign competitors, covered above. They look for evidence of cartel-like behaviour and find the strongest argument in the wide spreads throughout the period, which were in turn due to well-known agreements on rates and advances between the so-called clearers. They contend that the cartel was in fact "softer" than is often believed and that the increased competition for financial services eventually led to reduced official support for this arrangement.⁵⁸

⁵⁸Bowden (1997) approaches the structure of the financial system from another angle, namely the

As for the relationship between the government and the financial sector, the dominant theme of this thesis, a lot of work has been done on the attitude of finance within government. In addition to Moran (1984), mentioned above, an ongoing theme throughout in Kynaston (2002) is the evolving sentiment from government towards finance and vice versa - highlighting the built-in political aspect of banking throughout the ages.⁵⁹ Michie and Williamson (2004) also include several pieces on the relationship, again with much emphasis on how each sector perceived one another throughout the 20th century. Additionally, Michie (2004) emphasises the fact that the interests of the two sectors, i.e. financial and public, were alternatingly aligned and different which led to an almost cyclical relationship. Schenk (2005) highlights the divergent views on the City between the Treasury and the Bank of England, a feature covered in Chapter 3 of this thesis.

As for the secondary crisis itself, there is a broad consensus on its causes as well as its consequences. Reid (1982), widely considered the go-to work on the topic, concludes that the primary causes of the crisis were expansionary economic policy and the run-up in property prices. Capie (2010) argues along similar lines although he places more emphasis on regulatory factors. Other accounts are less holistic, however. Scott (1974), for example, argues innovatively for viewing the episode through the lens of Veblen's theory of crisis. Davis (1995) reaches similar conclusions to those above regarding the crisis causes, namely speculative lending and innovation in money markets, although he adds an interesting angle on quantity

finance houses. She focuses on the short-lived attempts to restrain competition among the houses around 1960 and argues, in line with the rest of the literature, that increasing competition and innovation led to the demise of collusion. For a hands-on view of the City of London as a workplace in the post-war era see Thompson (1997).

⁵⁹This approach of looking at attitudes contrasts with this thesis. I look only secondarily at personal attitudes and focus instead on economic relationships. For example by looking at how reliant various financial institutions were on public institutions and the extent of subsidies involved.

rationing for lower quality institutions.⁶⁰ Matthews (2005) looks at a specific case of failure, namely London and County Securities. Other such studies are reviewed in Chapter 4.

These seminal texts, as well as most other works on the crisis, are predominantly of a descriptive nature and furthermore do not analyze much the possibility of alternate routes that policymakers could have pursued. Indeed, little mention is given to questions such as whether the Bank of England could credibly have reduced the extent of the crisis or whether regulatory action alone would have sufficed. Additionally, attempts to measure the direct and indirect costs of the crisis are limited. The analytical work that does exist is more focused on macroeconomic policies, such as the elusive quest for growth pursued relentlessly by the government.

Summing up, Britain's economic experience in the post-war period was far from stellar. The overarching theme of the period was that of relative decline as Britain's status as that of an economic leader diminished. A lot of the literature has tried to eke out the reasons for this development and put it into context with the greater success of Britain's neighbours. This decline was also seen in policy circles at the time and was a source of some frustration as economic policymaking tried to reverse this development.

Periodic problems with the maintenance of the exchange rate exacerbated these policy problems. As mentioned in pieces such as Oliver and Hamilton (2002), Sterling seemed to be in constant state of crisis in the 1960s and 1970s. This gloomy economic situation, both internally and externally, reached a peak in some sense during the period under consideration in this thesis as Britain sought assistance at the IMF.

⁶⁰On the price rationing, Davis (1995) says that it was "evident for secondary banks in 1973; also in the interbank market after 1974, while many banks were subject to price tiering, the lowest class often finding themselves excluded from the market altogether." (p.194).

However, despite this gloomy picture depicted in the literature, it is important to remember that living standards were on an upward trend during the period and growth was for the most part not spectacular but certainly respectable. As emphasised by Cairncross (1992), Britain's post-war economic performance is often contextualized in relation to catch-up by other economies rather than its own absolute demise.

As for the financial sector, given the evidence presented above it is safe to say that there is a general consensus in the literature on the sector's development in the post-war period. Informalities gradually gave way to a greater emphasis on rules amidst greater competition and globalization. Regulators were also forced to adopt to increased modernization and financial innovation. Their reaction was only partially successful as the increase in volatility and crisis occurrences show.

However, as mentioned elsewhere, the goal of this thesis is not necessarily to alter this narrative. Instead, the aim is to dig deeper into the effect that the structure of the financial sector and its relationship with the public sector had on outcomes such as bank profitability and stability - or lack thereof - as well as public finances. We thus turn now to the economics literature and the tools used to tackle these issues before delving into the main chapters of the thesis.

2.3 Economics Context

Governments' role in the financial sector features in various branches of the economic literature. Here I look at the main strands that provide a background for the thesis while chapter specific literature is covered in each chapter. The main strands are the macro-prudential approach to government involvement, the micro justification of public sector assistance, the empirical work on governments and finance, and finally

the theory and practice of bank regulation.

As in many other fields of economic research, one can distinguish between micro and macro approaches to the topic of government and finance. The macro approach involves looking at how specific financial frameworks affects the credit cycle, the consequent real economy effects of these frameworks and how policy can play a countercyclical role.

Bernanke et al (1996) is amongst the most prominent theoretical works in this branch. The authors examine the effects of asset price fluctuations on real activity through balance sheet deterioration or improvement. As assets on the balance sheet increase in value, available collateral increases and investment possibilities rise. Conversely, when asset prices drop, a negative feedback loop leads to further declines in both asset prices and leverage. The end result is that this so-called financial accelerator exacerbates the fundamental fluctuations in the credit and hence business cycle.

Geanakoplos (2010) introduces a similar concept, that of the leverage cycle, which emphasises the connection between leverage and asset prices. Kiyotaki and Moore (1997) presents yet another similar argument, focusing on how imperfections in financial markets lead to an amplification avenue where small shocks have large effects. This body of work has provided formal justification for the inclusion of embedding the financial sector into macroeconomic analysis. The policy implications of this strand of the literature are also in line with the recent emphasis on macroprudential regulation whereby attention is focused on financial market imperfections, mainly information asymmetries. Bordo et al (1995) provide an overview of the various theoretical macro approaches to financial crises and links them with historical episodes.

Finally, Minsky (1976) falls between the micro and macro approaches to financial instability. His work, which has recently become fashionable again, focuses on how periods of stability themselves breed instability. This work has in later times been popularized and summed up in the phrase of the 'Minsky moment'. This term relates to Minsky's proposition that periods of stability lead to added speculation. The use of borrowed money for this speculation in turn leads to increased instability followed by a dramatic downturn. In that sense, it resonates well with Chapter 3 of this thesis where the primary conclusion is that due to the long period of stability within British banking, institutional knowledge of financial instability had deteriorated and the environment was ripe for a 'Minsky moment'. However, Minsky's work is fairly general in nature and does not provide specifics regarding either a theoretical framework or policy suggestions.⁶¹

Moving towards the traditional micro approach to governments' role in the financial sector, this part of the literature involves looking at the direct interaction between the public sector and particular financial institutions. As mentioned in various places in this thesis, this literature has a long tradition and dates back to Thornton (1802) and Bagehot (1873).⁶² At its core, the literature looks at the fundamental business of financial intermediaries and the periodic instability inherent in their role.

Both Thornton and Bagehot recognized the inherent imperfections of financial intermediation and set out to find policy solutions so as to minimize the effects of

⁶¹Minsky himself admits this, saying that his policy suggestions are "best interpreted as an agenda for discussion rather than a nonnegotiable program." (Minsky (1976) p. 370).

⁶²Grossman (2010) reviews the history of thought regarding the lender of last resort. He in fact dates the tradition back even further than Thornton, to Sir Francis Baring in 1797. Redish(2001) also takes a historical look at the lender of last resort function, focusing on the experiences of Britain, the U.S. and Canada in the 19th and early 20th centuries.

these imperfections. In short, these imperfections stem from two facts. The first is that financial institutions' illiquidity and insolvency are intrinsically but imperfectly linked and the second that the institutions within a system are themselves intrinsically linked. The consequence of the first is that a bank can go under despite remaining solvent, in the sense that its assets exceed liabilities, due to a general liquidity shortage which threatens the system as a whole. The second fact means that banks can fail due to another channel; concerns about a particular institutions health can lead to unfounded concerns about a rival institution due to information imperfections and subsequent panic withdrawals.

Thornton and Bagehot thus both argued that central bank assistance be provided in circumstances where solvent institutions became illiquid, while being mindful of the moral hazard this could create. Thornton specifically argued, in the words of Goodhart and Illing (2002), that "in a system with a central bank, the commercial banks will turn to it for assistance in any such crisis, and that the central bank must stand ready to supply that, despite the likely concurrent drain on its gold reserves."⁶³ Bagehot on the other hand argued that central banks should lend at will to solvent but illiquid institutions against good collateral at an appropriate rate.⁶⁴

Many attempts have been made in recent years to formalize the several insights of both Thornton and Bagehot. The most prominent example is Diamond and Dybvig (1983) who formalize the mechanism whereby long-term assets mixed with short-term liabilities can lead to self-fulfilling panics, even in healthy institutions.

⁶³Goodhart and Illing (2002) p. 7.

⁶⁴For an account of early adaptation of Bagehot's rule, see Bignon et al (2012). Amongst the conclusions is the fact that the Bank of England was on "a learning curve" in its lender of last resort operations during the mid 19th century, only gradually developing procedures along the lines of Bagehot. Chapter 3 of this thesis argues that after the long lull in banking, the Bank of England was again forced on a learning curve, albeit a much quicker one, during the secondary crisis of 1973-75.

More recently, focus has shifted to specific aspects of the Bagehot-Thornton analysis. Most significant for the purposes of this thesis are contagion studies and the effect of information issues.

The former type of studies looks at the interdependence of financial institutions and the possibility of knock-on effects between them. Amongst the most prominent of these is Allen and Gale (2000) who provide microeconomic foundations for contagion via overlapping interbank claims. They thus introduce the possibility of contagion originating from an initially small liquidity preference shock with the extent of contagion depending on the network structure in place. These dynamics are addressed more closely in Chapter 5 along with a closer look at the relevant literature.

The latter type of studies, which is in fact related to the former, addresses the effect of asymmetric or incomplete information on the equilibrium in financial markets and the possibility of sub-optimal equilibria that they introduce. By deviating from full and complete information, one can more easily arrive at run-like equilibria as well as moral hazard and adverse selection behaviour. These informational properties are discussed more fully in Chapter 3 while Gertler (1988) provides a survey of the early attempts to address the properties.

The most relevant of these studies for our purposes is Stiglitz and Weiss (1981) where it is convincingly shown that, in equilibrium, there may not be a market-clearing price, i.e. interest rate, for loans. More concretely, they assume that borrowers have different probabilities of repayment but the bank cannot fully identify safe projects from risky ones. This would generally be resolved by charging a higher price for the loan but with incomplete information, a higher price encourages borrowers to select riskier projects. In other words, no separating equilibrium can be found which means that the bank's best strategy in this case is to ration credit.

While Stiglitz and Weiss' original argument was in terms of traditional borrowers lending from banks that finance investment projects, the same principles can apply to the case in this thesis. This can be seen by putting banks in the role of the borrower and the central bank as the lender. Hence, when performing its role as stabilizer of the financial system, the central bank cannot distinguish between safer or more risky loans to banks in the presence of asymmetric information. Consequently, a higher rate, as argued for in the lender of last resort literature and discussed above, can result in greater losses for the central bank and riskier projects undertaken by the borrowing banks.

Another recent feature of the literature is the focus on the realization that Bagehot-type rules run into several practical difficulties. Calomiris (1999) stresses the potential for conflict between the short-term stabilization of credit supply and the long-run stability of the banking system. Anginer et al (2014) expand upon arguments similar to Stiglitz and Weiss in addressing when risk-bearing by the state is good public policy. As also argued in this thesis, they highlight the importance for government to explain "why the state can achieve what markets cannot" in order to justify its role in risk-bearing in financial markets.⁶⁵

The argument of Anginer et al builds on Calomiris and Kahn (1991) with the added effect of lenders' risk aversion as well as agency frictions. These frictions come in the form of bilateral agency frictions on the one hand and multilateral, collective frictions on the other. The authors show that these divergences from complete markets and risk neutrality lead to a higher risk premia and market inefficiencies. A state guarantee can thus help lower the cost of capital by spreading risk more broadly using the state's advantage in resolving collection action frictions.

⁶⁵Anginer et al (2014) p. 85.

This advantage is assumed to stem from underdeveloped financial markets where private parties cannot fully resolve the agency frictions, unlike the state which has a well-established taxing and spending framework.⁶⁶ However, the guarantee also has the side-effect of increasing moral hazard as the lenders incentive to monitor the borrower is lowered. The optimality of guarantees subsequently rest on the framework at hand, namely governance, risk management and clear mandates.

Another of their main highlighted issues, also covered at length in this thesis, is the importance of correct pricing of such guarantees. In the words of Anginer et al, "[u]nless this is done right and state guarantees are reasonably priced, state guarantees will likely end up unduly subsidizing private risk-taking, and this is bound to distort incentives and trigger unpleasant fiscal surprises (as well as political upheavals) once downsides materialize."⁶⁷ This issue of correctly designing government interventions in financial markets is currently a popular one in the literature.⁶⁸

On the empirical side, many attempts have been made at capturing the costs and benefits of various assistance episodes. The earliest attempts of such estimation came amidst renewed interest in the topic due to the rise of bank failures in the 1980s, especially in the U.S., and include Marcus and Shaked (1984) and Ronn and Verma (1986). More recently, attempts to quantify the implicit subsidy have again gained traction, similar to the empirical exercise in Chapter 3.

One such study is IMF (2014) which uses three methods to quantify the subsidy: bond-spread differentials between banks considered too important to fail and others, a contingent claims analysis, similar to that of Chapter 3 of this thesis, and a ratings-

⁶⁶The authors also argue for the state's advantage via fuller participation, both across current taxpayers as well as between generations, which leads to greater capacity for risk spreading.

⁶⁷*Ibid.*

⁶⁸The pricing of these interventions is at the core of Chapter 3 and the relevant literature is more closely studied therein.

based approach.⁶⁹ Such work focuses on the aforementioned moral hazard aspect of public assistance and tries to calculate the monetary value to financial institutions of the presence of the lender of last resort.

The greatest obstacle to such studies is isolating the part of market pricing that is due to expectations of assistance from the public sector. The early attempts at this generally employed normally distributed option pricing models to estimate the value of a put option on bank liabilities. More recent attempts, such as IMF (2014), have used credit ratings and CDS data to try and find out the difference between the stand-alone price of bank liabilities and the realized government protected liabilities. This latter type of exercise is unfortunately not possible for this thesis due to lack of CDS and credit rating data for the period in question.

Governments' role in the financial sector obviously features heavily in the theory of regulation. It is often argued, e.g. by Buser et al (1981), that guarantees and regulation be seen as complementary functions that go hand in hand. That is to say, guarantees and lending by the government be used to address market imperfections, such as those mentioned above, along with regulation which serves to address moral hazard and adverse selection issues that the lending and guarantee schemes introduce. Chapter 4 discusses the literature on regulation and its relevance to this thesis. Financial regulation has, however, in the main always been atheoretical as argued by Goodhart (2010).

Despite this, several attempts have been made to shed light on regulatory issues and construct optimal regulatory frameworks. Dewatripont and Tirole (1994) provide a holistic view of banking regulation.⁷⁰ They start by stating the motivation of

⁶⁹Again, many other recent attempts to quantify the subsidy are discussed in Chapter 3.

⁷⁰Another notable attempt to summarize the principles of banking regulation is Brunnermeier et al (2009). Their coverage is more practical in nature and focuses on systemic risk, counter-cyclical

regulation, principally depositor protection (the "representation hypothesis"), before looking at the real-world institutions in place. They then move to specific examples before introducing a theoretical framework, focusing on issues of moral hazard, agency and commitment. Work such as this is helpful in highlighting specific theoretical issues, such as the ones just mentioned, and are brought up throughout the thesis when the historical and empirical work touches upon each issue.

Recent work on bank regulation has been more empirical in nature and also more applicable to this thesis. These empirical studies tend to focus on cross-country comparisons to see whether different regulatory regimes produce different outcomes. Cihak et al (2012) provide several findings. By separating countries into two groups - crisis and non-crisis - the authors find that the former group had less stringent definitions of capital and lower capital ratios, had generally less strict regulatory environments and had weaker incentives for the private sector to monitor banks' risks.

Somewhat conversely, Barth et al (2004) conclude that government policies that rely, by their definition, excessively on direct government supervision and regulation fare worse and that disclosure, private-sector controls and incentives lead to better outcomes. These results may however be due to the sample period and timing of the research as the recent global financial crisis has altered thinking on these matters substantially.⁷¹

One very recent attempt to look at the effect of government intervention on bank fundamentals is Ding et al (2013). They use bank-level data from five Asian

regulation and countering the adverse effects of excessive maturity and liquidity mismatch.

⁷¹See for example Cubillas et al (2012) who look at market discipline at times of crises. They conclude that market discipline weakens after crises and especially so in countries where market discipline was promoted by regulators and supervisor prior to the crisis.

economies to look at bank performance - defined through solvency, credit risk and profitability - before and after intervention. Their results indicate that performance improves following intervention while highlighting differences between countries and along bank-specific characteristics such as internationalization.

While the papers in this area are related to the thesis insofar as they look at the government's role in finance from an empirical standpoint, they differ substantially from the approach taken here. More specifically, instead of looking at the effect of government intervention on macroeconomic variables, this thesis focuses more on the possible microeconomic relationship between data on individual institutions and government's actions and presence. In particular, we look at how a bank is affected in its routine business of matching savers and investors by the presence of the government as a stabilizer of financial cycles.

While the economic literature has divided into several branches, it has at its core two main tenets; motivation via market failures and policy design to negate these failures. On the empirical side, the literature involves measuring the possible extent of the failures and also the effect of implemented policies. Finally, despite substantial progress, on both the theoretical and empirical front, the crucial insights found in Bagehot (1873) remain the main anchor in the discussion.

2.4 Conclusions

The focus in this thesis is very much on the financial side of the economy and the public policies used to address malfunctions therein. However, in this chapter the goal has been to set the stage and describe the macroeconomic context within which these problems arose. In so doing, we have looked at the situation of the British economy

in the post-war period and leading up to the secondary crisis. The literature on Britain's economic development has been reviewed, as well as shortcomings during the period, in an attempt to summarize the problems faced by policymakers and their priorities at the time. At the forefront of these macroeconomic difficulties were both domestic issues, such as management of the business cycle, as well as Britain's international position and maintaining external balance with regard to balance of payments and exchange rate stability, as reviewed in Section 2.

These macroeconomic difficulties in turn interacted with the financial side of the economy, while the position of macroeconomic policies at the forefront of policymakers minds relegated that of financial institutions, and out-of-fashion concepts such as lender of last resort policies, to the background. The fact that macroeconomic policy was the main priority also meant that less resources were available to tackle other issues, including financial stability. Not until faced with a banking crisis did policymakers tackle the financial sector's problem head-on as the issues could not be ignored anymore.

In addition to this aforementioned historical coverage, this chapter has also shed light on the economics literature that has dealt with crisis such as the one covered in this thesis. This has been done to set the thesis in context, show how the issues involved are generally addressed and how the methods used in later chapters have previously been used. The coverage has shown that how public resources are used to shore up private financial markets remains a potent topic within the literature. Judging by the coverage, the reason behind this is an as yet unsolved dilemma involved with such operations. On the one hand, there are strong welfare justifications to be found for such public involvement due to the negative, widespread effects that can arrive in their absence. On the other hand, such public support of markets

introduces a very real possibility of redistribution from public to private hands as the mechanism design of such programs introduces a plethora of problems including pricing issues, moral hazard and market distortion.

In that sense, it is easy to argue that given the complexities that have arisen in the literature, it is the implementation of policies such as lender of last resort and other stabilizing measures which are the crux of the topic. The rationale for their existence was shown in the chapter to be well covered with recent works more focused on this implementation. As previous work has highlighted the various tricky issues, it is thus also no surprise that the implementation of the policies in previous crises has been criticized, both in the academic literature and the mainstream coverage. Ignoring the costs of crises is not an option while designing the right response for confronting crises is very complex.

This is perhaps why the mantra of Bagehot (1873) remains such an alluring one and continues to be a benchmark within the literature. In this thesis, I continue this tradition of using Bagehot's rule as an anchor albeit in a slightly different manner. Thus, instead of evaluating the merits of the rule or its theoretical underpinning, I use this chapter's coverage of the literature as motivation for focusing on the implications and practical difficulties policymakers run into when supposedly adhering to the rule. In so doing, I try to estimate how achievable the rule was in practice and what aspects of it the Bank of England was able to achieve.

As previously mentioned, this coverage only represents a broad overview and is not the end of the part of the thesis that covers with the literature. Within each of the following three main chapters, there is a constant connection with the chapter-specific literature as I aim to explore the possibility for new insights. This chapter has thus served the goal of, firstly, setting the scene and, secondly, laying out the

main contributions in the previous body of work on financial stability measures, including both the tools used as well as the results.

Chapter 3

Subsidies and Stability

The clearing banks' relationship with government has changed and developed very considerably in the 20 years since the banks gave evidence to the Radcliffe Committee. The process of government has become more complex and intrusive so that the banks' involvement has necessarily become greater. As government has become more and more active in a growing number of areas of business life, so the banks have been drawn increasingly into a dialogue with the Treasury and other government departments [...]. Like other institutions and interest groups, the banks have recognised the need to become constructively involved in a complex relationship with government as the public and private sectors have become more intimately related. Indeed they have been encouraged by government to become so involved.

- Evidence by the CLCB to the Committee to Review the Functioning of Financial Institutions 1977 p. 179

3.1 Introduction

The complex relationship between the financial sector and the public sector has received increasing attention in recent years, especially following the crisis of 2008.⁷² However, the main focus has been on the merits of various regulation, such as capital adequacy and liquidity rules, and to what extent such rules should be used. This chapter, in contrast, looks at the costs involved with the public sector's involvement in finance and the broad issue of the government as the back-stopper of the financial system. There have been plenty of isolated studies of this issue in the past but the focus has primarily been on simple, single-method estimates of the implicit subsidy to financial institutions with very little historical background or context given. This chapter aims to address both of these shortcomings with an expansion on the empirical methods involved and also by providing historical context and evidence from 1970s Britain that complements the empirics.

A central objective of central banks has long been to provide financial stability for the wider good of the economy. This objective, along with stabilization of macroeconomic variables, has been the centrepiece of central bank thinking and will in all likelihood continue to be so. There is however a crucial difference between these two objectives which has led to increased criticism for active financial stability operations from both professionals and the general public. This stems most prominently from the fact that the goal of financial stability is often times achieved by intervening in individual institutions which are thus thought to benefit disproportionately at the expense of other agents in the economy.

⁷²From here on in, whenever I refer to the public sector or public authorities I use it as an umbrella term for any and all non-private, centralized authorities. I.e. central banks, treasury departments, regulators, deposit insurance funds, etc. I generally refer to the Bank of England as 'the Bank', as is common in the literature.

Bagehot's rule, described in Chapter 2, represents one way to deal with this problem.⁷³ In practice, however, the appropriate interest rate is very hard to determine, as is the quality of collateral presented, and the rule itself also implies that central banks are able to determine - in the midst of a crisis - which institutions are simply illiquid and which are insolvent. Furthermore, reconciling Bagehot's rule with rational credit rationing a la Stiglitz and Weiss (1981) - also covered in Chapter 2 - is no mean feat.

It is convenient in this respect to think of any role undertaken by public authorities in the sphere of the financial sector - whether it be deposit insurance, liquidity provisions in times of illiquidity, equity injections at times of crisis or any other service - as one that the private sector is unwilling or unable to perform itself.⁷⁴ This chapter focuses on the deposit insurance mechanism but the same applies for other traditional types of interventions on behalf of the central bank.

The common method of the deposit insurance mechanism is to charge a non-risk-adjusted levy. This, however, means that the fee is not the same as a private insurer would charge its customers. That is to say, riskier banks would be met with a higher insurance premium than safe ones if they were to seek insurance from a private insurer. It may well be the case then, and has in fact been argued, for example in Ronn and Verma (1986) and Marcus and Shaked (1984), that safer banks are subsidizing riskier ones by paying the same fee for deposit insurance.

While this may well be a deliberate decision by authorities, perhaps for reasons of simplicity, the extent to which subsidization or taxation is taking place should in any

⁷³Bagehot (1873).

⁷⁴Solow (2002) and Goodhart (2002) both provide cogent insights into these functions. Schwartz (2002), while focusing on the international aspect, provides an overview of the development of thinking on these issues, both in the U.K. and the U.S.

case be estimated and decided as deliberately and transparently as possible. There is furthermore an arguably more serious risk that as a whole banks are underpaying for the insurance in which case the subsidy involved is not from safer banks to riskier ones but to banks as a whole from the person who pays out the insurance in case of "injury" - the taxpayer.^{75,76}

There is a large literature on deposit insurance and many attempts have been made to quantify the costs and benefits of such schemes. While explicit deposit insurance was not introduced in Britain until 1982, implicit deposit insurance can be just as costly.^{77,78} Implicit insurance happens when deposits are considered to be insured despite no formal commitment by the authorities that this is the case. Under these conditions banks enjoy an artificially lowered funding cost as depositors required return does not include full allowance for credit risk.

The mechanics behind the distortionary effects of deposit insurance are as follows. Whenever a creditor perceives that he has a third-party guarantee that insures him against principal losses he will require a lower rate of return. This benefit accrues to both debtor and creditor - with the extent to which either benefits depending on market structure and other factors - while the cost is born by the guarantor. The word "perceives" is key here, as the distortionary effect of a guarantee is in place

⁷⁵This assumes a clear and unambiguous ownership relationship between the central bank and the public. Conversely, if banks are overpaying then this represents indirect taxation in the opposite direction - from banks to taxpayers.

⁷⁶This goes back to the time inconsistency and rules vs. discretion argument, a la Kydland and Prescott (1977). See also Barro (1986).

⁷⁷While the deposit insurance scheme was a consequence of the Banking Act of 1979, it was not implemented fully until 1982.

⁷⁸The structural reforms of the banking sector, which started with the Banking Act of 1979, that "gave the Bank, for the first time, the formal power to supervise the banking system", represented a shift from informal relationships and regulation-by-persuasion to a more cutthroat environment accompanied by formal rules and increased competition from foreign banks and other financial institutions. See Chapter 2 of this thesis as well as Grady and Weale (1986) p. 39. See also Gola and Roselli (2009) for the lead up to the Banking Act.

whether the guarantee is explicit or not.⁷⁹ Much emphasis has been placed on the moral hazard aspect of deposit insurance but even in the absence of moral hazard there is the possibility of a subsidy. This can be seen by defining moral hazard as an increase in risky behaviour by an insured agent, as it is still the case that without such a change in behaviour there is the potential for subsidy if the insurance is mispriced to begin with.

These issues can also be thought of through the lens of institutional memory. As the number of policymakers that possess first-hand experience of financial crisis management decreases, it is plausible to expect the response to a crisis to be sub-optimal alongside policymakers' tendency to put greater weight on more recent experiences. This is similar to the case put forward by Berger and Udell (2004), who look at institutional memory at the bank level. They posit that the ability of loan officers deteriorates "over the bank's lending cycle that results in an easing of credit standards."⁸⁰ Similarly, for the case here, as British banking had been crisis free for a long time, policymakers put little emphasis on financial stability concerns.⁸¹

The analysis in this chapter is twofold; The chapter starts by looking at the decision-making process of policymakers - mainly the Bank of England - and the extent to which its staff thought about such problems. The traditional narrative of

⁷⁹This point is expanded on in Section 2.

⁸⁰They add that loan quality erosion and loan losses ultimately "helps restore institutional memory as officers re-learn how to make good loans, how to monitor them and how to avoid making bad loans." (p. 3) Likewise, the ability and agility of policymakers regarding financial stability increases as problems are addressed. This is consistent with the evidence provided below of a renewed emphasis on financial stability within the Bank of England. This is also linked to the argument put forth in Minsky (1986) that stability breeds instability as private and public actors let their guard down.

⁸¹Several papers mention this mechanism in passing. Fisher and Kent (1999), in discussing the crises in Australia of the 1890s and 1930s, suggest that "the greater conservatism in the 1920s may have been due in part to the memory of the disaster of the 1890s" (p.34). They also cite Butlin and Boyce (1985), pointing to the latter's argument that "during the early 1930s, first-hand experience of the 1890s depression focused bankers attention on the need for sound financial management."

the period is laid out before recently available evidence from the Bank of England archives is added. This evidence can add weight to, or alter, the prevailing narrative. This qualitative evidence can shed light on what the contingent policy in case of banking panics was and how well prepared the authorities were. Such inductive reasoning is necessary as no explicit or systematic policy was in place when it came to financial panics. We subsequently turn to quantitative evidence, using option pricing models to estimate the potential premium that the government could have charged for acting as guarantor of financial stability and how the results compare to the actual policies pursued.

The type of model chosen differs from the standard Black Scholes model favoured by a large part of the literature. A Jump-Diffusion model is presented which alters the standard assumption of normally distributed asset returns in favour of a Poission distribution which allows for periodic large negative returns - or crisis episodes in this chapters' context. The model's parameters are also calibrated to the case at hand and the range of results possible are discussed thoroughly along with their robustness, or lack thereof.

There is a large historical literature on the post-war banking environment in Britain.⁸² Up until 1970, British banking had been relatively crisis-free for almost a century. The Secondary Banking Crisis of 1973-1975 changed this but the mindset of market participants and regulators changed only gradually and was heavily influenced by the previous long, stable period.⁸³

The focus in this chapter is on the so called Big Four of the time: Barclays,

⁸²The literature on post-war British financial and economic developments is covered in Chapter 2. Here, only the immediately relevant literature is covered.

⁸³For a detailed overview of the structure of the financial sector at the time, see Revell (1973). Chapter 2 of this thesis also provides more detail.

Lloyds, Midland and NatWest. This is, however, not primarily due to their size or the concentration of the sector. In fact, in 1970 the deposit banks' (or clearers') share of total assets of the financial sector was just under 47% and decreased steadily as the decade wore on.⁸⁴ The reason for concentrating on these four banks is their position at the centre of the financial system and their proximity to the public sector - chiefly the Bank of England. While so called fringe banks, or secondary banks, increased their market share substantially during the period, the Big Four's position at the centre of the financial system provided them with access to senior Bank of England staff and resources, as well as providing a perception in the public eye that they were as infallible as the Bank of England itself.

While the matter received little explicit discussion, it is clear from the archival material that bankruptcy of these major banks was generally not considered a possibility - or at least not something that entered the policy-making process. A contemporary account regarding the reaction to the international panic witnessed in the banking sector during the time was provided by Hirsch (1977):

*In the nervous atmosphere caused by a small crop of bank failures in the third quarter of 1974, placements of large money market deposits both nationally and internationally immediately became more selective; and the dominating principle of selection was a bank that was sure of having its central bank behind it. Marked differentials developed in rates on certificates of deposits of different banks, with size and preeminence being taken as the main general criterion.*⁸⁵

As for the British market, Hirsch says:

⁸⁴The Bank of England's *Quarterly Bulletin* publication includes statistical annexes which provide time series of various aspects of Britain's banking system.

⁸⁵Hirsch (1977) p. 250.

*In the London market for dollar certificates of deposits, the list of issuer names acceptable to the majority of institutional buyers was described by a market participant as having become very narrow indeed—perhaps as few as seven names being universally acceptable.*⁸⁶

Executives of the Big Four met personally with the Bank of England several times a year and discussed whatever issues were in the mind of both the clearer's representatives as well as Bank of England staff.⁸⁷ The latter would hint as to what its preference was regarding balance sheet growth and the former would mention any potential dangers on the horizon. If the bank executives were uneasy about any situation it was usually possible to arrange a meeting with the Bank within a short period of time.

This framework suited both parties. For the banks, it meant that they could interact with the Bank as if the Bank were a service provider that made sure that stability was secured and also acted as guardian of their system. For the Bank itself, informality gave them discretion and allowed them to react to problems as they saw fit each time. Furthermore, when these matters were discussed within the Bank, this framework was described favourably with very few suggestions of changes to the status quo, as discussed in Section 2. In fact, even the notion of financial regulation as a concept was quite primitive and constituted primarily of dealing with fraud. The Protection of Depositors Act of 1963, for example, dealt almost exclusively with nailing down which institutions could solicit deposits and rules regarding advertisements and permission for deposit taking.⁸⁸

⁸⁶Hirsch (1977) fn. 14 p. 251.

⁸⁷A whole section of the Bank of England archives is in fact devoted to files related to meetings of commercial bank executives and Bank of England officials.

⁸⁸The Bank of England (1978) includes papers submitted to the Wilson committee, including

Additionally, the Bank enjoyed its position vis-à-vis the banks due to the bankers' balances. These were mandatory assets, in the quantity of 1.5% of eligible liabilities, that the clearers were required to keep at the Bank. The balances, which were approximately 250-300 mGBP well into the 1960s, were non-interest bearing which meant that they served as an implicit tax on the clearers with the receipt going to the Bank.

The income on the balances amounted to over 80% of the Bank's total income at the beginning of the 1970s and the cost to the clearers has been estimated in Capie (2010) for the 20 years up to 1971 as approximately 500 mGBP. By comparison, the Bank's income on banker's balances during the 1970s, as opposed to the commercial banks' perceived opportunity cost, amounted to just under 160 mGBP. The difference thus indirectly measures the spread between a risk free asset and the expected interest earned by the banks.

These balances gradually became a hot topic of debate as the clearers had to deal with increased competition throughout the period. The banks argued, with some legitimacy, that the balances were unfair as they didn't apply equally to all financial institutions. The Bank even grew increasingly concerned about its own rising profits, which arose primarily from the balances, and eventually started undercharging the Treasury for services provided so as not to draw attention to the Bank's profitability.⁸⁹

As for the regulatory discussion of the time, much of the focus was on the

an appendix on references to banking in the post-war statutes. There are five core statutes relating to banking; the Exchange Control Act of 1947, the Companies Act of 1948, the aforementioned Protection of Depositors Act of 1963, the Companies Act of 1967 and the Income and Corporation Taxes Act of 1970.

⁸⁹See Capie (2010) p. 346 and onwards for a discussion on the finances. Capie highlights the need to preserve distance from Treasury as one reason for undercharging.

distinction between the core financial institutions (deposit banks) and the fringe banks. These fringe institutions had exhibited rapid growth in light of increased wholesale funding possibilities and the Bank's apathy towards these unconventional firms. When the secondary banks ran into trouble this apathy promptly evaporated as the Bank had to make sure that their failure would not threaten the financial system.

The so-called Life boat operations, whereby the Bank of England worked in collaboration with the large banks on salvaging what could be salvaged of the secondary banks, proved a case in point of the cooperative spirit which arose whenever potential problems arose. It is the effect of this helping-hand policy by the Bank of England that I try to examine in the chapter. As both expected and realized backing of the financial system is funded with taxpayer money, it is pertinent to examine whether the taxpayers themselves are receiving a fair deal through the financial stability policies of its own institutions.⁹⁰

The chapter proceeds as follows. Section 2 introduces a framework for thinking about deposit insurance and other public sector guarantees and how they can be seen as resembling insurance contracts. While the framework is simple and likely familiar to many, it is helpful to put forth this benchmark as a reference point and to keep clear the chain of events. Section 3 describes the relationship between the public and financial sectors in Britain in the 1970s using newly released archival material from the Bank of England. Section 4 introduces a rough quantitative estimate of the value of the Bank of England to the clearing banks. Section 5 concludes.

⁹⁰This becomes an even more crucial point as central banks such as the Bank of England act as de facto insurer but do not have to set aside funds to cover expected future losses, unlike other insurers. Thus the funds used by the Bank of England do not have to be accounted for in advance in yearly budgets and do not require parliamentary vetting. For more on the consequences of this aspect see Lucas and Phaup (2010).

3.2 A Simple Game of Discipline and Stability

In this section I sketch out the vital role of expectations and rates of return with regard to possible subsidies and the central bank's dilemma of encouraging market discipline while preserving financial stability. This simple thought experiment helps clarify the issue at hand and explain the potential dangers of the central bank's presence. I look at a simplified game with several simplifying assumptions. A representative investor becoming a creditor of a certain bank starts by deciding whether he deems the banks to be safe or risky and hence what rate of return (r) to require.⁹¹ In deciding his required rate, the investor only considers whether the central bank would bail the bank out (B) if assistance is required or not (NB).

If the central bank is thought to have a bailout policy then the bank is not considered risky by the investor. After the investor decides r , the bailout realization is revealed. These two variables (r , and the bailout decision), along with the solvency of the bank, determine the payoffs to the three parties involved; the bank, the creditor and the central bank. There are thus a total of eight possible final states (2^3).

I assume that if there is expectation of a bailout then $r = 0$. If a bailout is not expected then the rate of return is $r > 0$. Denote this positive r as r^* . I also assume that when the firm is deemed risky then r^* is sufficient to compensate a risk-neutral agent for the inherent riskiness of the bank's fundamentals, i.e. $r^* = LGD \cdot P(NS)$, where LGD is Loss Given Default (1-recovery rate) and NS is the state where the bank is Not Solvent.

⁹¹For simplification, risk neutrality is assumed on the part of the investor, the bank and the central bank. As argued in Anginer et al (2014), risk neutrality is the strongest assumption for the investor and possibly the bank. In this simplified game, risk aversion for the investor would lead to a higher r^* and subsequently higher absolute payoffs in Table 3.1 and Figure 3.1 and thus not invalidate any of the results.

With a consistent central bank policy and repeated games we could rule out inconsistent investor expectations (such as repeatedly expecting a bailout when none is forthcoming) but looking at a single game is more appealing as it allows for the more realistic case of incomplete policy information.

For the central bank, there are two possible costly states involved: Bailing out the bank and the cost of a financial crisis if the bank isn't bailed out. Assume for now that the probability of a full-blown crisis, given bank default is one.⁹² This ensures that if the bank were to run into trouble it would receive assistance from the central bank, given that the cost of a crisis is great enough. Denote the dollar amount of the private bank's liabilities as L and the cost to society of a financial crisis, fully internalized by the central bank but, crucially, not by the investor or the bank, as C . The normal form game and extended form can then be written as follows.

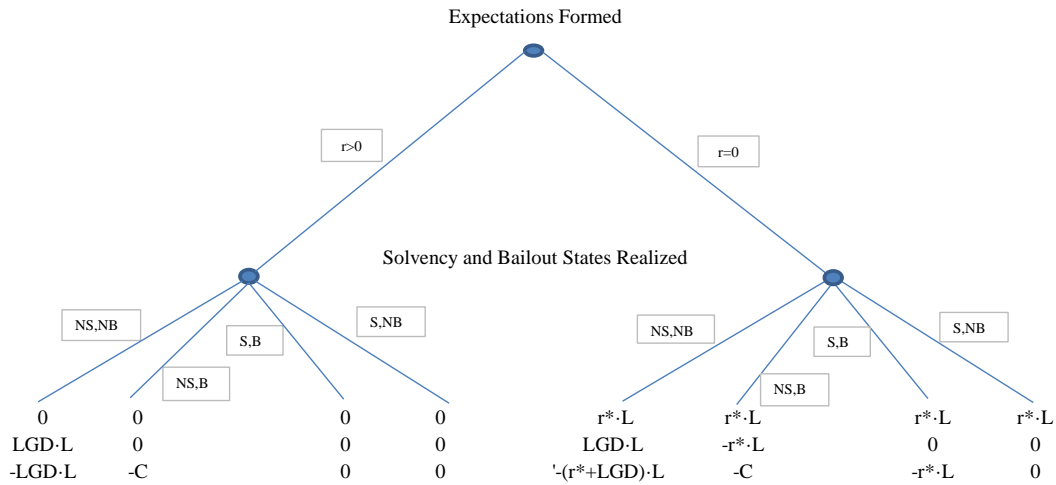
Table 3.1: Normal Form Of Simplified Game

Scenario	1 $r=0, S, NB$	2 $r=0, NS, NB$	3 $r=0, S, B$	4 $r=0, NS, B$	5 $r>0, S, NB$	6 $r>0, NS, NB$	7 $r>0, S, B$	8 $r>0, NS, B$
Bank	$r^* \cdot L$	$r^* \cdot L$	$r^* \cdot L$	$r^* \cdot L$	0	0	0	0
Creditor	0	$-r^* \cdot L$	0	$LGD \cdot L$	0	0	0	$LGD \cdot L$
Public	0	$-C$	$-r^* \cdot L$	$-(r^* + LGD) \cdot L$	0	$-C$	0	$-LGD \cdot L$

The sequence of end-payoffs are to the bank, creditor and public, i.e. taxpayer, respectively. The payoffs shown are net of normal market returns. For example when the investor expects no bailout, requires r^* and the bank then defaults, the investor receives the expected market outcome. Note that r is an ex ante decision based on expectations. S , NS , B and NB denote whether the firm ends up solvent, or not, and whether it is bailed out, or not, respectively. A few observations regarding the final states:

⁹²Alternatively, one can think of the cost of the financial crisis as the probability of contagion times the cost of a crisis, given a risk-neutral central bank.

Figure 3.1: Extensive Form Of Simplified Game



1. The bank has a non-negative payoff in every state. This is because both an expected and realized bailout both lead to decreased funding costs. At worst it has a zero payoff whereby no bailout is forthcoming and that knowledge is fully built into expectations.
2. The central bank can at best attain a payoff of 0. This happens when the bank is deemed to be safe on its own and that turns out to be the case (Scenario 1) as well as when the bank is deemed risky but does not default (Scenarios 5 and 7). If a tax were introduced the possibility of a positive payoff for the central bank would arise. This is indeed how the Bank of England saw itself for a period of time due to the banker balances as discussed in Section 3.
3. The creditor can lose out as well. This happens in the scenario where he assumes a bailout given insolvency but the central bank has a policy of no bailouts (Scenario 2). This can be thought of as the scenario where depositors look at their deposits as "money in the bank" which turns out not to be the

case when the bank fails.

The optimal central bank policy depends on the relative sizes of C , r^* , LGD and L . Knowing that the central bank contemplates the trade-off between C and $LGD \cdot L$ obviously affects the investor's decision regarding r . As the single game above is set up, it is most likely the case that $C > LGD \cdot L$ so the central bank decides upon a policy of bailing out the bank if in trouble. It should be noted that the bailout can entail a loss to equity holders of the bank but deposit holders do not lose out.

The dynamics at play generally involve ambiguity about the central bank policy.⁹³ In this simple game this feature can be represented as incomplete investor information regarding the relative sizes involved. The central bank thus knows in advance whether it will be bailing out the bank but the investor does not as a no-bailout policy cannot be credibly committed.

The objective by central banks in recent decades can be characterized as trying to reach Scenario 7. They would like to convince the investor that the investment is risky and that no bailout is forthcoming, while knowing themselves that when trouble arose a bailout were likely.⁹⁴ This scenario, which can be thought of as a time inconsistent one, is, however, an unstable equilibrium as whenever a realization occurs whereby the bank turns out to be insolvent, the bailout decision is realized and investor expectations are updated.⁹⁵

⁹³Enoch et al (1997) tackle the discretionary factor and argue for ex post information disclosure. Laidler (2003) also covers the discretionary angle through the lens of Bagehot to Thornton.

⁹⁴A poignant example of this objective can be seen in an internal Bank of England letter where it is stated that "It was apparent [note: following the secondary banking crisis] that the operation of the Protection of Depositors Act 1963 had not adequately alerted depositors to differences in status and risk between the various companies which were seeking to attract deposits from the general public." (Bank of England Archives 7A204/1, letter dated 26/05/78).

⁹⁵Chabot and Moul (2013) look at an example of this particular case through the panics of 1854

The game does not allow for the possibility of the central bank charging a levy for contingent bailouts (i.e. an insurance premium). This would amount to having a publicly known bailout policy which would reduce the possible final states to altered versions of Scenarios 3 and 4. These scenarios consist of the investor deeming the bank safe and the central bank having a bailout policy, but the scenarios would be altered by the fact that the levy would be sufficient to pay for the interest rate subsidy involved in Scenario 3 as well as the interest rate and bailout subsidies in Scenario 4. This would amount to the bank internalizing the externalities involved, not dissimilar to a pollutant paying a carbon tax. The obvious and substantial problem involved with this is determining the size of r^* and LGD . However, by looking at the framework above, we can see the mechanisms at play for a central bank when trying to convince market participants to demand market rates of interest while at the same time leaving the door open for itself to intervene if necessary. This trade-off between market discipline and preserving financial stability is key and will be the overarching theme in the historical discussion in Section 3.

Applying this framework to the case of 1970s Britain, it is extremely unlikely that the Bank gave any systematic consideration of this kind to its stabilization policies. In the next section I present evidence that the Bank did not systematically contemplate likely costs of bailouts given crises or even put much thought into how its own backing affected market incentives. However, it did talk about the importance of market forces and when the topic of crisis-policy periodically came up as well as trying to emphasize the fact that it wasn't a guarantor of individual institutions and that market participants had to perform their own due diligence. This supports the

and 1857 in the United States. They show the importance of government guarantees and especially the effect of inconsistent creditor expectations with relation to the guarantees.

time-inconsistency policy of Scenario 7 - trying to convince investors to treat deposits as risky without committing to a no-bailout policy.

As previously mentioned however, there was no expectation at the time that any of the big clearer banks would fail and financial stability required that they be assisted if needed. The result, in this framework, would thus be the $r = 0$, S , B case leading to a subsidy of deposit rates. At the stage where expectations are formed, depositors deem the banks at the core of the financial system as essentially safe. This means that whether they think about it or not, depositors exclude the possibility of a core financial institution going into receivership where every deposit is an uncollateralized claim on an institution whose sector has a historical recovery rate of approximately 50% when defaulted.⁹⁶ This is despite the fact that the equity buffer, that presents receivership, is usually on the scale of 1/20th of the banks total assets. This points to the disconnect between balance sheet fundamentals and the required rate of return to the claims of the bank.

We now turn attention to historical evidence of the views of the players involved in 1970s Britain. I look for evidence of expectation formation such as that discussed above and how the Bank of England juggled the two competing objectives of imposing market discipline and ensuring financial stability at the same time.

⁹⁶In the U.S., as reported by Duffie et al (2003), the average loss rate for failed banks varies largely from 8% in 1992 to a high of 61% in 1999. It can be argued that due to the complex structure of large clearer banks, and the fact that their operations are generally not taken over by larger banks, that their recovery rate would be lower than for FDIC failed banks which are usually local commercial banks.

3.3 Qualitative Evidence

In this section we look at historical evidence regarding the public sector's relationship with the financial sector. In doing so, I try to deepen the discussion of financial stability measures during the period and re-orientate the focus away from immediate crisis reactions and towards more systematic issues. I present the traditional narrative for the British financial sector, via the secondary literature, and add to it archival evidence from the Bank of England. I do not, however, present the evidence in chronological order or as a narrative as is common in the literature. As such a narrative has already been constructed forcefully, for example in Capie (2010) and Kynaston (2002), I focus instead on specific instances of interaction between the Bank and the banks, as well as periods of heightened volatility so as to eke out how the Bank tackled its financial stability role.

The archives contain vast amount of documents for all branches of the Bank, including both internal communication as well as the Bank's dealings with the private sector and other parts of the public sector. A large part of the evidence retrieved has recently become available as the Bank of England operates under the so-called "30 year rule" - or more recently the 20 year rule - discussed earlier.

As for the representativeness of the material that has been made available, some weeding of the Bank archives was performed in the 1980s although much of the discarded material will have been routine papers and non-informative letters. There is thus the possibility of selection bias due to omitted documents but as the incompleteness of the archives stems from removal of standard documents and not systematic removal of certain important material the likelihood of this is low. The documents that were retained are a mixture of high-level and low-level material and

provide a relatively thorough narrative of the episodes under consideration in this chapter.

The reference numbers of each entry generally refer to the department from where the file is taken. For example, files stored under the ADM section in the archives originate in the Administration Department and the Economic Intelligence Department files are stored under the EID section. There are 16 categories in total and each category consists of several subcategories called classes which contain related material. Finally, each class usually has several individual files. The end result is therefore a threefold categorization. One example would be ADM35/6 which would be file 6, class 35 in the Administration Department. This particular class represents the 6th file of the papers of John Fforde, the Bank's former chief cashier, executive director and official historian.

I use records from various departments although the main emphasis is on material such as the papers of certain Bank staff, such as the aforementioned John Fforde, discussions on the Banking Act, material relating to the Select Committee on Nationalised Industries and several EID files including reports of conversations with bank CEOs, which are stored under various reference numbers. The archival evidence presented consists mainly of internal letters within the Bank and confidential communication with Treasury and market participants. The evidence supports the arguments put forward in the secondary literature as I argue that the Bank had no systematic policy in place regarding financial stability and only addressed such issue as crises arose, on an ad hoc basis.

The story of post-WWII banking in Britain is a tale of two periods.⁹⁷ The for-

⁹⁷This section draws on Kynaston (2002) and Capie (2010), both of which describe vividly the intricacies of the Bank of England's policy towards the institutions in the City.

mer was a continuation of an informal and uncompetitive sector with a cartel-like structure that had characterized the industry throughout the 19th century. The latter period, beginning in the 1970s, is the story of deregulation, increased formalities and greater competition within the sector, both domestic and foreign. As the Bank of England played the role of linking the government (primarily Treasury) and the financial sector (the City), the primary focus is on the Bank, its responsibilities, roles and relationships. Other branches of government are mentioned only in passing, as they relate to the story. Geddes (1987) sums the ruling framework up succinctly:

*[...]the generally clubby atmosphere of the banking business continued happily into the post-war years. As one Governor of the Bank put it in 1957, "If I want to talk to the representatives of the British banks, or indeed of the whole financial community, we can usually get together in one room in about half an hour." The story of post-war banking regulation is the story of the gradual breakdown of that cosy club under pressure from the outside world.*⁹⁸

This history has been researched quite extensively but has nonetheless played second fiddle to the parallel history of monetary policy and systems.⁹⁹ This is true of both contemporary and subsequent material and applies to both outsiders, such as journalists and academics, as well as within the Bank itself and the City. As the financial system had been very stable for a long time, financial stability and regulation was slowly consigned to the background with the implicit assumption that instability was a thing of the past.

⁹⁸Geddes (1987) p. 98.

⁹⁹Capie and Webber (1985) remains the authoritative guide. Moran (1984) focuses on the banking side. Goodhart (1988) provides both monetary and financial coverage.

What little discussion the Bank did have on supervision, it was mainly concerned with deciding who was allowed to take deposits and which institutions were allowed to call themselves a bank.¹⁰⁰ These distinctions were maintained to protect the investing public but little attention was paid to further rules for those that had been granted banking permission. Neither was much heed given to the question whether a formal licence to call an institution a bank served as a guarantee by the Bank of England to the creditors. Due to the lack of discussion or attention paid to standard regulatory measures, the primary evidence of the Bank's attitude and policy towards actual supervision comes from episodes where trouble arises and the Bank is forced to act and take a stance.¹⁰¹

The general disinterest in regulation and broad financial stability during this period can also be seen in the reaction to international financial instability in the mid-1970s, not only in Britain but in Switzerland, the United States and Germany as well. Liquidity dried up in the world's financial system and the solvency of several major institutions was threatened. As Hirsch (1977) acknowledges, "many analysts, the present author included, had assumed this class of problem to have been left behind with the Credit-Anstalt in 1931. Thus, the issue found no place in the extensive academic literature and official documentation of the previous fifteen years."¹⁰²

3.3.1 A Brief Overview of Post-War Banking

The first major event of the post-war period was the Bank of England Act of 1946 which, as stated, was "an act to bring the capital stock of the Bank of England

¹⁰⁰The Bank of England (1978) includes discussion on the Bank's regulatory role.

¹⁰¹Watson (2008) tackles the development of the financial sector after WW2, including the institutional framework.

¹⁰²Hirsch (1977) p. 242.

into public ownership and bring the Bank under public control".¹⁰³ The Act thus in effect formally nationalized the Bank and, according to the Bank itself, "enabled the Treasury from time to time to give directions to the Bank as, after consultation with the Governor, they thought to be necessary in the public interest".¹⁰⁴ The Bank's responsibility for financial stability had in fact been established and developed in the banking crises of the mid-19th century so while prior to the 1946 Act the Bank was formally privately owned, it had nonetheless acted in what was thought to be the interest of the public.¹⁰⁵ Hence the 1946 Act did not bring with it a sea change regarding what the Bank was expected to do.¹⁰⁶

The development of the Bank's relationship with the City in the three decades following the nationalization was one of continued familiarity whereby the Bank tried to influence the commercial banks' decision-making by persuasion rather than legislation.¹⁰⁷ There was periodic frustration on both sides but all parties involved seemed to value the arrangement and no public calls were made for radical changes to the environment.

Hence the Bank was seen as a sort of overseer to the banks whereby the former would weigh in with guidance and hints as to the feasibility of the latter's plans

¹⁰³Bank of England Act 1946. Retrieved from the Bank of England website 27/06/2012. <http://www.bankofengland.co.uk/about/Documents/legislation/1946act.pdf> p1.

¹⁰⁴Retrieved from the Bank of England website 27/06/2012. See <http://www.bankofengland.co.uk/about/Pages/legislation/legis.aspx>

¹⁰⁵In contrast to the period under review in this chapter, the late 19th century crises have been heavily documented. See e.g. Flandreau and Ugolini (2011) and Mahate (1994).

¹⁰⁶See e.g. Capie(2010) pp. 34-36 for the significance of the 1946 Act. Capie emphasises how ill-defined the Bank's position was and contrasts the ease of nationalizing the Bank with the complex process of other new public corporations. Tempest (2011) also argues that the impact of the act was "minimal" with the government "hesitant to interfere with this invaluable 'golden goose'" (p. 81).

¹⁰⁷Sayers (1986) provides the official Bank of England history from 1891 to 1944. Relevant coverage of the more recent period can, for example, be found in Cassis and Bussiere (2005) and Michie and Williamson (2004).

while staying mindful of not being regarded too bossy. This relationship suited both sides. It provided the Bank with the illusion that it was in charge and increased its authority and importance towards the Treasury.¹⁰⁸ For the banks there was the easy access to government that other firms didn't have as well as the shelter from competition and adverse market conditions.

The fact that the various functions of the financial system were kept separate, each with its own clubs and cliques, meant that competition was even more scarce and the prevailing system suited the incumbent firms quite well.¹⁰⁹ Beginning in the early 70s, however, increased global flows and emphasis on competition within policy circles and academia meant that the system started to feel pressure from the outside. The general attitude towards competition and markets was becoming more positive and was felt within the financial system as well. This was to have huge effects on British banks but the potential for increased instability was only gradually noticed by the Bank.

So despite the Bank playing a prominent, yet informal, role in the banking sector in the post-war period, the role wasn't discussed much or given much attention. The role was known to exist in the background but the general opinion was that it needn't be given much heed, presumably because banking crises were thought to be a thing of the past. As previously mentioned, the Bank assumed responsibility for financial stability following the crises of the 19th century but this role was never formalized

¹⁰⁸This view held within the Bank is discussed in greater detail below. On the general relationship between Treasury and the Bank, Wass (2008) recalls that "In the exercise of all these functions the Bank operated with a good deal of contact with the Treasury, although the precise way that it exercised its management functions in these areas was often determined on an ad hoc basis, that is to say the Bank would consult whenever there was an important issue at stake" (Wass (2008) p.31).

¹⁰⁹These dynamics are covered in the literature review of Chapter 2.

and was taken as a given due to the Bank's status as reserve-holder for the system.¹¹⁰ This stability role was one that other more traditional banks refused to take part in.

The fact that other banks declined to share this burden, as Geddes (1987) puts it, was not met with much scepticism as to why that was the case and what that implied regarding the riskiness of "the burden". As for the Bank's own view of the clearer banks in particular and its own ability to safeguard the system, the following admission from an internal memo is remarkably frank:

*To all appearances, we know rather little about the clearing banks beyond what is necessary for day-to-day market management and for obtaining the banks' agreement to alterations, general or specific, in their lending policy. We know no more than the general public about their real profitability. We know almost nothing about their efficiency as users of real resources. Even in the field of credit control, after 14 years of reactivated monetary policy, our interpretation of month-to-month changes in bank advances relies largely upon our own speculative reasoning.*¹¹¹

Such a candid admission of the Bank's lack of knowledge regarding the fundamentals of the financial system is refreshing but at the same time shocking. Reconciling this lack of knowledge and therefore lack of information of the soundness of the system, with the fact that one of the main objectives of the Bank was to maintain stability in the sector is a tough ask. How the Bank intended to keep the system safe despite knowing "almost nothing" about the efficiency, profitability or changes in bank advances is a mystery. It is hard to see the Bank staff approaching the issue of stability in any other way than imagining that the clearers must have known best

¹¹⁰See Redish (2001) for the evolution of the lender of last resort role.

¹¹¹Bank of England Archives ADM35/6, letter dated 13/04/65.

and should be trusted to keep the system safe. What would happen if that wasn't the case was a remarkably understudied scenario.

3.3.2 The Mid-Century Transition From Old to New Banking

The thrust of the Bank of England's thinking towards economic management therefore came via monetary policy, primarily the bank rate, and not financial stability. In addition to the bank rate the primary tools that the Bank used to control the banks, and thus credit in general, were ceilings and limits.¹¹² The Bank would tell the banks what percentage increase in advances it would tolerate over the coming months and the banks would begrudgingly accept - in theory at least. These were obviously quite crude measures and were often announced to the banks without any consultation or warning. The requests were therefore met with increasing irritation by the banks. One such occasion which caused particular dismay to the banks was during 1968 when another tightening of credit was announced in order to curb increasing demand in the economy. The episode demonstrated the difficulties involved with operating an institution which was public in nature but nonetheless seen as something of a servant to industry by both its staff and its "clients" (i.e. the banks). With Treasury concerned about the unsustainable level of demand in the economy, it was communicated to the Bank that further restrictions on bank lending would be required. Bank of England Governor Sir Leslie O'Brien complained to the Treasury, however, that a request to restrict credit further at this point in time would worsen the already-strained relationship with the banks, possibly to a breaking point.

O'Brien feared the request might cause what the Bank had long feared; that the

¹¹²Cobham (2002) describes the workings of monetary policy at the time.

banks would simply decline since the Bank had no formal power to intervene. This would put the Bank in the unenviable position of having its authority questioned or being forced to act against the banks' will. The Treasury didn't back down and in the end O'Brien was forced to go along with the Treasury line. The banks were told to reduce their loans by 6 per cent with O'Brien having to warn them that if they were seen as not complying then he would have no other choice but to take some unspecified action against them.

The Bank therefore acted as a hesitant middleman between Treasury and the banks and while sympathetic to the banks frustration, saw that it was forced to carry out Treasury's wishes in curbing the banks' advances. The banks hesitantly agreed in principle to comply but advances continued to rise nonetheless. This development was obviously not to the Bank's liking and constantly fearing what would happen if the banks refused to comply decided to penalize the banks by reducing the rate of interest paid to them on special deposits.¹¹³

Episodes such as this show the haphazard process by which the Bank developed into a public institution with checks and balances akin to other public institutions. Despite having been formally nationalized 22 years earlier, the Bank still felt torn in its dual role as servant of the government - in particular the Treasury - and guardian of the City. The banks in turn felt increasingly betrayed by the Bank and its apparent lack of willingness to safeguard their interests. This dual-role would however be an ongoing dilemma within the Bank.

The gradual development from City guardian to public protector can also be seen in a debate on increased statutory powers for the Bank during the summer of

¹¹³Special deposits were a scheme whereby the Bank required banks to deposit a percentage of cash reserves with the Bank. They ranged from 0.6 mGBP to 1.9 mGBP in the four years following the crisis, see Wesson (1985).

1974. The Bank was for its part hesitant and stated internally that such powers would mean that the system would

*[...] soon lose its informal and flexible nature. The position of the Bank would have undergone a decisive and irreversible change such that we would be looked upon as the administrator of statutory powers rather than as the senior member and leader of the banking community [...] the informal and intimate relationship between the Bank and the banking system would have been weakened and self-regulation given way to a lazy acceptance of government authority and government responsibility.*¹¹⁴

Another revealing exchange came the following year from the Select Committee on Nationalised Industries which had long wanted a detailed look inside the cryptic and mysterious ways of the Bank. During one of many visits to the committee, O'Brien depicted the Bank as an independent body which didn't belong to any particular minister. Its independence meant that the Bank wasn't wholly a government entity and was free to form its own view of its own matters. He did however allow for the fact that the Bank executed government policy once it had been decided. It is hard to reconcile these two views into a coherent whole and O'Brien did not state in full what the procedure was when the government wanted the Bank to perform a task that the latter had a negative opinion on. O'Brien spoke to the committee at length on many issues and tried to explain how they should view the Bank within the government sphere.

After being quizzed whether the Bank's self-stated requirement of secrecy wasn't problematic at times and gave the Bank the opportunity to "drop clangers by stealth"

¹¹⁴As quoted by Capie (2010) p. 609.

and to "make mistakes by stealth", O'Brien said "Yes, that is so, but dropping clangers is not a thing which the Bank goes in for".¹¹⁵ The Bank thus saw itself as a public institution which was unique in its role and needed not only a certain degree of operational independence but also some distance from formal government.¹¹⁶ The Bank was persistent in defending this framework and put discretion and secrecy before accountability and openness.¹¹⁷ In fact, the Bank refused to reveal its accounts to Treasury and was not keen to be held accountable for the contents of the accounts when it did start releasing them. As Chancellor of the Exchequer, Denis Healey, put it, the Bank saw itself as "the guardian of mysteries which no ordinary mortal should be allowed to understand".¹¹⁸

This attitude can also be seen by dismissive remarks around the same time made by Sir George Bolton, executive director at the Bank, who claimed that "the positive mania for information reveals the desire to interfere and to direct operations in markets that take a life-time to understand".¹¹⁹ Bolton, echoing a common view within the Bank, was adamant that central banks should be left to their own devices

¹¹⁵As quoted by Kynaston (2002) p. 406.

¹¹⁶Much has been written on the extent of independence of the Bank of England. The independence it enjoyed at the time was not of the same nature as defined in the modern literature on central bank independence but rather a more intangible distance from Treasury. According to Capie (2010), the Bank "operated with considerable freedom" during the period. Cobham (2002), on the other hand, looks at the Bank's independence via a quantitative index and finds that independence was weaker in the 1970s than in more recent decades. This is understandable as formal operational independence to the Bank was only granted in 1997. Furthermore, the results are most likely partially driven by the fact that the index is constructed along the lines of current definitions of independence with formalities such as appointment of the Governor and legal mandates given high priority.

¹¹⁷An internal paper titled "Implications of changes in the British banking system" stated that In its supervisory relationship to the banks, the Bank of England has preserved an extreme discretion". Furthermore, regarding supervision, the Bank "still resembles a private disciplinary force, whose behaviour is subject to rules thought reasonable by those seeking its protection." (Bank of England Archives ADM35/6, document titled "Implications of changes in the British banking system").

¹¹⁸As quoted by Kynaston (2002) p. 495.

¹¹⁹As quoted by Kynaston (2002) pp. 407.

and not be subject to "relentless cross-examination" by public authorities.

These examples all demonstrate the lack of a holistic view of the Bank's purpose and the many potential principal-agent pitfalls that such an unclear view introduces. Simple what-if questions could have shed light on the impracticality of the contemporary arrangement of the Bank being a part-time City agent and part-time public protector. What if the Bank did in fact make mistakes and had the possibility of not disclosing them? What if the City's interests were to differ drastically from the public's interests? How should the owner of the Bank of England judge its performance without any information regarding the institution? How are principal-agents and accountability issues to be dealt with, apart from hoping that the Bank's staff and directors are honest, and extremely competent people?

O'Brien's above depiction of the Bank is one attempt to answer this last question and his answer that "dropping clangers" isn't something the Bank "goes in for" gives a clue as to how the Bank itself thought about the framework. When confronting the issue of why the banks were willing to accept this informality as well as the quasi-control which the Bank of England considered itself to have over these private institutions, the Bank's officials took the unsuspecting stance that the banks realized that it was for their own good that their behaviour was restricted:

*The success of self-regulation involves the scrupulous observance of rules, and depends in large part on the belief of those concerned that the rules are drawn up by a responsible and acceptable representative body or authority and that obedience to the rules is in their own best interests.*¹²⁰

Why the banks should welcome this interference with their business and in fact encourage it is not explained further. It must rest upon the assumption that the Bank

¹²⁰Bank of England Quarterly Bulletin 1978 18(3) p. 379.

of England somehow had greater knowledge about how to keep banks safe than the banks themselves did - which is a rare view for bank executives to have. Indeed, Goodhart and Schoenmaker (1995) make the point that, by definition, regulated banks should object to the interference:

*Regulation is otiose, unless it forces financial intermediaries to do what they otherwise would not voluntarily have done. Therefore unless the regulatory body is largely an advisory, counselling body, it will be resented by its clientele, and given few thanks for hypothetical, averted crises, except where these are obvious, as when the Fed calmed the situation on and after October 19th 1987.*¹²¹

Taken at face value it therefore seems odd that the banks were willing to take suggestions - which were de facto orders - from the Bank despite the fact that the Bank didn't have any obvious statutory authority to do so.¹²² Wass (2008) makes the case that "Although there was no legal control over the banks, they were very responsive to requests by the Bank of England to limit their lending, both qualitatively and quantitatively."¹²³ Griffiths (1973) concludes that the banks could best be seen as "a classic private oligopoly operating a cartel which was subsequently shown to be against the public interest but who complied with the requests of the authorities in return for the monetary authorities quasi-official support of their agreements."¹²⁴

¹²¹Goodhart and Schoenmaker (1995) p. 547.

¹²²Busch (2004), on the other hand, takes the banks actions more at face value. Regarding the clearers' involvement in the Lifeboat operations, Busch states that "[t]he fact that they were willing to pay so much money without being in any way legally required to do so is an excellent indicator for the functioning of the informal regulatory system in which feelings of solidarity and commonality were more important than pure profit considerations." This is despite the fact that the banks themselves conceded that their losses would have been much greater if they hadn't taken part. See Ackrill and Hannah (2001) p. 208.

¹²³Wass (2008) p. 20.

¹²⁴Griffiths (1973) p. 15.

Capie (2010) describes this supervisory framework at the time as "a mixture of statutory and non-statutory powers, with the emphasis on informality and flexibility rather than legislation and rigidity."¹²⁵

This approach of conducting monetary policy through discretionary and seemingly haphazard instructions regarding loan growth patently did not appeal to the banks but yet they complied. Their reluctant compliance can however be comprehended once one introduces the benefits that the relationship with the Bank provided.¹²⁶ The clearers' traditional, and formal, view was that "The Governor of the Bank was seen as acting both as the government's representative in the City and as the City's ambassador to Whitehall."¹²⁷ But as the banks increasingly felt sceptical about the Bank's willingness to play the role of a general City guardian, the main benefit that remained in place was the Bank's function as an informal buffer against times of difficulty.

Cameron Cobbold, the Bank Governor from 1949 to 1961, demonstrated this role succinctly in conversation to a senior London bank manager when he stated "Now, I'm at your personal disposal any time [...] If there's a crisis, come and see me personally, don't hesitate. And if you possibly can, come see me before the crisis, not after the crisis has started".¹²⁸

The Bank's attitude towards safeguarding financial institutions in the post-war

¹²⁵Capie (2010) pp. 589.

¹²⁶Ackrill and Hannah (2001) touch upon this relationship and the uneasy manner of parties on both sides of the table.

¹²⁷As stated in evidence by the Committee of London Clearing Bankers (1977) to the Committee to Review the Functioning of Financial Institutions p. 179. More informally, the clearers' evidence to the committee also mentioned that "as the clearing bank spokesman put it, 'provided we keep the Bank of England informed, they more or less leave us alone' with the qualification that, on occasion, the Bank might advise the clearing banks that on a particular issue they should 'leave it to us'." p. 180.

¹²⁸As quoted by Kynaston (2002) p. 58.

period was perhaps best demonstrated by its reactions to the Secondary Banking Crisis of 1973-1975.¹²⁹ Following the rise of so called "fringe" banks that utilized wholesale funding markets to grow rapidly, the Bank was forced to form an opinion on its relationship with them. In early 1973, a paper discussing an EEC directive on regulation co-ordination stated that "A failure of one or two among these [note: fringe institutions] might well prove embarrassing to the authorities" and if such an institution were to fail "the Bank might be held implicitly to have assumed and accepted at least some responsibility for its soundness".¹³⁰

However, it took the Bank a while to come to this conclusion. As the fringe banks hadn't been on the Bank's radar, the Bank came ill prepared to tackle the fringe's problems when they surfaced. Initially, the Bank argued that the fringe wasn't its responsibility and it shouldn't concern itself with its problems.¹³¹ When the Bank realized that failures of fringe banks could have serious effects on the core of the financial system, it quickly reversed its position and became a concerned partner of the clearers. The Bank cooperated fully with the clearer banks to minimize the fall-out and contagion of the fringe's difficulties, both with funds and as a focal point for cooperation. In total, 26 institutions received help from the Bank of England and the clearers with the amount lent reaching 1.2 bnGBP at the peak.¹³² The clearers provided the majority of the sum lent but the Bank's contribution was non-trivial. Furthermore, when the sums involved inevitably turned out to be larger than the initial estimates, the clearers refused to cough up more money and the Bank itself

¹²⁹The causes and intricacies of the secondary banking crisis are explored in more detail, separately, in the other chapters of this thesis.

¹³⁰As quoted by Capie (2010) p. 601.

¹³¹Capie (2010) points to the fact that policymakers thought that the fringe would become irrelevant due to increased competition following the Competition and Credit Control policy.

¹³²See Ackrill and Hannah (2001).

was forced to come up with the rest.¹³³

At one point during the crisis, with the concerns reaching such a high level that even the largest banks' solvency was starting to be questioned, the clearers even called on the Bank of England to publicly state which banks would be saved no matter what. Such an open commitment to public liability insurance would have represented a clear break and would have meant that implicit guarantees were made explicit.¹³⁴ The Bank ultimately refused the request although there was little doubt - on both sides of the table - that a few key institutions would be saved - come what may - to save the system.¹³⁵ Furthermore, the mere fact that the banks should ask for such a statement shows how they thought of the Bank and its role as their guardian against crises.

Nonetheless, the effect of the "Life boat" operations to safeguard the system was to reinforce the perception that the Bank of England stood behind certain institutions. This obviously had the desired effect of stabilizing the system but came at the cost of, in some sense, socializing financial sector liabilities. Following the crisis, giving evidence to the Committee to Review the Functioning of Financial Institutions, the Committee of London Clearing Bankers stated their view that

The crisis of confidence was to some extent indiscriminate in the banks affected and it was therefore in the public interest to contain it so as to avert serious damage to the economy in general, and to the reputation

¹³³The sums are discussed and summarized in Reid (1982), Capie (2010) and Moran (1984).

¹³⁴This marks an important point as it sheds light on the approach to policymaking and how the Bank thought about its role as protector of the banks. I come back to this point and the idea of lists containing those banks that would not be allowed to fail in Chapter 5.

¹³⁵One telling internal Bank discussion mentioned the argument that "since it is inconceivable (and assumed generally to be so) that the Government could allow a clearing bank to "go under", the clearers require less capital resources to maintain confidence than other companies or institutions" (Bank of England Archives 2A170/1, letter dated 02/09/74).

*of the UK banking system in particular [...] A further, closely related, objective was the protection of small depositors who might not have fully appreciated the risks they were running in leaving funds with fringe institutions. In fact, however, the lifeboat operation had the effect of protecting all depositors, including the large corporate ones who might have been expected to appraise the risks more realistically.*¹³⁶

This protection obviously came at a cost which was ultimately borne by the collaborative efforts of the clearers and the Bank of England - with the distinction between them even murkier than before. Following the crisis, the regulatory system was inevitably criticized. The thrust of the Bank's regulatory operations had consisted of a staff of fifteen who relied "too much on trust and membership of the City club in their judgements".¹³⁷ Geddes (1987) quotes the principal of the Discount Office at the time, discussing the unsuspecting world-view towards the fringe banks and their various failures: "I think we took those on trust the basis being, of course, that if you ever found a chap out in a lie, he was finished forever. You assumed nobody would be so stupid".¹³⁸

A final instance to mention regarding the Bank's reactionary policy to turbulence and role as City guardian was the 1967 devaluation of Sterling. Following ongoing difficulties with maintaining a fixed exchange rate, the government had decided to devalue Sterling by approximately 14% amidst continued pressure on the

¹³⁶Committee of London Clearing Bankers evidence to the Committee to Review the Functioning of Financial Institutions p. 65. This dual rationale for intervention - protection of depositors and contagion spreading - is a common one in the recent literature, e.g. Dewatripont and Tirole (1994). This rationale also ties in to the analysis in Chapter 5 where I try to ascertain how much evidence there is for the contagion argument.

¹³⁷*Ibid.*

¹³⁸Geddes (1987) p. 104.

currency.¹³⁹ It was widely expected at the time that other members of the Sterling Area would follow Sterling but the move was ultimately not appreciated by all members and some refused to devalue. This caused considerable dismay for several market participants including commodity merchants in London who had bought goods forward in Sterling Area currencies and were exposed to forward currency mismatches. When the problem arose, an internal Bank memo noted that the merchants' "normal expectation would be a profit of 0.5–1%; they now face losses of 14%. Such losses may be disastrous to individual firms".¹⁴⁰

The matter was complicated further by the fact that some of the merchants, concerned about the possibility of this breakdown of the Sterling Area, had approached the Bank prior to the devaluation and asked for permission to hedge this currency risk forward. The Bank had refused the request as this was not permitted under exchange control regulations. Following the devaluation these merchants complained to the Bank and demanded that it compensated them in full for this loss as they had been denied of the opportunity of preventing it.

There was considerable debate, both within the Bank and with the merchants, and the Bank considered four ways to solve the problem¹⁴¹:

1. Maintain that merchants were aware of the risks and must bear them themselves.
2. Consider compensation in some form.
3. Approach the ultimate buyer.
4. Seek the co-operation of the local Sterling Area governments.

¹³⁹See Oliver and Hamilton (2007) and Bordo (1993) for discussions on the devaluation.

¹⁴⁰Bank of England Archives 6A351/1, letter dated November 1967.

¹⁴¹Bank of England Archives 6A351/1, letter dated November 1967.

The memo goes on to state that "If indeed the losses involved are substantial, there is clearly a risk of bankruptcies or default on contracts; either course would be most damaging both to the Commodity Markets and to the British financial reputation. In these circumstances we could not rule out the need to provide some sort of help but the decision would necessarily be a political one."

The Bank was thus not fully willing to let the merchants themselves bear full responsibility on two grounds: The merchants had been denied permission to hedge the risk beforehand and also that there would be reputational risk to the City. The former argument was something that the Bank wasn't quite willing to dismiss, despite the fact that the traders had decided to pursue with the trades despite being explicitly refused permission to hedge forward. A straightforward interpretation of such decision-making would be that the traders considered the business profitable despite the currency risk which they were fully aware of - not that the Bank of England would guarantee their currency exposure going forward if problems arose.

While the losses ultimately turned out to be smaller than anticipated, there were initial fears that the magnitude of the problem meant that it had the potential to become a systemic one. The Bank internally noted that the losses were "considerable and justify the contention voiced yesterday that enough firms might well go to the wall to threaten the survival of some of the markets. Paris is watching with gloating expectation".¹⁴² Anything up to 30 mGBP was thought to be on the line but the figure was subsequently revised downwards. The initial figures were however large enough to concern not only the Bank but Treasury as well. An internal Treasury letter stated that:

¹⁴²Bank of England Archives 6A351/1, letter dated 24/11/67. These fears of losing business to Paris are similar to those documented by Meltzer (2009) p. 718.

*If no prospect of help is held out by the end of this week we must expect very great public pressure on the Government both in Parliament and the Press. There is also the possibility of some real damage to the United Kingdom's position as one of the leading commodity trading centres. Whatever assessment one may make of this, moreover, the fact remains that relations between the City and the Government will be considerably strained if no help is offered to firms who will represent themselves as having suffered severe losses on legitimate trade through no fault of their own. This strain may well spill over into other aspects of the Government's relations with the business community.*¹⁴³

Furthermore, remarkably, the Treasury staff thought that a further argument for assistance to the traders could be made with the fact that the amounts involved were small compared with other items of the government's expenditures. Treasury predicted that market participants would claim that the losses were completely avoidable with more flexible exchange rules or "by compensation in amounts which are tiny in relation to other items of Government expenditure on what they will represent to be less obviously worthy objects."¹⁴⁴

However, Treasury also recognized the fact that the risks were taken by professionals with knowledge of the possibility of losses, stating that "by their very actions before devaluation, these traders showed that they were well aware, not only that the U.K. might devalue, but also that Nigeria might not follow a U.K. devaluation. [...] To this extent they are no different from others who took a risk on devaluation (or non-devaluation) and lost, or won, accordingly."

¹⁴³Bank of England Archives 6A351/1, letter dated 30/11/67.

¹⁴⁴Bank of England Archives 6A351/1, letter dated 30/11/67.

The paper concluded that refusing direct assistance was a more agreeable decision since not all firms were believed to be in danger. Some damage would however be unavoidable and Treasury would certainly be heavily criticized. In the end, the traders had to be held partially responsible while at the same time the reputation of the City had to be kept intact and a financial panic avoided. The government was thus treading the familiar line, laid out for example in Section 2, of appearing firm and strict with regard to market discipline while maintaining the benefits of discretion when volatility and panic arose.

The Bank's response to Treasury's letter was predictably somewhat sceptical. With its history and traditional role as a go-between for Treasury and the City, the Bank found itself more sympathetic to the traders than Treasury was. Regarding the argument that the traders took the risks willingly, the Bank argued that such reasoning was superficial. The Bank was of the opinion that the government and the Bank itself were somewhat responsible for the situation following their refusal to allow the traders to hedge forward. The Bank's main argument however was the possibility of systemic risk as well as using the often invoked argument of business moving elsewhere if policy was unaccommodating towards the City.

The Bank thus leaned more towards assistance than other parts of government, and did so using several arguments. The threat of contagion was put forward, the fault of government itself, the potential loss of business elsewhere and the general cooperative mood with which the Bank had always worked with the City. Indeed, in another internal letter, Bank staff argued that inaction would lead to serious bankruptcies as well as warning that Britain would lose a lot of business to Germany, the Netherlands and France who had, according to Bank staffers, "made strenuous

attempts in the past to wrest London's entrepot trade away."¹⁴⁵

In this spirit, the Bank was in daily communication with the main traders involved and mentioned ideas of loans below market rates to cover the losses. These ideas were not met with enthusiasm as the traders disliked both the terms and the forms of assistance. In effect, they wanted the losses covered in full by direct grants.

Ultimately, the Bank stood willing to make 5 mGBP available for loans at a 5 per cent interest rate and ended up providing 3.2 million pounds. While the end result was that no accounting losses were made and the ex post cost of the response was small, the episode again demonstrates the Bank's readiness to jump in as soon as it was needed. The fact that the operation was somewhat limited in size was merely due to the problem being smaller than expected - not that the Bank was unwilling to commit funds when needed.¹⁴⁶

The reoccurring episodes of crisis did presented at least one benefit, which was an increase in debates within the Bank on the fundamental issues of financial stability. For a period of time while the secondary banking crisis was still fresh in the mind of the public and the City there was some thought given to a more systematic policy regarding the Bank of Englands role in ensuring financial stability. A letter by the Finance House Association, written in 1974 at the height of the secondary crisis, strikes at the heart of the topic of this chapter and raises questions which went unanswered but were of enormous importance.

The letter raised fundamental questions regarding regulation and what it meant to be an accepted institution. Would depositing with an accepted institution mean that the money was safe, while depositing at other institutions was done at one's own

¹⁴⁵Bank of England Archives 6A351/1, letter dated December 1967.

¹⁴⁶Bank of England Archives 6A351/1, letter dated 8/12/67.

risk? According to the Finance House Association, this was "indistinguishable from saying that deposits with the first group are guaranteed. Guaranteed by whom? Other finance houses? The Bank of England? The State? What strings, what interference in business, might attach to such a guarantee? Will a financial institution have the option of abiding by the Code (and getting cheaper deposits at the price of supervision) or not (and avoiding supervision at the price of paying more for deposits)?"¹⁴⁷

Such questions, despite their fundamental nature, were never answered following the crisis despite the reform of the sector accompanying the Banking Act of 1979. While a system of deposit insurance was installed at the turn of the decade, the ultimate question of what assets were safe and who they were made safe by was deemed too inconvenient to have a formal answer stated. The Bank thus only tackled such questions in passing, internally and without definitive answers. Such questions are similar to the framework put forward in Section 2 above and the discussions show the Bank staff becoming aware of Section 2's contradictory objective for central banks - keeping the system safe while preserving market discipline.

The issue arose again in 1976, in a confidential internal Bank letter titled "The General Thinking Behind the Governments Approach to Prudential Supervision" where the thin line between protection and market discipline was discussed. The letter recognized the trade off between protection and moral hazard and sensibly stated that the correct balance lay somewhere between the two extremes of explicitly protecting all investors and letting any minor panic turn into a full-blown financial crisis. The question would always be where to draw the line:

Once we have decided where we intend to strike the balance, there

¹⁴⁷Bank of England Archives 7A204/1, letter dated 11/06/74.

*are still a number of other very difficult questions which we shall need to consider when determining the details of the prudential system. One such area for further consideration will be the precise height of the entry barriers. This brings one straight back to the innovation versus risk trade off. Another area is the relative amount of effort to be devoted to supervision once an institution has been authorised by the Bank. The effective degree of protection for depositors could be the same with either a regime which combined high entry barriers and relatively relaxed post-entry supervision or with one which provided relatively low entry barriers but very strict post-entry supervision. This is clearly an area worthy of further debate if the legislation is to establish the most appropriate system for the circumstances in the UK.*¹⁴⁸

The letter concluded that informed public debate and consultation was crucial before legislation were to be introduced. Internal discussions such as this one intensified somewhat as the Banking Act of 1979 approached. Hence it cannot be said that Bank staff was unaware of these tricky issues or that they gave them no thought. Instead they remained in the background and never received the necessary attention for a solution to be found.

This background discussion and philosophical discussion within the Bank even went so far as to question such fundamental issues as the purpose of regulation. One internal letter stated that there were three possible "objects" of regulation; to protect the financial system, protect depositors and observe EEC requirements.¹⁴⁹ According to these three possibilities, only the last one could be considered a public

¹⁴⁸Bank of England Archives 7A204/1, letter dated 01/08/76.

¹⁴⁹Bank of England Archives 7A204/1, letter dated 28/10/77.

service as the former two's benefits fall disproportionately to certain members of society but the costs fall on society as a whole.

One possible solution that the Bank entertained was formally introducing a two-tier system whereby there was a predetermined core financial system which was to be considered safe, and a defined fringe whereby returns were presumably higher but creditors ran the risk of default. In effect, this would be similar to the system in place prior to the crisis apart from the fact that creditors of both tiers were effectively saved during the crisis. This conundrum was never fully dealt with, primarily due to the fact that it would have required the Bank to decide whether "safe" meant that the Bank itself guaranteed any losses incurred by bankruptcy within the core.

These fundamental discussions slowly abated as memories of the crisis faded away and the Bank. The balance sheets of the core financial institutions recovered and confidence was restored, relieving the Bank of the task of systematically defining the right mixture of market discipline and stabilization. It was thus free to revert back to its preferred method of discretionary policy with regard to financial stability.

When the Bank Act of 1979 finally materialized, most attention was given to the licensing scheme and deposit insurance which came into effect three years later.¹⁵⁰ Due to the wide-scale changes to the British financial sector in the following decade it is hard to estimate the effects of the 1979 Act on subsequent outcomes. For the purposes here it can however be said that while the discussion leading up to the act did involve fundamental questions on supervision, the end result barely touched on these questions apart from the partial deposit insurance which was, however, not

¹⁵⁰Gola and Roselli (2009) sum the act up thusly (p.13): "The Banking Act 1979 extended the supervision of the central bank to the secondary sector (licensed deposit takers), and formalized supervision in the primary sector (recognized banks), thus creating a kind of two-tier system. This Act is anyway a watershed, since before that bank supervision was conducted on an essentially non-statutory basis."

designed to deal with a breakdown of the core of the financial system.

The conclusion of this section is thus that the system of financial regulation and stabilization policies of the 1970s was underdeveloped and invited various dangers. These dangers can be seen by the response to the various crises episodes that arose, from devaluation through to the secondary banking crisis. The fact that the banking system had been stable for a long period of time meant that the Bank of England had paid little attention to matters of stability or regulation. This is the aforementioned institutional memory argument that echoes the conclusions of Berger and Udell (2004) although their take is focused on risk management within commercial banks as opposed to the risk management of central banks discussed here. In fact, greater attention was only paid to matters of financial stability when the Bank was forced by circumstances to do so.

Furthermore, the ad hoc responses to the periodic crises that endangered stability opened the door for possible implicit subsidies from the Bank to the financial sector as private liabilities became publicly backed.¹⁵¹ When investors tried to determine the risk of investments in the U.K. financial sector, the possibility of turmoil was reduced by the actions of the Bank of England. This meant that whether investors attributed this stability to a well-functioning system, well-run banks or the fact that the Bank of England was ready to step in at times of trouble, it had the effect of dampening risk premiums.

In the next section I try to estimate the extent to which these possible subsidies arose, how to think about them and the potential pitfalls and difficulties involved. In so doing I attempt to combine the main issues of this section, namely the Banks

¹⁵¹Again, this relies on the dual assumptions that the Bank is deemed a credible guarantor and that it is considered a public entity.

role of stabilizer of last resort and its effect on market outcomes.

3.4 Quantitative Evidence

In this section I try to establish and estimate the extent of implicit subsidies provided by the Bank of England to the clearer banks. I do this by constructing a market price for deposit insurance for the Big Four banks of the 1970s. I start by briefly describing the data used and the main characteristics of the banks. I then move on to the literature on the subsidy estimation methodology before explaining the method used for the benchmark model and then present some preliminary results. The benchmark model has severe limitations, however, which I look at before moving on to a more subtle model that addresses some of the main limitations.

3.4.1 Data Selection and Sources

The data used consists of equity prices and balance sheet data for the Big Four banks. The former is primarily used to calculate volatility, a key parameter in all option models, while the latter provides leverage numbers and dividend ratios. The equity prices are daily closing prices, and are retrieved from Datastream and Wharton Research Data Service, whereas the balance sheet data is taken directly from hard copies of the banks' original annual reports.

The period chosen for the calculations is 1970-1980, or 1970-1979 in some cases. As previously mentioned, this represented the last decade of "traditional" banking before the structural reforms that started in the early 1980s as well as increased foreign competition. Using the 1970s also represents a natural experiment in a sense. This is due to the fact that volatility in the banking environment was quite low

throughout the decade, apart from the secondary crisis, giving the period a rapid volatility jump followed by a relatively quick decline. The decade is also the most recent decade with available official documents due to the 30-year rule.¹⁵²

I focus on the so called "Big Four" banks which dominated the scene in the City: Barclay's, National Westminster, Midland and Lloyds.¹⁵³ The liabilities of these four banks were roughly 45% of the total liabilities of the U.K. banking sector during the middle of the decade.¹⁵⁴ Furthermore, as seen in the previous section, the Big Four had substantial influence with regard to access to the Bank of England's personnel and facilities and they also figure prominently in the Bank of England archives. As discussed in Section 1, it is primarily due to these banks' position at the centre of the system that the focus is on them. Using a larger sample of banks would mean that banks that were not considered as infallible were included.

The Big Four operated on a fairly low equity ratio throughout the sample period. The average equity ratio of the Big Four during the decade was 5.9% and went as low as 4.5% for Midland in 1973.¹⁵⁵ This low buffer to withstand losses was not a major concern for their regulator, the Bank of England, who didn't seem too much concerned with the possibility of a substantial erosion of capital.¹⁵⁶ While banks

¹⁵²While the 30 year rule has been replaced by a 20 year rule, the change is being gradually phased in with documents from 1985 and 1986 being released in 2014.

¹⁵³These were known as the clearers, i.e. the clearing banks. There were six London clearing banks in total; those used in this chapter as well as Coutts & Co. and Williams & Glyn's but the Big Four dominated in terms of size and influence so I restrict the calculations to them. It's interesting to note that RBS, which is a solid member of the current Big Four, belonged to the Scottish clearers at the time which in total amounted to roughly 10% of the size of the London clearers.

¹⁵⁴See statistical annexes in the Bank of England's *Quarterly Bulletin* publications.

¹⁵⁵The clearers did not publish their true profits until 1969, which strengthens the choice of the 1970s in this exercise. See Capie and Billings (2001) for a discussion and estimation of the true profits prior to the sample period.

¹⁵⁶Turner (2012) discusses the low level of capitalization in the post-war period and shows how detached the Bank considered capital levels to be from the banks' operations. Capital levels, and what represented capital, started to become a topic of discussion in the second part of the 1970s. See e.g. London Metropolitan Archives CLC/B/029/MS321 52B/001, "The Measurement of Capital",

in general did have to provide the Bank with "prudential returns", i.e. numbers on profitability and capitalization, the clearers were excluded from this requirement on the grounds that there was no urgent need to consider their positions. Their only regular requirement was to partake in periodic prudential interviews with the Bank. Section 3 discusses the Bank of England's decision to leave it to the clearers to manage their own business on the questionable grounds that it wouldn't make sense for their managers to risk bankruptcy.

As for the liability side of the Big Four, it consisted mainly of deposits (which renders the assumption of no non-deposit liabilities less restrictive). Barclays was the largest of the four, with just over 16 bnGBP of assets in the middle of the decade, followed by National Westminster, Midland and Lloyds which had assets of just under 10 bnGBP.

3.4.2 Methodology

The method of estimating the value of liability insurance via option pricing dates back to Merton (1977). As Merton demonstrates, a guarantee against default can be viewed as a put option where the strike price is the value of the insured liabilities and the underlying asset is the market value of total assets. In effect an insurer pays for the option of selling his investment at a predetermined price at some future time. I sketch the method here.

The *raison d'être* for deposit insurance is increased financial stability. By insuring deposits centrally, run-like behaviour by investors is discouraged and temporarily illiquid, but otherwise solvent, banks become less prone to self-fulfilling bankruptcies. This goes back to the classic argument from Diamond and Dybvig (1983) and

which focuses on discussions between the Bank and the banks.

in some sense further still to Bagehot (1873) and Thornton (1802).¹⁵⁷ For simplification, assume that the bank in question has a balance sheet that consists of total assets A , total non-equity liabilities L and total equity E so that $A = L + E$.¹⁵⁸

Furthermore, I assume that the bank has no non-deposit debt, that all deposits are insured and there is no uncertainty regarding the creditworthiness of the guarantor. These are somewhat strong assumptions and will tend to overvalue the fair-value of the insurance but nonetheless provide a plausible baseline for estimation. The assumption that all liabilities are insured is in fact not excessively strong and arises from the fact that non-payment by a bank on any liability renders the bank as a whole insolvent. For example, if a central bank only insures a given proportion of a bank's liabilities then non-payment on any uninsured liability will nonetheless trigger insolvency and thereby raise concerns about financial stability.

The central bank's expected policy would hence be to quash concerns regarding imminent default on any liability and thus ensuring financial stability. The expectation for this action is even stronger for large, core banks such as the Big Four. While a central bank generally does not communicate explicitly that any particular bank will be saved if it runs into trouble, the understandable expectations of creditors of large banks is often that the bank is so systemically important that the central bank

¹⁵⁷Another seminal contribution along these lines is Friedman and Schwartz (1963). On the introduction and early experience of federal deposit insurance in the United States, they wrote approvingly that it had "succeeded in achieving what had been a major objective of banking reform for at least a century, namely, the prevention of banking panics". (p. 440). They go on to say that federal deposit insurance contributed so greatly to monetary stability and "in practice far more than the establishment of the Federal Reserve System." (p.442)

¹⁵⁸Limited liability is key here as equity cannot become negative. This asymmetric property of equity in addition to the fixed value of debt contracts leads to the importance of deposit insurance. In that sense, equity can be seen as a non-negative residual once other claims have been settled. If, on the other hand, equity could become negative, as in partnerships, then the need for outside assurance for debtholders would be decreased.

would not take the risk involved with letting the bank go into receivership.¹⁵⁹

Options are an intuitive way of representing this relationship. I focus here exclusively on put options which can be thought of as an explicit promise and can be priced using Merton's and others framework. In our example, the central bank would be the seller of the option while the buyer is the holder of the bank's debt. While elasticities determine who gains most from such a contract, for simplicity I assume that the debt holder passes all gains on to the debt issuer who realizes the gain from any mispriced option issued by the central bank. While this is a somewhat restrictive assumption, it is common in the literature and arises from the fact that the bank has a unique position within the financial system while the second best for the debt holder is purchasing higher yield debt with no such option or contract in place.

An example of a put option is where an owner of a stock wants to be insured against extreme declines in the stock price. The stock owner then pays another investor a premium in each time period for the privilege of being able to sell the stock to him at a predetermined price in the future, if he so pleases. Say the stock price of the company is currently at 34 dollars, the owner might sign a contract whereby at the end of the year, the option seller promises to take the stock of his hands at 30 dollars, if the owner wants to. Then, if the year-end price is lower than 30 dollars, the owner will sell the stock to the option seller for 30. If the year-end price is above 30, the contract expires without a transaction. For this privilege the owner of the stock pays the option seller a certain fee - akin to an insurance premium.

More concretely for the case laid out here, the option seller would be the govern-

¹⁵⁹A large literature on these issues has developed in recent years. Freixas et al (2002) provide a survey of the literature. More recently, thoughts have turned to the topic under the guise of systemic risk. Brunnermeier et al (2009) review the current thinking on the topic.

ment which promises to "buy" a bank's deposit holder the face value of the deposit if the bank runs into trouble. For example, a saver who has 100 pounds in a bank that defaults can go to the government, hand over his claim on the bank of a 100 pounds and receive the full 100 pounds from the government. The government will then face a loss equal to the face value of the deposit, 100 pounds, minus whatever it can recover from the bankrupt bank. The main difference between deposit insurance and a traditional put option is thus the underlying instrument. Another instrument that deposit insurance can be related to is the more recent development of CDS contracts which also shift default risk between parties for a premium.¹⁶⁰

I start by building the most widespread option model, following Black, Scholes and Merton. This class of models estimates a fair price for the privilege of promises such as put options. They give answers to questions such as how much should one have to pay for being insured against large (in some sense) losses? The answer typically depends on the following factors:

1. Volatility of the asset; If the value of the asset is very volatile then the probability of the asset being worthless in the future is greater and thus the value of the put option is higher.
2. The current price and the insured price; If the current price of the asset is 100 then an option that promises that the buyer can sell the asset in the future at 99 is obviously more expensive than an option that guarantees a sale at the

¹⁶⁰Looking at CDS spread differentials is, alongside the method used here, the most popular way of estimating implicit financial institution subsidies. This involves looking at differences in compensation required for assuming default risk between institutions considered to be implicitly guaranteed by the public sector and other institutions. The obvious identification issue revolves around isolating banks that are similar along all characteristics apart from the expected guarantee. This method is, however, not possible for this chapter as CDS instruments are relatively new. An example of such an approach can be found in Demirguc-Kunt and Huizinga (2013).

price of 10.

3. The risk-free rate; If it's possible to find a risk-free asset that yields 5% a year then buying an insurance for a risky asset that yields 6% might not be worth it. If, however, a risk-free asset only gives you 1% but the risky one 6% then an insurance for the risky asset becomes more valuable. Option models are thus usually quite sensitive to the risk-free rate.
4. The maturity date; Whether the option, or promise, only applies at the end of the year or for five years matters a lot. The longer the maturity of the option, the more valuable it is.

In line with the literature, I set the maturity of the put option to one year which is generally interpreted as the next audit that the bank undergoes and thereby the "check-point" for whether the bank's operations are satisfactory. As per the standard Black-Scholes model, I assume that the underlying asset exhibits geometric Brownian motion. This means that very large gains or losses, on any given day, are very unlikely and expected returns are symmetric. The ex-post value of a standard put option on the equity is thus

$$P(t) = \text{Max}[0, X - S], \quad (3.1)$$

where X is the strike price (or option price) and S is the current price of the asset. Hence, when the contract expires, if the option price is higher than the current price the contract has a positive value equal to the difference between the two.

The traditional Black-Scholes formula subsequently follows as:

$$P(T) = Ee^{-rT}\Phi(y_2) - S\Phi(y_1) \quad (3.2)$$

Where $y_1 = \frac{\ln(E/S) - (r + \frac{\sigma^2}{2})T}{\sigma\sqrt{T}}$ and $y_2 = y_1 + \sigma\sqrt{T}$.

Here, E is the exercise price of the option, S is the current price and Φ represents the cumulative standard normal distribution.¹⁶¹ The exponential term represents standard discounting procedures. The well-known appeal of this approach is its simplicity. Assuming normality with a known and constant volatility parameter, the parameters required are essentially only the leverage of the firm in question and its volatility.¹⁶²

Following the representation of equity as a non-negative residual, mentioned above, the value of the liabilities can be written as $\min[L, A]$. Without any insurance, on the maturity date, if the firm is still solvent the payout to the deposit holders is what they were owed, L . If however, the firm is bankrupt, i.e. $L > A$, then the deposit holders only recover what is left of the assets. If a guarantee is introduced, we can view the realized, ex-post cost to the guarantor as the stop-gap in case of default and zero otherwise:

$$C(T) = \text{Max}[0, L - A] \quad (3.3)$$

If the firm is solvent at maturity then $A > L$ and the payout is 0. If the firm is insolvent the guarantor pays the outstanding amount, L , to the deposit holder, recovers what is left of A and therefore faces a shortfall himself of $L - A$.

Viewed in this way, the deposit guarantee is equal to a put option with A as the current price and L as the strike price. Using the equation above, the value of the liability guarantee (as opposed to an equity guarantee) can, analogously to Ronn

¹⁶¹Note that E here, the exercise price, is not the same E as above when defining assets (A) as the sum of liabilities (L) and equity (E). However, the two can be related for deposit insurance as the insurance contract is functionally exercised when equity reaches zero.

¹⁶²See Black and Scholes (1973) for the original formulation and derivation.

and Verma (1986), now be written as:

$$G(T) = Be^{-rT}\Phi(x_2) - V\Phi(x_1) \quad (3.4)$$

Where $x_1 = \frac{\ln(B/V) - (r + \frac{\sigma^2}{2})T}{\sigma\sqrt{T}}$ and $x_2 = x_1 + \sigma\sqrt{T}$.

As I use the standard method of time of one year (or to the next audit), all time notations can be dropped and the model rewritten as

$$G = Be^{-r}\Phi(x_2) - V\Phi(x_1) \quad (3.5)$$

Where $x_1 = \frac{\ln(B/V) - (r + \frac{\sigma^2}{2})}{\sigma}$ and $x_2 = x_1 + \sigma$.

This formation is very similar to the initial notation except we now have B as the face value of debt and V the market value of assets. We can see that the value of the guarantee lies in the probability of the debt being higher than the value of assets when the option expires.

While this approach requires relatively few parameters to be estimated, its main obstacle lies in the fact that the market value of the bank's assets, V and the firm's total volatility, σ , are unknown parameters. The solution to this is to use data that is actually observable, i.e. the equity price, along with Ito's lemma to infer the value of the two missing parameters.

Denote the two missing parameters, the market value of assets and the asset volatility, as A and σ_A respectively. The relationship between σ_A and the observable equity volatility, σ_E , can be stated as follows:

$$\sigma_E = \frac{A}{E} \frac{\delta E}{\delta A} \sigma_A \quad (3.6)$$

This implies

$$\sigma_E = \frac{A}{E} N(x) \sigma_A \quad (3.7)$$

Using the above formula, along with the formula for G , the values of A and σ_A numerically can be approached through computational iteration. The number of iterations required generally does not exceed 300.¹⁶³ All the required parameters are subsequently in place.¹⁶⁴

The benchmark paper for these studies, along with Merton (1977), is Ronn and Verma (1986), who apply these methods to the deposit insurance case. In addition to the framework laid out above, Ronn and Verma introduce a policy parameter, ρ , which represents the fact that the central authority involved with insuring the banks' liabilities does not use liquidation and payouts as a first-step when a bank runs into trouble. This relates to the point mentioned above regarding insured versus non-insured liabilities. In other words, when a bank first runs into trouble it is reasonable to expect that regulators try to make sure that the bank remains a going concern in the hope that its problems prove short lived and its future solvency can be ensured without drastic measures.

If a certain (non-explicit) threshold is reached however, it must eventually be the case that the regulators see no hope for the bank and step in to liquidate. This was the original reasoning behind the policy parameter in Ronn and Verma (1986) but one can also rationalize ρ on the grounds that uncertainty about the real asset value makes regulators hesitant. That is to say, regulators are generally unwilling to

¹⁶³While indirectly measuring asset volatility in this way is an imperfect measure, it is very common in the literature. Another non-standard approach would be to use macroeconomic volatility as a proxy for the banks' assets. Rough calculations suggest, however, that volatility in the macroeconomic environment are similar in size to the asset volatility as measured here. For further discussion on these measurements, see for example Kendall (1992) and Cron and Hayes (2007).

¹⁶⁴See Huynh et al (2008) for an applied exposition of this method.

force a bank closure unless there is a high level of certainty that the bank is genuinely insolvent. As the calculation of a bank's actual solvency at any given point of time is an imprecise science at best, and bank representatives generally argue that their problems are short-term and that the business is on the whole sound, regulators must come up with quite strong evidence that there is a substantial shortfall in assets before they decide to close a bank.

The value that Ronn and Verma place on ρ is 0.97. This means that if the regulator perceives there to be a shortfall in assets smaller than 3%, it will assist the bank in question whereas if the shortfall is estimated to be greater than 3% it will liquidate the assets, pay out the insured liabilities and wind down the bank via traditional receivership programs. The value of 0.97 has been widely used following Ronn and Verma. Laeven (2002) considers this to be an appropriate level of "regulatory forbearance" while noting that the level of forbearance is likely to be higher (i.e. a lower ρ) in developing countries where enforcement of regulation tends to be weak.

It could however be argued, especially in light of recent global events, that even within developed countries where regulation is *ex ante* thought to be strong, large financial institutions, such as the Big Four, would command a lower ρ as well due to standard too-big-to-fail arguments, regulatory capture by a powerful and sophisticated financial sector and the risk associated with letting such institutions fail. ρ thus ties directly into the historical discussion in Section 3 as the willingness of Bank of England officials to provide support to banks in trouble can be interpreted as a lower ρ .

Another factor that strengthens the regulatory-forbearance argument is the costs of bankruptcy. Imagine a bank that is slightly insolvent but is nonetheless allowed

to operate as a "going concern" indefinitely. Imagine also that in the long run the bank can - in the absence of a run - expect to pay back 90% of its assets. If the bank is forced into default, however, and files for bankruptcy, the expected recovery rate would presumably be much lower. This is due to the empirically noted costs of bankruptcy for financial institutions.

Historical recovery rates for large financial institutions vary but can generally be thought to be approximately 50%.¹⁶⁵ This means that the bankruptcy process itself introduces severe costs to creditors. This value destruction has been explained by many factors such as the shut-off of working capital, breakdown of contracts and general disruption to operations that the bankruptcy process itself introduces but whatever the reason, the value destruction ultimately increases the importance for - and pressure on - the institution tasked with financial stability maintenance to do all it can to prevent full-on bankruptcy.¹⁶⁶

The adjusted regulatory-forbearance model of liability insurance can now be written as:

$$G = Be^{-r}\Phi(x_2) - V\rho\Phi(x_1) \quad (3.8)$$

Where now $x_1 = \frac{\ln(B/V\rho) - (r + \frac{\sigma^2}{2})}{\sigma}$ and $x_2 = x_1 + \sigma$.

This is the baseline case I use to come to an initial estimation of a fair value fee for the Big Four to pay the Bank of England for deposit insurance. Several papers

¹⁶⁵Altman et al (2005), amongst others, look at recovery rates on corporate bonds. The lack of defaults of relatively large financial institutions, which in turn is partially explained by lender of last resort operations, means that data on recovery rates is sparse. Recent estimates for the estate of Lehman Brothers are that 67.5 bnUSD will be paid out through 2018 against claims of 300 bnUSD. Source: *The Wall Street Journal*, "Lehman Boosts Bankruptcy-Recovery Estimate", 17/08/12 and *Bloomberg*, "Lehman Lives to Pay 18 Cents on Dollar With New Sales: Mortgages", 14/08/12.

¹⁶⁶See Gruber and Warner (1977) as well as Altman (1984) for discussions of these costs.

have used methods such as this one and Table 3.2 presents results from a sample of them for the U.K. and the U.S. I present the value of the liability insurance as percentages of liabilities to enable comparison between studies. These numbers can most readily be compared to modern day CDS spreads in the sense that they indicate what proportion of each dollar lent would be a fair insurance value. The calculations behind each study vary somewhat but all have the underlying Merton model as its base, supplemented with various features such as the policy parameter of Ronn and Verma.

Table 3.2: Comparison Of Other Findings

Region and Period	Premium	Paper	Comments
U.S. 1983	0.08%	Ronn & Verma (1986)	Industry-wide weighted average deposit insurance premium
U.S. 1979	0.01%	Marcus & Shaked (1984)	Average insurance value for sample of 40 banks
U.K. 1991-1999	0.09%	Laeven (2002)	
U.K. 1983-1994	3.16%	Maude & Perraudin (1995)	Average insurance value for sample of 8 banks

Table 3.2 shows that the estimates are quite low but this is in part driven by the countries chosen and the period. The sample consists mainly of the Great Moderation period and doesn't include much volatility in asset values. In addition to the U.K. sample, Laeven (2002) also estimates a mean guarantee value of 0.32% of deposits for a sample of 25 developing countries and 0.04% for a sample of 23 developed countries. The average for both developing and developed countries is 0.18%. The sample period is 1991-1999.

As the period looked at for the U.K. is one where banking regulation and safety was in some sense an afterthought, and capital ratios were very low, one can ex ante expect a higher value for the deposit insurance in the calculations. The occurrence

of the secondary crisis during the middle of the period will also increase the value of insurance due to heightened realized market volatility. Whether one considers the period in question as one that has an upward bias due to the crisis or whether the calm periods of the studies in Table 3.2 are considered to have a downward bias is a matter of opinion. This opinion must take into consideration what one considers the long-run fundamental distribution of asset returns and whether mass volatility is something that periodically arises or whether times of calm should be the base case.

Another issue is whether heightened measured volatility reflects bank specific developments, unrelated market trends or a bit of both. It is impossible to determine the extent to which each of the three scenarios apply, however. Looking at the sample period in question, volatility of bank stocks was on average approximately 80% greater than that of the FTSE (with the figure reaching 250% during the crisis). As previously mentioned, the extent to which general market volatility affects the banks is unknowable although the feedback effects from market conditions to bank specific conditions can be expected to be complex and recursive. All that can be said is that the extent to which market volatility affects banks lies somewhere between 0 and 1 although this relationship should be kept in mind in the following sections. For reasons of brevity, I omit further such discussions and turn instead to estimates of liability insurance using the above model and their implications for public policy.

3.4.3 Empirical Results

Table 3.3 presents the baseline results for each of the Big Four according to this model. The parameter values chosen are as stated above and additionally I choose $r = 1\%$. This is the real risk-free rate and is chosen as the inflation-adjusted average

one-year return on short-term bills in Britain in the 20th century.¹⁶⁷

Table 3.3: Implied Insurance Per Bank - Merton Model (mGBP)

	Barclays	Midland	Natwest	Lloyds
1970	0.1	0.1	0.0	0.0
1971	0.2	0.1	0.1	0.0
1972	0.2	0.1	0.2	0.0
1973	0.9	1.1	0.7	0.4
1974	14.4	12.0	19.1	12.2
1975	25.7	17.7	35.3	27.0
1976	4.2	0.7	3.8	1.6
1977	3.3	0.5	2.7	1.5
1978	0.1	0.0	0.3	0.1
1979	0.3	0.3	2.5	0.7
Sum	49.4	32.6	64.7	43.7

Source: Author's calculations

The sum-total of the value of liability insurance for the banks during the decade was approximately 190 mGBP. Comparing this number with the estimated implicit tax due to the bankers' balance indicates that the banks might have had a case to be unhappy, even if they had used a liability insurance exercise such as the one above for support. The opportunity cost of 500 mGBP, mentioned in Section 3, or 250 mGBP per decade, did however include a larger number of banks and was intended for other purposes but can still serve as a comparison figure. The actual take-in on bankers' balances, as previously mentioned and shown in the table below, amounted to approximately 150 mGBP so the estimated value of the liability insurance above falls directly between the implicit tax and the bankers' income. Note, however, from the table below that the income from the bankers' balance is relatively steady compared to the more uneven nature of the subsidy. The latter is driven by both realized

¹⁶⁷See e.g. Dimson (2003) for the long-run return on U.K. bills, bonds and equities. He shows that bills averaged a 1% real yield during the 20th century, bonds 1.3% and equities 5.2%.

volatility figures for the clearers as well as distributional assumptions, described in detail above and below.

Table 3.4: Comparison of Implicit Tax and Implicit Insurance (mGBP)

	Bankers' Balance Income	Implied Insurance Value	Ratio
1970	10.4	0.2	43.8
1971	11.7	0.3	35.0
1972	12.7	0.6	21.4
1973	13.3	3.1	4.3
1974	14.7	57.7	0.3
1975	16.4	105.7	0.2
1976	17.1	10.3	1.7
1977	18.4	8.1	2.3
1978	18.6	0.6	32.0
1979	24.0	3.8	6.4
Sum	157.3	190.4	

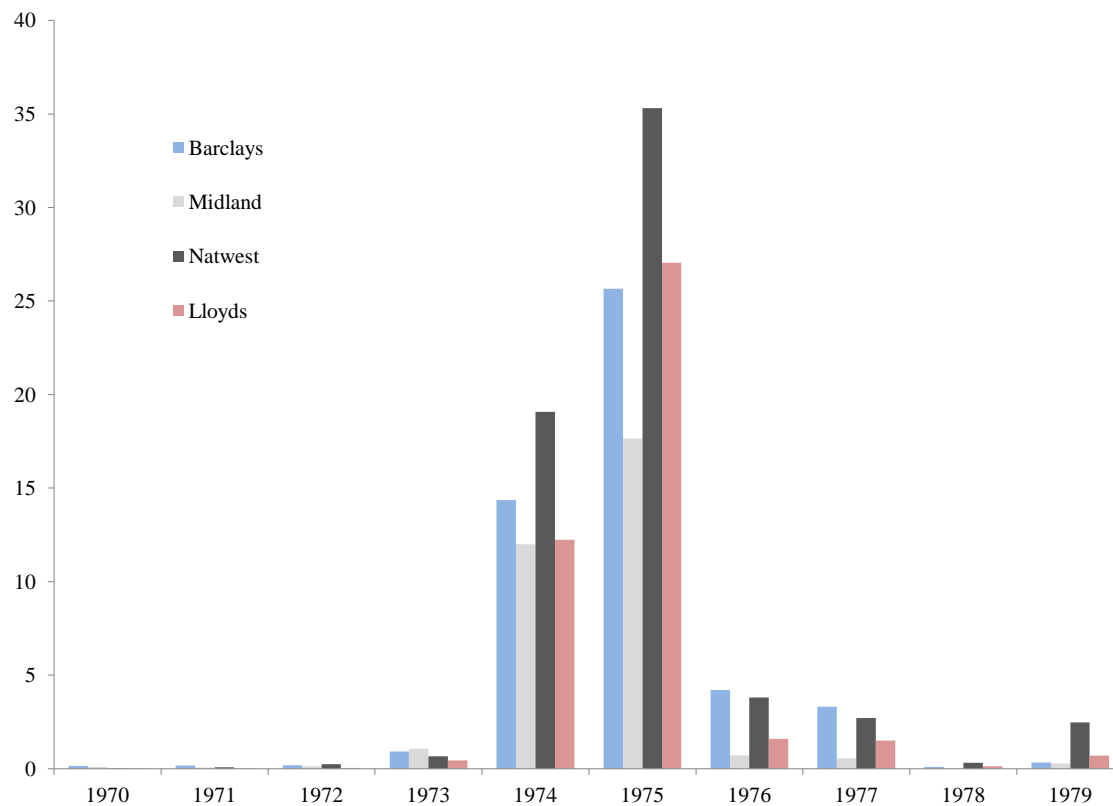
Source: Bankers' balance income retrieved from Capie (2010) p. 814. Implied insurance corresponds to the sum of each of the Big Four's implied insurance value.

Note: For the bankers' balance, the figures are for the period ending in February. 1970, for example, corresponds to the 12 months up to February 1971. The implied insurance on the other hand is each calendar year.

As for the dynamics involved, Figure 3.2 shows the spike in the value of deposit insurance during the middle of the decade. The main driver of this result is the large spike in volatility accompanying the Secondary Banking Crisis. The table below shows how the results change by smoothing the volatility and using the average yearly volatility for the decade. This reduces the decade-total premiums by 56%, to 85 mGBP. The highest yearly premium for any bank reduces from 35 mGBP to just under 9 mGBP. This sensitivity demonstrates the drawbacks of the simplicity of the model and also its main assumption; the normal distribution.

If the results are normalized to make the implied insurance a fraction of each dollar of deposits they can be more readily compared to benchmarks such as Ronn

Figure 3.2: Implied Insurance Per Bank - Merton Model



Source: Author's calculations

and Verma (1986). The normalized result that I get across banks and for the whole period is 0.03% of total deposits. Looking at the table below, this is towards the lower end of the range although still higher than Marcus and Shaked (1984) which indicates that the results do not imply a particularly onerous burden for the banks.

However, it should also be stressed that using average yearly volatility over larger periods understates the effect of the central bank's role. It is precisely because banks' volatility is uneven that the central bank's assistance is valuable. If banks were able to smooth out the effect of cycles, whether credit or business cycles, to establish a

Table 3.5: Implicit Insurance Values Using Average Volatility (mGBP)

	Barclays	Midland	Natwest	Lloyds
1970	0.5	0.0	0.9	0.0
1971	0.2	0.2	1.5	0.4
1972	0.4	1.1	3.3	1.5
1973	2.0	4.7	0.5	0.7
1974	2.5	3.7	1.6	2.4
1975	5.0	1.5	2.4	4.1
1976	5.8	1.0	4.6	1.1
1977	7.8	1.1	2.1	1.4
1978	1.4	0.6	2.8	1.0
1979	1.4	1.0	8.7	1.4
Sum	27.2	14.9	28.5	14.0

Source: Author's calculations.

Table 3.6: Comparison of Studies

Region and Period	Premium	Paper
U.S. 1983	0.08%	Ronn & Verma (1986)
U.S. 1979	0.01%	Marcus & Shaked (1984)
U.K. 1991-1999	0.09%	Laeven (2002)
U.K. 1983-1994	3.16%	Maude & Perraudin (1995)
U.K. 1970-1979	0.03%	Current Chapter

Source: Author's calculations

roughly equal distribution for their asset volatility then the need for liquidity and equity assistance would be drastically lower. The endogeneity factor should, however, once again be mentioned as realized volatility numbers are a function of central bank assistance. That is to say, we do not know what realized volatility would be in the absence of assistance from the monetary authorities. What the counterfactual

crisis-year volatility without central bank assistance were to be is hence unknown, although it is relatively safe to presume that it would be substantially higher.

More concretely, in constructing a policy at time t , $a_t()$, the policymakers looks to past, realized volatility at time $t - 1$, in addition to the bank's fundamentals, f_t , and general liquidity conditions, l_t , so that $a_t(\sigma_{t-1}, f_t, l_t)$. However, σ_{t-1} is itself a function of past assistance so that $\sigma_{t-1}(f_{t-1}, a_{t-1}, l_{t-1})$ with $\frac{\delta\sigma_{t-1}}{\delta a_{t-1}} < 0$. This leads to the endogeneity problem whereas what policymakers would optimally want to use for designing $a_t()$ would be the underlying σ_{t-1} without the presence of $a_{t-1}()$. This would in turn relegate the problem to distinguishing which part of σ_t were due to fundamentals, f , and which part due to general liquidity conditions, l .

The distribution assumption also has the effect of all but eliminating the possibility of large, predominantly negative, swings in asset and equity values, which contradicts the observed realities of historical prices. This ties into the institutional memory factor mentioned in Sections 1 and 3 whereby recent experience of small and relatively symmetric asset returns leads policymakers to dismiss the rarer, but still periodic, episodes of greater turbulence which leads to the need for central bank assistance. Sticking with normality obviously underestimates the value of a back-stop/guarantee in cases of panic and the interpretation of the Secondary Banking Crisis, in probabilistic terms, becomes that of an event that happens less than once in an average lifetime. I relax this assumption in the next section and look at pricing with the presence of crisis allowance. Before doing so however it is useful to take a look at what the above model can tell us, despite its limitations.

First of all, it can inform us about the *relative* stature of the Big Four banks. The figure shows that National Westminster had the highest overall premium during the crisis years. This is despite the fact that Natwest had a smaller balance sheet than

Barclays (see Table 3.7 below). The high fair-value premium for Natwest is primarily driven by the fact that it had the highest leverage and volatility combination of the banks during the period. The historical evidence also points to the vulnerability of Natwest as it was forced to state publicly that it faced no solvency concerns during the fringe crisis following concerns about its safety. This supports the empirical findings that it was the most fragile of the big banks.¹⁶⁸

Table 3.7: Implied Insurance as % of Equity

	Barclays	Midland	Natwest	Lloyds
1970	0.04%	0.03%	0.00%	0.00%
1971	0.03%	0.02%	0.02%	0.01%
1972	0.03%	0.04%	0.05%	0.01%
1973	0.13%	0.29%	0.08%	0.08%
1974	1.99%	2.53%	2.36%	2.26%
1975	3.32%	3.14%	4.18%	4.76%
1976	0.46%	0.11%	0.41%	0.20%
1977	0.33%	0.07%	0.23%	0.16%
1978	0.01%	0.00%	0.02%	0.01%
1979	0.02%	0.02%	0.16%	0.06%
Average	0.64%	0.63%	0.75%	0.76%

Source: Author's calculations, banks' annual reports

The calculations can also shed light on the fair premium in relation to the banks' size. Table 3.7 shows the basic results for the implied insurance value as a percentage of each bank's equity. We see that NatWest and Lloyds have a higher relative insurance ratio with the peak coming in 1975 where the ratio is almost 5% for Lloyds. As the banks had a similar equity ratio, looking at the insurance value as a proportion of liabilities yields similar relative results. The fair premium for the banks to pay would have ranged from approximately 0.0% of total liabilities in most of the non-crisis years and peaking at 0.26% for National Westminster in 1975.

¹⁶⁸See Reid (1982) pp. 123-5 for more on this episode.

Comparing this to the numbers from other studies in Table 3.6, we again see that they are in a similar range.

More crucially than the relative state of the banks is the absolute result. Using the baseline model, and thus almost ruling out the possibility of a crisis, still serves up a figure that would exceed the implicit tax collected by the Bank of England. These results support the historical evidence from the previous section whereby the banks were happy to play along with the Bank's meddling, despite its lack of authority, due to the fact that the Bank provided this valuable, albeit implicit, safety net. While the banks certainly did not estimate a model such as the above, they valued the service provided by the Bank on a more general level.

Before moving on to the Jump Diffusion model, which relaxes the assumption of normally distributed asset returns, the lack of robustness of the model should be stressed by a simple sensitivity analysis. As noted above, using the decade-average volatility numbers instead of the yearly volatility greatly reduces the fair value premium. This fact demonstrates the importance of the assumption of a fixed and known volatility number and its effect on a normally distributed normal. The same fact however applies to the risk-free rate parameter which shows how difficult it is to decide upon an actual pound-value to charge according to these option-based models.

Using the largest bank, Barclays, as an example - although the same applies to the other banks - if a risk-free rate of zero is chosen instead of 1% the decade-long fair value premium increases from 49 mGBP to 134 mGBP. This is obviously a tremendous difference and demonstrates the sensitivity of the model. The risk-free rate is used as a benchmark investment and comparison to which an investor would look when deciding whether to invest in a risky asset. If the investor can only get

0% risk-free then the risky asset becomes comparatively more attractive and vice versa for a higher risk-free rate. In total, going from 1% risk-free to 0% increases the premium by 130%. Increasing the risk-free rate from 1% to 2% decreases the value of the insurance from 49 mGBP to 18 mGBP.¹⁶⁹ More explicitly, the table below shows the difference for each bank year using $r=0.02$ and $r=0$. For example, for 1970, the insurance value is 1.1 mGBP greater for Barclays using a risk-free rate of 0 compared to 2%. In defense of the model, it should be stressed that 2% arguably represents an implausibly high value for the risk-free rate both during the period in case and in a long-term sense.¹⁷⁰

Table 3.8: The effect of the risk-free rate - Difference between 2% and 0%

	Barclays	Midland	Natwest	Lloyds
1970	1.1	0.4	0.1	0.0
1971	0.9	0.4	0.7	0.2
1972	1.3	1.1	1.9	0.4
1973	5.1	6.1	2.4	1.5
1974	27.3	22.6	26.5	16.9
1975	43.0	24.9	40.0	29.0
1976	17.0	3.4	12.4	4.3
1977	16.5	3.0	8.7	4.4
1978	1.3	0.3	2.3	0.8
1979	2.8	2.0	11.9	2.6
Sum	116.3	64.2	106.9	59.9

Source: Author's calculations. Figures in mGBP.

These issues also relate to the equity premium puzzle, for example in Mehra and Prescott (1985), and the subsequent formulation of the puzzle as a risk-free rate puzzle, as in Weil (1989). The former shows the implausibly high risk aversion re-

¹⁶⁹I come back to the risk-free parameter when looking at the Jump Diffusion model and argue that a 1% rate can be seen as a conservative value.

¹⁷⁰The section on Jump Diffusion also introduces an additional robustness exercise for the effect of the risk-free rate as well as other variables.

quired to reconcile the empirically realized risk premium. The latter, and extensions thereof, look at the inverse of the puzzle by positing the question in terms of why the risk-free rate is so low.

Weil hypothesizes that the puzzle - whether framed in terms of equity or risk-free misalignment - is due to simplifying assumptions including the representative agent and Arrow-Debreu markets. Furthermore, the low risk-free rate can be explained to a large extent by introducing heterogeneity between agents and differentiation between individual and aggregate consumption. The puzzle has not yet been fully resolved, however, and for our purposes here it is arguably best to keep the risk-free rate at empirically observed long-term values with added robustness checks to follow.

While complications such as this may result in additional doubts regarding the applicability of the model for the valuation of the Bank's services to the Big Four, it also highlights the complexity of the problem itself and demonstrates the importance of thinking how to price these and other financial stability instruments. Any private institution would think long and hard before insuring such an uncertain, but potentially extremely costly, service and would in all likelihood charge an uncertainty premium and prudential fees before doing so. While a public institution such as the Bank of England might want to provide the service on other terms than a private party would, it should be as wary about the costs as the private party would be before pricing and providing it.

3.4.4 A Jump Diffusion Model of Liability Insurance

I now alter the distribution assumption of the Merton model to allow for the empirically observed, periodic downward jumps in asset prices. For this purpose I use a so called Jump-Diffusion model which combines the Brownian motion specification

of the Merton model with a Poisson process that specifies the probability of a large decrease in asset value at any given time.

Jump diffusion models have in recent years become an increasingly popular way to deal with the fact that asset returns are non-continuous and non-normal. Again the framework was put in place by Merton (1976) in order to relax the prior assumption that trading was continuous and that "the price dynamics of the stock have a continuous sample path with probability one". The following model builds on Merton's paper as well as Dahlfors and Jansson (1994).¹⁷¹ For the purposes of this chapter, the jump diffusion approach can be thought of as a two-fold state. In the "normal" state we witness the same distribution of asset returns as in the previous section where returns are symmetrically located around the regular mean and large deviations are extremely rare. The second possible state is the jump-state as returns exhibit a Poisson distribution with a non-zero probability of a large negative return.¹⁷² The model thus entails a combination of the two possible states.¹⁷³

Re-writing the equation above from the Merton model¹⁷⁴, we have

$$G = Be^{-r}\Phi(x_2) - V\Phi(x_1) \quad (3.9)$$

With $x_1 = \frac{\ln(B/V) - (r + \frac{\sigma^2}{2})}{\sigma}$ and $x_2 = x_1 + \sigma$.

¹⁷¹Kou (2002) is also a popular reference point for Jump Diffusion models.

¹⁷²I exclude the possibility of a large positive return in the model. This corresponds to empirical evidence whereby large "jumps" are negative and sudden while positive developments happen gradually.

¹⁷³In addition to the work mentioned and built on here, Barro (2005) represents another attempt to include low-probability disasters, albeit in a macroeconomic framework. Barro shows that allowance of such disasters can help explain a lot of so-called puzzles in the literature, including the equity (or risk-free) puzzle mentioned earlier.

¹⁷⁴For clarity, I use the pre-forbearance model to derive the Jump Diffusion model. The Jump Diffusion model is however calibrated to include the regulatory forbearance parameter at 0.97, as per the Merton model.

Where, again, r represents the risk-free rate, Φ is the cumulative standard normal distribution and B and V denote liabilities and asset value respectively.

We now want to add the jump component of the model, in addition to the diffusion part represented above. As the simplified version of the model is presented, we omit time parameters, as before, as well as using a range of the crisis parameter, λ (explained below), which all but excludes multiple crises in a given time period, I can write down a simplified version of a standard Jump Diffusion model with easier notation.¹⁷⁵ The result is as follows

$$JD = \sum_{n=0}^1 e^{-\lambda} \cdot \lambda^n \cdot [e^{-r} \cdot \Phi(y_2) - V \cdot e^{-\lambda \cdot k} (1+k)^n \cdot \Phi(y_1)] \quad (3.10)$$

Where $y_2 = \frac{\ln \frac{B}{V} - (r - \lambda \cdot k - \frac{\sigma^2}{2}) - n \cdot \ln(1+k)}{\sigma}$ and $y_1 = y_2 - \sigma$

The main additions here are three variables; λ , n and k .¹⁷⁶ The first one, λ , represents the annual probability of a large, negative jump in asset values - i.e. a financial crisis or other unexpected shock that negatively affects the banks' balance sheets. Intuitively, setting $\lambda = 0$ reduces the model to that of the original Merton case where prices simply follow a Normal distribution.¹⁷⁷

The term not in brackets can be thought of as the possibility of a crisis or no-crisis, given λ . Calibrating the crisis probability, λ , to match empirical evidence is quite tricky, however, to say the least. One could take the approach of counting the number of past financial crises and thereby matching λ to the data. This can

¹⁷⁵This is similar to Barro(2005), mentioned above, where the probability of multiple disasters in any period is assumed to be small enough to neglect (p.5).

¹⁷⁶What follows is a discussion of the new variables and their effect. A robustness exercise is presented in the next subsection.

¹⁷⁷Another way of seeing that the Merton model can be seen as a specific case of the Jump Diffusion model is by looking at what happens to the model itself in the cases where crises do not occur. By excluding any setting where there is a positive number of crisis, i.e. $n = 0$, and then setting $\lambda = k = 0$ as well, we end up with the original Merton setting from the previous section.

be thought of as a Reinhart-Rogoff-esque approach. The fact that crisis parameters vary substantially and that the loss conditional of crisis is a constant in the model makes this approach problematic, however.

Furthermore, there exist few attempts of empirical application of the above model, as opposed to numerous such cases with the Merton model. Cummins (1988) provides some numerical applications but does not calibrate the model to realized data. Haldane (2011) does try to contextualize the model towards the recent crisis but uses the model more as a side-note than a full exercise. Additionally, and more generally than in the Merton model, there is also an endogeneity problem to think of as governments' past involvement and presence has reduced the number of full-blown crises and dampened those that did happen.

Counting the number of crises and their severity thus does not represent an estimate of crisis probabilities and costs without government assistance. Hence I adopt a simpler approach here of choosing $\lambda = 0.001$. This represents a 0.1% annual probability of a severe crisis. This value is very conservative and certainly underestimates the historical rate of crises. This can, however, be considered a sensible first approach as the model is very sensitive to changes in λ . The initial exercise thus relates to seeing whether despite this massive uncertainty regarding crisis occurrences even a very small probability of crisis presents a large expected cost to the guarantor, i.e. the government.

For further comparison, in formulating his rare-event macro framework, Barro (2005) calibrates the baseline probability of the event at 1% before showing the effect of moving it to 0.5%. While Barro's rare-event is different in nature to the one studied here, i.e. macroeconomic versus loss on securities, it is useful to keep this calibration in mind and the fact that Barro's higher probability of the rare-event

renders the λ chosen here relatively more conservative.

The second main addition that the model presents, n , is the number of such large shocks each year. This means that we have not just a probability that a single negative shock will happen within the time period but also that multiple shocks will happen. As the λ I use here is so low that the probability of multiple-crisis per year is infinitesimal, the summation through n goes from 0 (no crisis) to 1 (crisis). I also exclude multiple crisis on the general grounds that the time period is one year and examples of multiple crises within a year are hard to find. I can therefore separate the part of the insurance that is due to normal market fluctuations ($n = 0$) and the part that arises because of the possibility of a deep crisis ($n = 1$).

The third new variable which is of quite some significance is k . This variable represents the percentage loss in the event of a crisis. A k value of 0.3 would, for example, mean that in the event of a crisis, assuming the government does not step in to help, the bank would experience a 30% decline in value of its assets. This parameter is evidently quite problematic for a number of reasons. Firstly, there are the normal reservations that the value of k is neither known nor constant through time. Moreover, on a more philosophical note, absent government intervention, the bank does not get assistance, subsequently defaults and the loss then hinges on the recovery rate of creditors which in turn goes back to the cost of bankruptcy as well as the time consistency dilemma, both discussed earlier.

This rate is generally quite low and in most cases hovers around the 50% rate.¹⁷⁸ Should one interpret this as the government providing an safety net that leads to a k of 0.5, despite the fact that the government's actions don't cost it 50% of the bank

¹⁷⁸Empirical evidence on recovery rates, as well as complications in calibrating such rates for large, systemic banks, is covered in Section 2 of this chapter.

assets? There is no right way to answer such questions so below I present scenarios where k is both high and low. Table 3.9 presents results with the same calibration as in Section 4.3 above. I set λ equal to 0.1% and k to 50% to represent a plausible recovery rate for creditors. We see the same pattern as in the Merton model whereby the premium increases significantly during the crisis before decreasing again towards the end of the decade. Natwest again commands the highest total premium, with a maximum value in 1975 of just under 41 mGBP.

Table 3.9: Implied Insurance Per Bank - Jump Diffusion Model (mGBP)

	Barclays	Midland	Natwest	Lloyds
1970	3.4	1.7	2.4	1.3
1971	3.3	2.0	3.1	2.0
1972	4.2	2.8	4.2	2.6
1973	6.2	4.8	5.8	3.7
1974	20.0	16.0	24.5	15.8
1975	31.8	21.8	40.9	30.8
1976	12.6	6.0	11.3	6.7
1977	13.0	6.5	11.1	7.3
1978	10.7	6.9	10.2	6.5
1979	13.7	9.3	15.4	8.3
Sum	118.7	77.7	128.9	85.1

Source: Author's calculations

Note: $\lambda = 0.001$, $r = 0.01$, $k = -0.5$

Looking at the total premium for the Big Four for the whole of the decade gives a number of 410 mGBP, compared to 190 mGBP using the Merton model. If we again use the average-yearly volatility for each bank (thus smoothing out volatility-cycles) then the figure drops from 410 mGBP to 298 mGBP, a still sizable amount. Another conservative way of looking at the effect of volatility is to exclude completely the increase in volatility during the crisis altogether. Defining 1974 and 1975 as the

crisis years, the average volatility for the remaining years is used for these years.¹⁷⁹ This reduces the baseline amount from 410 mGBP to 261 mGBP which is, again, a substantial reduction but still leaves what is by no means a trivial amount. The aforementioned reservations from the Merton model regarding such smoothing are applicable for both of these checks.

If we change the risk-free rate from 1% to 0%, as above, there is also a substantial increase in the premium: from 410 mGBP to 646 mGBP. The fact that the risk-free rate is a real rate should be stressed and during times of high and variable inflation, average depositors may consider it acceptable for their savings to do no more than maintain their real worth which corresponds to $r = 0$.¹⁸⁰

An additional check on robustness that was not possible in the Merton model is to alter the probability of crisis, λ , and the loss given default parameter, k . I deliberately chose a conservative λ initially of 0.1%. Again, this means that there is only a very slight chance of a full-blown crisis and well below the number observed in any advanced economy during the past century or two. Increasing λ to anything approaching the actual number of crisis observed in the long-run leads to a gigantic increase in the value of liability insurance. Setting λ equal to 0.01, for example, which means (assuming iid shocks) a crisis every 100 years or so, raises the value from 410 mGBP to almost 2.4 bnGBPn. Likewise, as previously mentioned, if we eliminate crises completely ($\lambda = 0$), we end up with the same result as in the Merton model of 190 mGBP.

¹⁷⁹These two years were indeed in all cases the years with highest volatility

¹⁸⁰In fact, this was especially the case during the 1970s when inflation was high and variable. The real interest rate on British government bonds, for example, was often in negative territory during the period. For example, the real rate, measured by the gross redemption yield on 10-year gilts subtracted by the 12-month change in the RPI, was negative in almost half of months during the decade. Taking the forward looking measure of RPI, which corresponds to the actualized real return, gives an even higher proportion of real negative rates.

As mentioned above, an extremely important caveat to these figures is the aforementioned assumption that absent government intervention, default will occur and the recovery rate of assets will equal 50%. One can obviously hypothesize that absent central bank stability measures, banks would take it on themselves to save the system from falling, akin to 19th century United States banking, although this was riddled with imperfections as well. If we keep λ at 0.1% but reduce the loss given default parameter from 50% to 20%, the total premium reduces from 410 mGBP to 267 mGBP - still a sizable figure.

Finally, I try looking at a "best-case scenario" whereby the model is calibrated so as to see what the minimum premium, in some sense, could be. I raise the real risk-free rate to 2%, lower the LGD to 20% and keep the crisis probability unchanged at a low value of 0.1%. This results in a total premium of just under 160 mGBP which indicates that even a highly favourable scenario implies that maintaining financial stability involves substantial costs.

The obvious conclusion here - as has also been argued in other similar research - is that option-pricing models, even with more empirically realistic distribution assumptions than the Black-Scholes model, need to be interpreted with care and used as supporting evidence and not to serve as the sole determinant for fair insurance-premia.¹⁸¹

¹⁸¹Ronn and Verma (1986) argue that they are better served to look at which banks are underpaying the most, i.e. as a relative guide. While it is true that this is an easier question to answer, the models can also serve as a more general guide regarding the amounts involved given certain assumptions.

3.4.5 General Robustness

In this section, I provide a further robustness exercise that incorporates multiple parameter changes at once. While the analysis above hinted to the implications of the effect of calibration, I now show the effect of altering them together. The aim is to show that while the results are quite sensitive to the choice of parameter values, they remain non-trivial for conservative values of the affected parameters.

The parameters varied are the loss given default, k , the risk free rate, r , and the probability of default, λ . I present the results via 3D charts which means that one parameter is kept constant for each exercise as there are four variables (three parameters and the results). The parameter range chosen is as follows. -0.1 to -0.5 for k in increments of 0.1, 0.01 to 0.09 for λ in increments of 0.02 and 0 to 0.04 for r in increments of 0.01.¹⁸²

The first pair of figures, Figure 3.3 a) and b), depict the outcome when r is fixed at 0 and 0.01 respectively. These values correspond to the discussion of the Merton model. The Y-axis corresponds to the insurance value in mGBP for each configuration while the other two axes depict the changing parameters. As can readily be seen, while the insurance value rises rapidly as the loss parameter (in absolute value), k , and the probability of loss, λ , rise, the amount is non-trivial for conservative values as well. It should also be kept in mind that the range chosen for the probability of default is in the range of 0.01% to 0.09%. Increasing this value further would plainly lead to explosive dynamics of insurance values. Another important contextual figure to remember is 160 mGBP, the amount taken in during

¹⁸²The reason for k taking negative values is that it translates into a divergence from unity of asset value. That is to say, a k value of -0.5 is the same as a -50% move in the instrument. If k were to be positive it would represent a positive jump, i.e. a sudden rise in the value of the instrument at hand. Again, the choice of k is in line with Section 2 which discusses empirically realized recovery rates and the effect of varying k is discussed elsewhere in this section.

the period by the Bank of England due to the bankers' balance.¹⁸³

In Figure 3.4, λ is held constant while r and k alter. Again we see that the results, indicated by the Y-Axis, are somewhat sensitive to changing parameter values. However, with λ fixed at 0.01 there is a slight possibility that the value of the guarantee becomes trivial. In the case where the risk-free rate is 4% and k is -0.1, the value of the guarantee is just over 30 mGBP.

These are of course extremely conservative crisis parameters in addition to an implausibly high real risk-free rate. As soon as the risk-free rate is lowered and/or the cost of the default raised, the figures again rise rapidly despite the infinitesimally small probability of crisis. The lower figure shows the results holding λ constant at 0.009 (0.9%). In this case, any set of (r, k) involves large numbers. Even the lowest amount is greater than the 150 mGBP amount that the Bank of England took in via the bankers' balance.

The final set of figures, in Figure 3.5, shows the results for a fixed value of k . Again we see figures under 100 mGBP for high values of r and low values of λ with the figure rising rapidly as the parameters change. Note also that the maximum value of k that I calibrate for is -0.5 which may still be a fairly conservative value given the discussion of loss given default of large financial institutions discussed earlier in the chapter.

In sum, robustness exercises such as these confirm the previously stated fact that while the model results are somewhat sensitive to changing parameters, even conservative parameter values lead to non-trivial amounts for the value of the implicit guarantee. The only case where it can be argued that the Bank of England's indirect

¹⁸³See Table 3.4 for the amount taken in each year by the Bank of England due to the bankers' balance.

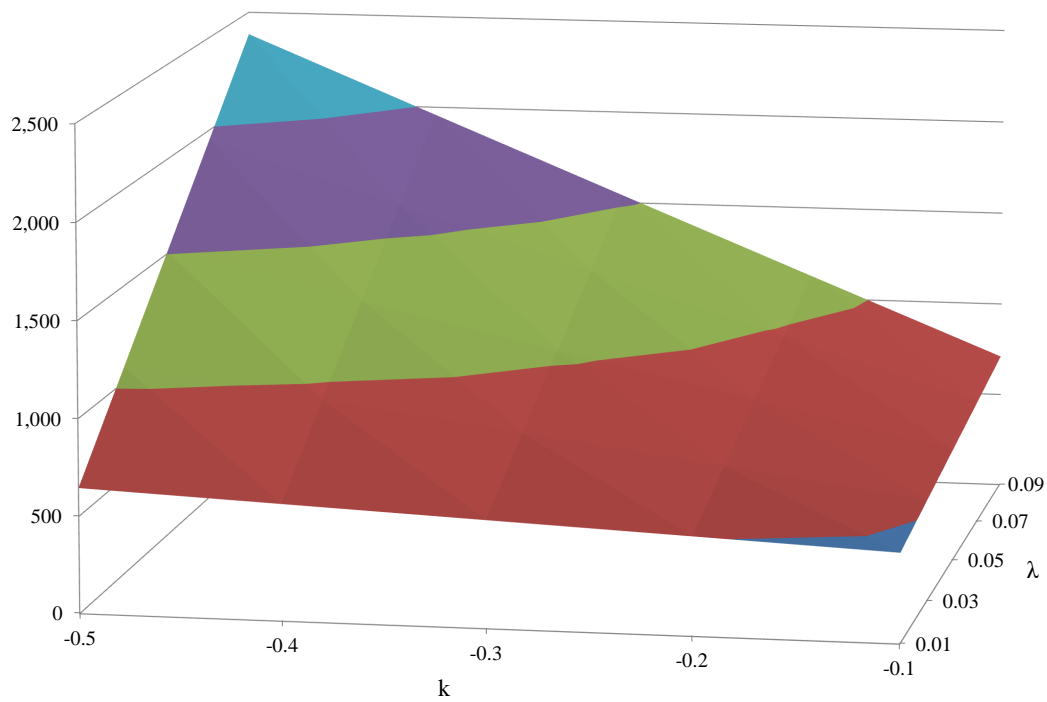
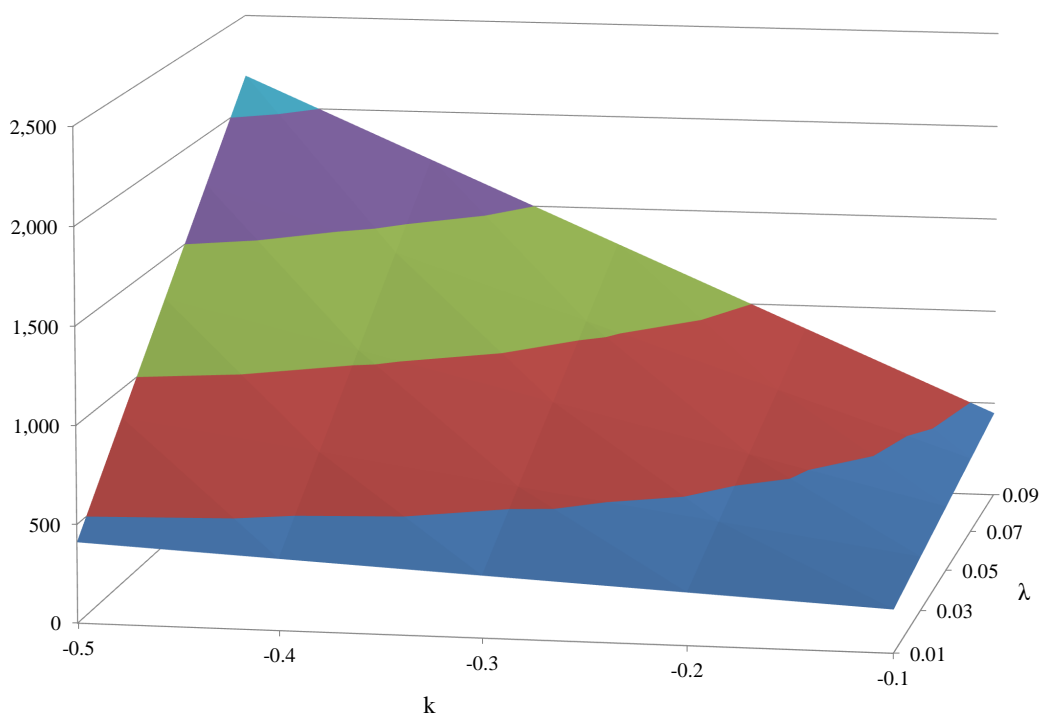
Figure 3.3: Robustness exercise for fixed values of r (a) r fixed at 0(b) r fixed at 0.01

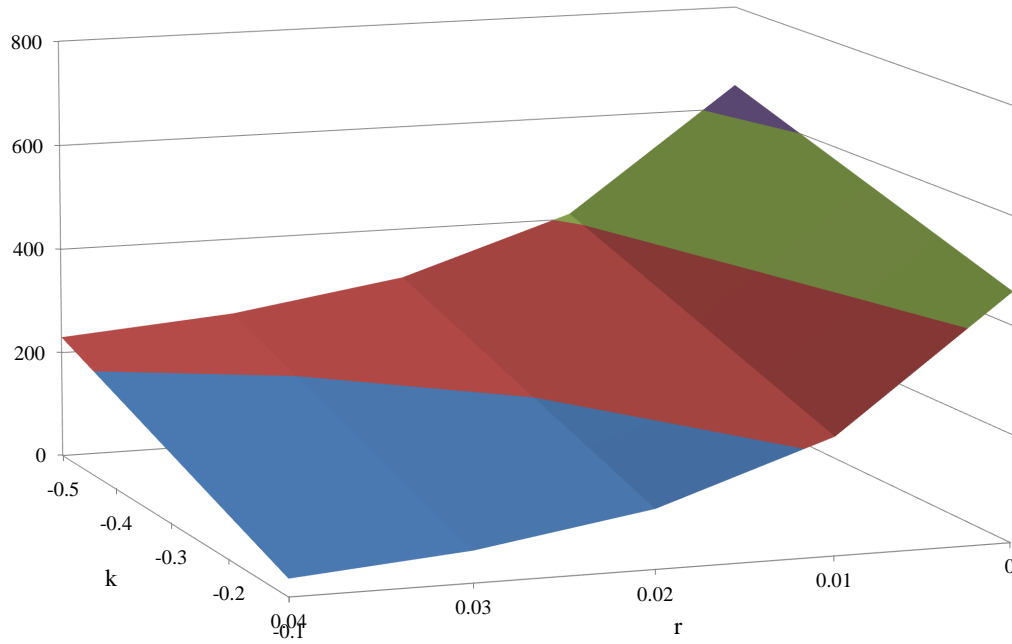
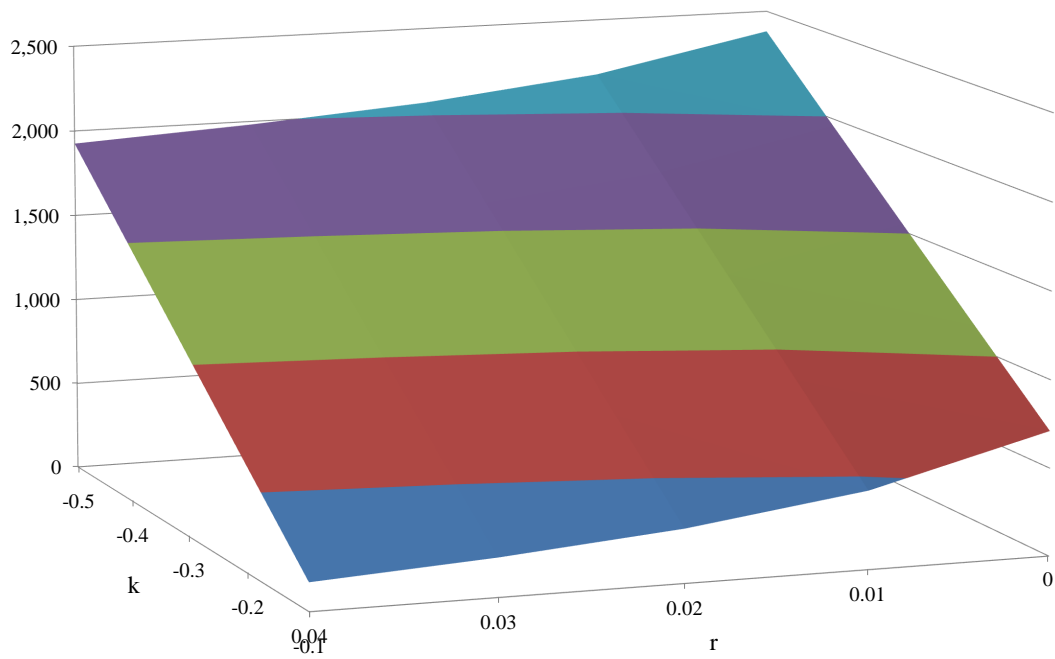
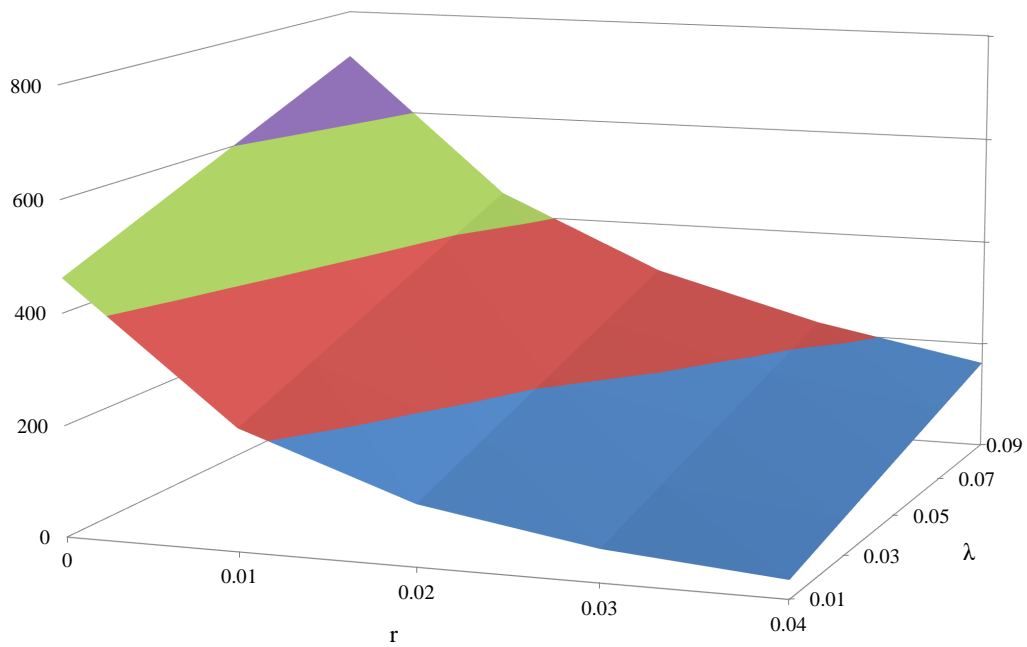
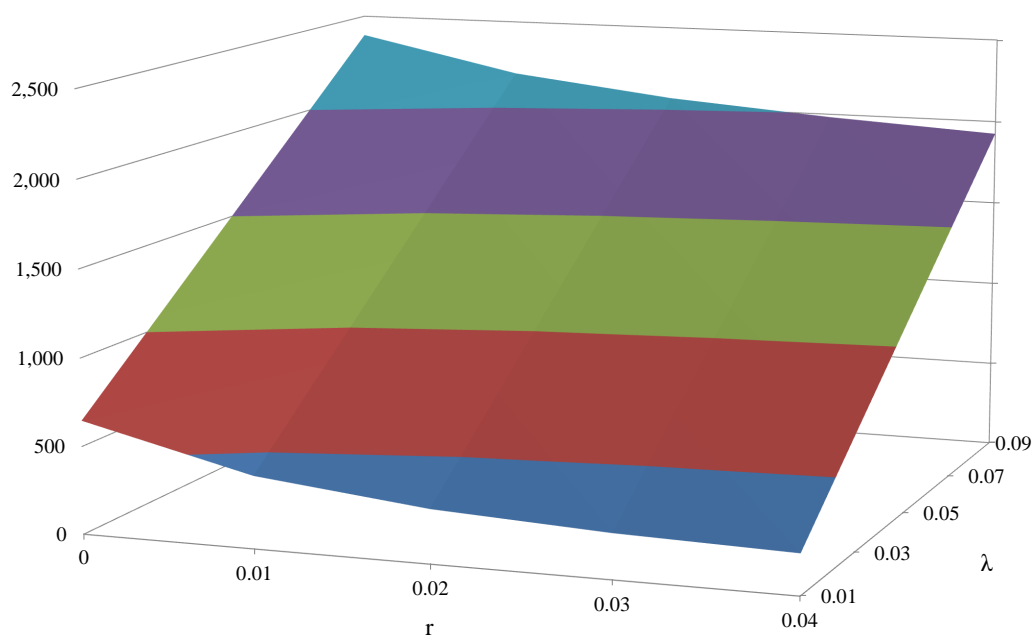
Figure 3.4: Robustness exercise for fixed values of λ (a) λ fixed at 0.001(b) λ fixed at 0.009

Figure 3.5: Robustness exercise for fixed values of k (a) k fixed at -0.1(b) k fixed at -0.5

taxation of the commercial banks was an adequate price to pay for the services provided is when one almost excludes the possibility of a crisis *and* assumes that crises aren't costly.¹⁸⁴ Note that it is not enough for one of these conditions to be fulfilled; they are individually non-sufficient but very necessary.

3.5 Conclusions

The goal of this chapter has been to shed light on the Bank of England's policy regarding financial stability in the run-up to the radical changes of the financial system during the 1980s. I have focused on the effects of the Bank's policy on the Big Four banks of the time and whether the banks possibly received an implicit subsidy as a result of the Bank of England's presence.

I argued that the Bank's policies in the 1970s were characterized by a lack of a systematic framework regarding financial stability and that its stance regarding safeguarding the City did not consist of a systematic framework of checks and balances. Furthermore, the response to the periodic crises of the time - which were of various nature - remained ad hoc and reactionary with little thought given to the systemic implications of the Bank's interventions.

Muddying the Bank's stated goals and actual policies even more was the friendly and informal relationship that the Bank had with the privately owned clearers. While this structure most likely led to increased financial stability it had the side effect of distorting market incentives. In the second half of the chapter, I thus tried to establish a market-price for the Bank's presence as guardian of the City.

The main results were twofold: Firstly, the estimates for the price of the Bank's

¹⁸⁴In fact, a real risk-free rate of over 2%, which has previously been mentioned as implausibly high, is also required to arrive at a small estimate of the value.

service to the large banks are very sensitive to the models' parameters which consequently makes them hard to use as a pricing method. Secondly, however, even conservative parameter values show that the Bank could be expected, by its actions, to provide the Big Four banks with a tremendously valuable service under the pretext of financial stability concerns without collecting a corresponding fee.

What should the policy implications of a study such as this then be? It is patently unwise to demand that central banks and regulators use models such as this one as sole determinants of pricing for their services - especially for 1970s Britain where the models didn't even exist. Furthermore, the limitations of such approaches render them imprecise for taxation purposes no matter how well they are calibrated.

Nonetheless, this does not mean that the conclusions of the Merton and Jump Diffusion models have no informational value. When thinking about how to price the services it provides, the government should have as a comparison guide the methods that private actors would use in providing such services. Whether this be a Jump Diffusion model of option pricing in current times or more of a rule-of-thumb method of pricing for loan guarantees in the 1970s, comparison must be made to what compensation would be reasonable for taking on the risk that is forthcoming to the government agency due to the services provided.

Of course, the reason for the government's intervention in the financial markets at times of crisis is exactly the fact that other market participants are not willing to provide the services needed at a market-clearing price. This necessarily means that the government must act in a manner different to that of private investors. However, for this not to constitute a pure subsidy to the governments' counterparties, the long run inflows to the government must compensate for the short-term outflows.

One could perhaps argue that a cost-benefit analysis at the time of intervention

would conclude that action was necessary as the potential of lost output dwarfs any fiscal cost of intervention. Setting this low hurdle would, however, render intervention as the best policy during almost any episode that has the possibility of affecting the real economy. Assistance to institutions guided by financial stability goals should ultimately be assessed by looking through the cycle and subsequently judged not only on a cost-benefit analysis at times of crisis but additionally with a revenue neutrality requirement whereby institutions are forced to internalize their potential externalities on the economy as a whole.

Furthermore, even if a subsidy via intervention were to be considered desirable, it should be provided in a transparent manner with the approval of those who provide the subsidy. The evidence provided in Section 3 indicates that a subsidy was not considered desirable and, in fact, not thought to be in existence in the first place.

The fact that the costs that arise from the services provided are both intangible and near impossible to estimate precisely makes them easy to neglect from a policy perspective. They are nonetheless very real and work in precisely the same manner as liabilities of insurance companies, which are ultimately paid for by premiums received. The results of the option pricing framework indicate a very conservative estimate of the fair value at 410 mGBP for the Big Four during the 1970s. This is considerably higher than the Bank of England's intake on the banker balances which were themselves considered too high at the time. Furthermore, increasing the estimated likelihood of a crisis increases the 410 mGBP figure and shows the size and scope of the Bank's task of keeping the core of the system safe.

The robustness exercise furthermore laid out the scenario required for the sums involved to become trivial. This is only the case if one all but excludes the possibility of a crisis *and also* assumes that the almost impossible crisis scenario would not be

costly in terms of losses. Once one allows for the scenario of either a slight probability of a crisis or that they could be costly, the sums involved rise rapidly and become very significant very quickly.

Put another way, to avoid implicit subsidies, the substantial costs that government agencies have to bear in times of crisis must be collected from financial institutions when times are good. If it is thought that these costs are too high for financial institutions to bear, even in the good years, the conclusion must be that the institutions in question do not work economically as a going concern. This would be akin to an industrial pollutant that inflicts more social costs with its CO_2 emissions than it takes in profits.

There is consequently no avoiding the fact that the government has to think of itself as an insurance company when fulfilling its goal of financial stability. By declaring that financial stability will be preserved necessarily contains the declaration that systemic financial institutions will not fail and market participants in turn act accordingly.

The qualitative evidence presented in Section 3 supported the above reasoning and pointed out the inefficiencies of policies at the time. While internal letters within the Bank of England show that senior staff was aware of these issues to some extent, the discussion never reached the policy-making level and ended up as unanswered philosophical debates in response to crises that had, as ever, been unforeseen. While such discussions demonstrate the fact that certain Bank employees (at least belatedly) became aware of the issues, recent events indicate that these issues are still with us and an adequate framework for thinking about how the financial sector gains - or should gain - from government involvement remains elusive.

Chapter 4

Simplistic Approaches to Regulation

*There have been success stories in the City before and will be again, but never has there been anything quite so big, so successful, and so singular as the growth of SWS.*¹⁸⁵

The Financial Times, April 1973.

4.1 Introduction

What motivates central banks and regulators when faced with a widespread financial crisis? Are they concerned with the protection of "unsophisticated" depositors or

¹⁸⁵McLachlan (1973). SWS stands for Slater Walker Securities. The Slater Walker group, formally titled Slater Walker Securities, is generally referred to as SW in the text. It is occasionally referred to as SWS when being compared to Slater Walker Ltd, SWL, which is the banking side of the group. The Bank of England is referred to either by full name or by the common parlance of "the Bank".

is it rather a case of preventing contagion from spreading throughout the system? How is the decision made whether to intervene or let market forces play their role? And if policymakers do decide to intervene, how are the specifics of the intervention determined?

Questions such as these have come back to the forefront following the global financial crisis of 2008. Yet concrete answers continue to elude researchers and many contradicting solutions to the problems that arise during financial crises have been put forward. In this chapter, I try to shed light on the practical matters faced by policymakers in their roles as financial crisis managers by looking at the largest fallout of the secondary banking crisis in Britain; Slater Walker (SW).

Slater Walker was the embodiment of the new type of financial institution in 1960s Britain. Exhibiting massive growth and ever-increasing influence, it gained a strong foothold within the financial system by riding the easy money environment of the period before collapsing dramatically and ending up in the arms of the Bank of England in 1975. The group's development from a tiny shell company to Britain's most exciting firm and then through to public ownership contains all the aspects of typical bank failures including contagion, regulatory problems and the question of public deposit safeguarding. In fact, Reid (1982) concludes that the portrayal of Slater Walker's position is "essential to the study of the crisis and of lessons to be learned from it."¹⁸⁶

An attempt to deal with these issues in the literature typically starts with the motivation for financial regulation, which generally comes in the form of externalities and information asymmetries. Once this rationale for regulation has been established, thoughts usually turn to policymakers' perceived inability to construct a

¹⁸⁶Reid (1982) p. 184.

framework to address these issues in an efficient way, i.e. an optimal policy. Despite the aforementioned theoretical considerations, as argued for example by Goodhart (2010), the application of financial regulation has generally been atheoretical.¹⁸⁷ Reform efforts have thus tended to focus on dealing with past crises in a patchwork manner in an effort to make up for previous mistakes, such as allowing too much leverage, asset price bubbles and undesirable financial innovation.

The secondary banking crisis in Britain was a case in point of the inability of policymakers to keep up with, and respond to, financial innovation - a reoccurring theme of financial crises.¹⁸⁸ The popular name of the crisis even takes its name from the new type of bank that emerged in the build-up to the crisis.

These so-called secondary banks shared several characteristics that are indeed widely held to have contributed to the imbalances leading up to the crisis. These characteristics include reliance on money market funding, funding for property development and the fact that they were not subject to controls that the more traditional banks had to obey.¹⁸⁹ Many of these institutions held the so-called 123 certificate which meant that they were positioned on the fringes of the banking system. Crucially, however, they were still classified as banks and were allowed to accept deposits which would prove to be an important factor when the Bank of England had to decide whether to save these fringe banks or not.¹⁹⁰

¹⁸⁷This has changed to a certain extent recently, e.g. with the introduction of internal risk-based models and the unifying of risk management and regulation. Relatedly, Clement (2010) presents insight into the development of regulation at the period studied in this thesis by looking at the origins of the term macroprudential. He traces it back to the late 1970s amidst concerns over international lending.

¹⁸⁸Mishkin (2009) mentions financial innovation as one of three common precipitating crisis factors (alongside asset price bubbles and deterioration of financial institution balance sheets). Gennaioli et al (2012) represents a recent attempt to formalize innovation as a source of instability. Van Horne (1985) gives a more casual overview between financial innovation and the potential for excess.

¹⁸⁹Other chapters of this thesis provide additional coverage of the secondary banks.

¹⁹⁰As noted by Geddes (1987), section 123 licenses were "an immediate target: the implication of

The case of Slater Walker is an especially pertinent one as it represents the most prominent of the fringe banks and the case with which policymakers struggled the most during the crisis. The bank's rise was dramatic, helped in part by the favourable market conditions of the time.¹⁹¹ Its founders purchased the shell which was to become Slater Walker in 1964 and within 10 years had grown the group to almost 600 mGBP in assets - a 30-fold increase. Its interests were varied with banking representing only one of several sectors the group was involved in.

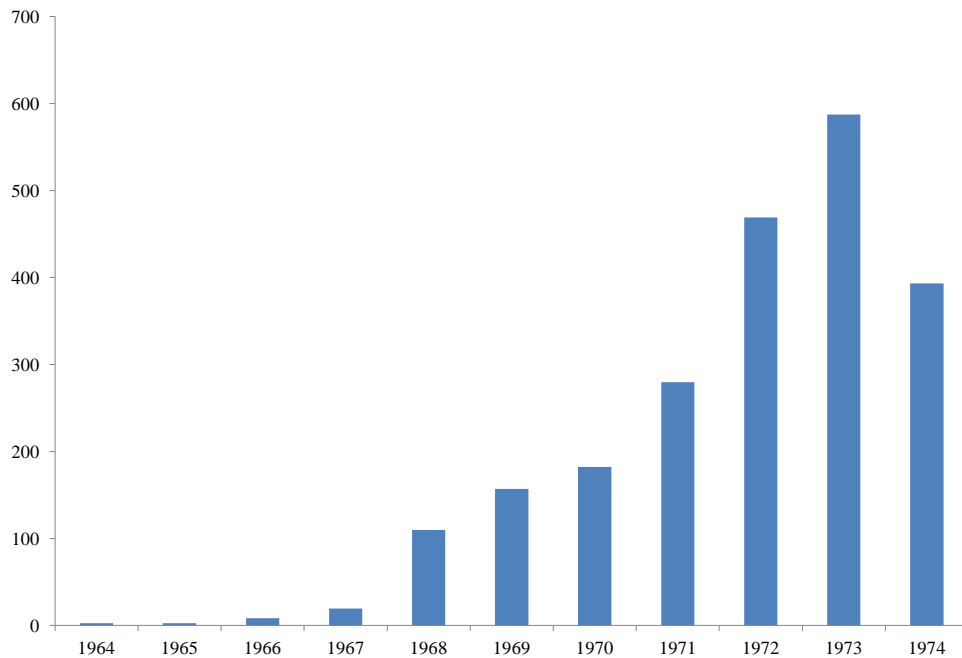
Figure 4.1 gives an indication of the rapid growth and transformation of the company. It shows the size of the group's balance sheet from the founder's takeover of the shell until its crisis in the middle of the 1970s. The rate of the expansion in later years means that the company's size at the time of the takeover, 2.7 mGBP, barely registers on the scale. Charts for other variables such as profits show a similar pattern. Most worryingly from the point of view of policymakers, the trend for public deposits held within the group was no different.

I identify three main phases of the company from its foundation to failure (see Figure 4.2). After being established in 1964 the focus was on funding and getting recognition within the investment community. The company's aim in this first phase was to make a name for itself and get access to capital. The second major phase - that of conglomeration - soon followed where a variety of disparate companies were taken over. The final phase came about following a decision to move away from

an 'authorized institution' was that it was run in a proper manner and subject to regulation. This was far from the case." (p. 104).

¹⁹¹The FTSE all share index rose by over 90% in the two-year period from May 1970 before falling over 70% in the beginning 1975. Interestingly, in looking at episodes of stock market boom in Britain, Bordo and Wheelock (2007) do not identify a boom at any point during the 1970s. They look at data from 1914 to 2000, finding five booms, although the fact that they look at real returns may partially explain the omission of the 1970s due to the accompanying inflation of the decade. Additionally, equity prices rose rapidly again after reaching the early-1975 lows which could lead to an interpretation of market volatility rather than a bubble and bust.

Figure 4.1: Slater Walker Securities balance sheet size



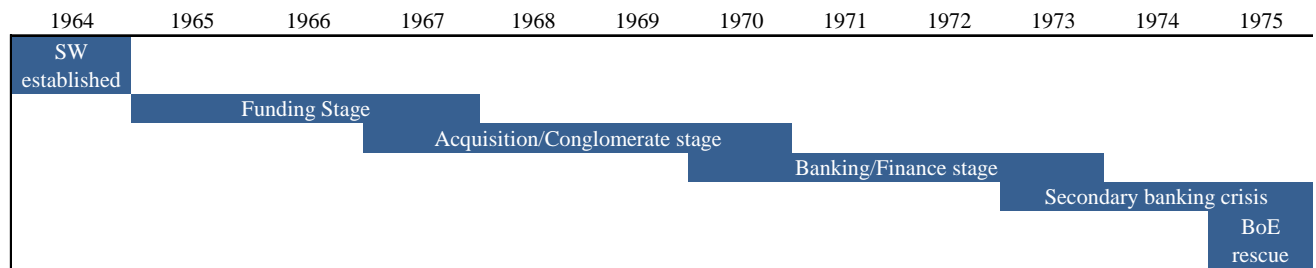
Source: Slater Walker annual reports.

Note: In mGBP, consolidated balance sheet including subsidiaries

the conglomerate type of operations and into banking. This phase accompanied the grand accumulation of public deposits which was to lead to the private risks of the company morphing into the public risks via the Bank of England's financial stability concerns. The development of Slater Walker's share price, depicted in Figure 4.3, shows this development in another way. Two peaks can be identified in the figure with the first associated with the conglomerate phase and the second one with the company's banking period.

What follows in this chapter is a description of how this situation came to be. We look at how a company of no significance at all was able to build itself up to

Figure 4.2: The Six Phases of Slater Walker's Story

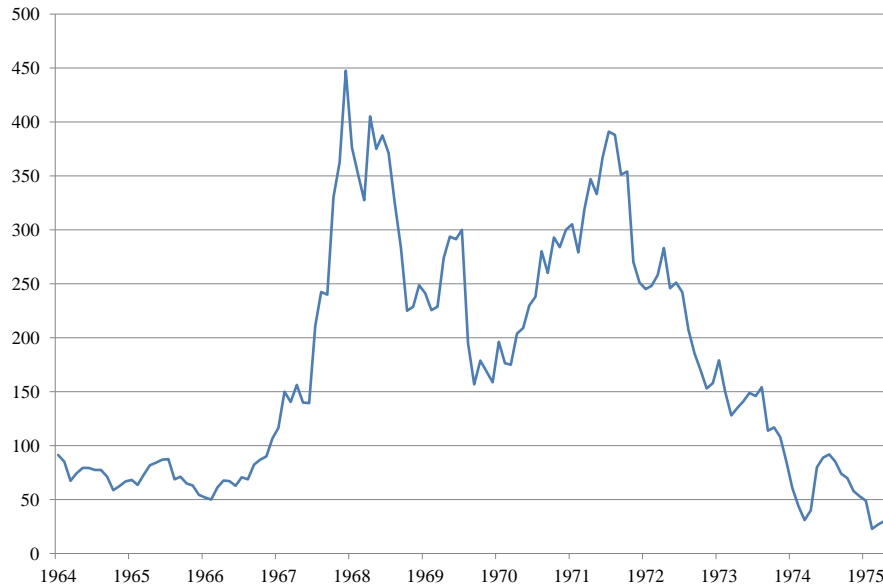


the point where it became a national concern and why it was allowed to do so. The goal is to establish the point in time where problems within the company had become a concern for the general public. While pinpointing an exact date for the transformation is not feasible, it is in theory possible to establish the period where the company's decisions led to public costs. If such a period can be identified, it can be said to signify the point in time where regulators would have needed to introduce proactive measures to counter this development. The focus is primarily on the Bank of England's policies and perspective but this also requires a look at the company itself from within.

A caveat on the limitations of the chapter is in order. The chapter is intended to provide a detailed view of financial regulation as pertains to the secondary banking crisis in general and Slater Walker in particular. There were several outside forces, both national and international, that influenced policymaker's views that will not be covered in detail due to space restrictions. These forces are discussed in Chapter 2 and include the general freeing of the banking sector, the expansionary economic policy immediately prior to the crisis and evolving international views on financial regulation.

As the focus is on regulation and policymakers, the aim of this chapter is thus

Figure 4.3: Slater Walker's Monthly Share Price



Source: Financial Times Archives. Numbers before 1971 adjusted for pre-decimalization.

not to examine what Slater Walker itself could have done to avoid its fate. The focus is squarely on assessing policymakers' attitudes towards financial institutions and provide a specific, but generalizable, example of how private sector risks can morph into risks to the public. To achieve this goal, I mainly use archival evidence from the National Archives and the Bank of England archives. Published accounts of Slater Walker and the Bank of England are also used as well as media coverage at the time and the subsequent secondary academic literature.

One final thing to note is the micro-level of the coverage in Section 3 and the first part of Section 4. This stands in contrast to traditional accounts of crises which focus on macro-level developments such as money supply increases and general

indebtedness within economies. As such, the chapter describes the rise of SW in considerable detail as well as how it came to be in the position of being saved by the Bank of England. This is due to the enormous growth of the company and the practical details needed to have in mind to understand how a small shell company could morph into an entity deemed too systemic to be allowed to fail. While certain minute details may seem irrelevant to the subsequent story of the crisis and the bailout, they help to shed light on the complex issues faced by the Bank of England in trying to assess the financial health of such an intricate business.

The chapter proceeds as follows. Section 2 lays out the motivation for the chapter and describes the sources and data used. Section 3 lays out the Slater Walker business narrative and documents the rise and prominence of the company. This is done via archival material, the secondary literature, contemporary media coverage and various correspondence. The goal is hence to assess whether it was possible for policymakers to see, *ex ante*, the build up of specific risks and prevent a public rescue of the company. Section 4 covers the demise of the company, the rescue operations and the accompanying fallout. Looking at the actual measures taken is only a secondary objective, as they have been documented before, and the focus instead is on how the Bank of England acted while the risks were building up as that would have been the time to provide preventive measures. The range of policy options are also examined, apart from those actually taken, and how the ultimate decisions were made within the Bank. Section 5 concludes.

4.2 Sources and data

The main archival sources used in the chapter are Treasury material, via the National Archives, and Bank of England material from the Bank's archive. A lot of this material was released following a freedom of information request in 2005 and consists of memoranda and correspondence, mainly with the Bank, on the assistance provided. The Treasury information is clustered around three periods between 1975 and 1977 and thus does not cover material prior to the crisis.¹⁹² There is no suggestion that the Treasury was involved with any work - regulatory or other - regarding Slater Walker prior to the crisis. There is, however, no mention made as to whether any Slater Walker related material has been deemed confidential and will not be made available.¹⁹³

Some weeding of the Bank archives was performed in the 1980s although much of the discarded material will have been routine papers and non-informative letters. There is thus the possibility of selection bias due to omitted documents. For general material, the incompleteness of the archives stems from removal of standard documents and not systematic removal of certain important material which, means that the likelihood of this is low. Documents that were retained are a mixture of high-level and low-level material and provide a relatively thorough narrative of the episodes under consideration in this chapter.¹⁹⁴ It is, however, difficult to certify on what

¹⁹²The three periods are during the original Bank assistance to Slater Walker, when the company's accounts were published and when the decision was made by the Bank to acquire the banking arm of SW.

¹⁹³As for the Bank of England, its archives contain a vast amount of documents for all branches of the Bank, including both internal communication as well as the Bank's dealings with the private sector and other parts of the public sector. In total, it contains over 80,000 documents dating from the Bank's foundation in 1694 to the present. Further information is provided in Chapter 1 of the thesis.

¹⁹⁴This information is also provided in Chapter 3.

grounds omissions were made and, as discussed below, there are certain suggestions that survivor and selection bias may play a part.

The reference numbers of each entry generally refer to the department from where the file is taken. For example, files stored under the ADM section in the archives originate in the Administration Department and the Economic Intelligence Department files are stored under the EID section. There are 16 categories in total and each category consists of several subcategories called classes which contain related material. Finally, each class usually has several individual files. The end result is therefore a threefold categorization. One example would be ADM35/6 which would be file 6, class 35 in the Administration Department. This particular class represents the 6th file of the papers of John Fforde, the Bank's former chief cashier, executive director and official historian.

For this chapter, the bulk of the evidence comes from material released following the aforementioned freedom of information request which also pertained to the Bank. While this includes a vast amount of material, the filing system indicates that a large amount of material has not been released.¹⁹⁵ Furthermore, the method with which the material was categorized is unknown, as is the decision making process regarding omitted material, so it is hard to gauge how representative the available archival material is. According to Capie (2010), the bulk of the Bank's material on the secondary crisis was destroyed. Capie does not provide the reason for this which means that whether the destroyed material was superfluous or simply destroyed because it portrayed the Bank in a negative fashion is unknown. As will be seen

¹⁹⁵The Slater Walker files in the Bank's archives are filed under 6A70. The available sub-files under 6A70 are 6A70/1 to 6A70/4 and 6A70/18, thus excluding sub-files 5 to 17. Capie (2010) had access to additional Bank material, including the missing files under 6A70, 5-17. The contents of these closed files are unknown.

below, however, enough material survived to piece together a coherent story of the Bank's operations and not necessarily in a positive manner.

The remaining Slater Walker files at the Bank's archives are of various nature. They include both internal and external correspondence, memoranda and minutes of meetings. They also include the Bank's analysis of Slater Walker's performance from 1968 onwards which covers most of the group's banking period. This material, used extensively in the chapter, is extremely relevant as it sheds light on the Bank's regulatory function before the onset of the crisis. It can thus help gain insight into whether it performed its role adequately, rendering the crisis unpreventable, or whether intervention was warranted earlier on behalf of the Bank.¹⁹⁶

In addition to the archival material, extensive use is also made of media coverage during the period. This includes newspaper articles, and interviews as well as trade and professional magazines. The coverage not only provides key insights into Slater Walker's development but also forms an integral part of its history. A major factor in SW's ability to attract funding - both from professional investors and the public - was the positive publicity and widespread interest in the firm. The intense coverage is therefore itself a piece of evidence and helps shed light on the firm's history.

4.3 The Rise of Slater Walker

In this section the Slater Walker narrative is laid out along with an explanation of how the company came to prominence. I start by charting the rise of its founders and the circumstances whereby they were able to acquire a publicly listed company. The focus then moves to the means by which the firm could grow exponentially and how

¹⁹⁶There are, of course, additional possibilities that fall in between these two categories, such as adequate crisis management without being able to prevent the crisis altogether.

its funding was the key to its early success. The role that positive media attention played in the company's growth is also emphasised.

4.3.1 Foundation and Funding

Slater Walker was founded by Jim Slater and Peter Walker in 1964. The former, born in 1929, was a chartered accountant and held several industry jobs before founding SW.¹⁹⁷ He quickly gained a reputation as a shrewd manager with a keen eye for company financials and was held in high esteem by his employers. Walker, meanwhile, was a rising star in politics; A MP for the Conservatives and a prominent member of the up and coming generation of the more business savvy Tories. The pair first met in the autumn of 1963 and hit it off right away with Walker immediately noticing Slater's nous for business.

The two men soon started SW at Slater's initiative. While Slater was still working in industry, Walker had remarked that if ever Slater wanted to go it alone, that is start an independent business, then Walker himself would fully support him - not only financially but also with introductions to the right people as Walker was quite well connected in City circles.

Slater and Walker's early connection helps explain how an outsider such as Slater was able to penetrate the famously closed gentleman's club that was London finance and Slater was, in some sense, an example of the changing times therein. The pair's relationship and initial business dealings are an integral part in explaining the transition from the son of a salesman with no history in finance to becoming a symbol of new financial times and ultimately the head of a financial firm that hadn't previously existed but came to be considered too important to fail during the

¹⁹⁷See Slater (1977), especially pp. 15-26.

secondary crisis.

Slater's first step in becoming an independent businessman was taken in 1963 when he acquired, alongside his business partner Kenneth Meyer, a 25% stake in a company called Productof foam. According to Raw (1977), Slater's main interest in the company was due to the fact that it was one of the smallest quoted companies on the London Stock Exchange. Raw provides no evidence for this motivation although Slater's initial focus on small companies was definitely in accordance with his limited means at the time.

Productof foam's main operations were in laminating as well as rubber and glove manufacturing. Slater's intentions were however only very partially based on the existing operations of the firm. He did in fact intend to increase Productof foam's laminating efficiency by purchasing a rival firm but his main intention was to set up a share dealing and investment advisory business which was to increase profits greatly.¹⁹⁸

To obtain the shares needed, and hence set his plan in motion, Slater needed roughly £50,000. He paid half of the amount with his own money that he had amassed in share dealing and the other half was borrowed from Lombard. This holding, along with Meyer's stake which was roughly half of what Slater held, gave Slater control of approximately a quarter of Productof foam's outstanding shares. However, he did in fact control a substantially larger portion of the shares as friends and acquaintances had been encouraged to buy shares for themselves. This control of shares, coupled with the fact that the company's chairman, Freddie Cheshire, and the largest shareholder, Jan Rabl, were sympathetic to Slater's plan, allowed Slater to put his plan into motion. This resourcefulness in leveraging his connections was

¹⁹⁸Raw (1977) p.103.

a key characteristic of Slater's operations.

In this early example one can see how little skin in the game was required to get a foothold in the financial services industry. Slater had needed merely £25,000 of his own capital to gain control in a public, albeit small, company.¹⁹⁹ The rest of his control came through borrowing, control of his friends shares and the trust of the chairman and largest shareholder. The £25,000 alone would have meant direct control of 10% of outstanding shares, before the shares started to rise. The other factors were therefore of huge significance in gaining control of the company.

As fate would have it, Productof foam did not turn out to be the platform by which Slater was to establish his empire. A series of unfortunate incidents including factory fires led to decreasing interest in the firm by Slater. Luckily for Slater, Cheshire knew of another company that could be used as a shell to carry out his plans.

This company was initially registered in 1935 as H.Lotery Co. Ltd. Its history lay in the manufacturing of uniforms but had recently been more of a property investment firm.²⁰⁰ The firm's heady days came during World War One when it was a supplier to the Army and other official organizations. At year end 1962 its balance sheet stood at £662,510, with almost no debt, and in 1964 the only remaining asset was Beaufort House, a large office block. H.Lotery's purpose for being a publicly listed company had therefore declined considerably but its balance sheet suited Slater well.

Amid political uncertainty and the possibility of adverse effects on property prices following a Labour victory in the general elections, the largest shareholders of

¹⁹⁹This amounts to roughly £450,000 in current terms.

²⁰⁰Rixson (1969).

H.Lotery were looking for a way out. Cheshire had alerted Slater to this development and Slater quickly made a bid for the want-away shares. Slater's bid valued the company a little higher than the valuation of Beaufort House; 1.5 mGBP against approximately 1.35 mGBP. This premium was presumably primarily due to the value of the control of capital to Slater. His interest in the company, according to the Bank of England, also stemmed from the fact that "its public quotation would enable him to capitalise his income and give a market value to his consultancy business".²⁰¹

However, Slater had nowhere near the amount of money required to complete the takeover himself. The stake he wanted to acquire amounted to 48% of the company, translating to a need for £720,000. Table 4.1 lays out how Slater obtained the required capital.

Table 4.1: Financing of H. Lotery by Jim Slater

Own money	25,000
Borrowed	325,000
Walker	50,000
Walker-Young (Walker's insurance brokerage)	45,000
Meyer	88,000
Placed	188,000

Source: Raw (1977) pp. 110-114.

This structure of funds shows a similar pattern to the Productof foam transaction whereby a large proportion of the stake that Slater ended up controlling came from either borrowed funds or Slater acting as agent for other people's principal. Slater thus ends up gaining control of a publicly listed company, through a 48% stake that was funded less than 3.5% by his own capital, or just over 1.5% of the company's market capitalization.

The fact that he was able to obtain the amount of borrowings that he did is

²⁰¹BEA 6A70/2, P.J. Keogh, d.d. 13/12/71.

testament to Slater's resolve and the trust with which those he encountered bestowed upon him. His connections with Walker, Cheshire and other well connected individuals, who were more on the inside than he, were invaluable in starting out the Slater Walker business.

As soon as the deal was completed, the name of the company was changed to Slater Walker & Co. The company's stock, which had been illiquid and stable for a long time, started rising rapidly as soon as Slater's started showing interest in the firm. Slater's offer for the 48% stake was 10s per share but jumped to 17s 6d. within a month - a 75% increase.²⁰²

It is hard to distinguish what fraction of the share price development was due to Slater's buying and his associates and what was due to either fundamentals or interest from unrelated parties. One of the main themes in Raw (1977) is that many of Slater's dealings led to a higher share price due to his own transactions as opposed to general price discovery. Some of Raw's examples are convincing and others less so but the purpose here is not to establish the mechanics behind share price developments. Suffice it to say that due to the fact that Slater often dealt with small, quoted companies there was the potential for his own dealings and those of related parties to materially and permanently affect the price of these illiquid equities but the extent of this mechanism will not be estimated here.

Having secured control, if not ownership, of the company - now known as Slater Walker - Slater set about pursuing his strategy. He started by taking out an £850,000 mortgage on the previously debt-free Beaufort House and managed to acquire another 1.5 mGBP from general investors. According to Slater himself, half of the mortgage

²⁰²The offer price of 10s amounted to 0.5 pounds which indicates how illiquid and small the stock was.

money was used for undefined "special situations" and the rest for general equities.

The 1.5 mGBP were raised to start a subsidiary of Slater Walker called Slater Walker Industrial Group (SWIG). This was to become the vehicle through which large shareholdings were held and used to influence boards and companies - active shareholding in the modern parlance. There was considerable and widespread interest from the investment community with regard to SWIG and the group found great success in its early days. This interest was partly a function of the positive atmosphere towards such ventures at the time but also the charisma and persuasiveness of Slater himself. With these two efforts - the mortgage and SWIG - Slater thus found himself with almost 2.5 mGBP to invest despite only having had £25,000 of his own money to start the venture.

The effect of Slater's newfound connections and trust cannot be overestimated with regard to Slater Walker in general and particularly SWIG. Slater was able to use a highly successful public relations strategy to attract smaller investors and his relationships with individuals such as Peter Walker and Cheshire to attract larger investors and the backing of respected financial institutions. It should also be noted that at this point in time, the Bank of England understandably paid no attention to Slater's dealings as they had not yet entered the Bank's vicinity. Regarding the public relations strategy, Slater had hired a consultant who was quite successful in securing media interest - primarily in the Evening Standard. Articles that depicted Slater's rapid rise and the impressive capital appreciation he had attained led to increased business which Slater used primarily for further share dealings. Slater's own charm was another factor that helped create favourable coverage and his mantra that companies such as his performed the social good of increasing efficiency in Britain's industries were favourably received within publications such as the Daily Telegraph.

Slater was thus seen by many as a new breed of capitalist who saw room for drastically increased efficiency throughout the economy and was able to dramatically reorganize companies in disparate industries despite no prior association with the industry. On a macro level, this increased efficiency was thought to be able to catapult Britain back to the forefront of European business and signal a new period of prosperity.

As for his relationships, Walker in particular presented a way into circles that Slater would have found hard to enter on his own. Walker's formal role within Slater Walker was that of non-executive board member but his main advantage was in introducing Slater to important bankers and stockbrokers. Lord Black, whom Slater had first met during his industrial days at a company called Park Royal, was also instrumental in introducing Slater to the right people and his connections secured a hefty chunk of SWIG's funding. The people introduced by Walker and Lord Black in turn helped Slater gain further backing where needed and helped in those early years secure funding from reputable institutions such as Schrodgers, Lazard and Lombard Banking.

The investment climate during these formative years must also be put into perspective when assessing Slater's achievement in attracting funds. As previously noted, there was substantial uncertainty regarding the financial outlook during the summer of 1964 as fears of a Labour government mounted.²⁰³ Investors were unsure what measures such a government would take regarding both finance and property which meant that funding was not particularly easy to come by during the period. Slater's financing is thus more impressive as the funds indicate a genuine belief in his

²⁰³See e.g. Burk and Cairncross (1992) for a discussion on the political environment of the time as it related to subsequent financial instability.

plans and acumen from well established brands with a long and conservative history when it came to backing new ventures.

While SWIG was initially a standalone venture, standing outside of Slater Walker itself, towards the end of 1964 it was decided to place the investments made with the £850,000 mortgage within SWIG in exchange for a 40% share in the latter. Regarding this transaction, Raw notes that "[t]he fact that the august institutions which Slater had persuaded to invest in SWIG were prepared to accept this arrangement is a tribute to Slater's salesmanship."²⁰⁴

With this transaction, the initial form of Slater Walker itself was taking form and the company was renamed Slater Walker Securities Ltd in November of the following year. The two main subsidiaries were to be SWIG, which held industrial side of the business, and Slater Walker Ltd which was to be - in various forms in following years - the banking side of the company. The final piece of the setup was completed when ownership was secured for the SW shares that had only temporarily been placed during the initial takeover (Table 4.1). The stake was bought by a company called Great Portland Estates (GPE) which had great belief in the SW project. GPE was a property group which had initially signed up for 13%, or £200,000, of SWIG's funding but now decided to take up 240,000 shares in SW itself.

SW's good fortune continued in early 1965 when it was announced that the main tenant of Beaufort House was to buy the property for 1.85 mGBP. Not only was this £500,000 above the valuation of the property when Slater had taken over the company, but it was also £350,000 higher than the price he had paid for it. Following this, Slater was ready to unveil his strategy for the firm as it stood then.

The strategy consisted of seven seemingly distinct fields although the operational

²⁰⁴Raw (1977) p.118.

distinction was more blurry. The seven fields were property, investment, trading, investment management, management services, industrial group and general. These fields can roughly be re-categorized into proprietary trading, private equity and asset management. The property portfolio was a legacy unit and it was not thought to be the case that property speculation would form a large part of the company. While the strategy wasn't executed in full, and was to change considerably several times, the initial plan for the firm shows the tremendous ambition right from the start.

The Bank of England had not shown any interest in SW at this point. This is to be expected as SW hadn't yet delved in any meaningful sense into its banking activities and its position could at best be of informational use to the Bank of England as indicative of more widespread changes within the financial system including aggressive takeovers and wholesale funding. Another key attribute of Slater's early success was his short-lived, anonymous career in journalism. Slater had contributed regular columns to the Daily Telegraph from early 1963 where, under the pseudonym Capitalist, he recommended various stocks to the public and had been quite successful at this stock picking. In early 1965 Slater's identity was revealed which led to another surge in inflow to his advisory business, which was now managed inside Slater Walker. Whether intentional or not, the journalism angle can be categorized as another successful part of the PR strategy which helped attract funds and thus facilitated further growth of Slater Walker's business.

In this early stage, SW was able to fill a gap in the investor market by accepting smaller fees than most traditional advisers - as small as £5,000. The group's published results and media coverage served as a signal of high expected returns to many investors and SW was able to attract large amounts of funds. This could also have been taken as a sign that the firm was taking advantage of less sophisticated actors

in the market but this does not seem to be the case. First of all, SW's reputation was also positive within professional, experienced circles. Secondly, it is hard to argue that the group's earnings and performance were purely noise related with no signal involved.

SW had now constructed the funding platform on which it could build its empire on. This initial platform - i.e. constructing the liability side of the balance sheet - was the biggest obstacle and with funding secured, Slater and his colleagues could focus on the asset side of the balance sheet. As far as any overall strategy regarding deals and sectors was concerned there didn't seem to be one. During the acquisition phase of 1965-1970, SW invested heavily in sectors as disparate as slipper makers and gas ovens.

One early acquisition, noticeable for our purposes, was A. Rosenthal & Partners which was bought in the summer of 1966. This was a small banking business with approximately 1.4 mGBP of deposits.²⁰⁵ There is no indication that this takeover warranted any discussion or attention within the Bank of England which had not started to monitor the SW group at all at this point. A. Rosenthal was sold on only three years later but signalled SW's first venture into banking.

4.3.2 Conglomeration

As reported in a detailed *Accountancy* article, aptly named *The Sky's The Limit*, SW's pace of acquisitions began to increase from 1966 onwards.²⁰⁶ According to Raw, during the following three years, between 1967 and 1970, SW acquired seventeen companies and approximately twelve private firms. This is the period that I classify

²⁰⁵See Raw (1977) p.186.

²⁰⁶Rixson (1969).

as the conglomerate phase where large stakes in various unrelated industries were acquired. The firm's balance sheet grew from just under 20 mGBP at year end 1967 to 182 mGBP at the end of 1970. In the same period profits went from roughly £650,000 to 7.4 mGBP. The group's market capitalization showed a similar trend, rising by a factor of 33 over a three year period. The astronomical growth in assets and earnings was allocated quite equally between what was in the annual reports termed "financial and investment activities" on the one hand and "commercial and industrial activities" on the other.²⁰⁷ This categorization corresponds roughly to the SW Ltd and SWIG divide mentioned above.

It was the massive share price increase, along with borrowings, that fuelled a lot of the expansion during this period, which was when the empire "came of age" as later described by the Bank of England.²⁰⁸ Slater wasn't shy in stating publicly that it had seemed a waste not to take advantage of the share price increase by buying firms with SW shares.²⁰⁹ It was therefore, in essence, the reputation of Slater and expectation of his financial prowess that enabled the empire to grow. This is, in some sense, not that different from funding through deposits as it is the expectation of wealth preservation and possible capital appreciation of the funders that allows the company to embark on its expansion.

The pace at which the funds were put to use is noteworthy. The management team at Slater Walker consisted of young and ambitious men who were all eager to prove themselves and move on up in the financial world. The group also had a policy of paying large fees to brokers in an effort to be the first to know if they heard about

²⁰⁷Information on the group's financials is retrieved from the company's annual reports.

²⁰⁸BEA 6A70/2, P.J. Keogh, d.d. 13/12/71.

²⁰⁹The Bank later described "this sudden burst of activity" as having been made possible mainly because of "the glamour rating given to Slater, Walker stock, which, sensing the climate, he [Slater] used to the full". BEA 6A70/2, P.J. Keogh, d.d. 13/12/71.

any possible deals. The fact that the management team was so aggressive also meant that shareholders of companies who wanted to arrange a sale of their company often came to SW first.

This section briefly expands on this conglomerate period of industrial growth, starting in 1967 with the purchase of a rubber company by the name of Greengate & Irwell. Greengate was SW's largest acquisition to date with a purchase price of 3 mGBP, which was funded with SW shares and loan stock. At year end 1966, SW's balance sheet had grown to 8.6 mGBP. The largest part of which was attributable to 2.9 mGBP of advances, quoted investments of 1.6 mGBP and 1.5 mGBP in cash. Capital and reserves stood at 2.7 mGBP while debt amounted to 5.1 mGBP.²¹⁰ There was thus already at this stage a heavy reliance on borrowed money.²¹¹

This is also highlighted in the aforementioned *Accountancy* article, as well as the opaqueness of the accounts and the speed with which things had begun to move within the SW group:

*Movements between 31 December 1965 and 31 December 1966 are so complex that it is difficult to get very far in interpreting them, but a pattern for the future is beginning to emerge: [...] the use of unsecured loan stock for acquisitions; the rapid growth in creditors and overdrafts.*²¹²

The article is written in 1969, well before any dramatic signs of trouble for SW. The extensive use of debt and the difficulties in trying to assess the position of the group by using publicly available information was plain to see for the authors of the article. This is in stark contrast to the view within the Bank of England - the

²¹⁰Other items on the liability side included minority interests and tax liabilities.

²¹¹Appendix 1 shows the organizational structure of the company at this point in time.

²¹²Rixson (1969) p. 529.

entity charged with regulating the banking side of the group in its latter years, as mentioned below.

The Greengate deal was rapidly followed by deals for the office furniture maker Constructors and the slipper makers Newman's Holdings. SW paid 1.1 mGBP for the two companies and the acquisitions were again funded substantially with SW shares as well as cash. Another deal of some significance was made a few months later, in early 1968, when SW acquired Keith Blackman, a ventilation and gas oven manufacturer. Yet again SW used its own shares to fund the 4.3 mGBP deal but within three months the firm had been resold for 3.7 mGBP. However, the sale was made through cash which essentially meant that SW was able to raise cash with its shares in a discreet way, albeit at a slight discount to the prevailing market price.²¹³

Soon afterwards, SW made what was to be its most important industrial move when it acquired the window maker Crittall-Hope for 18 mGBP - by far the group's largest deal to date. SW had no expertise in window making and Hope (1976) argues that a large part of the rationale for the purchase was the acquired company's cash position. Yet another industrial venture was taken over when SW bought the optician TWW for 6 mGBP. The last large deal of 1968 was, however, a move that restored the balance somewhat between the industrial and financial sides of SW. This was the purchase of Drages - a huge deal for SW, worth approximately 33 mGBP, and an expansion on the banking side which the Bank in hindsight pinpointed as "the climax of this series of operations".²¹⁴ A third of the funding came via cash and the

²¹³The use of equity to fund acquisitions was quite common in Britain at the time although it was steadily declining. Franks et al (1988) find that during the period 1955-1985 66% of completed acquisitions used at least some equity. However, deals financed fully by equity amounted to 25% of all deals. Franks et al also group proportions by period which reveals that pure equity financing was highest in the five year period 1960-1964 (40%) before gradually declining to 17% in 1985.

²¹⁴BEA 6A70/2, P.J. Keogh, d.d. 13/12/71.

rest by issue of SW shares.

An attractive feature of the deal, as far as SW was concerned, was that Drages held about 6 mGBP worth of long-term finance on attractive terms. The most significant factor of the deal, however, was that with Drages, SW acquired 50% of its banking subsidiary, Ralli Brothers, which held all the necessary banking licenses. This was the vehicle with which the banking side was to be built in the coming years under Slater Walker Ltd - not to be confused with Slater Walker Securities Ltd, the holding company itself.

The term conglomerate was, at this point, still considered a positive one both in the U.S. and the U.K.²¹⁵ Often stated efficiency gains that could be obtained by "revitalizing" staid assets were thought to be a noble cause and a good enough reason for existence for the conglomerates. Slater himself defined a conglomerate at the time as a company which was "very diverse, highly acquisitive and financially orientated in their approach".²¹⁶

At year end 1968, SW's consolidated balance sheet had grown to 110 mGBP - up from 20 mGBP a year earlier. At the same time, profits increased by over 300% so it is hard to compare the company over time - even on a year to year basis. Table 4.2 provides a condensed view of the firm's operations at the time. While the plain leverage ratio hadn't increased dramatically, and was in fact unchanged at 35%, the absolute increase in debt could have given cause for concern.²¹⁷ Total debt

²¹⁵Chandler (1994) provides context to how conglomerates fit into the history of U.S. industry in the post-war period.

²¹⁶Slater (1977) p. 91. See Jones (1997) on the similarities and differences of British and U.S. business methods during the period. Tiratsoo and Tomlinson (1997) cover the effect of U.S. business philosophy on British industry in the post-war period and the British initial reluctance to adopt the techniques of the former.

²¹⁷As was mentioned in Chapter 3 of this thesis, the Bank of England was quite frank in acknowledging that the only information it had on most institutions were the infrequent reports posted. This is in line with the available records in the Bank's archives and the discussion within the Bank

included not only the 25.4 mGBP in long term debt but also the bulk of the 42.5 mGBP of current liabilities. Deposits and short term loans were 34.7 mGBP and bank overdrafts another 4.8 mGBP.

Table 4.2: Simplified Slater Walker balance sheet at year end 1968

<i>Assets</i>	
Fixed assets	16.8
Investments (at cost)	10.2
Current assets	82.7
<i>Total</i>	109.7
<i>Liabilities and Equity</i>	
Equity	38.6
Loan stocks	25.4
Minority interests	1.7
Tax	1.5
Current Liabilities	42.5
<i>Total</i>	109.7

Source: Slater Walker Securities Annual Report 1968. Author's summary.

We can therefore see here the first signs of a possible warning sign according to the theory put forward in Dewatripont and Tirole (1994) of small-depositor protection as the rationale for financial supervision. There are, however, no indications that these amounts were of any concern to the Bank of England. In total, SW's debt was conservatively estimated 64.9 mGBP out of the 110 mGBP balance sheet.²¹⁸ Without further information, it is hard to estimate the asset and liability quality as the published accounts are heavily aggregated.

On the asset side, there are 4 mGBP of cash and bank balances which could

at the time. This was thus most likely the only information the Bank had on SW.

²¹⁸This estimate includes only the following items: Unsecured loan stocks, loan stocks of subsidiaries, creditors, deposits and short term loans, and bank overdrafts.

offset any liquidity need but beyond that it is hard to estimate how readily the firm could weather investor withdrawal. The bulk of the assets at the time were current assets but only a small amount therein were listed stocks that could be sold at any time. Furthermore, the listed positions that the firm generally took were deliberately small, illiquid stocks which meant that any sudden unwinding could be expected to come at a substantial loss.

The two largest items under current assets were "investments" of 19.2 mGBP, and 50.4 mGBP under "Debtors, loans and advances". But as we have seen above, investments were often majority shareholdings in specific manufacturing companies. Furthermore, these holdings were frequently purchased above the current market price in the prospect of increasing the given company's efficiency which means that speedy liquidation of assets was again unlikely. The largest item, "Debtors, loans and advances" wasn't itemized but consisted mostly of the banking side of the business under Slater Walker Ltd. As with any bank, rapid liquidation of the loan book was nigh on impossible which ultimately gives the final impression that despite SW's industrial look, it had enough banking characteristics to make it both vulnerable to similar kinds of shocks as banks as well as bringing with it the possible threat of contagion if it were to fail.

However, as discussed in Chapter 3 of this thesis, the Bank of England's thinking at the time when it came to regulation was not centred on functions and properties of specific financial institutions but rather their strict classification, i.e. whether said institution had the proper licenses.²¹⁹ In fact, the Bank did not believe that

²¹⁹In addition to being squarely focused on classification, those institutions which did come under the radar of the Bank were regulated mainly through qualitative means. As discussed by Row and Saville (1990), supervision placed considerable emphasis on the quality of management. They quote the Bank of England Quarterly Bulletin saying that interviews with bank management were "the cornerstone of the Bank's system of supervision" (Row and Saville (1990) p. 166).

intervening with and supervising these new, "fringe" institutions was in any way its business. Finally, in addition to these warning signs, SW borrowed heavily during this period not only from domestic investors but abroad as well. This cannot be confirmed from the published accounts but it was to be a major reason for the Bank's later intervention.

As 1969 began, the merger frenzy that accompanied the positive attitude towards conglomerization within the City continued. General market conditions were relatively favourable at the time with GDP growth gathering pace somewhat although inflation had increased and was hovering around 6%. In February, the Bank of England increased interest rates by 1% to bring them to 8%, their highest level for quite some time. SW completed what were to be its last substantial industrial takeovers later that year; P.B. Cow, another rubber company for 8.5 mGBP, and Forestal Land Timber & Railway Company for 10.5 mGBP. The year also saw the takeover of Ralli completed as SW bought the remaining shares in the company.

A big advantage that came with the Ralli acquisition was that it was a "ready-made" bank with all the necessary licenses. This included being a so-called "Schedule 8" bank which placed it quite centrally within the financial system and meant that it didn't have to reveal the true extent of its reserves.²²⁰ This was a vital point as "banks which are "fully authorised" do not grow on trees and are hardly ever for sale", as it was put in an Investors' Chronicle article.²²¹ Indeed, this proved to be an important point as soon after the Ralli acquisition SW applied for status as an approved bank by the Building Societies. The application was duly accepted on the grounds that Ralli had been a "highly respectable merchant bank" that had retained

²²⁰Raw (1977) p.249.

²²¹Investors' Chronicle (1969).

its "Schedule 8" status under its former title of Ralli Brothers.²²²

While generally apprehensive about any takeovers that involved banking licenses, the Bank remained passive towards SW's Ralli takeover. As soon as SW acquired its main vehicle for accepting traditional public deposits, the only conceivable solution to a potential failure that wouldn't entail costs for the public was if a buyer could be found for the bank's operations. Yet the Bank did not have a certain framework in mind as to the first response when insolvency loomed. There is indeed no evidence that contingency planning for a potential failure of the bank formed any part of the Bank's framework. Instead, the Bank's main concern regarding Ralli was on the monetary policy side and practical issues as to how the Bank should calculate its lending ceiling from now on.

SW went even further with its plunge into banking a year later when it applied informally for a Drawing Office, or "banking account" at the Bank of England.²²³ This was the next step in moving towards the City's inner circle but the move was met with resistance from the Bank. A necessary requirement for approval was not only that the applicant was to be "of good repute and that their business was prudently conducted" but preferably also a member of the Accepting Houses Committee, which SW was not.²²⁴

The fact that SW had acquired banking recognitions "through the back door", as put by the Bank's staff, also nurtured the Bank's hesitancy although aforementioned favourable balance sheet ratios were seen as a positive. In the end, the Bank answered the informal application with the equally informal reply that SW should delay any

²²²BEA 6A70/2, R.T.P Hall, d.d. 14/07/70.

²²³Formally, the application was to transfer the dormant banking account that Ralli had held to the SW banking group which would have the effect of granting SW itself banking status.

²²⁴BEA 6A70/2, Discount Office, d.d. 11/11/70.

approach for a "banking" account for a year or two. Privately, the Bank was of the opinion that SW would in time be sufficiently established to warrant an account and the Bank would thus like to be as helpful to them as possible.²²⁵

The Ralli acquisition also highlighted another facet of SW's relationship with the Bank of England and the extent to which the Bank intervened in the company's affairs. SW had intended to drop the Ralli name and incorporate the bank fully under the SW group. A letter from the Bank of England's discount office, however, argued that this would be undesirable and that "there would be some advantage in incorporating the name in your own name for a transitional period." The letter even goes so far as suggesting a more opportune name which would save SW "a great deal of tiresome explanations in the money markets" and be "highly desirable" from the Bank's point of view.

As SW was a fringe bank it was in no position to go against the fatherly figure of the Bank of England when such a strong opinion was voiced. Indeed, a reply five days later from Slater himself thanked the Bank for the "excellent" suggestion which the company would go by immediately.²²⁶ The mere fact that SW representatives had now opened a dialogue with the Bank of England meant that the group was slowly but surely becoming an acknowledge brand that would fall within the Bank's jurisdiction. The letter also demonstrates the extent to which the Bank was willing to micromanage the affairs of individual banks if it thought the banks were erring.

²²⁵BEA 6A70/2, d.d. 12/2/71.

²²⁶BEA 6A70/1, d.d. 19/8/69.

4.3.3 The Move to Banking

The Ralli acquisition had inadvertently provided SW with the opening for the next phase of the company's development - the banking phase. Slater had been rethinking the purpose of the SW group for a while. With conglomerates in the US on the defensive and SW itself having become very scattered with regard to its holdings, Slater was ready to alter the company's strategy.²²⁷ The Ralli takeover, which had been something of a sideshow at the time of the Drages deal, was now seen to be the vehicle with which to catapult SW into the world of banking. As SW's share price had ceased its rapid rise of the prior years, cheap takeovers fuelled by its own shares also became harder to complete.

The transition to banking from conglomerate was mainly carried out via straightforward asset sales and so-called satellites. The latter was a form of asset sale whereby SW's holding of a company was sold into a public company in exchange for shares and/or cash. SW's stake in many industrial interests thus became indirect with the appearance of independence. By retaining a significant part of the divested company, control was still kept and a new CEO was installed - generally a SW man. The affiliate would then also become a banking client which further helped the transition to banking.²²⁸ The lines between principal and agent were obviously blurry with such a structure in place.²²⁹

²²⁷The *Investors' Chronicle* article indeed stated that "the whole nature of the group has changed, principally because of the acquisition of Drage's and Ralli. The balance-sheet has become that of a bank."

²²⁸The extent to which the banking side of SW relied on business from satellites and other related parties could be seen in a piece from the *Financial Times* on the transition from conglomerate to banker. The article stated that as Slater realigned himself as a banker, he sought to win business "from any group in need of advice - even if he does not own the company". The need to state the latter part of the sentence is telling. *Financial Times*, "Men and Matters, Call him banker now", 30/12/69.

²²⁹As previously stressed, the intention here is not to estimate the extent of potential, and realized,

The Bank's absence during this transformation is noticeable. This was in fact the period whereby SW moved into the Bank's realm and in some sense became the Bank's responsibility. The Bank placed a great deal of emphasis on public deposits, of which SW now held a considerable amount of, being safe but this did not lead the Bank to monitor closely new developments or the potential for new parties to change the existing structure of deposit-taking.

With the withdrawal from industrial holdings underway and a new-found emphasis on investment banking, Slater had found what he called the group's *raison d'être*.²³⁰ It was his goal to establish SW as an international investment bank in the 70s and, according to the *Financial Times*, "to become to international investing what he has been to Britain in the 1960s".²³¹ As Slater himself was quick to point out, SW ended the sixties as "the acknowledged growth stock of the decade" and topped the decade's "Growth League" compiled by *Management Today*.²³²

Slater's intention were therefore certainly laid bare for all to see, including the country's banking regulator. He mentioned on several occasions the attraction in Ralli of taking over a bank with all licenses already obtained and his excitement of escaping the conglomerate tag and replacing it with the banker tag. During this initial transition, the Bank had become aware of SW and was made fully aware of these intentions although it did not contemplate the possibility of excluding SW from banking circles.

A further explanation of the group's intentions came in a letter sent by Slater

conflict of interest. For a discussion on the extent of such problems see Raw (1977). For our purposes here, the satellite concepts helps explain the transformation from conglomerate to banking and how banking clients were attained.

²³⁰See Slater (1977) p. 119.

²³¹*Financial Times*, "Men and Matters, Call him banker now", 30/12/69.

²³²Slater (1977) p.119.

to the Bank of England in October of that year.²³³ In the letter, Slater lays out his intention to grow the banking side after incorporating Ralli into the group and states four expected developments:

1. To expand positively the existing banking, money market and foreign exchange activities of Ralli Brothers (Bankers) Limited;
2. to reduce the loans and advances to property companies previously advanced by Ralli Brothers (Bankers) Limited;
3. to develop the corporate finance activities of the present Slater Walker Limited; in particular to provide loan facilities to large private and medium size public companies, especially those companies which look to us for financial advice and management consultancy services;
4. to continue to develop and expand under the exempt dealership status the dealing in securities business carried on by the present Slater, Walker Limited at our Gresham Street office under its Licensed Dealership.

These communications lay bare the extent to which the Bank was made aware of ongoing and expected developments at individual banks - even fringe banks such as SW. It was during this time that a line of communication seems to have been formally opened between the Bank and SW. Several letters were sent back and forth between the two parties with the purpose of providing the Bank with a thorough understanding of SW's intentions regarding its banking business.²³⁴

²³³BEA 6A70/1, J.D. Slater, d.d. 16/10/69.

²³⁴BEA 6A70/1, letters dated 5/3/69 and onwards.

The talks had a congenial tone and Bank staff seemed to trust the answers they got from SW.²³⁵ Furthering the positive lines of communication, Slater wrote to the Bank about his liking the former deputy principal of the Bank's Discount Office, John Dudley, and his desire to hire him. Making sure that the formal procedure was recognized, Slater asked the Bank for permission and to arrange the hire much like a potential groom to his future father-in-law. During another meeting Keogh told Slater that he "thought it was very much in his interest to obtain a named banker from somewhere."²³⁶ He urged him to "take nothing but the best" and went so far as to give examples of specific bankers to hire. On another occasion, the Bank acted as consultant to SW on the matter of which bank the group should deal with regarding its own finances. The Bank, again acting as a fatherly adviser, listed the pros and cons of switching banks as well as what characteristics SW should look for in a banking partner.²³⁷

Another early example of the Bank of England's interest in and attention to Slater Walker came earlier in the year following a speech presented by Slater to the Society of Investment Analysts. The Bank sent three staffers to the event who then filed a for-the-record retelling of the speech including policy aims, profit sources and developments of specific SW investments.²³⁸ It also listed the entire Q&A session of the speech and data tables presented by Slater. This part of the Bank's operations

²³⁵At one point, Malcolm Horsman, one of SW's first hires, thanked James Keogh, principal of the Bank's Discount Office, for sparing the time to have a drink with SW executives following the latter's annual general meeting.

²³⁶BEA 6A70/1, d.d. 12/11/69. These were not the only instances where SW consulted with the Bank regarding personell issues. At times they even asked whether the Bank thought specific persons would represent "a positive step forward in the development of the banking side of our business". The Bank thus played a very active role in SW's business and was kept fully abreast of minute detail. BEA 6A70/1, J.D. Slater, d.d. 30/10/69.

²³⁷BEA 6A70/2, d.d. 15/10/70.

²³⁸BEA 6A70/1, d.d. 3/3/69.

was thus similar to a modern bank's research department, gathering and analyzing public information in an attempt to evaluate the business's operation.

Amongst the main topics of discussion at the time between SW and the Bank was the management of the SW subsidiary General Guarantee Corporation which had recently sold its hire purchase interests. The question was subsequently what lending ceiling should apply to it and how it should be categorized.²³⁹ One possibility was to remove the corporation's 123 certificate. This certificate was the official stamp of approval that allowed companies to act and present themselves as secondary banks.

A reservation was made in discussion within the Bank that it should not allow the 123 certificate to become a "marketable asset". The license had in fact been estimated to be worth £40,000 which put the Bank in a delicate position whenever an acquisition of any license holders took place. This put the Bank in the position of having to judge who was worthy of a license as the license evidently entailed a substantial advantage in terms of attracting funding.

Coverage in the media was intense as ever and talk had already begun of Slater's "empire". A two part special in the *Investor Chronicle* opened with the statement that even if SW were to go into immediate liquidation, Slater's place in British business history was already assured due to him "having regenerated and enhanced the holding company idea in this country".²⁴⁰ The gushing profile went on to add that "[...] Short of having played World Cup football for England, it is hard to think where he has "missed out" en route to the top. It all reads like a tract from Boys' Own".

²³⁹The lending ceiling was a monetary policy tool used by the Bank of England as an attempt to control credit. At issue was whether to continue with the 98% ceiling or 102%. See Chapter 2 for the framework of monetary policy during the period.

²⁴⁰Investors' Chronicle (1969).

When the 1969 results were published in April of 1970, the reception was fairly positive and focused on the transition to banking. Slater further laid out the future prospects in the annual report, saying that there was substantial scope for higher profits on the banking, investment and insurance side. There were, however, no plans for any major acquisitions. Net profits for the year amounted to 6.2 mGBP while the balance sheet had grown during the year by some 43%, from 110 mGBP to 157 mGBP. The equity ratio had fallen somewhat, from 35% to 29%, as borrowing had exceeded the increase in capital with the largest funding increase, by far, coming from creditors, deposits and short term loans. This was partially offset on the asset side by an increase in cash but all in all there was still a substantial increase in maturity transformation.

This maturity transformation further increased the vulnerabilities that the group faced. A sudden negative shock to the system was liable to induce deposit withdrawal as short-term funding flew to safety. As SW moved further into banking, the danger of a bank-like run therefore increased. This was particularly the case for unconventional and new banks, such as SW, since they did not have access to traditional central bank funding at times of illiquidity.²⁴¹ SW was thus increasingly vulnerable on two fronts; creditors, especially depositors, were more likely to withdraw funds from less traditional banks and when such deposit flight occurred, the probability of assistance was lower.

While vulnerabilities were increasing somewhat, it can be argued that SW was doing a relatively better job than others of maintaining liquidity. Indeed, the

²⁴¹While such funding could possibly be forthcoming in certain instances, it is safe to assume that the assurance wasn't in place. Furthermore, it is highly questionable that institutions exhibiting such rapid growth as SW was had developed liquidity management systems to the extent as say the Big Four had.

Economist praised the group's cash position at the time, saying that the "accounts [...] reveal the company's strong liquid position [...] During 1969, Slater Walker's talisman was its 25mn cash."²⁴² The group was thus thought to have a keener eye on its liquidity position than many others but the coverage at the time did not mention that even greater than the proportional cash increase was the increase in loan volume.

What was mentioned was by how much current assets exceeded current liabilities - a common way of looking at ratios at the time. This was considered to be a barometer of how readily a company, or bank, could tackle a temporary liquidity dry-up. For SW, current assets did indeed exceed current liabilities by a sizable 42 mGBP but the vast bulk of current assets consisted of debtors, loans and advances. While these loans must have had a maturity of less than a year to qualify as current assets, it is completely unclear - even unlikely - whether such assets could be redeemed with the speed required if deposit withdrawals started gathering pace.

Additionally, it cannot be determined whether these were current assets in the economic sense. While a loan maturing in under 12 months certainly qualifies as a current asset in an accounting sense, there could be an implicit agreement between the lender, SW, and the borrower that the loan will be rolled over when it matures with little thought given by the lender as to repayment. As mentioned in various places in this chapter, SW's closeness to many of its debtors, e.g. through the satellite concept, increased the likelihood that the debtor's problems could not be distinguished from SW's problems.

Therefore, if any of the satellites were to run into difficulties during a downturn, it could certainly be argued that since SW had funded a substantial part of the

²⁴²The *Economist*, "Sold Jim Short?", 2/5/70.

satellite's operations, SW could not easily withdraw its funds as this could prove lethal to the satellite with potential additional contagion effects to other satellites.

This is an example of problems arising from the so-called entity concept in accounting whereby the true relationship between two seemingly disparate parties becomes one of a single party as trouble arises.²⁴³ Two well-known examples of this entity problem can be found during the recent financial crisis. The first is the use of off balance sheet liabilities, so called SIVs and SPVs, that were taken onto banks' balance sheets when the SPVs experienced liquidity and solvency issues. The seemingly independent entity thus became dependent on the host bank, see Brunnermeier (2009).²⁴⁴

Another comparable example is the morphing of bank and sovereign risk. This was for example the case for separate Icelandic banks during the recent crisis whereby each bank ceased to be a standalone risk and instead there originated an "Icelandic risk" as the expectation was that a failure by one bank would through contagion such as counterparty exposure lead to the collapse of other domestic banks.²⁴⁵ It can also be argued that this was the case for many periphery European countries during the Eurozone crisis.²⁴⁶

The SW satellites exhibited this same property of seeming independent while still being connected to the host. This vulnerability would have been very hard to gauge in real-time but for anyone tasked with ascertaining the soundness of a bank's finances would have needed to look into the genuine, as opposed to stated,

²⁴³See Husband (1954) for an early discussion of the concept. For a more recent discussion see IASB (2010) and FASB (2008).

²⁴⁴See also Papanikolaou and Wolff (2013) who explore the interplay between on- and off-balance sheet leverage in the recent global financial crisis.

²⁴⁵For a more detailed explanation of this process, see Benediksdottir et al (2010) and Danielsson and Zoega (2009).

²⁴⁶On this issue, see e.g. Acharya et al (2011).

independence of various, related entities.²⁴⁷ In addition to the entity problem, The Economist went on to reveal an additional, related weakness:

In an active investment group like Slater Walker however it is difficult to be precise about something like a cash figure. It is entirely possible that much of the 15m has been invested in short term dealing situations, and the reassurance, in today's bear markets, of all that money sitting safely on deposit cannot necessarily be taken for granted.^{248,249}

Issues such as these did not, however, figure heavily in the media and investor coverage and issues of liquidity, related parties and potential runs were not a high priority on Slater's mind at the time, nor the general investor's for that matter. The coverage at the time continued to be more focused on the more general transition from conglomerate to banking. The *Times* christened this process "turning respectable" while the *Economist* stated that the role had "shifted not a little, away from industry, to finance and investment [...] the 1969 Slater Walker results reflect the changing emphasis, with 6.1m coming in from investment banking against 4.6m from the industrial side before head office expenses".^{250,251}

The Bank of England meanwhile was unsure about the nature of the accounts and what to make of them. "At first glance this does not much look like a merchant bank's balance sheet" was the view offered within the Bank upon seeing the accounts.²⁵² Despite having established regular dialogue with the company itself, the

²⁴⁷This function is commonly referred to as stress-testing in modern regulation and has come to signify a large portion of regulators regular investigations.

²⁴⁸The *Economist*, "Sold Jim Short?", 2/5/70.

²⁴⁹This argument is similar in structure to recent research on safe assets and information sensitivity, see for example Gorton (2010).

²⁵⁰The *Times*, "Slater's first half earnings slow", 8/8/70.

²⁵¹The *Economist*, "Changing camps", 11/4/70.

²⁵²BEA 6A70/1, d.d. 16/10/69.

Bank was looking at the holding company's accounts as it was, remarkably, unaware at this point of the distinction between the holding company, SWS, and the banking subsidiary, SW Ltd.

The Bank went on to criticize the accounts, stating that a stock item and overdrafts were not fitting for a bank's balance sheet. It was also unhappy with the lack of detail in the accounts, singling out investments saying they had "no way of knowing the types of securities in the figures". The analysis concludes with a comparison of ratios between SW and comparable banks. The ratios calculated were quick assets to deposits and free resources to total liabilities. SW came in first place in the former and second place in the latter, out of five allegedly comparable banks.²⁵³ The numbers, despite being taken from the SWS accounts and thus not at all comparable, therefore gave the Bank superficial reassurance that the banking business of SW was not only steady but also, if anything, ahead of its competitors.

Apart from SW's strategic realignment, much of the attention at the time focused on the realization that the growth rate of previous years could not continue. Despite these reservations, the following months featured a sizable increase in the number of satellites and the banking side also continued to grow as local branches were set up across the country.

By the end of 1970, the only remaining major industrial interests were the rubber manufacturer Crittall-Hope and the textile company Phillips Brocklehurst. Despite the earlier predictions that the group couldn't keep growing at such a rapid pace, when the 1970 results came in it turned out that the balance sheet had grown another 16%. While certainly not as exaggerated as prior growth, this was a non-

²⁵³*Ibid.* The other banks used for the comparison were Hill Samuel, Samuel Montagu, Schroder and Warburg. All banks that were more established and ingrained into the City environment.

trivial expansion for a company in the transition towards becoming a bank. The chairman's statement - always a highlight of the results and covered extensively in the media - was strictly positive, highlighting the banking side's contribution to profits especially in light of the testing market conditions during the year. However, the growth on the liability side once more came primarily from short term borrowing while the asset side growth was far less liquid.

In fact, out of a 25 mGBP increase in the balance sheet, short term lending and deposits accounted for 16 mGBP. As for the assets, half of the increase was due to loans which were not disaggregated further in the accounts. The bulk of the remaining growth was in domestic and foreign equities. As previously mentioned, while equities are a potentially liquid asset category, the specific equities that Slater preferred were small-cap and generally large holdings. Slater himself said that

*it made more sense to build up significant shareholdings than to dissipate funds over a wide range of companies. The underlying principle was that it would be better to have ten shareholdings of 9 per cent than ninety shareholdings of 1 per cent. The reason for this was that a 9 per cent shareholding carried with it a measure of influence.*²⁵⁴

While this argument certainly has some logic and is not unheard of, this advantage of influence came at the cost of diminished liquidity - especially when dealing with smaller, listed firms. Slater would later concede to this point having witnessed first-hand the adverse effects of holding illiquid positions.

Upon receiving the company's annual report, the Bank's analysts deemed 1970 to have been a very good year for SW. The balance sheet raised some issues however,

²⁵⁴Slater (1977) p.191.

especially the liquidity ratios which were satisfactory until one remembers that a third of total deposits were group deposits. This goes back to the principal-agent issue mentioned above and was a slight cause of concern for the Bank.²⁵⁵

By early 1971, however, Slater himself had become worried about the number of satellite companies and how scattered they had become. The satellites are quite relevant to the purpose of this chapter as their structure represented an indirect and somewhat contingent liability which seemed separate to the group itself in normal times but was revealed to be connected to SW when trouble arose. An example of a somewhat successful satellite, Cornwall Properties, illustrates this effect.

SW had bought a 40% stake in Cornwall in 1970 through the banking subsidiary.²⁵⁶ To spin-off the holding from its balance sheet, SW agreed to lend one of its own executives personally the amount needed to purchase the shares from SW. In turn, Cornwall purchased for shares one of SW's minor subsidiaries. Cornwall then purchased several other companies in various industries, including fertilizers and seeds as well as property, with much of the funding being underwritten by SW. The market capitalization of Cornwall, at the time of the spin-off, was approximately 1 mGBP but its subsequent purchases, and rise in equity prices, led to a market cap of 30 mGBP by the end of the year.

SW's direct and indirect exposure to Cornwall at any given point would be hard to estimate even if the necessary data was available. What can be said however is that by underwriting purchases that vastly exceeded the borrowing firm's prior size as well as lending the equity stake SW had exposed itself further than a traditional

²⁵⁵BEA 6A70/2, d.d. 18/5/71.

²⁵⁶The offer, made on May 7th 1970, came amidst a number of similar offers made by SW and affiliated companies during the period. The Cornwall offer was followed with an offer for another property company, Sterling Land Co Ltd, three months later, also by the banking subsidiary. Source: London Metropolitan Archives CLC/B/127/MS29333/088.

bank which partially finances an expansion of an unrelated business. This point was made clearly in *The Sunday Telegraph* in late 1971. While noting the apparent success that the SW satellites had enjoyed thus far, Patrick Hutber, warned that "It is also true that Slater is not yet apparently in a position to be able to afford to let a satellite fail. If one falters [...] there is no alternative but for the head office team to move in, take over and sort it out."²⁵⁷

Slater himself seems to have worried more about the satellites in general, as opposed to this specific entity aspect, and whether they were too diverse and numerous to manage. Despite these worries, the SW empire continued to expand rapidly. The Bank took notice of the fact that deposits from outside the banking group increased by 143% to 88 mGBP during the year but noted bullishly that the group was still "very well placed to expand further".²⁵⁸

Later that year the group announced a new investment trust, appropriately called Slater Walker Investment Trust (SWIT). The trust had the effect of increasing the group's assets under management by 20% in addition to increasing substantially the group's management fees. Therefore, while the transition phase was well under way and there was talk of simplifying and removing industrial interests, there were no signs of shrinking the group or even consolidating the balance sheet to any extent.

The Bank of England meanwhile continued to monitor SW's operations closely, if somewhat informally. A six page biography on Slater was compiled for the Bank which detailed his education, business ventures and personality. It even goes so far as to describe in detail his character traits and listing his hobbies and activities. Slater is for example said to have a "puckish sense of humour and an apparently

²⁵⁷As quoted by Slater (1977) p.153.

²⁵⁸BEA 6A70/2, d.d. 12/5/72.

easy manner with people in all walks of life".²⁵⁹

It is hard to establish who the intended reader of the biography is but it reads as if to serve as a background file for any Bank staffer who was to communicate with Slater. For example, a copy was to that effect sent to the Governor a couple of years later, prior to a meeting with Slater.²⁶⁰ It was, according to the biography, too early to pass judgement on Slater as a merchant banker but he is said to have "increased the quality" of Ralli "out of all recognition" since he took it over. It is hard to see how such a view was made in light of the limited data that the Bank was working with.

The assertion was also made that his recent triumphs led to his words and actions being "enveloped in a new and well-deserved aura of respectability." Furthermore, due to SW's rapid activity in takeovers and mergers, the "advice team", or corporate finance team, is said to be as good as any in the City. While the language was more restrained than that of the general media, Slater's reputation was obviously rubbing off on people within the Bank who generally had a much more conservative vocabulary than the media.²⁶¹

The Bank held regular meetings SW's executives, mostly with John Ford, SW's financial director, following which reports were filed for senior Bank officials. These reports detailed the amount of deposits that the banking arm of SW held at any given time and the breakdown of deposits into currencies. The reports also listed the proportions of the items on the asset side of the balance sheet. These reports

²⁵⁹BEA 6A70/2, P.J. Keogh, d.d. 13/12/71.

²⁶⁰BEA 6A70/3, R.D. Galpin, d.d. 27/4/73.

²⁶¹This stands in sharp contrast to the Bank's thoughts following its rescue program. By then the mood towards Slater had changed dramatically and the Bank was now of the view that "under Slater, Slater Walker Securities was a one-man band with its affairs in such a tangled skein that it was virtually impossible for anyone to tell the true position of the group and of each separate subsidiary." BEA 6A70/18, d.d. 4/12/75.

show no immediate rise of concern during the early 1970s although the analysis was quite superficial. Little attention was given to asset quality or stress testing of any form which left the Bank's overview incomplete and over-reliant on aggregated, low frequency data on the one hand and the staff's opinion of SW's executive team's character on the other.

The positive view within the Bank at this point was reflected in October when SW was officially granted permission by the Bank's Exchange Control to issue, without limit, negotiable Certificates of Deposit denominated in sterling. The group was also given permission to issue Certificates of Deposit in U.S. dollars, subject to the condition that the C.D.s had a maturity of less than five years. This was another boost to SW's credibility and a further step towards becoming part of the financial system proper.

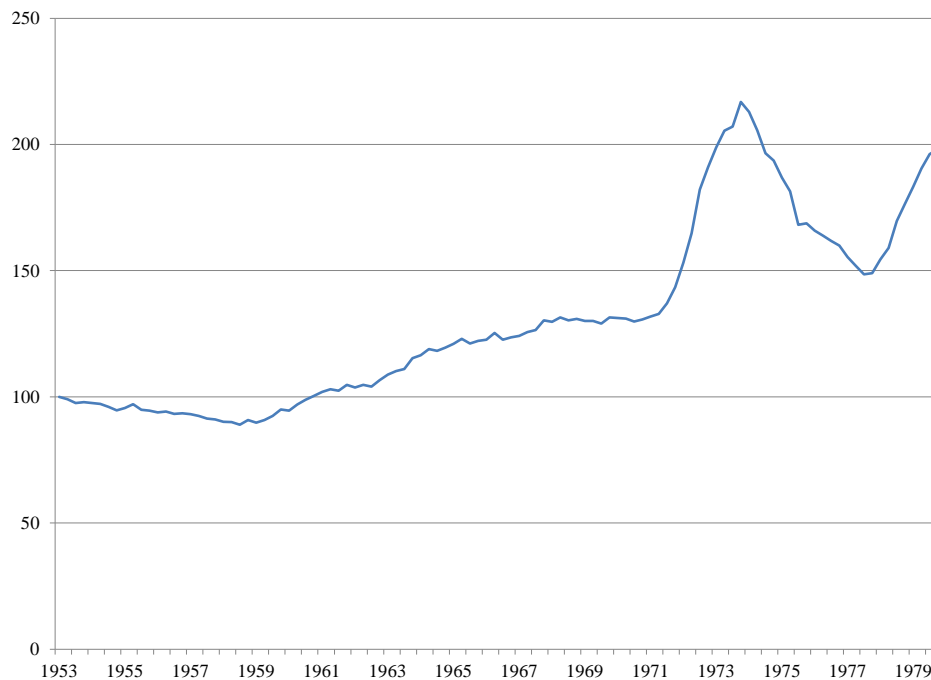
The proceeds of these and other fundraisings in the start of the decade went primarily towards property developments. The British property market was experiencing the rapid rise which would eventually place it at centre stage during the secondary banking crisis itself and SW played full part in the housing mania.²⁶² Figure 4.4 shows that real house prices had been drifting upwards for a long time and then took off rapidly after 1970 before correcting following the crisis. This dramatic rise is despite the sizeable rise in inflation, meaning that in nominal terms - which is of course how banks' balance sheets are measured - house prices rose astronomically.

Funding for such projects thus came easily at the time and especially so to SW. As documented by Slater:

Credit was easy to obtain and in particular we could borrow dollars apparently very cheaply on a medium-term basis. Our expansion in property,

²⁶²On the property aspect of the secondary banking crisis, see Reid (1982).

Figure 4.4: Real House Prices in the U.K. in the Post-War Period



Source: Nationwide index of all houses, author's calculations.

Note: Series deflated with monthly RPI figures, re-done on quarterly basis.

*like our entry into the credit finance business, was very much stimulated by the availability of easy credit. With growing inflation rates the mood of the country was that it was better to have money in things than in cash and this mood did of course fuel the stock, land, property, picture and commodity markets. [...] Money was still to be made, but with hindsight it was getting dangerous to be a buyer because if the mood changed it would be difficult to change tack, realize profits and degear.*²⁶³

When the annual report for 1971 was released, the effects of this cheap credit

²⁶³Slater (1977) p. 152.

could readily be seen. The group as a whole, SWS Ltd, had grown by over 50% while growth on the banking side, SW Ltd, was almost 80% with profits well above prior expectations.²⁶⁴ While the leverage ratio hadn't increased much, total lending had.²⁶⁵ The group now had over 200 mGBP of debt and a large part of it arose from short-term borrowings which bore substantial rollover risk in case of a business cycle downturn.²⁶⁶ The chairman's statement was very optimistic, highlighting the extremely healthy cash position, the strong management team and excellent growth prospects.²⁶⁷

The transition to banking was also apparent in the accounts as 70% of the group's profits were due to the finance, investment and insurance side - the rest from commercial and industrial holdings. The banking side was now bringing in a profit of 2 mGBP as opposed to just over half a million the year before. With such a rapidly changing balance sheet, traditional ratios said relatively little about the true state of the bank. Its return on equity was an astronomical 49% and return on assets were 4%.²⁶⁸ This fact did not go unnoticed at the Bank of England who, as previously mentioned, looked at these exact ratios when monitoring potential outliers and the state of various banks.

Another core property of the group is the bank's dividends which were very high right up to the crisis, as seen in Figure 4.5. The average yearly payout ratio from

²⁶⁴Slater Walker Limited Report and Accounts 1971.

²⁶⁵As there were no share offerings during the year, the increase in equity that accompanied the increasing debt came purely from undistributed profits. These profits were not itemized fully but a substantial part of them arose from capital appreciation which awoke questions of earnings quality.

²⁶⁶Out of the 97 mGBP increase in the balance sheet, over 50 mGBP was in the "Creditors, deposits and short term loans" section. Bank overdrafts and unsecured loan stocks accounted for another 16 mGBP.

²⁶⁷Slater Walker Securities Reports and Accounts 1971; Chairman's Statement.

²⁶⁸It was a marginally lower 45% when using year end equity in the denominator as opposed to the average during the year.

1969 to 1974 was 73.6% and never dipped below 60%. The bank's equity ratio thus struggled to increase and stood at this point, at year end 1971, at 9% (down from 13.4% a year earlier). Furthermore, there was no oversight regarding the relationship between earnings quality and dividend payments. The accounts do not detail what proportion of profits was realized capital gains and what portion was unrealized increases in asset value. If the latter accounted for more than the retained earnings, public deposits, and other forms of debt, were in effect being used to pay dividends.

Slater himself held a substantial amount of shares, as mentioned elsewhere. In 1968, his holdings amounted to 800,000 shares and were to reach over 1.3 million a few years later (although he was quite active in the market for SW shares, both selling and buying). This amounted to roughly 5% of total shares outstanding with other directors owning much less. It is, however, impossible to calculate his indirect holdings, held through companies, as the full list of shareholders is not available.²⁶⁹

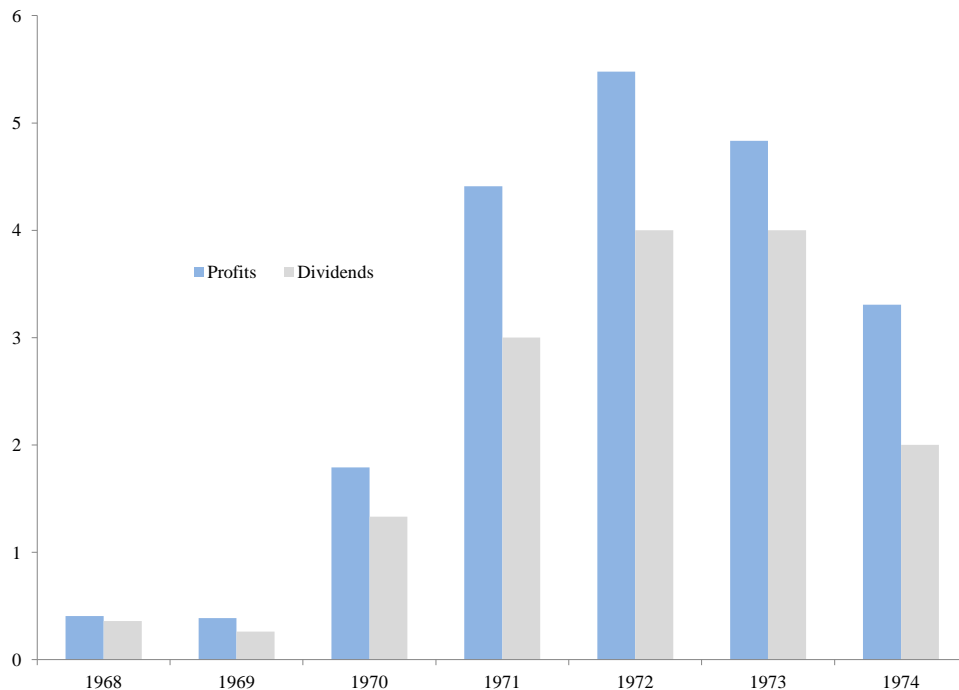
Arguably the most important item on the bank's balance sheet, from the standpoint of financial stability and the eventual need to provide public assistance, was the item labelled "current, deposit and other accounts". This item was effectively the part of the balance sheet that the Bank of England sought to safeguard during the crisis. It included public deposits that the bank had raised and would ultimately be considered a category that the bank could not be allowed to default on.

The category had grown from 36 mGBP to 86 mGBP during the year but did not figure exclusively in the Bank of England's discussions. In fact, SW's growth during the year had in some sense exclusively been funded by deposits as their increase exceeded the balance sheet's total growth.²⁷⁰ Nonetheless, the Bank continued its

²⁶⁹His personal portion of the 1970 dividend would, for example, have amounted to approximately 80,000 GBP according to Raw (1977).

²⁷⁰There was a decrease in the item 'group companies' which meant that deposit growth amounted

Figure 4.5: Slater Walker Ltd yearly profits and dividends, in mGBP



Source: Slater Walker Ltd accounts.

procedure of assessing the firm's strength via casual aggregate ratios and informal discussions with its executives.

SW's share price had also done well during the year. It had risen by a total of 82% which is another sign of the rapid expansion still at hand. In comparison, the market had risen by just over 40% which again indicates SW's rapid rise, both in absolute and relative terms.²⁷¹ The Bank of England had received an early draft of the accounts for the banking side and were quite impressed. Unlike the previous year when the Bank reviewed the group accounts as if they were a bank, this time

to over 100% of growth.

²⁷¹Other fringe banks, such as Keyser Ullman and F.N.F.C. had been rising more or less in line with the market

they were relieved to see that the balance sheet had "as purely a banking look as is possible".²⁷²

The Bank also approved of the composition of the balance sheet, this time calculating the same ratios as the year before but for the actual banking side. Free resources to public liabilities and liquid assets to public liabilities revealed a "powerful" capital position although a slight dig crept in when noting that netting out intra-group positions made all ratios look better and gave SW the "appearance of being less of a group washing machine".²⁷³ In the aftermath of the crisis, these intra-group positions were to be cited as one of the main factors of SW's downfall.²⁷⁴

1972 was to be the year in which the SW empire was at its peak. The group's share price reached its all time high of 412p on May 1 and funding came with relative ease.²⁷⁵ It was also at this time that the *Telegraph's* City Editor Kenneth Fleet coined the popular term "Slater Walker government" which referred to the Heath government's approval of the ongoing developments within the financial system in general and SW in particular.²⁷⁶ The new focus on efficiency and finance within the British economy was lauded and SW was used as a prime example of the way ahead.

In the first half of the year the growth of the group showed no signs of abating. 10 mGBP was raised in long-term borrowing early in the year and a further 15 mGBP by issuing Sterling/Deutschemark bonds and convertible dollar loan stock. The latter

²⁷²BEA 6A70/1, Discount Office, d.d. 24/4/70.

²⁷³*Ibid.*

²⁷⁴See especially the discussion of the accountants' report below.

²⁷⁵In its annual City Growth League, which SW topped yet again, Management Today reflected that the group's performance "again confirms the unassailable lead which the Slater operation has established in perfecting its peculiar financial art form", as quoted by Slater (1977) p. 168.

²⁷⁶The context of the term was the developing 'New Toryism' whereby financiers such as Slater were seen as the future of the British economy. The term was also a reference to Walker's dual role in SW and the Conservative Party. For more on this relationship see Blackhurst (1996) and Kynaston (2001) p. 453.

was raised to finance investments in listed shares in several European countries. The emphasis on foreign funding continued with a further 50 mCHF and 60 mNLG raised in July. This was a clear sign that despite worries - both internal and external - about the feverish investment environment and the need for prudence, SW saw no reason to slow down at this point. The group also advertised aggressively locally. One advertisement stated that it didn't matter whether an investor had £300, £30,000 or £3,000,000 - they could take advantage of the group's investment management services.²⁷⁷

So while Slater reasoned that he had become "bearish about the market" he also acknowledged that the group was still "borrowing money long term to invest in property and to expand our banking and overseas interests". To that end, SW was, according to Slater, "like everyone else in banking at that time, [...] busy actively seeking opportunities to lend more money".²⁷⁸ In fact, Slater envisioned that within 10 years the market capitalization of the group would have grown from the current 200 mGBP to 1,000 mGBP. At this point, Slater believed that SW would own "a significant percentage of every major asset situation in Britain" and well on its way to achieving his ultimate objective of becoming the biggest investment bank in the world.^{279,280}

By now, the general consensus was that SW's business was that of an international investment bank. This tag did not have a formal definition as in the current parlance but was considered different than the traditional merchant bank of the

²⁷⁷ *The Financial Times*, 01/24/1972 p.5

²⁷⁸ Slater (1977) p. 160.

²⁷⁹ Raw (1977) p.306.

²⁸⁰ *The Sunday Telegraph*, "How Slater Succeeded in Spite of Himself", January 23rd. Following this revelation of his ultimate objective, Slater added that "It's like a knife and butter, and we're the knife."

time. It was generally seen as a catchall phrase for a new kind of bank which, in current terms, can best be seen as a mixture of private equity, proprietary trading and corporate finance.²⁸¹

While Slater's autobiography is written with the benefit of hindsight, his take on developments during this crucial period is noteworthy. As previously mentioned, credit remained plentiful but there were problems brewing in the property sector and the start of the secondary banking crisis was just around the corner. Slater came to regret SW's policy during this period:

*we had taken on two new senior banking executives to help us extend the purely commercial side of our banking business: one to concentrate on building up the branch network and deposit getting, the other to expand our loan book. This policy was a cardinal error on my part because the pure lending of money is a highly professional business. It is quite different in investment banking, where in parallel to a commercial loan one is also taking an equity stake, on which the upside potential could be very considerable. In pure lending the upside potential is only the 'turn' on the interest receivable, less the cost of borrowing plus overheads, which in our case probably worked out at about 2 per cent per annum. Bearing in mind that the downside risk on any loan is 100 per cent the odds were substantially against our being successful, especially as we were going with the crowd and actively competing for business.*²⁸²

The passage paints a somewhat naive picture of banking and the structure of finance. SW was going into banking full steam ahead during these years but

²⁸¹See Slater (1977) p. 162 and Channon (1977) p. 70. These characteristics are most in line with what is now termed a universal bank.

²⁸²Slater (1977) p.161.

its architect seems to have only thought about the inner mechanics of commercial banking following the crisis. The well-known problem of newcomers attracting riskier customers than traditional, incumbent banks did not register with Slater. The Bank of England's stand-off approach during this period is noteworthy, especially in light of the heavy emphasis the Bank placed on suitable personalities for bank executives when thinking of its attitude towards individual financial institutions.²⁸³

With the rapid growth of the firm and its successful move into banking, SW had become disinterested in handling individual's small portfolios. It had instead built up positions in unit trusts, insurance bonds and investment trusts. It had hence become, in addition to something close to an investment bank, a traditional asset manager with some 250 mGBP under management in 1972. An important part of the asset management side was the so-called annuity business which was linked to insurance bonds. This vehicle came to be seen as an alternative to building society deposits which were regarded as a safe place to store ones savings. SW was able to offer considerably higher interest rates on these bonds, attracting a lot of de facto deposits, and thus increasing the systemic risk of the group as a whole from the standpoint of its regulators.

At the same time as these funds were being raised, sentiment was starting to turn on various aspects of the financial sector that directly related to SW's operations. This included criticism of the satellite concept, so-called "warehousing" where a fee is paid to an institution for holding one's assets, as well as the merger and acquisition frenzy in general. There was also increasing scepticism around the value of many takeovers and the mantra of increasing efficiency.²⁸⁴ Setting free deadwood industrial

²⁸³This point is highlighted in the discussions within the Bank regarding executives of supervised institutions. See for example the description of both Slater and Goldsmith elsewhere in this chapter.

²⁸⁴The more cut-throat approach to business which was gradually gaining a foothold in Britain

companies was no longer considered a sufficient rationale to convince investors and the media of a deal's worth.

One of the most scathing criticisms came in a *Sunday Times* article in the middle of the year.²⁸⁵ The article lays bare the extent of dealings in the satellites attributable to SW itself. Concerns were also raised on the price formation of listed shares whereby a large shareholder is active in dealings of a relatively illiquid stock. The article caused enough commotion for SW's Ford to write to the Bank about it, listing the article's various shortcomings and misrepresentations.²⁸⁶ No evidence exists of the Bank either discussing the merits of the article or replying to Ford on its substance.

Amid the increasing negativity, the 1972 results looked on paper to be business as usual. While the coverage following the publication of the results focused on the income statement and the 28% profit increase, the balance sheet showed yet another year of extraordinary growth. The group's assets had grown almost 70% during the year and stood at 469 mGBP at year end. This turned out to be the largest absolute growth that the group would witness. Once again, the growth was primarily achieved through short term borrowing and deposit increases which amounted to 92 mGBP.

The banking arm exhibited even more exaggerated growth than the group itself with the balance sheet ballooning 96%. Short term deposits at the bank doubled

was quite controversial. Some, however, argued for a link between this increased focus on efficiency, primarily via factory closures and layoffs, and the upsurge in productivity in the 1980s. Muellbauer (1986) provides an overview of the competing explanations for the growth in productivity. Oulton (2000), looking at the period from 1973 to 1989, argues that closures of branches or companies were not the reason for increased productivity. Instead, firms where employment fell were responsible for the greatest part of the productivity growth.

²⁸⁵*Sunday Times*, "Seven Days in the Life of Jim Slater", 7/5/72.

²⁸⁶BEA 6A70/2, J. Ford, d.d. 12/6/72. The article, and others like it, were also seen to be amongst the reasons for the reorientation of the group and cancellation of certain ventures such as the Brazilian branch of SW, BEA 6A70/3, W.J. Hall, d.d. 18/7/73.

as the bank aimed to substantially grow its commercial banking activities and the equity ratio dropped to 7%.²⁸⁷ Bearing in mind that it was in terms of the absolute amount of SW liabilities that the Bank of England stood in line to guarantee if the group needed saving, there was remarkably little discussion within the Bank on SW's increased holding of public savings. One of the primary reasons for this indifference seems to have been the large proportion of funds that went into money-market investments. This, according to the Bank, kept the group very liquid and served to subdue concerns about the bank's operations.

The Bank was, however, a little concerned about profits and the unusually high profit ratios that the banking side achieved. Bank staff calculated both the return on capital and the return on total funds to produce the following table of comparison.

Table 4.3: Bank of England Comparison Report - Year End 1972

	SW	Barings	Kleinworts	Morgans
Pre-tax profits (mGBP)	11.9	4.6	13.2	3.2
Return on Capital	90%	30%	38%	27%
Return on Total Funds	6%	2%	2%	1%

Source: Bank of England Archives 6A70/3, document dated 4/7/73.

While the disparity is most striking in the return on capital, it was the return on funds that perplexed the Bank the most. Accompanying this table was the analysis that

[...] it is virtually unknown for any listed bank to achieve a higher margin than 2.5% on its total funds (cf. Cedar Holdings which reaches 3.4%). Usually a high figure indicates a large proportion of profits from

²⁸⁷Slater Walker Limited Reports and Accounts 1972; Chairman's Statement.

*non-banking activities. More than half of Slater, Walker's funds are invested in money-market assets on which the margins are probably very slim. How then do they achieve their 5.6% margin?*²⁸⁸

Noting that SW were at the time principal merchant bankers to only 14 companies, the Bank could think of only two possible origins for the profits; fees from other companies within the SW empire and dealing in securities. The Bank was evidently becoming, if not worried, then a tad unsure about SW's operations. While never connecting the dots between its own zero-tolerance policy for public deposit losses on the one hand and the foggy nature of SW's business on the other, the Bank did question the published numbers and notice the difference between SW's ratios and those of other merchant banks. As the Bank was by nature very conservative and traditional, it was quite astute at recognizing an upstart that seemed to defy the perceived laws of nature within the City, but it seemed completely unable to take any action to prevent the escalation of such developments.

Additionally, and separately from the sheer amounts involved in inflow of funds, were the multiple channels with which SW was attracting funds. The mainstay method of bond issuance by SWS and deposit and money market participation by SW Ltd was thus complemented by the myriad of asset management techniques mentioned above. The investment trusts, unit trusts, insurance business and various other vehicles all served to gain funds to acquire and fund further business within the SW empire. Little resistance was given to this capital vacuum by the Bank of England as it only considered traditional deposits as its business, as mentioned elsewhere. The only obstacle that groups such as SW thus had to face in their rush to growth was presenting investment opportunities that the general public considered

²⁸⁸BEA 6A70/3, d.d. 4/7/73.

attractive.

The hectic pace of the year is perhaps best exemplified by a year-end article in the *Investors Review* which detailed the various SW deals of 1972. In what it described as coverage of "only the main events in the calendar" and excluded most of the major property deals, which was arguably the most active sector of the year, the article included a list of 62 SW dealings during the year. These included capital raising, takeover bids and mergers all over the world including the United States, Germany, Australia and Singapore. The group had truly gained a global, and soon to be seen as an unmanageable, reach.

4.4 The Fall of Slater Walker

4.4.1 Gradual Decline

1973 marked the beginning of the secondary banking crisis. Continuing on from 1972, investor sentiment and media coverage turned against the high flying methods and firms of the previous years. SW was particularly vulnerable to such sentiment changes as it was highly leveraged and its business methods were reliant on the group's credibility and reputation towards investors. Indeed, the accountants' report into SW's failure specifically highlighted the group's maturity mismatch as one of its main weaknesses.

During this turn to negativity, Slater was busy selling off the few remaining industrial concerns and building up cash. Media coverage at the time shows that he had more negative market expectations than most, and in fact came in for some criticism when he aired the view that share prices were too high. Furthermore, by his own admission, Slater had become somewhat weary of the go-go environment he

had created and wasn't adverse to the possibility of leaving SW. It was amidst this backdrop that Slater entered into merger negotiations with the commercial banking traditionalists at Hill Samuel (HS) - a deal that would have created the City's largest merchant bank. A merger would enable Slater to place SW inside a more staid firm and subsequently take a back seat in the combined company.

An additional advantage to the merger from SW's standpoint was that Hill Samuel was a member of the Accepting Houses Association. This stamp of approval gave HS insider status within the financial system or, in the words of Raw (1977), "the coveted inner ring of banks whose credit is almost underwritten by the Bank of England".²⁸⁹ Raw also states the following reason for the attempted merger by SW:

*In retrospect it is clear that Slater Walker needed a merger in early 1973; for Slater Walker was then essentially a facade for share dealing, and with stock markets around the world starting to fall dramatically, share dealing profits were going to be much harder to make. Indeed it was soon to be revealed that Slater Walker's profits were falling, for the first time ever, at the time the merger was proposed.*²⁹⁰

The extent to which SW had become a "facade for share dealing" is debatable but it is clear, again in retrospect, that the sprawled out nature of the firm's operations were to complicate matters in the following years. Raw furthermore argued that the merger would provide Slater with much needed respectability and security as well as power behind the scenes as opposed to his more familiar power based on

²⁸⁹Raw (1977) p.327.

²⁹⁰Raw (1977) p. 329. It should be noted that Slater himself disagrees with this argument and places heavier emphasis on his longing to withdraw from the scene. In hindsight, these opposing views can perhaps be reconciled by the fact that the deal's major advantage would have been to attach SW to a traditional bank in light of coming difficulties although this may not have been the reason for entering the negotiations.

”publicity and charisma”. This power and security was to come mainly from the fact that HS had 670 mGBP of assets under management compared to SW’s 250 mGBP.

The merger talks attracted significant attention with the most common view initially being that the deal was a natural one to pursue. SW’s investment banking operations and HS’s commercial banking were thought to provide good synergy. According to the *Financial Times*, the Bank of England supported the deal which was far from a formality as the Bank took great interest in any merger involving members of the Accepting Houses Committee.²⁹¹

The publicity and interest in the deal, however, gradually became the reason for its cancellation.²⁹² As scrutiny intensified, the deal had given investors and the media the chance to have a second look at the SW group and this time in a bearish environment. Several articles started to question the complex business methods of the firm and criticized both the dealing nature of its profits as well as the potential conflicts of interest that arose within the group’s structure.

Institutional investors also had concerns which were reflected in a substantial drop in both companies’ share price following the announcement of the merger. Amidst this wide-reaching criticism and unwanted attention, the two parties finally agreed to call the deal off and in a joint statement sent to shareholders stated that the talks had ”revealed fundamental differences of work-style and personalities, which both Boards now consider could prejudice the successful implementation of the merger”.²⁹³

Following the breakdown in talks, SW faced something of a existential crisis.

²⁹¹ *The Financial Times*, ”Slater Walker-Hill Samuel Merger”, 27/4/73.

²⁹² This view is supported by both Slater (1977), see p. 180, and his main antagonist Raw (1977), see p.333, as well as in the media coverage at the time.

²⁹³ BEA 6A70/3, d.d. 4/7/73.

The deteriorating market conditions meant that buyouts, funding and profit opportunities had become much harder to come by - even for SW - and the criticism that had come to light during the merger talks did not disappear following the cessation of talks. A board meeting was held to discuss the situation whereby pressing objectives were decided upon, the most important of which was to simplify the group's financial structure and a letter was consequently sent to all shareholders.²⁹⁴

Slater himself had by this point become worried about the general financial environment as well as SW's somewhat vulnerable position. Efforts were thus to be made to start selling sections of the hastily accumulated property portfolio and liquidate other positions as well. On the banking side, the intention was to gradually contract the loan book to prepare for trouble ahead.²⁹⁵ While the loan book reduction never materialized, SW was somewhat successful in selling its property, most notably, a house in the City which had been acquired for 9 mGBP but was sold at over 22 mGBP.²⁹⁶

By the end of the year, Slater had come to realise that SW's asset position looked "very fragile". After reviewing the nature of each asset class at a time of market decline and illiquidity, he came to the conclusion that the group only had 85 mGBP with which to resist "the coming storm" while consolidated lending totalled over 450 mGBP.²⁹⁷ Only at this point did the group's management team start to

²⁹⁴The other objectives were improving the quality of profits by lessening dependence on investment dealing, improve the level of disclosure and improving liquidity.

²⁹⁵It should be stressed again here that the stated intentions of Slater come from his own recollections following the crisis. These intentions are considerably more defensive than the actual measures taken. Apart from the well known difficulty of scaling back loan books once a market downturn has commenced, SW even continued with expansionary plans such as an offer for Franklin Stores which was to signify the group's move into the U.S. market.

²⁹⁶The buyer of the estate was the Singapore Monetary Authority which subsequently came to regret the purchase. The transaction was to have a significant negative effect in the so-called Spydar case, discussed below.

²⁹⁷The 85 mGBP figure was reached by subtracting cash from gross assets and categorizing the

realise that properties and loans became vulnerable during downturns - no less than shares. By Slater's own admission, looking at the balance sheet in a new "bearish light", he readily saw large vulnerabilities.

While the expected losses were never addressed in the group's published accounts, SW's executives were well aware of the potential downside. The property portfolio was certain to decrease in value and a prudent reserve was estimated as a 20 mGBP loss. Slater also remembered "with horror how we had been competing to lend money" and thought another 20 mGBP of losses could easily be seen on the loan book. The greatest vulnerability however was in listed investments, i.e. share dealings, where, by Slater's calculations, 50 mGBP was a conservative loss estimate. He then compared this 90 mGBP total loss estimate to the equity buffer of 85 mGBP and came to the conclusion that the company could easily become insolvent.

The annual report for 1973 confirmed this dire outlook while at the same time the balance sheet was at its all-time largest. Total assets had ballooned again and now stood at almost 600 mGBP, up by 25%, in comparison to a total of 330 mGBP of current liabilities. More worryingly, the equity ratio had dropped just below 20% which was a dangerous prospect for a group that specialized in buying listed shares. Short term loans and deposits had breached 300 mGBP which was an obvious worry in a negative sentiment environment. SW had by this point undoubtedly become close enough to being a bank to be vulnerable to a bank run if sentiment took another negative turn.

Profits were roughly unchanged from the previous year and were boosted significantly by the group's gold holdings - some 6-7 mGBP in profits according to Raw

remaining assets as loans advanced, quoted investments, property, insurance companies and fixed assets. Cash balances were 125 mGBP.

(1977) - and property deals. The chairman's statement showed no sign of panic and focused instead on the continuing expansion of the commercial banking activities on the one hand and the improved liquidity on the other.²⁹⁸

The banking side had meanwhile seen a 17% growth in deposits which the Bank thought was minimal and the balance sheet itself had grown by a smaller 10% - on paper the bank looked to be doing fine.²⁹⁹ This was due to the fact that no losses of any significance had been taken on the loan book at this point.³⁰⁰ The decision was, however, taken to re-classify the existing "inner reserves" as provisions for doubtful debts. While stressing that the amount far exceeded any foreseeable doubtful debts this was done due to the "exceptional conditions prevailing in the banking sector".³⁰¹ The Bank's internal view on the results was that the year had been one of consolidation and that SW had endured "considerable pressures".³⁰² It viewed the banking side's balance sheet as "markedly less healthy than last year."

The same pattern continued in the beginning of 1974. Assets were sold off to the extent possible in light of the secondary crisis being well underway. Amongst the divestitures was Crittall-Hope which had been the group's largest industrial takeover upon its purchase in the heady days of 1968. SW managed to raise a further 50 mGBP in cash during the first half of the year and by now the outlook had become dire enough for the group not to use its cash proceedings to expand.

Slater had used the company's annual meeting in May to articulate his current

²⁹⁸Slater Walker Limited Reports And Accounts 1973; Chairman's Statement.

²⁹⁹BEA 6A70/3, d.d. 29/4/74. The Bank commented that this deposit growth meant it "had slowed right down".

³⁰⁰This was also the case with the parent company's investments. A large portion of them had fallen well below their book value. These investments were not written down however as, in the opinion of the board, "these investments are worth more than their market value" (Slater Walker Securities Reports And Accounts 1973; Chairman's Statement).

³⁰¹Slater Walker Securities Reports And Accounts 1973; Chairman's Statement.

³⁰²BEA 6A70/3, d.d. 29/4/74.

views, namely that cash was the optimum investment. The speech, which predictably drew a lot of attention, focused on the dire economic situation with Slater voicing the opinion that cash was the best investment no matter what happened to the economy.³⁰³ Apart from cash purchases, the only other position taken by SW at the time was gold which turned out to be the main profit source during this period. First half profits totalled 10.1 mGBP, thereof 6 mGBP in dealing profits of which a large proportion had again come from gold.³⁰⁴

Towards the end of the year, market sentiment had become so negative that SW saw itself forced to reply to the negative market rumours.³⁰⁵ A company called Jessel Securities had witnessed a dramatic fall in its share price and since it owned both an insurance company and a unit trust, worries mounted that SW might be experiencing similar problems. Fearing contagion, SW put out a statement saying that all was well, liquidity was ample and that the company's cash reserves had been placed with "leading banks outside the group". The last point was considered crucial to stave off worries about counterparty risk.³⁰⁶ The announcement concluded with the words that while SW "does not normally comment on stock market rumours, it felt it advisable in the current exceptional circumstances, to draw shareholders' attention to the company's inherent financial strength."

As the failings of the secondary banks had become widespread, the scramble for cash became harder still.³⁰⁷ Deposits also became increasingly hard to come by and

³⁰³ *The Times*, "Mr Slater tells his shareholders cash is the optimum investment", 31/5/74.

³⁰⁴ According to Raw (1977), gold accounted for half of the year's profits.

³⁰⁵ To put it in general context, the equity market declined by 55% in 1974 and had declined in total by 70% from its peak. While unbeknownst to investors, this was to be the trough of the decline as the market recovered in 1975.

³⁰⁶ BEA 6A70/3, Reuters, d.d. 17/10/74.

³⁰⁷ The fact that Slater had been amongst the first to start moving into cash, and been criticized in some quarters for it, was not lost on the Bank. It noted that this had been seen by some as a "failure to support British Industry". BEA 6A70/3, d.d. 30/10/74.

the money market was drying up. Much of the cash that the group had been able to raise, by various measures, went into repaying depositors spooked by the fringe crisis. There was thus a large discrepancy between cash raised, which was a figure widely reported, and the much lower amounts that were cash on hand, that is after repayment to fleeing depositors.

These depositors, as mentioned below, were both domestic and foreign. While SW had initially collected deposits from its London headquarters it had also set up branches in six major U.K. cities and three off-shore subsidiaries.³⁰⁸ The branches were tasked with taking "deposits locally and were a point of contact for people who wanted to inquire about [...] other services".³⁰⁹ These other services included the unit trusts and insurance business, which were cited *ex post* by the Bank of England as further reasons why it had been forced to save the company.³¹⁰

Most financial companies were in distress as their assets were, in Slater's words, "literally disintegrating before their eyes". Share prices consequently plummeted and the only item on any financial sector firms' agenda was to stay above water. SW's early awareness of the need to preserve and raise cash, as well as the willingness to sell into a falling market, were key reason for the firm not being forced into the Lifeboat and managing to stay afloat longer than most fringe banks. Slater's aforementioned decision to buy gold, which served as a rare source of profit during the period, was also instrumental.³¹¹ To add to the fringe's woes, many of them were witnessing severe contagion as every publicized failure of a secondary bank brought with it

³⁰⁸*Financial Times*, "'Weak' lending policy criticised", 15/09/76.

³⁰⁹Slater (1977) p. 129.

³¹⁰The unit trusts held approximately 250 mGBP from over 300,000 unitholders. The life assurance arm had 29,000 clients. See Bank of England (1978).

³¹¹See Reid (1982) p. 138 and Raw (1977) p. 341 who both emphasise early liquidation as a key reason for SW staying afloat as long as it did.

redemptions at other banks, including SW.³¹² Slater had even spoken directly to the Governor of the Bank of England about the need for rescue operations to avoid repercussions on his own bank and all the accepting houses.³¹³

The Bank's attention towards SW intensified further as the banking sector's problem intensified. It compiled a large table of data scrutinizing SW's accounts five years back and its ratios, summarized in the table below.³¹⁴ The analysis centred on three aspects; capital, liquidity and profitability. As the numbers used were reported numbers, the profitability showed no warning signs except possibly that the numbers were too good as previously mentioned. The main liquidity ratio used was quick assets to deposits. Quick assets consisted of "cash, bank balances, money at call and very short notice, certificates of deposit, bills, quoted investments." Note also that there were no reported loans to the holding company or subsidiaries, even through 1973. This is despite the fact that inter-company lending was to be a major point of criticism following SW's demise.

While the material was thus very specific as to what the calculations contained, the inclusion of quoted investment in the ratio meant that SW's small, illiquid holdings made the liquidity position seem better than was perhaps warranted. Furthermore, some of these holdings were held at the parent company level and some at the banking level, leaving any rough calculation imprecise. The devil was most definitely in the excluded details.

The same applies for the capital analysis as the ratios calculated included terms

³¹²A simple correlation comparison supports this. Looking at share prices for the period from SW's flotation until its demise, five fringe banks (including Slater) have a correlation of approximately 0.5 with SW itself ranking in the middle. These fringe banks' correlations with Barclays (or other members of the Big Four) are however much smaller and hover around 0. See Chapter 5 for further such analysis.

³¹³BEA 6A70/3, d.d. 21/12/73.

³¹⁴BEA 6A70/3, undated document.

Table 4.4: Bank of England Analysis of Slater Walker Limited

	1969	1970	1971	1972	1973
<i>Liabilities</i>					
Deposits:					
From public	23,284	34,993	84,105	162,538	190,353
From holding company / subsidiaries	3,383	13,760	7,609	24,897	24,191
Other current liabilities	181	1,250	3,000	3,904	2,000
= Current liabilities	26,848	50,003	94,714	191,339	216,544
Shareholders' funds	6,122	9,451	11,276	19,263	15,030
=Total	32,970	59,454	105,990	210,602	231,574
<i>Contingent liabilities</i>	284	1,207	2,153	1,060	1,716
<i>Assets</i>					
Quick assets	10,575	22,921	37,391	84,682	82,406
Term deposits	5,834	2,752	4,831	37,213	21,010
Lending:					
To public	16,432	31,816	59,848	85,201	122,978
To holding company / subsidiaries					
=Current assets	32,841	57,489	102,070	207,096	226,394
Shares in subsidiaries and associated companies	-	1,000	1,000	3,500	5,180
Other capital assets	129	965	2,820	6	-
=Total	32,970	59,454	105,890	210,602	231,574
Free working capital	6,381	7,833	11,578	19,827	9,961
Free resources	6,381	7,833	11,578	19,827	-14,583
<i>Capital</i>					
Free resources: liabilities to the public	1:4.3	1:6.5	1:8.4	1:9.7	1:21.9
Shareholders' funds: deposits	1:4.4	1:5.2	1:8.1	1:9.7	1:14.3
<i>Liquidity</i>					
Quick assets: deposits	1:2.5	1:2.1	1:2.5	1:2.2	1:2.6
<i>Consolidated</i>					
Pre-tax profits	501	2,887	7,972	11,855	8,653
Pre-tax profits as % of B/S	1.5	4.8	7.4	5.6	3.15
Pre-tax profits as % of shareholders' funds	8.5	47.2	84.3	90	52.23
Retained profit as % of disposable income	75.2	47.9	38.1	52.3	17.24

Source: Bank of England Archives 6A70/3, undated document.

Note: Table reported as in original document, apart from minor omissions due to space restrictions. All numbers except ratios and % in thGBP.

such as free working capital and leased assets. The classification of assets and liabilities within both SWS and SW meant that both the true liquidity and the earnings quality could not readily be ascertained by looking at aggregated, stated figures. The Bank took these questionable numbers at face value in all three categories which made the ratios acceptable and eased concerns. It had thus formally performed a rudimentary stress test while ignoring the economic dimension of the figures. When Slater called on the Governor in October, the Bank was of the opinion that SW had been able to maintain good liquidity.

Two separate issues were now starting to weigh on the banking side of SW and therefore the group as a whole. These were Cannon Street Acceptances (CNA) and a deposit held by National Westminster. CNA was one of the casualties of the secondary banking crisis and SW had been its creditor to the tune of approximately 5 mGBP. In connection to the Bank's "Lifeboat" operations, provisions were made so that unsecured creditors of CNA would not take haircuts.³¹⁵ SW had, however, been a secured creditor and now that its collateral looked to be insufficient, it sought out assistance from the Bank.

SW representatives were of the view that the company had been unfairly punished for showing the prudence of a collateral request, which CNA's unsecured creditors had not. When SW director Michael Booth had met with the Bank he had very clear views about the need for SW to be made whole, and was, according to the Bank, "very bitter" about the whole affair. His suggestion amounted to what the Bank thought to be an "elaborate scheme for loss sharing on Cannon Street Acceptances, involving selling assets and liabilities to us. So far as [the Bank] could make

³¹⁵BEA 6A70/3, d.d. 8/11/74.

it out, 'loss sharing' under this scheme means loss transfers."³¹⁶ The Bank ultimately refused this request and SW was forced to take a loss on its CNA exposure of 1.8 mGBP.

The other issue weighing on the banking side of SW was the National Westminster case. It concerned a 5 mGBP deposit that NatWest, as SW's clearer, had lent to SW but was due to expire at the end of the year. It was, according to the Bank, of "vital importance" that it be renewed.³¹⁷ As mentioned above, much had been made of SW's solid liquidity and ample cash. The fact that the 5 mGBP deposit was of such utmost importance to the firm might therefore have been expected to ring alarm bells within the Bank as it was intimately involved and up to speed in the communications between NatWest and SW.

Finally, the Bank seems to have decided to lend SW 10 mGBP to paper over the issue.³¹⁸ No background material on the discussion leading to this loan are available but the loan went through on 31st December and matured eight days later. The only available clue as to its purpose was during the discussions on the National Westminster deposit whereby Booth, the SW director, conveyed the vital importance of the deposit's renewal. The term "end-year window dressing" was used by the Bank and no other conclusion can be drawn than the 10 mGBP loan from the Bank was designed to make the SW year-end accounts look healthier than they otherwise would have and possibly artificially easing immediate liquidity pressures.^{319,320}

³¹⁶*Ibid.*

³¹⁷*Ibid.*

³¹⁸BEA 6A70/3, d.d. 30/12/74. and 31/12/74.

³¹⁹BEA 6A70/3, d.d. 8/11/74.

³²⁰This operation resembles an episode surrounding the infamous Creditanstalt failure documented in Aguado (2001). Aguado shows that the Austrian central bank used an intricate system of cross deposits to steer funds to Creditanstalt in attempts to prevent the crisis. The aim of this secretive use of financial engineering was "to provide the Creditanstalt with foreign exchange without having to reduce the reserves in the Austrian Nationalbank's published statements. This was done to keep

The 10 mGBP loan was duly repaid a week after it was made but the secretive nature of the payment can be seen by a letter from SW's chief accountant who could not find confirmation of the loan anywhere. The reply from the Bank's chief cashier was that the loan was so secretive in nature that the Bank staff dealing with the certificate were not even aware that the loan had been made.³²¹ The extent to which the Bank not only sanctioned but facilitated and funded such window dressing is striking and cannot be said to classify as coming under the Bank's insistence on "proper" banking procedures. The fact that the loan was made so secretive allows for the possibility that such short-term window-dressing loans were provided to other institutions in need of a credibility boost.

As it turned out, 1974 was the only year in which SW was able to reduce the size of its balance sheet. The group managed a 33% reduction in the balance sheet by selling off industrial assets and using the proceeds to increase the cash buffer and buy back its own debt. The latter served to improve the appearance of the accounts as the debt was bought back at a discount, hence boosting net asset value. Short term debt was for example decreased from 300 mGBP at the beginning of the year to just under 175 mGBP at the end of it.

However, the income statement was a bigger sign of worry, as seen in the table below. The figures showed that the company had been forced to take a 30 mGBP write-down of its industrial assets when they had been sold off. The total amount of assets sold off during the year was 140 mGBP which meant that the losses taken were a considerable percentage of the total value of the companies sold. The *Sunday*

these cross-deposits secret, because, if the published reserves of the Nationalbank had suddenly fallen by a substantial amount, it would have been impossible to keep the matter secret." (Aguado (2001) p.202).

³²¹BEA 6A70/4, D.A. Clarke, d.d. 28/1/75. and D.H.F. Somerset, d.d. 6/2/75.

Times was later to describe the asset sales during this period as "one of the greatest corporate clearance-sales of all time".³²²

Table 4.5: Condensed Income Statement for SWS (thGBP)

	1967	1968	1969	1970	1971	1972	1973	1974
Profit Before Tax	1,159	4,868	10,443	12,161	16,285	17,592	23,413	14,482
Profit After Tax	747	3,126	6,671	8,281	10,625	12,195	12,622	8,772
Dividends	413	1,047	2,860	3,792	4,511	4,098	3,630	3,984
Extraordinary Items	62	0	0	0	0	0	0	-33,578
Retained Profit	296	1,890	3,373	3,577	5,000	8,078	9,210	-28,858

Source: Slater Walker Securities Annual Reports.

This write-down was taken through reserves which meant that they didn't affect the bottom line figure. This softened the appearance of the losses as net profit for the year came to 8.7 mGBP. However, following this "extraordinary item", as it was categorized, retained profit was -28.9 mGBP. This figure was described in the chairman's statement as "substantial losses" that arose from asset disposal.³²³

Despite the extremely defensive strategy and negative market environment, dividends were still paid for the year to the tune of 4 mGBP or approximately half of the yearly profit *before* write-downs. SW was still scrambling for cash and trying to deleverage amid the ongoing difficulties in the markets but no mention is made of the justification for paying out dividends at such a time. Neither did the Bank comment upon this decision despite its increasing concerns about the viability of SW and the importance of retaining all available cash.

The banking side of the firm, unlike the holding company, exhibited no obvious signs of trouble although profits were down to 3.3 mGBP from 4.8 mGBP the year

³²²*The Sunday Times*, "The Jim Slater Verdict: Puncturing the City's indiarubber idol", 19/9/76.

³²³Slater Walker Securities Report and Accounts 1974; Chairman's statement.

before. The quality of the results and calculation are hard to scrutinize however as the bank only released the net profit figure. Presumably, Slater's aforementioned view that loans should be written down easily by 20 mGBP did not make its way into the results. The balance sheet had contracted by 26% to 172 mGBP but current deposits still amounted to more than 100 mGBP - an obvious concern if the bank, and group as a whole, were to run into any serious difficulties.³²⁴

1975 started with an unexpected rise in share prices in the middle of the ongoing crisis. SW shares almost tripled in value, albeit from a low base, as talk started of the worst of the crisis being over. The group stayed mostly inactive during this rise although a significant move was made in January when it acquired the National group of unit trusts for 1.2 mGBP. While the purchase price was in some sense miniscule compared to SW's overall size, the acquisition added 60 mGBP of unit trust funds to the 80 mGBP already in place, making SW the third largest unit trust group in the country. This purchase thus had the indirect effect of making any future collapse of SW more costly and greater in scope. SW continued advertising its various businesses throughout 1975, further compounding the Bank's problems when it came to resolving the group. For example, in April it advertised in *The Financial Times*, seeking funds from charities, pension funds, private clients, institutional clients, investment trusts and unit trusts.³²⁵

Slater, having conceded that SW as a whole had lost its *raison d'être*, was by this stage certainly not opposed to selling the company in its entirety. During the early months of the year, he held talks with various parties about a deal, but nothing materialized. He continued the asset sales by selling off the credit finance company,

³²⁴At the time of collapse, SW held 95 mGBP of deposits "taken from the public in the United Kingdom and abroad", according to the Bank itself. BEA, 6A70/18 d.d. 14/09/76.

³²⁵*Financial Times*, 04/19/75 p.18

Slater Walker Finance Corporation, amongst other subsidiaries. The sale of SWFC was a welcome one for SW as it had been hard hit by higher interest rates and in fact ran up a loss in the first half of 1974.³²⁶ Further divestitures followed during the summer, in addition to a substantial reduction in overhead costs. When the first half profits were announced in August, the profit for the period showed a dramatic year-on-year fall of 78% to 2.2 mGBP.

Other adverse issues also started to arise which painted a more negative picture both of SW's operations and its current situation. An example of this was when the American bank Morgan Guaranty had called on the Bank to complain about the behaviour of SW.³²⁷ The dispute centered on a five-year, 21 mUSD loan that Morgan had provided SW with prior to the crisis for the specific task of acquiring the retail company Franklin Stores. A year later, during SW's dash for cash, it sold the company. Both Morgan and Barclays, who had also lent specifically for the purchase, requested that they be repaid but SW argued that the loan was for five years and no covenant regarding early repayment had been placed in the loan contract.

While Morgan did not ask the Bank to take any action, the group wanted to voice its anger as they felt they had been taken advantage of. Internally, the Bank's response was sympathetic to Morgan and it decided to raise the matter with SW. The behaviour on SW's part was not what the Bank called "the sort of conduct we expect of a London bank and it is not conduct which is in their own best interests."³²⁸ Ultimately the dispute could not be settled but the Bank was evidently somewhat displeased by the way SW had tackled the matter.³²⁹ The affair also raised questions

³²⁶BEA 6A70/4, d.d. 3/3/75.

³²⁷BEA 6A70/3, d.d. 4/3/75.

³²⁸*Ibid.*

³²⁹Both parties sent the Bank its correspondence with one another in a bid to convince the Bank of its argument. The Bank was therefore in some sense in the role of a moral judge, as both parties

as to whether the way that SW conducted its business in general was "proper" by City standards as well as introducing the possibility that it wasn't as liquid as publicly stated.

The 1974 annual report, released in April of 1975, was not purely doom and gloom, however, as the chairman's statement declared that the board had "recently identified some new and attractive investment opportunities and we feel well placed to come back very strongly as and when general market conditions improve."³³⁰ On the other hand, during the annual meeting in June, Slater conceded that group profits would be at a "very low level indeed" in 1975. He was thus performing a balancing act of sorts, by both keeping expectations low while maintaining the public image of a company that was ready to pounce at any time. Slater finally added that a priority during the rest of the year would be to reduce the group's substantial property portfolio which was an ambitious goal during such a severe downturn.³³¹

The problems kept piling up and the bankruptcies of several secondary banks were starting to affect SW. The effect of the impending collapse of Town and Commercial Properties on SW was a particular worry inside the Bank. SW had indirect exposure to TCP of roughly 15 mGBP and SW executives were most anxious that the recovery in its reputation should not be impaired in any way.^{332,333} Issues such as these gave the Bank additional cause for concern but still no contingency plan was drawn up to deal with the possibility of a SW collapse.

agreed that no law had been broken. Ultimately, Morgan had asked for a repayal covenant in the event of the sale of Franklin but SW had refused. The reason for this refusal and Morgan's concession was not established and the Bank thus told both parties that it could not take the matter further. BEA 6A70/4, d.d. 27/3/75.

³³⁰Slater Walker Securities Report and Accounts 1974; Chairman's statement.

³³¹*The Guardian*, "Dividend pledge from ebullient Mr Slater", 6/6/75.

³³²BEA 6A70/4, d.d. 8/5/75.

³³³The recovery relates to the fears in late 1974 that SW was in trouble.

4.4.2 The Bank of England to the Rescue

It was during the early autumn of 1975 that Slater's reign was to come to an end. The catalyst seemed haphazard in nature as it came in the form of a fallout from an employee incentive scheme in Singapore. Amongst the global outreach programs by SW, documented above, was its venture to Asia where it had built up substantial holdings with several of its executives stationed in the region. An incentive programme was subsequently set up whose purpose it was to prevent these executives from trading on their own behalf in the recently developed stock exchanges of Hong Kong and Singapore, where insider trading rules were still quite murky. The programme would also serve traditional incentive purposes by giving the executives "skin in the game".

The scheme was constructed by forming a private company called Spydar which would purchase shares in companies that Haw Par, SW's subsidiary, was to take interest in. This operation was in some sense no difference to similar schemes set up in other countries.³³⁴ The importance of Spydar stemmed from the massive trading gains made and the way in which they were accounted for in Hong Kong. The matter came to light following an article in the *Financial Times* in early August that revealed the investigation by Hong Kong police into Haw Par and Spydar.³³⁵

Slater was on vacation at the time but Booth contacted the Bank, knowing that this would concern them. Slater, via Booth, categorically denied all accusations levelled at him and the firm. The Spydar affair was to become a very heated international dispute which ended in extradition cases for Slater and another SW executive. The intricacies of the affair are not of direct relevance here but the consequences

³³⁴As noted by Raw (1977) p.346.

³³⁵The *Financial Times*, "Haw Par probe by Hong Kong police", 9/8/75.

are since the Singapore authorities ultimately refused to release a much needed 29 mUSD payment that was due to SW following its sale of Haw Par.

Up to this point, the funding and liquidity issues facing SW had mostly been in relation to general market movements and worries about the financial system as a whole. The Haw Par affair however focused matters more directly on SW and the potential problems that the non-payment of the 29 mUSD could have on the firm's operations. The size of the payment cast serious doubts about the viability of the banking part of SW and subsequently the group as a whole. Finally the connected nature of the group was dawning on investors, and more importantly the Bank, including the drastic consequences that failure of one part of SW would have on the other parts.

The Bank of England thus followed the Haw Par affair closely as the 29 mGBP was both an amount that SW could not easily swallow and the intense media scrutiny could prove troublesome. As the affair gained momentum, the Bank saw only three possible solutions; that SW be provided a "bankable", though less valuable, security against the 29 mGBP, that part of the loan be converted into equity or that the deal be in some capacity reversed.³³⁶

In late September, there was still no sign of a solution being found to the Spydar situation. The Bank had internally become increasingly negative and impatient towards SW and its situation. This was the first time that the Bank was taking a critical look at SW's core banking operations and it did not like what it saw. It was of the view that the banking side looked "over-lent" and that its maturity transformation was a major concern; "whereas half of its sterling deposits are short-term money market borrowings, about two-thirds of its sterling lending is for periods

³³⁶BEA 6A70/4, undated document.

of over one year.”³³⁷

The Bank added that “stability of the banking company rests heavily, therefore, on continuing confidence.” This worry, taken at face value, is somewhat perplexing as the combination of short liabilities and long assets is in some sense the very essence of banks. The Bank ran through several issues that could adversely affect the SW group such as the aforementioned Town and Commercial Properties loans and the fact that “a significant proportion of the banking company’s lending is to companies which have recently acquired major assets from Slater Walker Securities.”³³⁸ This is the principal-agent problem mentioned earlier which the Bank seemed to be noticing for the first time in late 1975.

The Bank was waking up to the unpleasant truth that it did not know a whole lot about SW apart from the primitive ratios it had calculated throughout the years following earnings releases. It was thus decided that a primitive form of a stress test were to be run, or as the Bank put it, “an attempt [...] to measure the anticipated liquidity pressure which an intensive run on the bank might produce.” Additionally, a list of securities owned by SW was put forward in an effort to determine whether a standby facility could be arranged by the Bank against collateral from SW. The Bank considered the problem of SW to be a big one and the Governor was advised to encouraged Slater to sell off his banking interests. The purpose of such a move would be to subsume SW’s problem into a more stable banking group.

An accompanying document listed the various information that the Bank would need to fully assess the situation at SW. The information was grouped into eight categories: group structure, unaudited consolidated balance sheet, analysis of the

³³⁷BEA 6A70/18, d.d. 30/10/75.

³³⁸*Ibid.* The correspondence went on to say that “there may be nothing wrong about this, but such loans may not be as fully at arm’s length as one would wish.”

balance sheet, analysis of deposits and secured borrowings, loan stock trust deeds, further details of uncharged assets, analysis of bank lending and finally article of associations. Under each category was a further description of the precise information required. This can be said to be the point at which the Bank finally realized the risks that SW's operations entailed, the potential fallout of the group's failure, and the lack of information required to assess the firm's true solvency and liquidity.

The Governor spoke with Slater shortly after this and expressed his wish to make formal arrangements for a standby - i.e. some sort of rescue mechanism.³³⁹ Slater also provided the Governor with an update on the Haw Par situation. He was at this point willing to take a serious discount on the amount owed by Haw Par and was himself "appearing rather more nervous about his own and the group's vulnerability", according to the Bank. He also declared his intent to get out of banking and business altogether.³⁴⁰

Ultimately, it was the Spydar affair that proved to be the tipping point that convinced Slater to resign from SW.³⁴¹ As mentioned above, Slater had been open to the possibility of withdrawing from the company for quite some time but the Singapore dispute gave him the opportunity to do so. He argued that apart from his own desire to get out of the business, his removal from the company would clear the way for the Singapore authorities to reach an agreement with new parties. Slater was in regular contact with the Bank of England at this point who were similarly concerned about the adverse effects that a disorderly failure of SW could have. The

³³⁹BEA 6A70/18, d.d. 7/10/75.

³⁴⁰*Ibid.* He mentioned to the Governor that he had been hopeful of selling the company to either American Express or Bank of America but both deals had collapsed.

³⁴¹It should be mentioned that no documentation exists from the Bank between August 28th and September 30th of 1975. The reason for this is unclear as it was certainly an active period for SW and its relationship with the Bank.

Governor had at this point brought the Treasury into the discussions and kept the Chancellor notified of the ongoing developments. The Chancellor in turn briefed the Prime Minister himself, showing the extent to which SW had become a genuine public concern.³⁴²

Slater announced his resignation on 24th October amidst a predictable media frenzy. He was replaced by his business associate and SW shareholder Jimmy Goldsmith who would lead SW through its collapse and Bank of England reorganization. The Bank had heard about the idea of Goldsmith replacing Slater from Slater himself before he resigned.³⁴³ The Governor had even spoken to Goldsmith prior to Slater's resignation about the terms of the replacement. They agreed that Slater should resign and it would be best that he would do so promptly before "a Press campaign demanding his departure could be mounted".³⁴⁴

Goldsmith also confessed to the Governor that following the massive divestitures, there was little remaining of an ongoing business within SWS, apart from the unit trusts, and it was his intention to run down the group. The Governor told Goldsmith that a facility would be on offer which provided SW with liquidity against collateral and the Bank "would be prepared to make further advances, as necessary, to enable unconnected deposits to be repaid as soon as satisfactory arrangements

³⁴²The National Archives (TNA) T386/293, part 1, page 1 (p1/1). The Governor's first notification to the Treasury was given prior to Slater's resignation and then periodically after that as the rescue operations further developed.

³⁴³Slater had also mentioned the possibility that Goldsmith buy the group outright but the Bank was not fond of this idea. Goldsmith was not considered an ideal candidate to run a bank and he currently ownly owned a "house bank" in France called Banque Occidentale. While the Bank saw a certain attraction in the fact that the SW problem could be shipped abroad to Paris, it was quite certain that further problems for the group would still have to be dealt in England. A merger with Goldsmith's bank was judged to be a worse alternative than winding SW up in bankruptcy. BEA 6A70/18, d.d. 17/10/75.

³⁴⁴BEA 6A70/18, d.d. 21/10/75.

could be made for further security to be provided.”³⁴⁵ This initial assistance came in the form of a 70 mGBP standby facility ”designed to provide adequate liquidity to protect SWL’s depositors while the new board examined the situation.”³⁴⁶

This commitment meant that, in principle, the Bank would follow Bagehot’s guidelines and was only to provide funding as long as SW was solvent.³⁴⁷ However, when the Bank came to the realization that there might be inadequate collateral for the money required it did not consider cancelling assistance. Instead of thinking in terms of when assistance should be halted, it discussed the matter in terms of the expected loss to itself, conditional on the fact that unrelated depositors would be paid back in full.³⁴⁸ Goldsmith’s final request was that the Bank assistance remain a secret matter which the Governor agreed was prudent.³⁴⁹

Secrecy was in fact a priority for the Bank and the need for it was mentioned regularly in internal correspondence. A testament to the Bank’s insistence on secrecy came in a note for the record which urged that the Bank, in its dealings with the

³⁴⁵ *Ibid.*

³⁴⁶ BEA 6A70/18, d.d. 14/9/75. According to Capie (2010), the maximum drawing of SW was 54.8 mGBP, reached in December 1976. The 70 mGBP facility is arguably a more relevant number for our purposes as it better describes the amount that the Bank stood to lose in an adverse scenario. In fact, it may even understate the potential loss for the Bank as it might have been forced to increase the facility if needed.

³⁴⁷ Ackrill and Hannah (2001) note that in establishing the Lifeboat, the Bank of England had defined it as ”an open-ended (though voluntary and terminable) agreement to support all illiquid but solvent banks.” (p.207) See Chapter 2 for a discussion of Bagehot’s principles.

³⁴⁸ The identity of the unrelated depositors is unknown and presumably included a vast number of the general public. There were, however, also larger issuances involved and some were mentioned in the Bank’s dealings with Goldsmith. These included National Westminster, which had served as SW’s primary bank, Midland, Sun Life Canada and Abbey National. An example of the group’s international reach can be seen in a document, that lays out the expected cash flow of the company, showing a recurring item paid out to ”Japanese”. Currency bonds, sold to unrelated investors, were also a substantial amount and stood at 50 mGBP at year end 1975. BEA 6A70/18, d.d. 11/5/76, Appendix IV and d.d. 4/6/76, Appendix B.

³⁴⁹ When it was decided that the SW problem was big enough to necessitate Treasury involvement, it was decided that only the Chancellor and two of his staff should be informed of the situation. BEA 6A70/18, d.d. 4/12/75.

press, stressed that SW had never been a recipient of funds from the Lifeboat and that the Bank had no money in SW.³⁵⁰ Crucially, it was also stressed that the Bank say that there had never been, nor was there now any necessity for such support. In light of the discussions detailed above and below, such statements were highly misleading and this media strategy was in clear contradiction with the clear need that the Bank saw for support to SW via its own funds.

The Bank's staff was also told that if they were to be asked whether the Bank had ever lent SW any money the answer was to be a "categorical no". This was obviously in contradiction to the 10 mGBP window-dressing loan mentioned earlier in this chapter which was deposited to SWL's account at National Westminster. The "categorical no" related to the holding company, SWS, and was therefore technically correct although whether the intention of the Bank was to get off on the technicality is unclear. Certainly if a journalist were to ask whether the Bank had lent money to SWS, or any of its main subsidiaries, there would have been no wiggle room for the Bank.

The media strategy notwithstanding, the structure of the decision making process during the rescue operations seems to have been relatively simple. It was decided that due to the complexities of the group, in addition to the uncertainty surrounding its operations and its international nature, its problems should not be addressed via the Lifeboat operations which were used for most of the secondary banks.³⁵¹ Instead it should be treated as a separate, standalone issue with more direct Bank involvement.

Those involved within the Bank were exclusively upper-level staff, especially

³⁵⁰BEA 6A70/18, G.L.B.M., d.d. 24/10/75.

³⁵¹BEA 6A70/18, Q&A drafts, undated.

during the period where secrecy was of the upmost, and the Governor himself was personally kept informed on all discussions. Senior staff would hold meetings with SW executives and report on the outcome to the Governor . He would then frequently ask for a briefing on a specific issue, such as estimates of the Bank's loss under various scenarios and an overview of SW's operations.

In one instance, the Governor asked for an analysis of " the likely course of events if the Bank decided not to help finance further loan redemptions".³⁵² The staff involved thus prepared a two page document qualitatively describing the possible effects of such a decision. These included effects on confidence as well as the reaction overseas and on the Euromarket if a U.K. borrower were to fail. The conclusion was that there seemed to be no way for the Bank to stand idly by and it would have to signal in some way to general creditors that an unorganized fallout would not follow.³⁵³

As per tradition, the Bank wasted no time in compiling a five page biography on Goldsmith himself, covering the usual traits such as family history, banking experience and business interests.³⁵⁴ While the Bank had given the go-ahead for Goldsmith to take over, his reputation in the City was somewhat lacking and he was known as both a "whizz-kid" and a gambler - certainly not traits that the Bank looked kindly upon. He was also said to have a "propensity to trade companies as if he was playing Monopoly" and he had been described in the press as both a playboy and a speculator. The only obvious attraction that SW had to him was its banking licenses - licenses that the Bank had denied Goldsmith repeatedly before.

³⁵²BEA 6A70/18, d.d. 25/5/75.

³⁵³*Ibid.* The Euromarket factor is highlighted in Geddes (1987). Davis (1995) also associates the international aspect to the Bank's response, stating that "the Herstatt crisis of 1974 (see below) made the Bank sensitive to avoid any default on euromarket loans." (p.153).

³⁵⁴BEA 6A70/18, "James Goldsmith", undated.

Goldsmith's reputation as a risk-taker was in many ways similar to that of Slater himself. The Bank was however satisfied with him taking charge due to his relationship with Slater and the fact that continuity within the firm was considered of upmost importance. The Treasury, on the other hand, was not impressed with the decision and questioned the Bank's ruling in this case. Describing the Bank as being "up to their neck in the Slater Walker affair", they questioned the extent to which Goldsmith was adequately reputable to lead a City institution.³⁵⁵

The Bank's main task in the following weeks was to untangle the SWS balance sheet and figure out how assistance should be provided and also on what terms. The aptly named Banking and Money Market Supervision Section compiled a repayment profile for the consolidated banking side of the group, matching assets and liabilities by maturity which showed that assets were much more back-loaded than the liabilities.³⁵⁶

According to Table 4.6, the firm seemed solvent at this point in time but it would take several years to wind it down and this was without analysis of any doubtful debts. A similar analysis of money market assets and liabilities was more front-loaded and seemed to show a positive cumulative cash position from day one.

The amount thought to be needed at this point was approximately 40 mGBP, of which 25-30 mGBP was for the banking side.³⁵⁷ Furthermore, this support would trigger repayment clauses in the loan stock which would necessitate that they be repurchased by the group with further funds from the Bank.³⁵⁸ A provisional balance

³⁵⁵TNA T386/293, p1/2.

³⁵⁶BEA 6A70/18, Banking and Money Market Supervision Department, d.d. 17/10/75. Revell (1973) provides a view of maturity mismatch at the time. He puts forward the argument that secondary banks should aim for "matching" of assets and liabilities but does not mention the immediate danger due to the circumstances at the time.

³⁵⁷BEA 6A70/18, d.d. 23/10/75.

³⁵⁸At the time of collapse, SW had loan stocks of 100 mGBP outstanding, 75 mGBP of which

Table 4.6: Maturity Profile for Slater Walker (mGBP)

	Sterling matching	Currency matching	Cumulative
Sight	-2	+0.3	-1.7
1-7 days	-20.8	+5.6	-16.9
8-14 days	-0.8	-1.1	-18.8
15-31 days	-5.3	-1.2	-25.3
1-3 months	-7.6	-2.2	-35.1
3-6 months	-6	-3.7	-44.8
6-12 months	+4.2	+6.4	-34.2
1-2 years	+9.2	+0.1	-24.9
2 years and over	+48.1	+15.2	+38.4

Source: Bank of England Archives 6A70/18, document dated 17/10/75.

Note: On consolidated basis.

sheet for the banking side as of 31st August showed capital of 18 mGBP against total assets of 158 mGBP. Customer deposits were, as before, the largest item at 88 mGBP.

Goldsmith quickly started backtracking on his early optimism and warned there was insufficient security available within SWL relative to the fund's needed from the Bank. The security available to the Bank, laid out in five items, were in practice to be any available assets within SWL that the Bank saw fit to take as collateral. Several conditions were attached to the disbursement of funds such as that all group deposits, i.e. deposits from related parties, were to be converted into equity. The terms laid out were general in nature and gave the Bank discretionary power over operational decisions, if it so chose. There was even a clause which demanded that SW paid any legal fees that the Bank incurred regarding its assistance.

The Bank was also well aware that if Goldsmith failed to run down the group successfully, his own loss would be limited to the 4 mGBP he had invested but the

were international issues in foreign currency. BEA 6A70/18, d.d. 13/09/76.

Bank's loss "might be very much greater".³⁵⁹ The situation deteriorated further and the facility provided by the Bank was by the beginning of November estimated at 100 mGBP.³⁶⁰ However, the security available, "if all goes well", merely amounted to 80 mGBP.

It gradually dawned on the Bank that most of both SWL's and SWS's assets were tricky to assess and there were various uncertainty aspects involved with running a financial institution that the Bank was not used to thinking about. These aspects included not only the repayment of outstanding loans but also how much money could be raised by the sale of the bank's property portfolio, whether the Haw Par payment would materialize and a myriad of other factors.³⁶¹ The Bank went through extensive discussions about possible scenarios and its exposure with good scenarios ending in minimal direct loss for the Bank while worst case scenarios meant losses well in excess of 100 mGBP.³⁶² While such a dramatic loss was unlikely, the Bank could easily see a 50 mGBP loss as necessary and was aware that this could have severe consequences for the finances of the Banking Department as well as the Bank's dividend to the Treasury and payment of tax.³⁶³

The plan to buy up outstanding SW debt at a discount was also unravelling which would make any Bank assistance costlier still. Three options were laid out at this point, none of which were attractive. The first two involved letting SWS go into

³⁵⁹BEA 6A70/18, d.d. 24/10/75.

³⁶⁰BEA 6A70/18, d.d. 6/11/75. The file states that the original facility was for 130 mGBP, of which 23-30 mGBP was to repurchase the loan stock but the new facility of 100 mGBP was only intended to repay deposits, of which the bank had approximately 93 mGBP.

³⁶¹The Haw Par situation was particularly tricky as it was seen as a potential diplomatic dispute. How it played out in the scheme of SW's survival was thought to have "extremely detrimental consequences to the U.K.'s relationships with Singapore." BEA 6A70/18, d.d. 4/12/75.

³⁶²As discussed in Chapter 2 of this thesis, the indirect costs are much harder to ascertain and involve implicit subsidies whereby Bank of England support for one institution lowers the funding costs for other institutions.

³⁶³BEA 6A70/18, d.d. 4/12/75.

liquidation and paying out either small depositors or all depositors and the third to avoid bankruptcy by paying SWL, saving depositors and recapitalizing SWL.³⁶⁴

The Treasury was kept well abreast of all developments during this period. Its source of information however was, apart from media reports, mostly Bank officials. Their scope for independent analysis of the situation and the feasibility and desirability of any decisions was therefore very limited.³⁶⁵ In December, with the year-end deadline for covenant-breaching fast approaching, the Chancellor spoke with the Governor, the Deputy Governor and Blunden.

After the Bank officials had explained the deteriorating situation to the Chancellor, his staffers came to the realization that there was a non-trivial probability that the Bank's capital and reserves were "seriously at risk", no matter what policy was pursued. This meant that a "heavy loss would not only jeopardise the payment of future dividends to the Treasury but might force the Governor to ask for an injection by the Government of new capital for the Bank." Treasury officials were thus preparing themselves for the very real possibility that the Bank of England itself would become insolvent following its rescue of SW.³⁶⁶

The Bank eventually agreed to yet another facility of 14 mGBP to enable SW to repay the loan stocks carrying the most restrictive conditions. This part of the assistance was swiftly repaid while the agreement for the guarantee to SWL came

³⁶⁴BEA 6A70/18, d.d. 14/11/75.

³⁶⁵One example of the Treasury's role as an inactive, outside observer could be seen following one of the Chancellor's meetings with the Bank. After the Bank had explained the importance of avoiding the covenant breaching, the perplexed Treasury staff commented casually that "the end of the year was in some unexplained way a big date for this operation" without a request for explanation by the Bank. TNA T386/293, p1/16.

³⁶⁶TNA T386/293, p1/16. The Bank subsequently eased these fears and told the Treasury that their loss estimate was currently in the 20-40 mGBP range. The upper limit of the range would be readily absorbed by the Bank's capital and would result in lower dividends from the Bank to the Treasury but no need for a capital injection. TNA T386/293, p1/18.

with the requirement that SWL pay the Bank its profits until the company had repaid 125% of the amount called. The main advantage of this agreement was that SW could produce an end-year balance sheet "unburdened by an obligation to pay the Bank."³⁶⁷ The advantage was thus one of financial engineering aimed to alter appearances rather than substance, not dissimilar to the window-dressing loan mentioned earlier.³⁶⁸

It is helpful at this point to put the magnitude of the Bank's assistance into perspective. Provisions were made in the Bank's accounts for losses arising from its assistance to financial institutions during the crisis. A breakdown of these provisions were not made public but their approximate amounts were declared to the Treasury. In early 1976, the provision for losses due to SW assistance was put at 20 mGBP.³⁶⁹ This compares to an accumulated provision for the Lifeboat operations of 30 mGBP.³⁷⁰ The Lifeboat was obviously a general operation which ended up supporting several institutions with the maximum amount drawn at 1,200 mGBP. It should be noted that the 1,200 mGBP figure was the aggregated amount lent by the clearers as well as the Bank. Nevertheless, the amount lent via the Lifeboat was vastly higher than that lent to SW but the expected loss due to the Lifeboat as a whole was only 50% more than that of SW.

It is clear that the Bank's main rationale for interference in SW specifically was the protection of unconnected depositors, i.e. those of non-related parties. A second

³⁶⁷BEA 6A70/18, d.d. 14/9/76.

³⁶⁸When the Bank conveyed this arrangement to the Treasury, it seems to have been the understanding of the Treasury that the 125% clause guaranteed that the Bank were to get its money back as well as compensation for the risk taken. The possibility of insolvency did not seem to be thought of. TNA T386/293, p2/1.

³⁶⁹TNA T386/293, p2/9.

³⁷⁰A clear distinction is made between provisions, which was the estimated amount to be written off, and the total amount lent in each case. The provisions are therefore the amount of the loan that is thought to be lost.

main concern was that of contagion, whereby allowing a recognized bank, in the form of SWL, to go into liquidation could have serious consequences on other authorized banks and even on confidence in the British financial system.³⁷¹ The extent to which depositors should be protected in fact went so far that the Bank had endorsed a paper earlier in the year with the clearing banks that suggested that "deposits with listed banks were free of credit risk."³⁷²

Another sign of the Bank's intended support of the financial system in general came in an internal Q&A briefing of the SW situation. The question posed was "The Bank has committed substantial public funds to prevent the failure of an authorised bank. Is it a matter of policy that an authorised bank should not fail?" The answer to which was "The failure of an authorised bank cannot lightly be contemplated and the Bank would, of course, normally examine all possibilities of avoiding such an eventuality."³⁷³

This confession, along with the claim that deposits bore no credit risk, can ultimately be construed to mean that the Bank would contribute to loss sharing arriving from sub-optimal performance of banks. It had by this point become all too clear to the Bank that it had not been able to supervise the banking system to an extent where credit risk was eliminated. Several secondary banks had failed or received assistance at the time of the above question being posed and the intrinsic contagion within the system had clearly dawned on the Bank. In effect, the combination of stating that deposits bore no credit risk on the one hand and the ongoing troubles

³⁷¹Moran (1984) states that SW was rescued because it was authorised to deal in foreign exchange and its default on Eurocurrency dealings would have "damaged London's standing as a financial centre" (p 92). We do not find evidence of this here, certainly not as a primary motive, although this reasoning will have featured in general discussions on the repercussion of SW's bankruptcy.

³⁷²BEA 6A70/18, d.d. 14/11/75. In relation to this, any non-payment of deposits by SW would cause "a grave risk of a crisis of confidence affecting other Authorised Banks."

³⁷³BEA 6A70/18, Q&A drafts, undated.

of the banking sector on the other meant that the Bank was not eliminating the inherent risk of bank operations but merely transferring it from depositors towards itself.

The Bank didn't stop to contemplate the wider implications of this policy, in part because it was still in full-blown crisis mode and was forced to focus on pressing matters regarding SW's rescue. The Bank was in close and continuous contact with Goldsmith and the other new executives at SW. In fact, Goldsmith's stock within the Bank had already risen since taking over SW. In correspondence with the Treasury, the Bank had aired their satisfaction as to the way Goldsmith was handling the rundown of the company and it was "apparently the Governor's view that Mr Goldsmith has reached the stage in his career at which he now wishes to become a respectable City figure, rather than a financial "whizz-kid": the Governor regards this as a powerful motivating force."³⁷⁴

Various proposals and scenarios were put forth as to the best solution for the Bank and Goldsmith was generally helpful. In late March of 1976, a report that Goldsmith had commissioned the accountants Peat Marwick Mitchell and Price Waterhouse to write was near completion.³⁷⁵ The Bank was to receive an early copy of the eagerly awaited report which purpose it was to investigate the causes of the SW's demise and whether any illegalities had occurred. Goldsmith told the Bank that the part which pertained to the banking side, SWL, was the most controversial but the report did not identify many illegalities. He added that "Basically the S.W.L. story is [...] one of horrible management."³⁷⁶

³⁷⁴TNA T386/293, p2/4.

³⁷⁵The full report was never made public. Apart from the Goldsmith commissioned report, a Department of Trade investigation was carried out as to the possibility of a "Section 54" infringement. Section 54 covered rules regarding providance of financing for own shares.

³⁷⁶BEA 6A70/18, W.P.C., d.d. 23/3/76.

This verdict, while absolving SW management of financial fraud in the main, painted a damning picture of the Bank's indifference towards SW prior to the crisis. The dramatic build-up in public deposits within the group caused no concern as simplified, aggregated ratios that were calculated using published figures did not raise any alarm bells. The accountants' report, taken as a whole, was, however, not as damning a verdict as many had expected.

Apart from the banking issues mentioned above and problems with the insurance operations, many aspects of the business were deemed by the authors of the report to have been run professionally, including the property division and investment management.³⁷⁷ The report estimated that ignoring the Bank's support, provisions of 66.1 mGBP should have been made in total. This sum was broken down as follows: 29.2 mGBP for the banking side, 14.8 mGBP for the property portfolio, 8.8 mGBP for the insurance operations and 13.3 mGBP for general investments and associated companies.^{378,379} The main criticism was thus reserved for the part of the business that was supposedly the most regulated, the banking side. It should however be stressed that the report did not look into the circumstances of past transactions which was the focus in Raw (1977).

As discussions dragged on regarding the myriad of possible ways to structure the Bank's bailout of SW, it became clear that the Bank could not ring-fence SWL and disregard the holding company, SWS, due to the complex interconnections of the two. Any rescue of SWL would therefore have to be performed with the secondary task of keeping SWS solvent. To prevent covenants in SWS contracts being breached, SWL

³⁷⁷The insurance arm criticism centered around three factors; it was said to have been too liquid, hold too many assets of questionable value and too much property content.

³⁷⁸Of this 29.2 mGBP, an astonishing 15.5 mGBP was a recommended provision due to a single situation.

³⁷⁹For the Treasury's view of the report and these matters, see TNA T386/293, p3/5.

would have to be bought out at close to its book value of 23 mGBP.³⁸⁰ All parties involved were in no doubt that this price was well above any market value of the banking subsidiary but the effect of the Bank buying it for under book value would most likely lead to the downfall of SWS which in turn meant indefensible losses for SWL itself. Even if SWL could withstand the losses, a liquidator for SWS might try to include SWL in the liquidation opening up the possibility of litigation - and major losses - for the Bank.³⁸¹

There was also the additional issue of secrecy being difficult to maintain for such a long period of time. The Bank admitted that "Within the City it must be clear to all but the most blinkered that the group is being run down."³⁸² Outside the City, knowledge of SW's state of affairs was partial and it was considered "clear therefore that the full extent of the group's problems is not universally appreciated."

On 15th September 1976 SWS released its annual report and accounts for the year ending 31st December 1975. This was known by those in the know to be the event that would place the full extent of the Bank's involvement, and the amounts in play, in the public domain. There was therefore considerable preparation involved within the Bank and Treasury regarding best responses to media coverage. Amongst the positions prepared was that it be stated openly that the SW operation had involved no public expenditures but rather only indirect involvement through the government's ownership of the Bank.

This argument of only indirect exposure was made to counter the criticism that public funds were used to prop up a private bank. In the words of the Treasury, the "Government's financial concern only arises because it is the shareholder, so that any

³⁸⁰BEA 6A70/18, d.d. 4/6/76.

³⁸¹Capie (2010) p. 563.

³⁸²BEA 6A70/18, d.d. 25/5/76.

losses incurred on operations of this kind may effect in due course payments which the Bank makes to us "in lieu of dividend".³⁸³ The extent to which this indirect exposure is in some way less regrettable than a direct expenditure is arguable.

In case of a loss due to SW, direct exposure would have involved a fiscal outlay to cover the loss whereas the indirect exposure - the one that was used - manifested itself as foregone dividends or a lower fair value for the asset at hand, in this case the government's ownership of the Bank. The Treasury defence thus involves arguing about the *way* the payment, or loss, entered the books - not the amount or ultimate bearer of loss. But since this defence was to be used against the charge that public funds were used, they can only be seen as an attempt to muddle the issue and indirectly argue that any loss would in any case not ultimately borne by taxpayers - without saying it in those exact words.

The publication of the accounts ultimately carried with it the expected media firestorm. In the chairman's statement, Goldsmith briefly summarized the chain of events starting from Slater's resignation through to the restructuring of the company. The tone of the statement was inevitably different to that of the Bank's comments and focused on how common it had become for commercial banks to fail. SW's demise was thus to be seen as part of a larger problem and not an indictment of the individuals involved. It's unlikely that the Bank would ever emphasise how widespread problems in the City were when explaining its course of action.³⁸⁴

The numbers showed that after provisions of almost 32 mGBP, the net loss for the year of 1975 had been 42 mGBP. This took the cumulative loss for the previous two years to 72 mGBP. In explaining the weakness of the banking side's performance,

³⁸³TNA T386/293, p2/13.

³⁸⁴Slater Walker Securities, Explanatory Circular, Directors' Reports and Accounts 1975; Chairman's statement.

three factors, quoted in full, were emphasised, all of which could have readily been spotted by Bank officials if a rudimentary analysis of the balance sheet had been performed prior to the crisis:

1. *The small number of very large loans, whose size appeared out of proportion to the resources of SWL. The four largest loans (ranging from £5 million to almost £18 million) accounted for 51 per cent of the portfolio. There were a further 16 loans of over £1 million which accounted for 31 per cent of the portfolio. Therefore, of the 150 loans, 13 per cent of the total number accounted for 82 per cent of the total value of the portfolio.*
2. *The terms on which some £36 million of the loans were granted included provision for the rolling up of interest.*
3. *The mismatching of the maturity dates of assets and liabilities due within 3 months amounted to £57 million, whereas assets realisable within 3 months were £22 million. The loan portfolio included some £62 million of loans (before provisions) with an expected repayment date of over two years.*³⁸⁵

As for the balance sheet, it had shrunk to 160 mGBP by the end of the year. This was however not comparable to earlier years as there was substantial reclassification of the figures, resulting in total assets for year-end 1974 now being reported as 238 mGBP (down from 393 mGBP). Out of the 238 mGBP, 80 mGBP was said to be capital and reserves although the arrangement with the Bank of England meant that the quality of the equity was severely impaired.

³⁸⁵ *Ibid.*

The coverage of the accounts was understandably widespread, given the fact that the Bank had managed to keep its assistance a secret for almost a year. Most major outlets focused on details of the Bank's assistance, notably on the guarantee and the loan facility. Much was also made of the accountant's report with the most quotable parts drawn out, such as the "inherent weaknesses" in the group's lending policy and the concentration in the loan book. The "in-house" nature, or interconnectedness, of SWL also drew a lot of attention. The *Financial Times* focused on the fact that the loan book had shrunk from 90 mGBP to 51 mGBP, of which up to 40 mGBP were bad debts covered by the Bank guarantee.³⁸⁶

All in all, however, the media reaction was not overly critical of the Bank. Most of the criticism centred on SW executives while the fact that the Bank had put up unprecedented amounts to rescue the group caused little outrage. While a more radical rethink of financial regulation and stability was to follow during the end of the decade and onwards, little reflection was to be found at this stage on what the Bank's role in the financial system should be. The implications of the SW rescue on future crisis episodes were not discussed and neither was the effect of the Bank's insistence on viewing deposits as an instrument that was free of credit risk.

As the story was now out, the political pressure intensified with requests for information being sought from the Chancellor. He addressed parliament and assured MPs that he had been "aware of the general approach" adopted by the Bank and accepted the Governor's assessment. He further clarified that the total support was the 70 mGBP standby loan facility and the 40 mGBP guarantee before stressing that the two were not additive.³⁸⁷ By this he meant that if the guarantee were to

³⁸⁶The *Financial Times*, "Slater Walker's narrow escape", 15/9/76.

³⁸⁷Despite this clarification, and many others, it was regularly reported that they were indeed additive. Grady and Weale (1986) talk of the Bank being responsible for SWL "at a cost to the

be drawn upon, the loans under the facility would be repaid. In a nod to central bank independence, he admitted that his specific approval of both facilities had been neither sought nor required.³⁸⁸

A particularly scathing letter was written by the Labour M.P. Frank Hooley to the Chancellor, in which he denounces the SW rescue operation. The line of criticism is certainly familiar to anyone loosely acquainted with coverage of any financial crisis in recent decades:

*How is it that £70 million of public money can be used to prop up the activities of a shoddy swindler like Jim Slater, while the NEB [note: National Enterprise Board] is having to make do with quite inadequate resources. Why is it that the Bank of England can rescue any lousy City twister while manufacturing companies in difficulties have to beg and plead and argue for the old couple of million to help them out - which is then made available if at all on the most stringent terms.*³⁸⁹

In the following months the asset realisation programme continued within both SWS and SWL, with Goldsmith assuring the Bank that the group "was now reduced almost to a shell", thus returning it to its initial state when Slater had taken over H. Lotery in 1964.³⁹⁰ The cash received from asset sales and wind-downs was used to buy in loan stocks with no new business being sought out. By the end of 1976, 15.5 mGBP of both foreign and domestic loan stock had been bought in at 8.7 mGBP,

Bank of a £70 million loan and a £40 million guarantee" (p.152). Geddes (1987) reports similarly additive numbers.

³⁸⁸BEA 6A70/18, House of Commons transcript from 13th October 1976. The forthcoming question regarding the Chancellor's involvement had been known beforehand. Much care was taken in constructing the answers with drafts going back and forth between the Bank and the Treasury as every sentence was scrutinized.

³⁸⁹TNA T386/293, p2/23.

³⁹⁰BEA 6A70/18, d.d. 20/12/76.

giving a discount of 44%.³⁹¹ This "profit" on the buyback gave a clue to the extent of the hole which market participants saw in SW's balance sheet. Additionally, the rundown of SWL's loan book had been outsourced to Hambros.

Another move designed to run down the balance sheet came when the group moved to smaller premises. Having previously occupied the grand premises next to St. Paul's Cathedral that previously belonged to Ralli, the group now took up residence at the more humble Old Change Court. These moves seem to have pleased the Bank and there was general agreement that most of the moves being taken by SW executives were the right ones for all parties involved.

Not everything was rosy however. For one, the group's insurance operation seemed "unsaleable" which led to uncertain recovery aspects. More crucially, the Bank estimated the group's ongoing operations to be yielding a yearly loss of 5-6 mGBP. The disposal of the property portfolio was going according to plan although a hoped for recovery in property prices which would strengthen the balance sheet didn't seem to be forthcoming and interest rate increases had not helped in this respect. Due to these developments, SWL's board were considering whether to make use of the Bank guarantee which led the Bank to question Goldsmith's willingness to remain as chairman.

In a late December meeting with the Governor, Goldsmith reported that the group was now "as clean as he could get it."³⁹² The bad news was that it wasn't structurally profitable. The damage could be contained in the short term but losses would gradually mount. Goldsmith's favoured solution was to find a bidder for the company who could take it forward and provide fresh capital to invest in new

³⁹¹BEA 6A70/18, d.d. 14/12/76.

³⁹²BEA 6A70/18, d.d. 20/12/76.

ventures. The major impediments to this plan were the insurance business and the Bank's involvement but Goldsmith saw the possibility of an acceptable deal with all parties and even had a specific buyer in mind.

No such deal materialized, however, and the months passed without any decisive decisions being taken. Any immediate threat to either SWS or SWL was treated with urgency, primarily to avoid liquidation but a permanent solution for the group was not forthcoming. As time went by, the ongoing losses gradually became more of a concern. A suggestion, refused at first, was finally made by Goldsmith in June of 1977 that the Bank simply buy SWL from the group for a nominal price.

Upon hearing about the refusal, SW representatives threatened that the only available move at this point was liquidation. The Bank was as ever opposed to such a move due to several reasons. Among them was not only the financial fallout - liquidation was estimated to entail 20 mGBP more in losses to the Bank than restructuring - but also the unwanted media attention and the very real possibility that SWL would be dragged into it. On another sour note, SW's advisers notified the Bank that in the event of liquidation, the group's board would have no other choice but to publicly criticize the Bank and blame it for the bankruptcy. It is not possible to put separate weights on the legal, publicity and financial repercussions that the Bank faced but the publicity aspect was undoubtedly something that was not taken lightly.

The Bank thus reconsidered the option of buying SWL out and thus severing all ties with SWS. The possible net loss scenarios for the Bank now ranged from 29 mGBP to 49 mGBP. Having looked over the options and the estimated losses involved with each one it was finally decided that the reconstruction option, whereby the Bank bought SWL for a fee in the region of 1.5 mGBP, was the least costly option, both

in financial and other terms.³⁹³ A sub-committee within the Bank, including the Governor and Fforde, was subsequently appointed to complete the deal on behalf of the Bank.³⁹⁴

The Bank also consulted with the Treasury regarding the this option. Treasury thought it best, for the most part, that decisions regarding how to minimize ultimate loss due to the SW rescue operations were made by the Bank. In that sense, whether assistance was to continue in the form of provisions or an outright purchase of SWL was left to the Bank. The Treasury's main concerns were however the status of SWL as a Bank of England subsidiary and, more importantly, whether the acquisition would be categorized as a public expenditure as this would have an effect on the highly sensitive fiscal budget and deficit.³⁹⁵

This latter point relates to the urgency placed on the fact, discussed above, that the SW rescue operations had so far not been seen as a public expenditure but instead came in the form of lower future dividend payments from the Bank.³⁹⁶ Treasury was thus very much concerned about the categorization of the proposed takeover of SWL, and less about the real effects. Direct public expenditures were guarded safely as they had to be accounted for in the budget while indirect expenses could circumvent the budgetary process. Treasury consequently emphasised the fact that if the purchase were carried out through the Issue Department of the Bank

³⁹³The proposal included various nuances such as a group relief payment from SWL to SWS of 3 mGBP in respect of tax losses and the purchase of several properties by the Bank from SWS.

³⁹⁴An interesting sidenote came up during the negotiations as it came to light that the structure as it had been decided entailed a 1.8 mGBP tax charge. It was thus agreed that the transaction be delayed to prevent this tax charge. It must surely be considered a rarity that the Bank of England conduct its business in a way that reduces tax revenue for its colleagues at the Treasury. BEA 6A70/18, R.D. Galpin, d.d. 27/6/77.

³⁹⁵TNA T386/293, p4/12.

³⁹⁶This dividend shortfall was at one point estimated to amount to 3-4 mGBP a year, if the purchase went through. See TNA T386/293, p4/15.

it would count as public expenditure while a Banking department purchase would avoid this.

While the Treasury was not averse to the acquisition and focused mostly on the budgetary effects of the deal, the possibility of vetoing the Bank's deal was addressed in a staffer letter to the Chancellor:

*Formally the Treasury has power to give a direction to the Bank on most things, including over-ruling their assessment in a case like this. But it would be very out of the ordinary to do so and there are in any case advantages in letting the Governor act independently and flexibly in rescue cases. But the corollary of this, which he seems to accept and which you may wish to confirm with him, is that the responsibility is his alone.*³⁹⁷

This goes back to the Bank Act of 1946, discussed in Chapter 3 of this thesis, which formalized the ownership and governance issues of the Bank vis--vis the Treasury. While the relationship had been formalized with the act, it had yet to be tested in practice and this was one of the first instances where Treasury's power over the Bank was put to the test. In fact, while the Bank did indeed consult with Treasury on the matter and indirectly asked if they had any objections, this was more of a courtesy gesture aimed to keep Treasury in the loop.

Having gone through the formalities with Treasury and ironed out the details, it was announced on 4th July 1977 that under the reconstruction proposals being put forward by SWS, the Bank of England would purchase the group's banking subsidiary, SWL, for 3.5 mGBP. This was to be the final chapter in the Bank of

³⁹⁷TNA T386/293, p4/16.

England's long-winded and complex involvement with the Slater Walker group. In addition to SWL, the Bank would also purchase two properties for 6.5 mGBP and SWL would itself buy a 10 mUSD convertible loan note. These purchases were agreed upon by the Bank in order to provide SWS with necessary liquidity that staved off default. In an accompanying background briefing for the press, the Bank claimed that the "original objective of the Bank's intervention - namely the protection of depositors - has now been achieved."³⁹⁸

The restructuring in general, and the Bank's purchase of SWL in particular, inevitably opened up the possibility of some further unwanted media attention on the Bank. Serious efforts were made to predict the line of questioning from the press and dossiers of acceptable answers prepared. The tried and tested Bank line was to be taken, namely that the decisions made were the best possible and other actions would have lead to greater losses. The protection of general depositors was, as usual, to be stressed while no precise numbers should be mentioned regarding the estimated eventual losses but instead the Bank should cite the large uncertainties involved.³⁹⁹

To the relief of the Bank, the intensity of the media attention on SW had mostly withered away at this point. The post-mortems had come flying in following the release of the 1975 accounts when the Bank's involvement became public knowledge. Most major outlets had used the opportunity to put out reflective articles, focusing on the rise and fall of the company and, as mentioned above, explaining rather than criticizing the Bank's eventual involvement.⁴⁰⁰ These articles symbolized the end of

³⁹⁸BEA 6A70/18, Background Press Briefing, undated.

³⁹⁹BEA 6A70/18, Press Briefing, undated.

⁴⁰⁰Many of these reflective articles also reevaluated the media's role in hyping up the SW machine. Many within the profession deemed the media to have been too complicit in the whole affair and not delved deep enough to properly cover the issue. One of the most detailed reviews came in the *Sunday Times* and went so far as to quote several eulogies from other newspapers, including a 1974 quote from the *Financial Times*, obviously wrong in hindsight, that Slater Walker as a bank was

the media frenzy accompanying the SW group as there was not much to report on - at least as far as publicly available information was concerned.

The decrease in media attention gave both the Bank and Treasury space to evaluate the actions taken during the whirlwind crisis. In one of Fforde's "weekly chats" with the Treasury, during the summer of 1977, he relayed that from the Bank's point of view, its actions regarding SW could justifiably be criticized, both with regard to the "overall extent of assistance" as well as the methods chosen. They would however, according to Fforde, "probably not have to face that criticism, because there would be few who had the knowledge and expertise to formulate it, and many of those who might be qualified were wrong-footed because of previous public support of Slater Walker."⁴⁰¹

This proved to be the case as general interest in the SW affair, both from the public and by the press, quickly subsided as time passed. The name of SWS was changed to Britannia Arrows Holding Ltd at the end of 1977 and the group ultimately merged with Invesco in 1988. No inquest was made into the whole affair and there was little urgency in increasing the Bank's responsibility when it came to rescue operations. The interest had in fact decreased to such an extent that the Bank was never forced to publish its true loss resulting from the SW rescue operations.

No mention was even made of SW in the Bank's published accounts until the takeover had been completed. A note accompanied the Bank's accounts following the crisis which revealed the amount of provisions needed due to "advances made, and guarantees entered into, in connection with the Bank's involvement in support

at the time "underlent, and what doubtful debts there are, are well covered by the reclassification of inner reserves" The *Observer* received the same treatment with a 1972 quote: "When the next bear market comes, Slater, at least, is not going to be caught napping." *Sunday Times*, "The Jim Slater Verdict: Puncturing the City's indiarubber idol", 19/9/76.

⁴⁰¹TNA T386/293, p5/15.

operations.” The figure for the 1978 accounts is 10.2 mGBP although this is after allowances for provision reductions due to Gilts. Capie (2010) says that the true 1978 amount was 25.6 mGBP.⁴⁰² No further details are given in the public accounts although a further note regarding ”investments in subsidiaries” states that during the year the Bank had purchased 100,000 ordinary shares of SW and 10m deferred shares. It is furthermore mentioned that consolidating SW into the banking department’s accounts would have been ”misleading” in the view of the Directors.

Even the Bank’s aggregate losses due to the secondary banking crisis remain elusive. According to Capie (2010), an internal note written in 1984 estimated that the total losses would be approximately 80–90 mGBP.⁴⁰³ Reid (1982) p. 190 estimates the losses at 100 mGBP while Grady and Weale (1986) counter that Reid’s figure excludes 200 mGBP of losses due to the Crown Agents scandal which they argue was ”effectively a loss to the taxpayer as shareholder in this public corporation”.⁴⁰⁴

Capie (2010), with access to classified material, finds that 38 mGBP of provisions were made due to SW through to 1980 and 7.8 mGBP, subsequently written off, thereafter. The proportion of the 38 mGBP provisions that were written off is not mentioned although a significant part of it is likely to have been lost. If the total amount was written off, that would put the total losses at 46 mGBP, compared to Bank total capital at year end 1976 of 121 mGBP. This accounting loss obviously does not take into account the foregone interest that went along with the Bank’s use of funds. Ultimately, calculating the precise extent of the final losses is impossible. Moran (1984), writing nine years after the end of the immediate secondary crisis,

⁴⁰²See Capie (2010) p. 582 for a discussion on the costs to the Bank. While he mentions that in 1994 the provision for support given in the 1970s stood at 55 mGBP, Capie concludes that it appears impossible to calculate definitively losses to the Bank from the secondary crisis.

⁴⁰³Capie (2010) p.581.

⁴⁰⁴Grady and Weale (1986) p. 152.

puts it as follows:

Any narrative of the rescue might reasonably conclude with an estimate of these costs. The task is impossible: the monetary costs have been hidden, the other costs are literally incalculable. It is the last great triumph of esoteric politics that the Bank has without difficulty declined to reveal the full size of its involvement. [...] The refusal to reveal true costs was entirely in keeping with the tradition of banking politics in Britain. The Bank took the view that the money used was from its own resources, and that details about losses were sensitive banking issues best dealt with confidentially."⁴⁰⁵

In addition to these very real direct costs, the implicit costs, covered extensively in Chapter 3, need to be added to the total tally. The Bank, in safeguarding deposits by any means necessary, explicitly and implicitly removed credit risk from deposits leaving any dangers due to commercial banks' operations to be dealt with via the Bank's own balance sheet. As seen in Chapter 3, these costs are by no means easier to calculate than the direct costs discussed above but remain very real in terms of burden allocation in response to crises such as that of Slater Walker.

Finally, Table 4.7 shows Slater Walker's role in comparison to other rescue operations during the crisis. The Support Group consists of the so-called lifeboat operations which was taken on by the Bank in collaboration with the main clearing banks. The unilateral operations were taken on at the Bank's own risk, after the clearers had announced that they wouldn't partake in further rescues. As can be seen, Slater Walker, along with Edward Bates, represent the largest rescues by far

⁴⁰⁵Moran (1984) pp. 111-112.

Table 4.7: Total Charge For Bad Debts In Four Years To 28th February 1977

<i>Support Group</i>		
Triumph Investment Trust	500	
Burston Finance Ltd.	1,260	
FNFC	5,000	
J.H.Vavasour	400	
London & County Securities Ltd.	1,878	
Knowsley & Co.	321	
<i>Shared with Other Banks but not Total Support Group</i>		9,359
David Samuel Trust	2,625	
<i>Unilateral</i>		
Edward Bates	20,400	
Jacobs Kroll	600	
Wallace Brothers	3,800	
Slater Walker Ltd.	27,152	
Cannon Street Acceptances	3,956	
G.T.Whyte	949	
Whyte Gasc & Co. (C.I.)	3,532	
London & County Securities Ltd.	4,888	
		65,277
<i>General Bad Debt Provision</i>	5,471	
<i>Other</i>	-951	
<i>Total Charge for Bad Debts</i>		81,781

Source: Bank of England Archives 1A179/17, "Brief on Support Operations", filed 1/3/78.

and, as documented above, the Bank's exposure to Slater Walker was in fact nearer 70 mGBP at one point.

4.5 Conclusions

Slater Walker's rise and fall represented one of the most tumultuous episodes for the Bank of England during the 20th century. The firm's fortunes represent a pertinent case study in misapplied regulation and the inability of regulators to adapt to financial innovation on the go. It is a good example of a privately owned institutions bearing risks that are initially private but which subsequently morph into public risks as it begins to take public money. The fact that regulators, in this case

primarily the Bank of England, are not aware of these developments as they happen ultimately lead to realized burden-shifting when the firm fails. Pinpointing the exact date where the private risks on SW's balance sheet morphed into risks for the Bank, and thereby the public, is impossible. However, it is unlikely that the risks would have been allowed to remain private ones once the takeover of Ralli had been completed in 1969.

As covered in this chapter, the Bank of England became aware of Slater Walker and its operations when it acquired licensed banks and thus came under regulatory scrutiny. The time to prevent later problems within SW would thus have been the point in time when the company acquired its banking business. Only by taking a close look at the company's accounts would the Bank have been in possession of the information necessary to see the true state of Slater Walker. Instead it relied on sporadic and simple ratios from the aggregated annual accounts to assure themselves that the business was sound. Drawing a line between these ratios and the true economic state of the company involved several assumptions which ultimately meant that the Bank was oblivious to any mounting problems.

Finally, how representative was Slater Walker in comparison to the demise of other secondary banks during the period? While the goal of this chapter hasn't been to use the company as an analogy for the crisis as a whole, it is worthwhile to consider how it compares to other failures and rescues at the time. In terms of size, SW was amongst the biggest secondary banks, although it was not much larger than other notable cases such as First National Finance Corporation or Keyser Ullman.

As for the rescue by the Bank, it stood out from many of the typical secondary banks as it was not orchestrated through the Lifeboat. This was primarily due to the fact that the cap of 1200 mGBP had by then been breached and the Bank had

to schedule subsequent failures on its own, without the clearers.^{406,407} SW's troubles were however, as we have seen, symptomatic to that of the secondary banks in general, with the rapid growth, property exposure and lack of market disciplining all present. In that sense, the chapter's analysis and narrative can be seen to apply to the crisis in general and the problems faced.

Turning to the various participants involved, there was considerable weariness towards the crisis at the time of the rescue. The Bank felt that the situation had stabilized somewhat and that it was better able to deal with issues that came up than at the onset of the crisis. Its insistence on as much secrecy as possible also contributed to a somewhat subdued atmosphere. Under different circumstances, an isolated failure of Slater Walker could have caused greater commotion. Below we look at the role played by each of the actors that can loosely be seen as serving the role of public guardian.

The Press

In retrospect, was the press oblivious to the forthcoming problems and if so, were they all equally oblivious? As the various instances of the coverage above indicate, the media took what can be described as a pro-cyclical stance towards Slater Walker. During the company's growth years, coverage was near-unanimously positive and, although the effects are not quantifiable, this positive coverage helped create the public profile of the company and especially Slater himself which facilitated increased funding opportunities from the public.

Given the dearth of information at the time, it can be argued that the press was lacking the means to evaluate the performance of both the banks and the Bank of

⁴⁰⁶See Reid (1982) p. 138.

⁴⁰⁷Slater Walker was one of three large unilateral rescues by the Bank of England, the other two being Edward Bates and Wallace Brothers. See Capie (2010) p. 556.

England. There was, for example, no Freedom of Information channel that the Bank had to adhere to until 2005 (when the FOI act of 2000 came into effect).⁴⁰⁸ However, there is no indication, neither in the mainstream nor investigative reporting of the time, that the press felt it needed greater information to assess the performance of the banks or the vigour of the Bank of England. Statements were generally taken at face value.

The turn-around in press sentiment was also in line with the turn of the economic and financial cycle. As soon as equity prices started their decline the coverage towards companies such as Slater Walker turned negative. The press started to question the value of various financial operations and the criticism increased as the credit cycle worsened further. The case could certainly be made that the coverage overshot in both directions.

The uncritical praise heaped on companies such as Slater Walker in the late 1960s and early 1970s was facilitated by journalists that didn't seem to put much effort into understanding the figures or the business itself. The coverage was frequently based on quotes from company executives and what numerical coverage there was centred on headline numbers, as presented by the company. Likewise, the criticism during the downturn reflected the sentiment of the time and did not seem to be based on any newfound understanding of the company's business.⁴⁰⁹

Regarding the second part of the question, most of the largest outlets were guilty of this, including the *Telegraph*, *Observer*, *Financial Times*, and the *Economist*. A notable exception was *The Sunday Times*, although their coverage often suffered

⁴⁰⁸For a recent evaluation of how such channels can work, see Karlson (2010) who covers the recent FOI requests in the U.S. following the global financial crisis.

⁴⁰⁹This relates to the recent increase in quantitative methods in the media, for example in political coverage. See Silver (2012).

from these cyclical stances as well. One big reason for the *Times*' more nuanced coverage of SW was the efforts of Charles Raw, the same Raw who later wrote the book on SW. In sum, however, it is difficult to see signs of the press providing checks and balances for investors and the general public during the SW story or for the secondary banks in general. Determining whether this was due to a lack of resources, misaligned incentives or other issues is beyond the scope of this thesis but less pro-cyclicality in the investigative press's coverage could certainly have helped with regards to market discipline.

The Treasury

Treasury served a very indirect role as public guardian during the Slater Walker episode and the secondary banking crisis. It relied almost solely on the Bank to carry out government's involvement in the financial sector. This was despite the fact that the Bank was somewhat uneasy in viewing itself as a branch of the public sector as well as the fact that it only reluctantly shared information with Treasury.⁴¹⁰ While there was some tension between Treasury and the Bank regarding leniency and terms of assistance, the only concrete decision made by the former was to trust the judgement of the latter in matters of assistance. This passivity can be seen as being driven by the fact that Treasury was almost solely concerned about items that were to fall under the budget. As the Bank's losses didn't reach a level that meant a capital injection from Treasury was required, the latter didn't feel the need to concern itself with the Bank's minutiae.

The Bank of England

As for the Bank of England's role, several items stand out regarding its handling of the SW affair. First of all, its attempts at regulating SW during the firm's lifetime

⁴¹⁰See Chapter 3 for a discussion on how the Bank viewed itself.

were nothing short of naive. By relying on aggregated ratios and casual chats with the firm's management, the Bank completely missed the interconnectedness of the group and the complications involved with trying to separate the banking side from the group. The Bank was also completely unaware of the illiquidity of the balance sheet and the concentration of its loan book.

Finally, the Bank never owned up to the problems with viewing public deposits as bearing no credit risk. The fact that the operations undertaken by banks are inherently risky means that for the liability side of their business - i.e. deposits - to be risk-free there must be a risk-transfer of some sort. The Bank may possibly have had the view that it could foresee any upcoming problems and take action to prevent any fallout but the experience of 1973-1975 should have laid any such ideas to rest. The fact that they did not meant that the crisis management facilities became a tool of risk-transferring, no less than stability providing.

What did the Bank think of its own supervisory performance in hindsight? A clue came in the previously mentioned internal Q&A brief where several aspects of the SW rescue came up. Under the heading "Supervision Arrangements", the question was posed whether the Bank thought it had obtained "adequate information" from SW in the period from September 1974. The reason for focusing on this date seems to have been the increased supervisory procedures announced by the Bank at that time. The constructed answer didn't address the question directly and focused instead on the complicated structure of the SW group. The Bank did however recognize that the "in-house nature" of the banking subsidiary was not adequately recognized.⁴¹¹

In response to similar questions the Bank placed similar emphasis on the renewed vigour of supervisory activities following the September 1974 changes. It thus neither

⁴¹¹BEA 6A70/18, Q&A drafts, undated.

addressed the issue of information adequacy in relation to supervision of deposit taking institution nor indeed the fact that the Bank, by viewing deposits as bearing something close to zero credit risk, was in the business of guaranteeing deposits in the event of commercial bank difficulties.

The official Bank-approved view was finally revealed in its June 1978 *Quarterly Bulletin* in an article titled "The secondary banking crisis and the Bank of England's support operations".⁴¹² The article states explicitly that depositor protection was the Bank's main concern and that avoiding disturbance in other related financial fields was an added benefit. Apart from that, the article only mentions the whole SW affair in terms of retelling the story and provides little in the way of potential lessons learned. As for the crisis in general, it is emphasised that changes were at this point in time underway with regard to supervision and regulation. Finally, the view is given that the proposed arrangements, which were to culminate in the Banking Act of 1979, would "go far to reduce the risks of major difficulties arising and [...] provide a satisfactory basis for dealing with any which do occur."⁴¹³

The official view can thus be summarized as stating that the Bank's main goal had been achieved and that any losses were unpreventable. Furthermore, any flaws in the system would be addressed in the upcoming reforms. There was therefore very little introspection as to removal of depositors credit-risks, the costs of achieving depositor protection or explicit figures as to losses due to SW or other rescues of the time. Furthermore, by the time the article was published, memories of the crises had already faded considerably and attention had moved on to more recent and pressing

⁴¹²Bank of England (1978). The general tone of the article is covered in Chapter 3.

⁴¹³Bank of England (1978) p. 236. The *Banker*, commenting on the act, was of the opinion that it would be seen by the bankers as "a necessary inconvenience. Some might even regret that the UK's first banking Bill is so evidently not momentous." (The *Banker*, "Britain's Banking Bill: Umbrella or Safety Net?", Vol 128 pp. 23-27.)

matters.

This also goes back to the time inconsistency discussion in Chapter 3, especially the simplified game presented there. Put in that context, one can argue that the Bank's decision to intervene in Slater Walker once the crisis started was a prudent one as forcing losses on depositors would have invited contagion. This argument is addressed in greater detail in the next chapter. However, it is also easy to argue that the Bank could have done more to prevent this scenario from arising at the time when it was mostly concerned with comparing standard ratios across banks. The *Quarterly Bulletin* article contains very little in terms of lessons for future crises and how the Bank intended to change its regulatory policies following the secondary crisis.

As for assessments of the Bank's crisis management performance from the outside, the most direct discussion of the lack of information sought by the Bank and its stand-off approach possibly came in a Slater Walker obituary in the *Economist*, under the heading "The Bank learns":

Why was the Bank of England taken by surprise by the size of the doubtful debts in the Slater, Walker banking subsidiary? They were apparent to the new board as soon as MR Slater quit. The Bank's new system of bank supervision had begun a full year earlier in September, 1974. So three, and possibly four, of the quarterly returns now made would have reached the Bank.

Answers: the Bank's supervisors were impressed by the size of Slater's cash balances and by the fact that it had not needed lifeboat funds. The degree of inter-group business did not show up on the returns. The supervisors paid insufficient attention to the equity stakes in banking clients

held by other Slater companies and so did not ask the right questions.

Says a spokesman for the Bank: "we live and learn."⁴¹⁴

⁴¹⁴The *Economist*, "The Bank learns", 18/9/76.

Appendix

4.A Slater Walker Directors and Organizational Chart

Directors as of year-end 1967

J. D. Slater - Chairman and Managing Director

P. E. Walker - Deputy Chairman

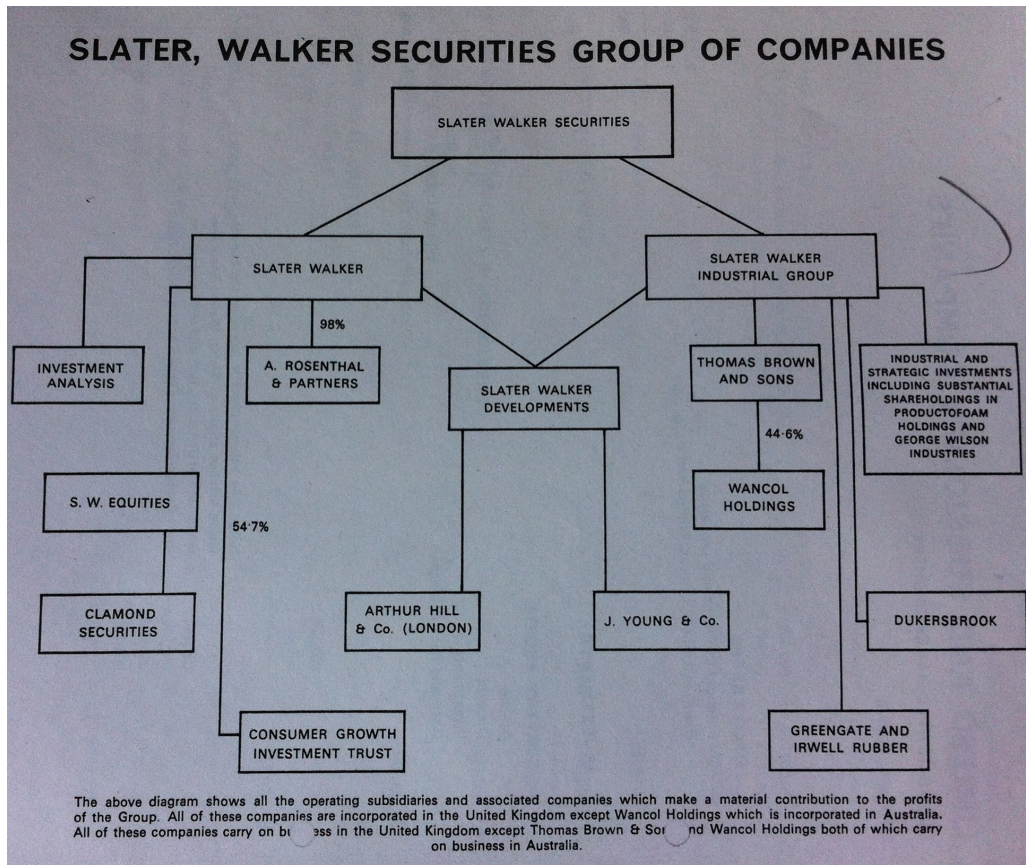
M. Horsman - Director

A. J. H. Buckley - Director

J. Ford - Director

A. J. H. Buckley - Secretary

Figure 4.6: Slater Walker Organizational Chart 1966



Source: Slater Walker Securities Ltd annual reports 1966 and 1967.

Chapter 5

Interdependence and Contagion

5.1 Introduction

As mentioned in previous chapters, contagion within the financial system was - alongside the protection of small depositors - the primary motivation given by policymakers for intervention during the secondary banking crisis of 1973-1975. In this chapter, use is made of previously confidential data to shed light on these issues and also try to establish how crisis episodes, such as during the secondary crisis, differ from more normal market conditions. In so doing, an attempt is made to answer a general question, applied to the subject matter at hand: To what extent do banks face the same liquidity problems during crises and to what extent do creditors differentiate between banks when withdrawing funds? Furthermore, how do banks themselves react to and experience such episodes?

To help shed light on this matter, the empirical section of the chapter looks at both developments within the core and the reaction of the core to the problems of the fringe. For the former, a new data set is constructed, consisting primarily of monthly

balance sheets for the bulk of the 20th century for the Big Four banks in Britain. This data recently became available under the 30-year rule and gives a more nuanced view of balance sheet developments during the sample period than could previously be achieved.⁴¹⁵ This data can help shed light on several aspects of the question at hand. Firstly, the data allows us to determine to what extent the biggest banks of the period witnessed depositor withdrawal at the height of crisis episodes or whether they were able to elude the panic that was wreaking havoc on other institutions. While the banks' official accounts show no signs of panicked withdrawal during the period, this could be due to the fact that the accounts are of a low frequency and only reveal a glimpse at one point in time that also happens to be pre-approved by management. On a related note, we can look at periods of calm and see whether there is a marked difference in depositor - and bank behaviour - during times of tranquillity as opposed to marked volatility.

Secondly, the data can help with analysis of how closely figures such as deposits and cash co-moved between the banks throughout the period. If it is the case that there is heightened interdependence of deposit flows amongst banks during crises it is easier to make the case that a true lender of last resort should take steps to negate a general run on the system.⁴¹⁶ This is the so-called contagion argument. By looking at the co-movement between banks we can see both whether there is general correlation between them as well as whether any general co-movement found is heightened during crises.⁴¹⁷

⁴¹⁵The 30-year rule and its recent changes are explained in greater detail in Chapter 1 of this thesis.

⁴¹⁶See Chapter 1 on the distinction between a lender of last resort and crisis management more broadly.

⁴¹⁷The extent to which the plotting of these co-movements can determine actual contagion is debatable and is covered further below. In the chapter, the term contagion is generally not used for the empirical exercise and instead restricted to policymakers' and banks' own discussions.

It should also be stressed that while we know that the secondary crisis did not lead to the demise of the largest banks, it has not been established whether there were any less-dramatic effects of the crisis on the core of the system. This applies to both the developments for individual banks as well as the relationship within the system. The former would, for example, include a possible drain of deposit at the onset of the crisis which was reversed following the Lifeboat operations. The latter, could be in the form of heightened or decreased correlation between banks during the crisis. The data presented in this chapter can help shed light on these matters.

Furthermore, previous studies have focused on market prices when estimating interdependence due to lack of availability of other, more relevant, high frequency data. Using the data set employed in this chapter, comparisons can be made as to the extent to which equity holders and deposit holders reacted differently in response to the crisis and whether there was greater co-movement in one market or the other.

As for the second part of the empirical section, that of the effect of the fringe's problem, use is made of equity price data of several of the banks that failed during the period, obtained from the *Financial Times* archives. Following up on the interconnectedness exercises described above, adding data on the fringe banks can help show to what degree they affected the core and whether the fringe's problems contain predictive power for the Big Four. The results from this exercise can also be put into the context of the policy response to the problems, most notably the Lifeboat, as well as any possible discrepancy between equity and deposit reactions to the crisis.

The overarching goal of this chapter is, however, to look in greater detail at the Bank of England's contagion rationale for intervention during the secondary banking crisis. This is done quantitatively, as described above, but also qualitatively

in Section 2. The emphasis there is on using archival data to document the banks' decision making process, their communications with the Bank and their response to the crisis. In addition to providing support to the quantitative sections, the qualitative section tries to shed light on how the Bank devised its crisis management strategy as the crisis wore on. How the Bank attempted to maintain market discipline while supporting the banks figures heavily as well as its collegial spirit towards the banks.

The underlying assumption behind any intervention on behalf of a public entity, such as a central bank, in financial markets is to correct some market failure and adjust the market mechanism so as to ensure a healthy market environment. Another underlying assumption is that this market adjustment is revenue neutral, in the sense that the undertaken adjustment does not involve a redistribution of funds towards - or from - the institutions involved.⁴¹⁸ It is merely enacted to correct a market failure and to enable private institutions to function as if the market worked without these frictions.

In the case of financial market contagion, and banking contagion specifically, irrational creditor withdrawal from solvent banks due to informational imperfections leads to a sub-optimal solution which could be mitigated by public support. This support, in the form of replacing private credit with public, would thus help solvent but illiquid institutions ride out the withdrawal period until private credit returns and the situation normalizes. For this mechanism to work as envisioned, three conditions must be fulfilled.

⁴¹⁸We omit the case here whereby a bank is insolvent and is judged to be too systemically important to fail. In such a case, there may be an argument for subsidizing the entity involved, although the argument for nationalization is stronger in this case. This was not the scenario during the secondary crisis, however, so we focus on the general case as in the literature.

First of all, the supported bank must in fact be solvent and not be suffering from illiquidity because its liabilities exceed assets. Second of all, the public entity - generally the central bank - needs to have superior information to private creditors if it is to correctly counter any perceived informational market failure with regard to solvency of banks.⁴¹⁹ Thirdly, the public entity must price the credit provided in a manner so as to emulate as exactly as possible the way in which private creditors would provide credit if they had the same information as the public entity. If the public credit is provided at a discount to the price of private credit, the facility would represent a subsidy from the public entity to the bank.

A counterargument to this formulation is that the market failure is on the supply side rather than the demand side. That is to say, creditors are not withdrawing funds and squeezing banks due to concerns of insolvency but rather due to a recently heightened liquidity premium and a need for cash. In this case, the banks in trouble could call on the central bank to provide the funds needed. However, in order to correct this type of market failure, the same requirements of distinguishing between illiquid and insolvent institutions and pricing the assistance correctly are required in order for the principle of revenue neutrality to be upheld and the assistance to be a clear case of correcting a market failure.

Before proceeding, one might find it helpful to pin down exactly the terms used in the literature. This is difficult, however, as several definitions have been made for most of the terms at hand. Even the term contagion itself is not homogenous

⁴¹⁹On this second point, see for example Myerson (2014) who argues that "To do its job, then, the central bank needs more than just a deep ability to issue more money when necessary; it also needs some basic expertise in evaluating financial investments, so that it can identify when a bank's investments can be taken as good collateral. In this sense, a lender of last resort may be better understood as a monitor of last resort, and its bold lending then serves as public signal that the borrowing banks have been found creditworthy by the experts at the central bank." (p. 202)

as it can occur between institutions, countries and currencies giving rise to different definitions in each case. One example is Forbes and Rigobon (2002) who look at the emerging market crises of the 1990s and define contagion as "significant increases in cross-market linkages after a shock to one country (or group of countries)".⁴²⁰ While pointing to other definitions, they note that this definition has been used substantially in the literature.

This definition has in fact come under some criticism for the fact that it does not specify any causal linkage but rather rests upon a statistical development found in specific time series. The counterargument would, however, be that specifying a single channel as the true definition of contagion would limit the term and force it to become too narrow. For the purposes here, I simply refer to interconnectedness or interdependence to avoid the ongoing debate on the correct usage of the contagion term.⁴²¹ The empirical exercises can thus be seen as an attempt to measure the degree of comovement and correlation while not necessarily implying a shock to a single institution which subsequently spread throughout the system (as the term contagion could be interpreted).⁴²²

A brief mention should be made of some institutional factors to keep in mind in the specific case of interdependence under consideration here. One can think of the British banking system at the time as a two-tier system; the secondary banks and

⁴²⁰Forbes and Rigobon (2002) p.1. Among others to use the exact same definition is Claessens et al (2000) who also summarize the recent findings in the literature at the time of writing. In a more recent review, Claessens and Forbes (2004) discuss the difficulties of definitions and different types of contagion in more detail.

⁴²¹For more on these debates, see Billio and Pelizzon (2003) as well as Corsetti et al (2005).

⁴²²See Forbes and Rigobon (2002) who focus on the the distinction between contagion and comovement.

the clearers.^{423,424} As discussed in Chapter 2 of this thesis, the secondary banks, as fairly new institutions, pursued aggressive lending growth in the years leading up to the crisis and were thus particularly vulnerable to the dry-up in liquidity and housing slowdown that accompanied the crisis.

The decision that policymakers then faced was whether to intervene or let the institutions that lost access to funding fail. The decision was taken to try to distinguish between solvent and insolvent banks, along the lines of the mechanism described above. As mentioned above, the two reasons for doing so were protection of small depositors and the threat of contagion towards larger and more established institutions, including the Big Four.

These actions have a big effect on the study in this chapter as there is no counterfactual. The realized developments of cash and deposits of the big banks will not shed light on the interdependence effect that could have materialized if policymakers would not have intervened in the secondary banks and safeguarded the rest of the system. What can be done, however, is threefold: Firstly, to see whether in the long-run there are signs that the liquidity patterns between the banks are the same. Secondly, whether there is a heightened volatility of the time series during the crisis, and, finally, whether policymakers can reasonably be thought to have based the contagion argument on what they were actually seeing in the data or whether

⁴²³In fact, the system was multi-layered with merchant banks, accepting houses, clearing banks and secondary banks (and some interlap between categories). Griffiths(1973) and Rowan(1973) describe the system of the time in its connection to monetary policy. Grady and Weale (1986) provide a more general overview. For our illustrative purposes here, a two tier description is more appropriate.

⁴²⁴This classification is somewhat similar to that used by Upper and Worms (2004) in describing the German banking system. They specify an "upper tier" which consists primarily of commercial banks, and a "lower tier" which includes savings banks and cooperative banks. Figure 4 in their paper (p.837) describes a mechanism similar to that of the British system at the time, more fully described in previous chapters of this thesis.

the moves taken were motivated either as a pre-emptive course of action or due to more anecdotal evidence of contagion elsewhere in the system.

The most common method of looking at contagion episodes is by analyzing dynamics in co-movements of readily available market data. Such studies gained in popularity following the Asian crisis of the 1990s.⁴²⁵ A multitude of papers were published, using readily available data such as equity prices to look at whether different countries that experienced crisis during the late 1990s also experienced increased co-movement leading up to, and during, the crisis. The methodology in such papers is often to look at development of cross country correlation and analyze whether an increase takes place during crisis episodes. Other popular methods include time series techniques such as cointegration and error correction models, as well as cross country regressions which focus on "excess" returns influenced by external events.

Such methods have also been popular in analyzing the Great Depression along both internal and external channels. This has involved looking at contagion between countries during the depression as well as amongst institutions within specific countries that were hit by the crisis. This latter approach is similar to the one taken here as the focus is on the dynamics between specific institutions within a single country. The novelty of this chapter lies in the choice of data as described later in the chapter.

The chapter proceeds as follow. Section 2 provides the historical background of the topic at hand. The section introduces new material on the secondary banking crisis and adds to the narrative of previous chapters. Specifically, we look at the response to the crisis from the point of view of the banks themselves, as opposed to

⁴²⁵The discussion here is intended to give a sense of how the topic is tackled to provide perspective for this chapter. However, Goodhart and Illing (2002) represents a fine report on the stance of the literature, especially following the Asian crises. Allen and Gale (2000) also represents a focal point in the literature.

a greater focus on the Bank of England in previous chapters. Therefore, while the role of the Bank of England is discussed in this chapter, it is focused on the reaction to the banks' actions and the developing relationship between the two. Section 3 describes the data used, its origins and also provides some summary statistics. Section 4 presents the empirical methodology for the interconnectedness study and results. Section 5 expands on these exercises by looking at the effect of the secondary banks on the core of the system. Section 5 concludes.

5.2 The Big Four's Reaction to the Crisis

In this section the environment of the institutions under consideration is described - most notably the same "Big Four" as in previous chapters - and how they viewed the looming difficulties surrounding the secondary crisis. However, the goal is not to go through the rescue measures taken in detail or build a narrative of how the crisis was dealt with in general as these issues are covered in other chapters of this thesis. Instead, we look at previously unused archival material on the crisis reaction as it related to the Big Four, try to put it in the context of contagion and by extension the possible knock-on effects of the secondary banks on the clearers.⁴²⁶ The Bank of England and its role is thus viewed through the lens of the clearers and the Bank's relationship with them.

As discussed in greater detail in Chapter 2 and Chapter 3, the Bank of England's

⁴²⁶A disproportionate amount of the primary sources used in this section comes from the Lloyds archives, despite the general coverage consisting of the Big Four. This is due to the fact that the Lloyds archives store a large amount of information pertaining to the Big Four in general, such as CLCB minutes and material passed on to all of the Big Four from the Bank of England. This is also the case for much of the quantitative data in later sections which are stored by Lloyds but come from the CLCB. Furthermore, Eric Faulkner, Chairman of Lloyds, served as chairman of the CLCB for a large part of the secondary crisis and thus recorded large amounts of the Big Four communications.

focus during the period was very much on the monetary policy side and as Rowan (1973) notes, "the volume of bank deposits [...] was unimportant in the transmission process" as it was thought of at the time.⁴²⁷ The greater emphasis on competition in policy circles in the 1960s changed this somewhat, however, particularly with the introduction of the Competition and Credit Control policy.⁴²⁸ However, the onset of the secondary crisis, starting in 1973, led to a sudden slowdown - if not rethink - of such policies being implemented and the competition for deposits did not completely reach into the clearing bank tier of the system until after the sample period.

Looking further back, Griffiths (1973) in fact argued that the policies of the Bank of England, which had historical roots through the latter half of the 19th century and onwards, actively sought to encourage "restrictive agreements" within the banking system and subsequently increased concentration and cartel like behaviour. Griffiths mentions two major reasons for seeking out such policies. Firstly, that monetary aggregates can be controlled much more effectively within a concentrated system and, secondly, that cartelling and decreased competition would lessen the probability of bank failure. This latter reason is of greater concern for our purposes here as the concentration of the sector and "tiering" that emerged following the rise of the secondary banks gave rise to wildly divergent paths for the two groups.

The secondary banks did not manage to establish themselves fully in the inner circle of the system that Griffiths talks about and were thus more susceptible to the risk of failure - or at best be restructured - when problems arose. The banks within

⁴²⁷Rowan (1973) p. 23. The lack of interest in banking matters, especially crises, is further discussed in Chapters 2 and 3 of this thesis. One telling fact is that in Ackrill and Hannah (2001), which serves as Barclays official history, a total of three pages, out of 400, are given to the secondary crisis.

⁴²⁸See Chapter 2 for a discussion on CCC. Rowan (1973) includes a narrative of the case for increasing "price competition" between banks during the period.

the core of the system - most prominently the Big Four - were on the other hand not only sheltered by the Bank of England but also formed a team with the Bank that performed the rescue operations.

While the narrative of the secondary crisis itself is covered in more detail in Chapters 2 and 3, here some primary data from the archives is introduced along with a timeline. This timeline can help put the quantitative data in context and establish both the onset of the crisis as well as its different stages. To summarize briefly, Table 5.1 shows the size and composition of the problem as it was seen at the onset of the crisis at year-end 1972. Note that the situation was to get considerably worse than it was perceived at this point in time.⁴²⁹

Examination of the figure reveals that the acceptable risk was purely a function of each bank's reserves - 20% in each case - while the limit on a single exposure was set to 5% of capital and the bad debt ceiling to 2.5%. The banks had the luxury of putting such stringent ceilings at this point in time whereas when the situation worsened they were forced to increase their exposure and ultimately offload a substantial part of the risk onto the Bank of England. Note also that the total acceptable risk of the five banks in Table 5.1 was 360 mGBP while the size of the so-called Lifeboat would eventually max out at 1,200 mGBP.

A year later, in December 1973, this proved to be the case as the situation had deteriorated considerably along with the amounts required from each party. This was in some sense the pinnacle of the crisis where, according to Capie (2010), it

⁴²⁹Note also that there are five banks in Table 5.1 but four banks in our sample later in the chapter. The difference is William & Glyn's which took part in the Lifeboat operations but was not a part of the core, Big Four banks and hence data for it was not included in the CLCB database. William & Glyn's was formed in 1970 with the merger of the Royal Bank of Scotland's subsidiaries in England and Wales. Technically, it was thus an English based bank like the Big Four but owned by a Scottish clearer.

Table 5.1: Rescue Operations Overview

	Consolidated Capital and Reserves	Total Acceptable Support Risk	Limit on Any One Name	Bad Debt "Ceiling"
Lloyds	350	70	17.5	8.75
Barclays	593	120	30	15
Midland	314	64	16	8
National Westminster	470	94	23.5	11.75
William's & Glyn's	58.2	12	3	1.5

Source: Lloyds Archives, file HO/Ch/Fau/2.

Note: Figure for William's & Glyn's is 30/9/72. Others are 31/12/72.

had become evident "that a widespread run on the secondary banks had started to develop".⁴³⁰ At a joint meeting between the executives of the clearers and the Bank of England, the idea was presented that a support fund of over 1 bnGBP should be set up. There was willingness to extend the list of participating parties beyond the clearers but this was considered risky as it might draw unwanted publicity towards the situation and "exacerbate an already dangerous situation".⁴³¹ The threat of contagion was thus ever present in discussions between the banks and this led through to the decision making process.

At a meeting later that month, the Governor of the Bank of England expressed the view that the problems of the secondary banks were in many cases only liquidity problems following withdrawals of deposits by large institutional investors. However, it was not possible to know how much further the situation would deteriorate and that added attention with details coming "out into the open" - i.e. via the press - meant that "chain reactions were involved."⁴³²

⁴³⁰Capie (2010) p. 535.

⁴³¹Lloyds Archives, HO/Ch/Fau/2, document dated 19/12/73.

⁴³²Lloyds Archives, HO/Ch/Fau/2, minutes of meeting at Bank of England 21/12/73.

During the whole operations of this group, or control committee as it was called, there was a sense of collegiality between the clearers and the Bank. The group members, having all committed themselves to financially supporting the mission, held daily meetings at the height of the crisis and discussed in earnest who should decide upon which secondary banks should receive support and which should be allowed to fail. The formal "Heads of Agreement" document which laid out the mechanics, pricing and setup of the rescue operations even formally stated that these specific entities, the London and Scottish clearers, would "work together" with the Bank of England "in closest co-operation".⁴³³ This differs considerably from more recent crisis whereby functions are more clearly defined with central banks uniquely commanding the role of crisis manager with private institutions on the other side of the table, at least nominally.

During the group's meetings, the Governor also took it upon himself to try to ease concerns of the banks and, for example, expressed his view that it was likely that the deposits withdrawn from the secondary banks would find their way to the clearers. The cause and consequences of this expected "flight to safety" were not considered, further underlining the two tier system and leaving the lines between the clearers and the Bank of England well and truly blurred.⁴³⁴

In total, 26 companies were supported by the control committee. Five of those were authorized banks, i.e. Section 127, and 18 were Section 123 (secondary banks). 18 of the 26 continued trading following their bailouts and 8 were either placed in receivership or liquidation. Figure 5.1 shows the total amount of Lifeboat support at shared risk during the height of the crisis. As the figure shows, considerable support

⁴³³Lloyds Archives, HO/Ch/Fau/2, document dated 27/12/73.

⁴³⁴Lloyds Archives, HO/Ch/Fau/2, minutes of meeting at Bank of England 21/12/73.

remained outstanding long after the immediate crisis had subsided. Table 5.2, on the other hand, shows the summary of shared risk in late 1975. The amount of risk undertaken by each bank is somewhat different as National Westminster has the greatest number of names under its lead. However, the largest single risk at the time, that of U.D.T. at 450 mGBP, was the responsibility of Barclays.⁴³⁵

Figure 5.2, in turn, shows the Bank of England's own risk. In contrast to the Lifeboat itself, the Bank's funds at risk continued rising following the crisis. This is due to the clearers' demand that their exposure be capped and that the Bank would have to undertake risk on its own beyond that point. The increase in the Bank's exposure during 1976 is also due to large individual rescues such as Slater Walker, discussed in detail in Chapter 4.

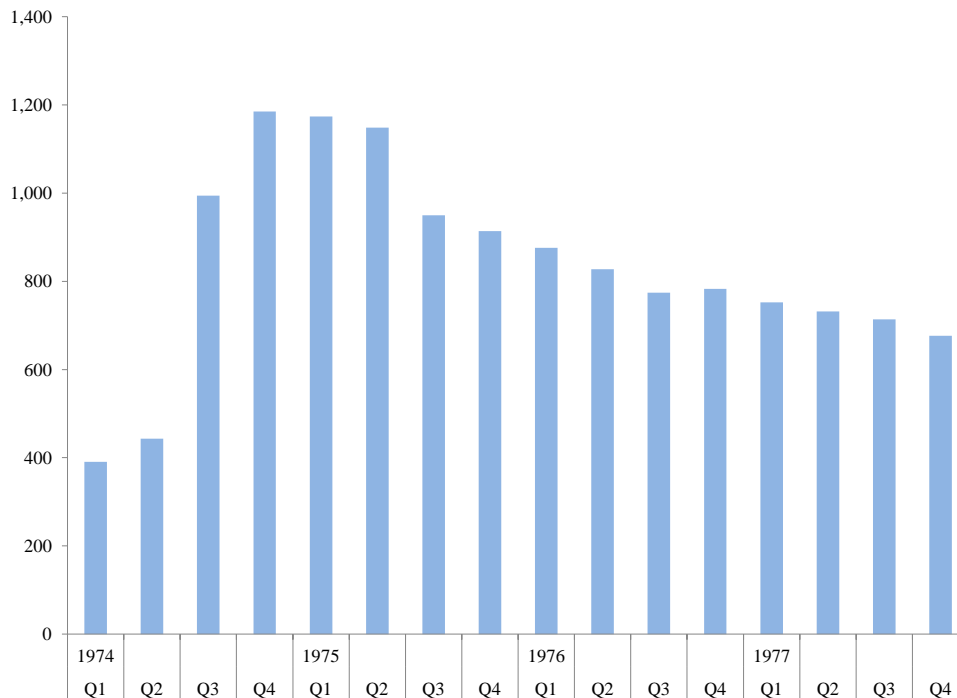
By early 1974, following the collapse of London & County Securities, it became clear that not only was a number of fringe banks in danger but the situation had begun to "affect even major companies who suffered a temporary illiquidity and began to have to pay extravagant "over the market" rates for money."^{436,437} While the empirical exercise presented below represents an attempt to establish whether this interconnectedness can be seen in the data for the Big Four, it is clear that certain interconnectedness, could be seen on a more cursory level, first amongst the fringe and subsequently leading to "major companies". This is consistent with other accounts in the sense that when citing the possibility or threat of contagion, the Bank of England relied on verbal descriptions by market participants, general

⁴³⁵As the table shows, the terms on funds provided were in the range of 1.75% to 3% over LIBOR. This contrasts with Ackrill and Hannah (2001), however, who state that the Lifeboat loans were provided at 1.5% over LIBOR (p. 207).

⁴³⁶Lloyds Archives, HO/Ch/Fau/2, document dated 04/01/74.

⁴³⁷The failure of London & County is by many considered to signal the beginning of the crisis. See e.g. Metcalfe (1982) p. 79.

Figure 5.1: Total Amount of Lifeboat Support at Shared Risk



Source: Lloyds Archives, File HO/Ch/Fau/5.

Note: In mGBP. Outstanding at end of quarter.

developments in market prices, and reports of market movements rather than any statistical analysis of the data.

In the second half of 1974, with the amounts needed for the rescue operations still rising, the Big Four reluctantly agreed to increase the limit from 1,000 mGBP to 1,200 mGBP, while warning that this increase meant that half of the banks' equity was at stake.⁴³⁸ During this stage, when the total amount needed to stem the tide was still unclear and the banks were considering what could be done if further limit increases were needed, the idea of the banks lending money to the Bank of England

⁴³⁸Lloyds Archives, HO/Ch/Fau/2, document dated 21/08/74. Note, however, that part of the 1,200 mGBP figure was shared with the Bank of England.

Table 5.2: Schedule of Support - Shared Risks

Name	Lead Bank	Limit (GBPm)	Interest rate over LIBOR
Bowmaker	Lloyds	75.0	2.0%
*Burston Finance	National Westminster	25.5	2.8%
Edward Bates	Barclays	74.5	1.8%
*First Maryland	Barclays	5.8	1.8%
F.N.F.C.	National Westminster	350.0	1.8%
Henry Ansbacher	Williams & Glyn's	3.7	2.0%
Keyser Ullmann	National Westminster	50.0	2.5%
Knowsley & Co. Ltd.	Barclays	40.0	2.8%
**London & County Securities	National Westminster	49.5	2.5%
Schlesinger Ltd.	National Westminster	5.0	2.0%
Sterling Industrial Securities	National Westminster	1.8	2.5%
*Triumph Investment Trust	Lloyds	25.2	2.0%
Twentieth Century Banking	National Westminster	25.0	2.3%
U.D.T.	Barclays	450.0	1.8%
Vavasour	Lloyds	19.2	3.0%
Wagon Finance	Williams & Glyn's	6.0	2.3%
Total		1,206.1	

Source: HSBC Archives, file UK 0200/0442.

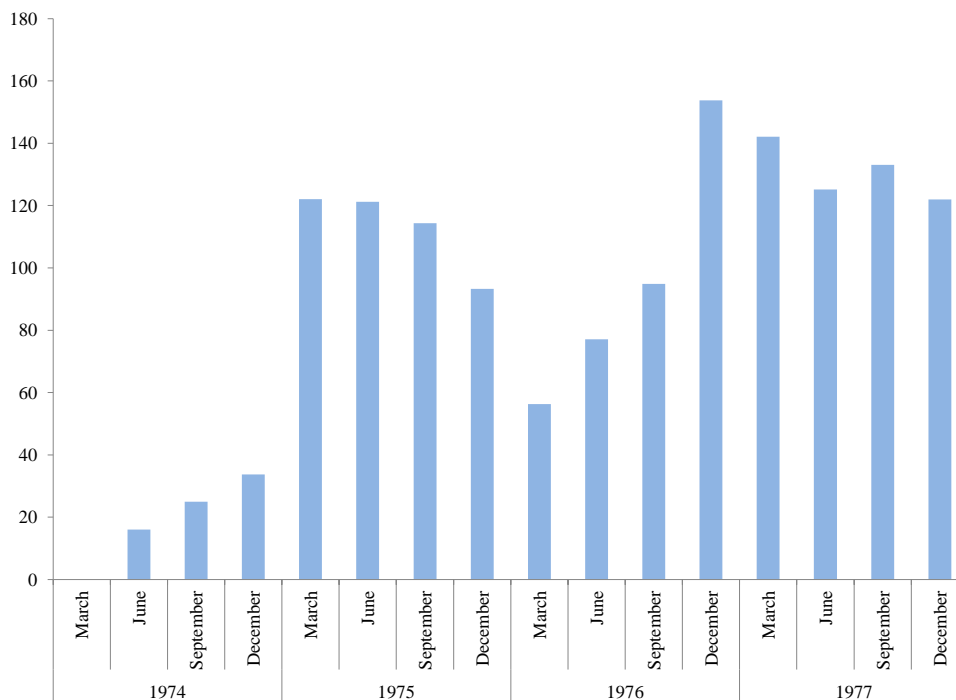
Note: Figures as of December 1975. * indicates that the name in question was in receivership at the time. ** indicates voluntary liquidation.

was floated. The banks thought that while the amount committed would increase with such actions, this would have the effect of "eliminating the risk".⁴³⁹ The risk in question here was thus the clearers' own risk with their counterparty being exclusively the Bank of England, while, presumably, the Bank of England itself would thus bear all additional risk owing from such operations.

Furthermore, at the stage where the funds needed for the Lifeboat were continuing to rise, the sense was that the need for funds would continue rising at a similar

⁴³⁹ *Ibid.*

Figure 5.2: Bank of England Own Risk



Source: Bank of England archives, file 1A179-17.

Note: In mGBP.

pace and the figure of 2 bnGBP was thrown around.⁴⁴⁰ So while it is clear from Figure 5.1 that the size of the Lifeboat was about to reach its peak, this realization was nowhere near the case for those concerned at the time.

The clearers subsequently agreed with some reluctance upon a hard limit on their combined capital and reserves of 2,750 mGBP, noting that they would be "gravely concerned" if their support were to reach 50% of that figure. Bearing in mind the Bank of England's 10% contribution at that time, that would put a 1,500 mGBP upper limit on the operations.⁴⁴¹ To further ease the concerns of the clearers, the

⁴⁴⁰Lloyds Archives, HO/Ch/Fau/2, draft memorandum from CLCB.

⁴⁴¹*Ibid.*

Bank of England reiterated its support along several channels. These included confirmation of several principles that had been agreed earlier but one particular line stuck out for the purposes of this chapter. This was that the Bank confirmed the principle that "it was imperative that the integrity of the inner core of the City [...] should not come into question in any one's mind in the U.K. or overseas."⁴⁴² The Governor then went on to state that there was "no question of a Clearing or Scottish Bank, or an Accepting House coming into jeopardy."⁴⁴³

As concerns continued to mount regarding the extent of support required, the group was continually forced to reconsider how far its members were willing to go and under what conditions. In addition to applying "commercial considerations" and examining each case on its merits, it was accepted by all concerned that there were certain institutions which the Bank of England would regard as "essential to support". While this list is not available, and it remains unclear whether there was a specific list that was considered definitive at the time, it was known to include all the clearers and "thought to number about fifty". Any loans made by the clearers, under the guise of the support group, to banks on the list could be regarded as "risk free if the Bank of England would agree to take responsibility in respect of support given to names on that list".⁴⁴⁴

While the general tone of the meetings was congenial, there remained some disagreement, both between individual banks as well as the Bank of England, about the best way to proceed. Those bank representatives that had pushed the Bank to

⁴⁴²Lloyds Archives, HO/Ch/Fau/2, document dated 16/08/74.

⁴⁴³*Ibid.*

⁴⁴⁴Lloyds Archives, HO/Ch/Fau/2, CLCB minutes of meeting 10/01/74. This is presumably the same list, or along the same lines, as the one mentioned in Chapter 3 of this thesis. As discussed there, the Bank ultimately refused the clearers' request to publish a list of institutions that would not be allowed to fail. However, there does not seem to have been any doubt that certain important institutions - including the clearers - were not to be allowed by the Bank to default on their deposits.

publish a list of banks to be saved were still seeking assurances in some form as to the safety of the operations. This safety, ultimately to be provided by the Bank itself, came when the Governor assured those present that "the Bank would not allow an operation in which it was directly concerned to fail".⁴⁴⁵

Remarkably, one of the Bank's main arguments for not wanting to make a definitive list of institutions that would be saved was the effect on those institutions not on the list.⁴⁴⁶ The Bank was thus considerably more concerned with the effect of saying that certain institutions bore a market-determined amount of default risk rather than saying that others warranted no such risk premium. On a related note, the Bank directly cited contagion as a rationale for maintaining discretion regarding the operations. Citing one unnamed bank that was facing some pressure in the market, the Governor said that "Although confidence in it has been damaged, it must continue in business because of the contagious consequences of failure."⁴⁴⁷

These discussions show how willing that the Bank was to transfer risk from creditors and debtors towards itself. While no public statements were made announcing that certain institutions would not be allowed to fail, the Bank's declarations during the Lifeboat meetings meant that other members of the committee felt free to continue lending to these institutions.

The mounting concerns about the scope of the problem also led the clearers

⁴⁴⁵This contrasts somewhat with Ackrill and Hannah (2001), who, in writing Barclay's official history, argue that the crisis showed that "the 'Big Four' could provide liquidity not only for themselves but also for others. Barclays' capital was ample for absorbing any losses it was likely to make." (p. 209). That is to say, on the one hand, the clearers were, as shown in the main text, very concerned about receiving guarantees from the Bank and that the Bank would underwrite further assistance. On the other, Ackrill and Hannah implicitly argue that the clearers were self-sufficient and in fact took it upon themselves to assist other banks.

⁴⁴⁶More precisely, the Governor said that it was better "not to mark off gradations of banks because of the possibility of damaging confidence in others".

⁴⁴⁷Lloyds Archives, HO/Ch/Fau/2, document dated 16/08/74.

to stress that while they acknowledged some indirect responsibility to help restore confidence, their direct responsibility lay first and foremost with their shareholders and depositors.⁴⁴⁸ The clearers stated at this point that they would need to limit their risks along three channels; Making sure that their own depositors' funds were not in jeopardy, that the share price did not drop so far as to damage confidence in the banks as recipients of capital for trade and, finally, that the clearers' equity were not to drop to a level that would question future support for industry and commerce "by virtue of a shortfall in capital/deposit ratio".⁴⁴⁹

Another requirement was added shortly afterwards, namely that the clearers' participation in the support operations would not inhibit the ordinary lending to "normal borrowers". Taken together, it is hard to see how these four requirements could mean anything other than the rescue operations were to have no effect on normal business. That is to say, the rescue operations were to lead to no increase in default risk of the banks (as depositors were absolutely not to be affected), no effect was to be felt through the banks' equity positions and finally, on the asset side of the balance sheet, the operations were to have no effect on regular lending of the banks.⁴⁵⁰

It was not explained how exactly the effects of the rescue operations were to

⁴⁴⁸Lloyds Archives, HO/Ch/Fau/2, CLCB minutes of meeting 10/01/74. While this classification of responsibility is narrow in the sense that it does not include all stakeholders, it does in fact include depositors while executives in the present day focus almost exclusively on their fiduciary duty to shareholders only.

⁴⁴⁹*Ibid.*

⁴⁵⁰During the period, the clearers were slowly but surely adapting to this new, more involved, relationship with government. In late 1975, in an early example of lobbyism that was to become increasingly important within banking, the CLCB discussed hiring a person with experience within government to become a "permanent liaison with selected MP's" who could also "effect introductions to appropriate MP's". This person was to be a consultant on political matters but "without a title and to be conducted low key". HSBC Archives, UK 0200/0442, minutes of CLCB committee meeting 02/10/75.

be neutralized to such an extent. As mentioned above, the size of the Lifeboat was to reach approximately 1.2bn GBP compared to combined equity of the Big Four of 2.4 bnGBP at year end 1973.⁴⁵¹ Granted, the Bank of England also participated as well as the smaller clearers but this was by no means a trivial amount as far as the clearers were concerned taken at face value.

As the loans extended were indeed by definition part of a rescue operation, rather than part of the banks' normal operations, they can be assumed to have been of higher risk and in much greater danger of not being repaid than the other parts of the banks' loan books. Indeed, as mentioned above and below, the clearers were quick to impose a cap on the additional amount they were willing to contribute when they thought that continued support would possibly start to affect their basic operations.

Seen in this light, it can certainly be argued that despite participating in the Lifeboat, the clearers were participants in name only. They were willing to provide funds with two conditions. That the Bank of England assured them that they all but guaranteed the principal amount and that the amount the clearers were to provide was capped at a level that would eliminate the possibility of the Lifeboat affecting any regular operations. The Lifeboat was thus very much the responsibility of the Bank, although it may not have looked that way from the outside.

The extent to which the support operations became a game of negotiations about responsibility and burden allocation is supported in the circumstances surrounding the saving of London & County Securities in March of 1975. London & County was

⁴⁵¹At Lloyds' 1975 annual general meeting, it was disclosed that the banks' commitment to the rescue operations stood at 150 mGBP. This compares to a total book value of equity of 568 mGBP at year end 1975. Lloyds Archives, HO/Ch/Fau/5, Book 1673 (7), and Lloyds Annual Report for 1975.

one of the most high profile cases of the secondary crisis and Matthews (2005) calls it "one of the most significant UK corporate fraud scandals and regulatory failures in recent decades".⁴⁵² The company's total deficiency was estimated at over 50 mGBP and the circumstances around its failure were the subject of a Department of Trade investigation.^{453,454}

Ultimately, it was the Bank of England that bore the losses and repaid depositors. However, the minutes of a meeting of the Committee of London Clearing Bankers (CLCB) shows that it was the banks' opinion that it was only due to pressure from the Bank of England that the clearing banks assisted somewhat in the operation.⁴⁵⁵ While the case could be made that the principle of only lending to viable situations, i.e. solvent banks was broken in several instances, this was clearly the case with London & County which had an obvious deficiency of 50 mGBP. The approach and opinion of those involved in the operations also served to highlight the different objectives of the clearing banks and the Bank of England. The former being concerned with losing as little as possible and safeguarding their shareholders while the latter first and foremost thought of financial stability.^{456,457}

As for external scrutiny, while the Bank came under some scrutiny for these

⁴⁵²Matthews (2005) p. 518.

⁴⁵³See Reid(1982) p. 157.

⁴⁵⁴Chapter 2 and Chapter 4 include more detail on specific failures, including London & County.

⁴⁵⁵Lloyds Archives, HO/Ch/Fau/5, CLCB minutes of meeting 19/12/74.

⁴⁵⁶Indeed, members of the CLCB agreed that "It had been stressed at the time how vital it was to protect the central core [note: of the financial system] and some Chairmen had given their shareholders to understand that the support arrangements were temporary and applied only to viable cases." Lloyds Archives, HO/Ch/Fau/2, minutes of CLCB committee meeting 19/12/74.

⁴⁵⁷Another interesting aspect of the crisis came when the State of Jersey sent letters to all the clearers subsidiaries in Jersey asking essentially that the parent companies formally guaranteed the deposits of these subsidiaries. Remarkably, the clearers were not willing to do so as they did not want to "create a precedent". Midland even felt it unnecessary to cooperate as the clearers business in Jersey was far too important for the local economy for the authorities to take strong measures. They also feared that open guarantees for their subsidiary would threaten the tax status of said subsidiary. HSBC Archives, UK 0200/0442, meeting of chief executive officers, 20/02/75.

rescue operations in the press, most of the pressures that the clearers faced came from their own shareholders. In a Q&A session at Lloyds' 1974 annual meeting, Eric Faulkner, Lloyd's chairman faced several general questions on the rescue operations that were known to be unfolding although the specifics were kept strictly confidential.⁴⁵⁸ The chairman's tone was somewhat different when facing shareholders than in conversations within the control committee. He took the opportunity to reveal that in conversation with several overseas bankers, they had expressed the opinion that "they did not believe there is anywhere else in the world than London that a rescue operation of that magnitude could be mounted".

The chairman assured those in attendance that utmost care was being taken with regard to reimbursement from the support group and in each case where the support group felt it necessary, "security has been taken", by which he meant collateral. Barclays' chairman, Anthony Tuke, had similarly reassuring words for his shareholders, declaring that he expected that the banks' losses on its 300 mGBP commitment to the Lifeboat would effectively be covered by the interest received on these loans.⁴⁵⁹ The banks' were thus able to present a fearful view to the Bank, in order to prevent their own losses, while exuding calm towards shareholders and downplaying the significance of their participation in the Lifeboat.

A year later at the same event, the Lloyds Chairman ran through some numbers considered important, which were usually not revealed but due to the extraordinary conditions were deemed important to sooth shareholders. These numbers included the share of advances that went to property companies (4%), as well as a vague

⁴⁵⁸Lloyds archive, Ho/Ch/Fau/5. File titled "Statements made by Chairman to Shareholders on the Lifeboat operation at Annual General Meetings in 1974, 1975 and 1976".

⁴⁵⁹Tuke also announced that provisions already made had been covered by profits. (*Financial Times*, "Barclays U.K. profits could fall this year", 15.3.75).

measure of capitalization. The chairman, acknowledging similar coverage in the press, said that the ratio of capital to deposits stood at 7% (compared to 5.9-6.9% at the other Big Four) which he interpreted as meaning that the "gearing" didn't seem of immediate concern.⁴⁶⁰

When explaining the approach taken by Lloyds and others involved with the rescue operations, the Chairman stated that they were "faced at that time with a complete collapse of confidence by small and even professional depositors in the British banking system" and that the steps taken were taken to stop the rot and restore confidence. Mentioning specifically the threat of contagion, he said that "this lack of confidence could in fact spread to the inner core of the British banking system - who I suppose you could broadly classify as the London Clearing and Scottish Clearing Banks, the Acceptance Houses and the Discount Houses."

During the 1976 annual meeting, with the crisis behind him, the Chairman highlighted the fact that Lloyds free capital ratio was better than that of its main rivals.⁴⁶¹ The figures themselves would have given creditors a greater rise of concern, however, as they were in the range of 2.4% to 3.2% for the Big Four and had been falling. This shows even better how thin the buffer was between the bank and its creditors. In fact, the Bank of England was later to use the free capital ratio as a regulatory tool and introduce a minimum ratio of 4%.

⁴⁶⁰The description by the Chairman indicated that such measures were not routinely considered in discussions of banking operations. The calculation made was equity plus subordinated loan stock, minority interest and reserves minus goodwill and adjusted for the market value of investments. This leverage ratio is fairly simple compared to modern measures but again shows the small buffer with which to absorb losses, especially considering the growth and volatility of loans advanced described in Section 4.

⁴⁶¹This ratio, which the *Economist* was to call "the ratio most closely scrutinised by the Bank of England in judging whether a bank is backed by sufficient capital", measured capitalization in a manner similar to the leverage ratio mentioned above. ("Rights Angle", The *Economist*, October 13th 1984, 7363 (293) p. 82)

It is important to keep in mind the external conditions of the time when attempting to understand the nature of the banks' capital levels. Firstly, the measurement of "capital" is not necessarily a straightforward exercise. Capie and Billings (2001) provide various measurements of capital and find that "true" capital, which includes "hidden reserves", as a percentage of assets was in the 6-9% range at the end of the 1960s. This was a significant improvement from previous decades as capital levels had taken a long time to recover following war. At the same time, the discrepancy between published and "true" capital had been falling towards the point when disclosure started in 1969.⁴⁶²

Another important and related factor was that in the post-war period British banks were forced to maintain *lower* levels of capital than they would have wanted. This was due to the economy-wide scarcity of capital following the war and the need to prioritize the government's financing requirements. Billings and Capie (2007) show that the Bank of England was itself concerned with the banks having too much capital and it was important that capital levels not be "excessive", while acknowledging that it, the Bank, didn't have information on true capital levels.

The authorities did not seem overly concerned with the amount of deposits at stake in the Big Four in relation to the banks' capital levels and did not put much weight on such developments. There is little direct evidence of the Bank discussing deposit increases and withdrawals at the clearers, either internally or in its discussion with the clearers themselves. This supports the evidence put forward in Chapter 3 regarding the Bank's general stand-off approach regarding regulation and how little concern was given to issues of financial stability.

⁴⁶²Maintaining "hidden" reserves was a prevalent procedure in British banking, starting in the 19th century, with Bank officials having to guess as to the extent of them (see Billings and Capie (2007) p. 144)

In conclusion, what does the historical evidence tell us about the fear of contagion, the rescue operations and the Bank? Firstly, the Bank and the clearers worked together more as equals than as a regulator and its counterparts. All involved considered it their duty to prevent a crisis of confidence although that involved pooling together public and private money and deciding on a case-by-case basis which institutions were to survive.

Secondly, both the clearers and the Bank regularly cited contagion as the consequence of inaction although not in those words. The implicit view was that if the liquidity dry-up in the secondary banks was allowed to unfold without action, the panic would spread systematically throughout the system and finally reach the clearers themselves. It was this domino-effect that spurred both the Bank and the clearers on as a pre-emptive measure.⁴⁶³ In the next section we turn to the new dataset and its characteristics before attempting to shed greater light on any possible effects or manifestations of the crisis and rescue operations in the empirical section.

Finally, despite the operations being conducted under the aura of collegiality described above, there was substantial pressure on the Bank to commit to the clearers that it would prevent severe losses and in fact all but negate any negative effect on the clearers. This power struggle and subsequent pressure on the Bank to underwrite the operations has been underreported in the literature. Metcalfe (1982) is amongst the few to highlight it, noting that the clearing banks "limited their financial commitments to the lifeboat, so the Bank of England was left with residual responsibility

⁴⁶³The extent to which this domino effect would have been borne out is hard to estimate and outside the scope of this thesis. Saunders and Ward (1976) use a CAPM approach to look at the performance of the Big Four during the period and argue that "the fear, prevalent at the time, of a 'domino effect' of secondary bank failures on the clearing banks was exaggerated." (p. 153). However, it is hard to judge whether this result stems directly from the effect of the Lifeboat.

as guardian of the whole system, secondary as well as primary.”⁴⁶⁴ Whether the Bank was wholly successful in so doing can be determined in the empirical sections below.

5.3 Data and Summary Statistics

In this section the various data sources used in the quantitative section are described as well as the nature of the data. Unfortunately, the data contains various limitations and omissions which are listed in the Appendix 1 along with measures taken to mitigate these limitations. The main data source for the key time series is Lloyds’ archive.⁴⁶⁵ File UK0495/0002 contains a ledger from the Committee of London Clearing Bankers where monthly balance sheet data has been collected for the Big Four from 1921 to 1979.

In total, this database consists of 15,864 observations across the seven variables listed below. From 1921 through 1968, the data for National Provincial and Westminster are separate, while from 1969 and onwards the figures are combined, following the merger which created National Westminster in 1968. Where figures and results for National Westminster are presented, numbers for the pre-1969 era are aggregated numbers for its two predecessors.⁴⁶⁶

The data reported in the ledger consists of seven series: Cash, bills, investments, advances (i.e. loans), other assets, eligible liabilities and deposits. The data for cash,

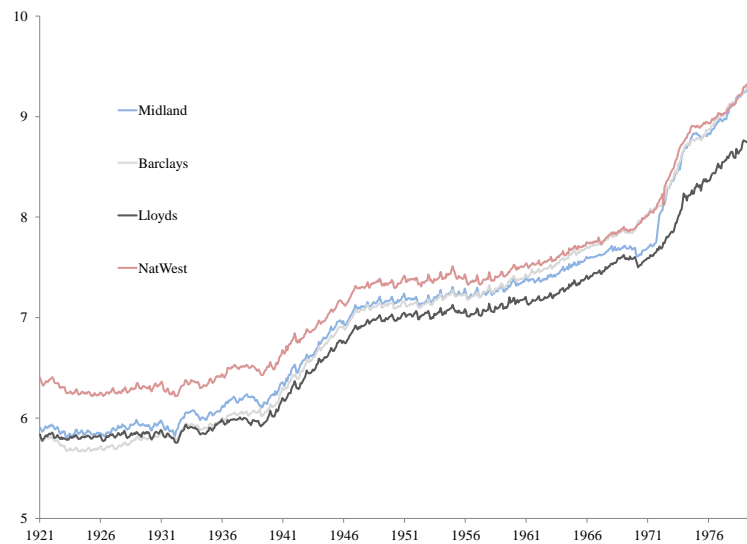
⁴⁶⁴Metcalfe (1982) p. 80.

⁴⁶⁵In addition to the main time series used, several interesting series are available at a higher frequency with some even recorded on a daily basis. Unfortunately these series are not available after 1972 which means they are of limited use in analyzing the effects of the secondary crisis. The onset of the crisis in 1973 may have directly or indirectly affected either data collection, the operations of the CLCB or the willingness to provide the figures.

⁴⁶⁶Such aggregation may have the effect of altering results, such as reported volatility, but we try to be aware of such alterations as much as possible and mention the separate figures where appropriate.

deposits and advances cover the whole period, bills and investments start from 1939 onwards while other assets and eligible liabilities are only available from 1973 to 1979. The seven series for each bank are provided in Figure 5.3. Note that these are nominal series and do therefore not serve as a real quantity tracker. This means that the developments can possibly be partially due to fluctuations in inflation. In Section 4.4 we look at the effect of inflation on the part of the sample period that inflation data is available for.

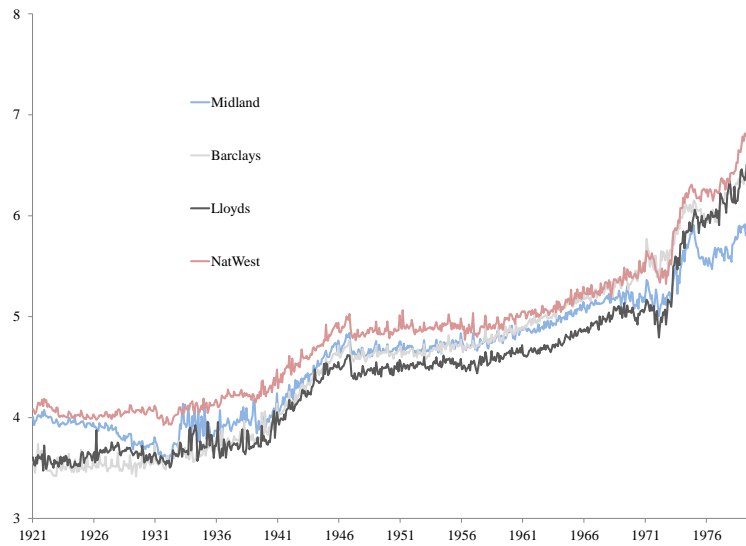
Figure 5.3a: Log Levels of Deposits



Source: Author's calculations.

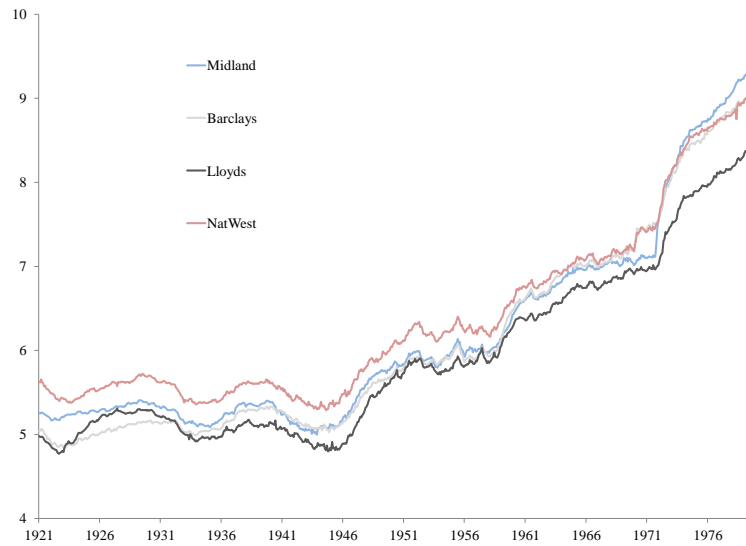
Here we already see certain characteristics of the data. Looking at the trend over the period, we see that there is a visible rise in the primary series in two instances: The immediate post-war period and again in the early 1970s. As described below, the latter shows to some extent the degree to which the clearers were caught up in a similar reach for growth that was to be explained as one of the main reasons for the secondary banks' failure. Also as described below, a Markov switching model detects

Figure 5.3b: Log Levels of Cash



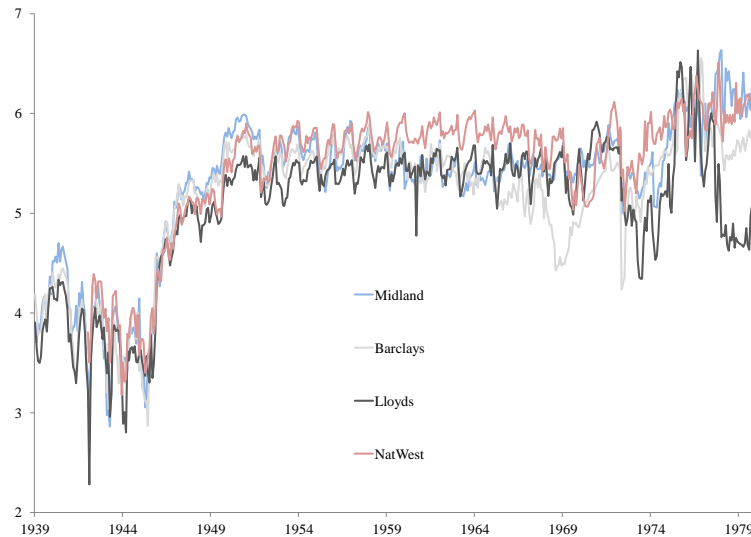
Source: Author's calculations.

Figure 5.3c: Log Levels of Advances



Source: Author's calculations.

Figure 5.3d: Log Levels of Bills



Source: Author's calculations.

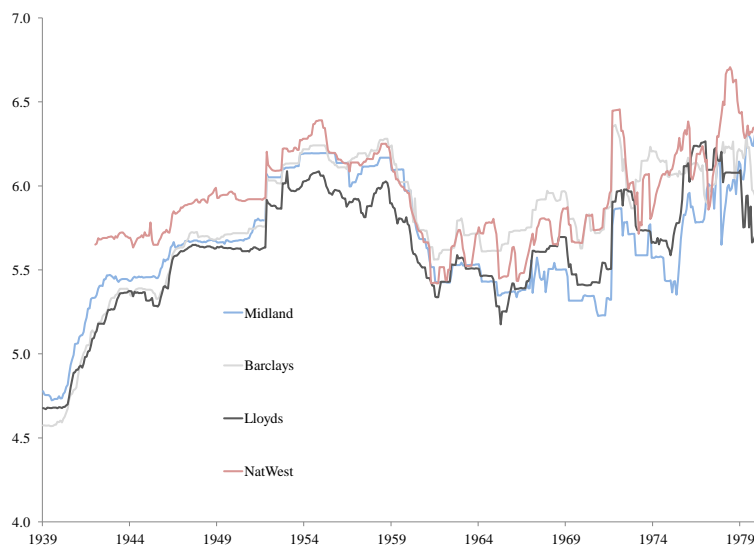
Note: NatWest data only available from 1942.

possible regime switches, towards a higher growth level, in both the 1940 and 1970s.

As for a comparison between banks, there is a strong co-movement between banks within specific categories. Deposits show the same trend for all the Big Four with a gradual increase in the immediate post-war period, followed by rapid deposit growth during the credit boom of the late 1960s and early 1970s. Similar trends apply for cash and advances, with the early 1970s standing out as a period of substantial expansion. While there are definite signs of co-movement, there is no indication of deposit withdrawals or liquidity drying up during the secondary crisis.

Note also the fact that the definition for the cash series changed in the middle of the crisis, in January 1973, whereby it incorporated money "at call" as well as pure cash. It remains possible that this change was triggered by a drawdown of cash and the effect of the broadening of the definition of cash makes it harder to detect

Figure 5.3e: Log Levels of Investments



Source: Author's calculations.

Note: NatWest data only available from 1942.

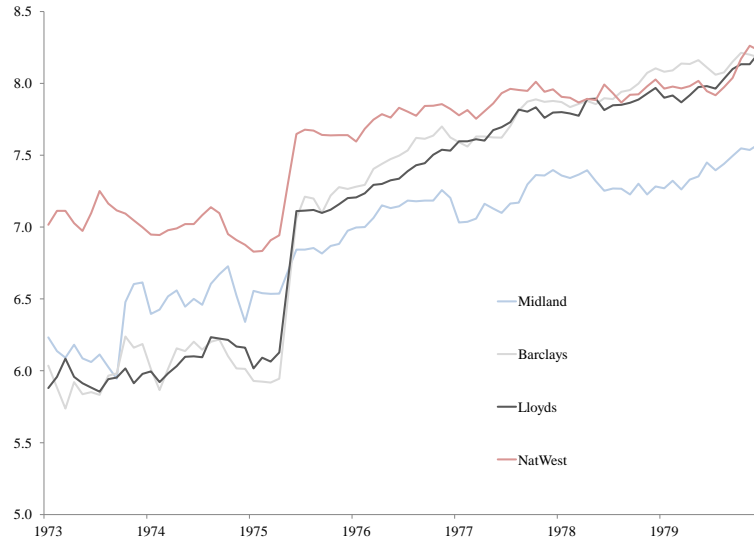
liquidity shortages, although the other series whose definition did not change do not elude to such developments.⁴⁶⁷

Finally, Table 5.3 presents summary statistics of the data series. The statistics presented are for logarithmic first-differences of the data. As can readily be seen, there is substantial heterogeneity both across different types of series as well as across banks.⁴⁶⁸ Furthermore, due to occasional jumps in individual series, some of

⁴⁶⁷It is hard to gauge the developments of the components of the cash series. The definition of liquid assets becomes important during crises where banks have an incentive to include assets that are not easily converted into cash in their liquidity position. See Lang and Maffet (2011), who look at liquidity volatility, transparency and uncertainty during times of crisis.

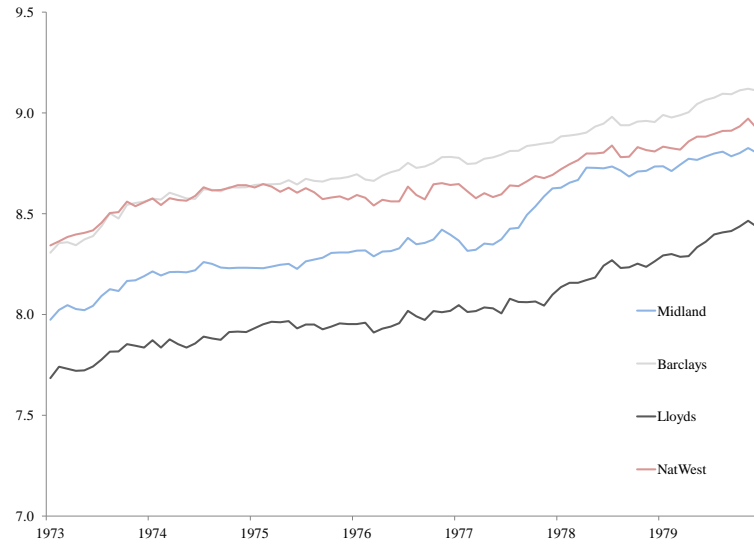
⁴⁶⁸In an attempt to analyze the heteroskedasticity and jumps in the data, a simple two-state Markov switching model was estimated for the deposit and volatility series. The model detected the 1940s as well as the 1970s as a period with high probability of regime switch although this second state was characterized by *higher* - not lower - deposit growth than the normal state. This suggests a flight to safety argument during the crisis but no further attempt was made to analyze these results as the series do not exhibit classic regime-switching behaviour, unlike the seminal study in Hamilton (1989), for example.

Figure 5.3f: Log Levels of Other Assets



Source: Author's calculations.

Figure 5.3g: Log Levels of Eligible Liabilities



Source: Author's calculations.

the series exhibit strange properties. These can be partially explained due to the use of log differences (resulting in possible "returns" of less than -1) as well as volatility of data. These issues are all covered in Appendix 1, but suffice it to say here that adjustments are made for re-classifications of data and none of the remaining outliers affect the results in the empirical sections of the chapter.

Table 5.3a: Summary Statistics - Cash

<i>Cash</i>				
	Midland	Barclays	Lloyds	NatWest
N	707	707	707	707
Mean	0.003	0.005	0.004	0.004
Median	0.002	0.004	0.003	0.002
St.dev	0.062	0.062	0.068	0.051
Min	-0.331	-0.226	-0.297	-0.184
Max	0.306	0.251	0.320	0.187

Source: Author's calculations.

Table 5.3b: Summary Statistics - Advances

<i>Advances</i>				
	Midland	Barclays	Lloyds	NatWest
N	707	707	707	707
Mean	0.006	0.006	0.005	0.005
Median	0.004	0.004	0.004	0.003
St.dev	0.023	0.021	0.023	0.025
Min	-0.075	-0.068	-0.097	-0.118
Max	0.173	0.103	0.143	0.153

Source: Author's calculations.

The file categorized as UK0298/0003 in the Lloyds archive also contains monthly balance sheet figures for the clearer banks and these are compared to those mentioned above for consistency. Unfortunately, the data found here only covers the period 1963-1970. However, these figures have the added benefit of being more detailed, with 17 different series in total, forming various parts of the banks' balance sheets.

Table 5.3c: Summary Statistics - Deposits

<i>Deposits</i>				
	Midland	Barclays	Lloyds	NatWest
N	707	707	707	707
Mean	0.005	0.005	0.004	0.004
Median	0.006	0.005	0.005	0.005
St.dev	0.022	0.017	0.021	0.021
Min	-0.066	-0.081	-0.064	-0.114
Max	0.099	0.086	0.090	0.181

Source: Author's calculations.

Table 5.3d: Summary Statistics - Bills

<i>Bills</i>				
	Midland	Barclays	Lloyds	NatWest
N	491	491	491	455
Mean	0.004	0.003	0.002	0.005
Median	0.017	0.011	0.011	0.018
St.dev	0.158	0.153	0.193	0.145
Min	-0.703	-1.189	-0.940	-0.699
Max	0.752	0.767	1.267	0.495

Source: Author's calculations.

Table 5.3e: Summary Statistics - Investments

<i>Investments</i>				
	Midland	Barclays	Lloyds	NatWest
N	491	491	491	455
Mean	0.003	0.003	0.002	0.001
Median	0.000	0.000	0.000	0.000
St.dev	0.051	0.043	0.044	0.055
Min	-0.499	-0.218	-0.215	-0.297
Max	0.442	0.477	0.400	0.476

Source: Author's calculations.

Finally, various supplementary data are used for support and contextualize the data described above. These include the Committee of London Clearing Bankers' *Statistical Digest*, annual reports and figures from the Bank of England, figures found

Table 5.3f: Summary Statistics - Other Assets

<i>Other Assets</i>				
	Midland	Barclays	Lloyds	NatWest
N	83	83	83	83
Mean	0.016	0.026	0.028	0.015
Median	0.013	0.015	0.018	0.002
St.dev	0.097	0.112	0.089	0.077
Min	-0.219	-0.175	-0.145	-0.145
Max	0.533	0.558	0.492	0.352

Source: Author's calculations.

Table 5.3g: Summary Statistics - Eligible Liabilities

<i>Eligible Liabilities</i>				
	Midland	Barclays	Lloyds	NatWest
N	83	83	83	83
Mean	0.010	0.010	0.009	0.007
Median	0.008	0.007	0.007	0.008
St.dev	0.024	0.020	0.025	0.026
Min	-0.051	-0.042	-0.048	-0.058
Max	0.065	0.068	0.072	0.075

Source: Author's calculations.

in the Bank's *Quarterly Bulletin*, and numbers found in minutes and letters between and within the clearers and the Bank. In Section 4.5 equity prices are also used for the Big Four to compare equity market developments to deposit flows. In doing so an attempt is made to see whether the same disciplining dynamics can be seen by market participants in the two markets. The data used for this is for the period 1965-1980 and is obtained from Datastream.

On an epistemological note, the various pieces of data available are not only of interest in themselves but also in the sense that they shed light on which data the banks and their regulators focused on internally compared to the modern day. In sum, the figures and ratios used seem to differ somewhat from those used in the

modern day although the underlying focus - i.e. of capital and liquidity - is very much the same.

Finally, it should be mentioned that the empirical part of this chapter - unlike many previous interconnectedness studies - consists of quantity variables and not prices.⁴⁶⁹ There is theoretically, of course, the possibility that developments and dynamics that occurred when the banks altered the price paid for deposits are not being captured. One such scenario would be that a looming run was staved off by increasing the interest rate paid on deposits.

Relying on quantity data would in this case not capture this response. However, as mentioned above, it has been documented in the literature that competition for deposits amongst the clearers was very limited during the time and interest rates were seldom changed in response to the business cycle.⁴⁷⁰ In fact, the banks had an agreement on interest rates on both sides of the balance sheet which prevented them from using rates as a mechanism to stave off runs.⁴⁷¹

5.4 Empirical Evidence

In this section the new dataset, described in the previous section, is analyzed and an attempt made to see whether it provides any sign of interconnectedness between

⁴⁶⁹See for example Aharony and Swary (1983), Kaufman (1994) and Mahate (1994). Amongst exceptions are Degryse and Nguyen (2007) and Upper and Worms (2004). Allen and Gale (2007) present a broad overview of the literature.

⁴⁷⁰See e.g. the aforementioned Rowan (1973) and Griffiths (1973). Capie (2010) and Kynaston (2002) also provide detailed discussion on the arrangements of the time.

⁴⁷¹One rate channel that may have still affected deposit quantities is that secondary banks were free to pay the interest rate they wanted. This meant that deposit withdrawals from clearers could be triggered by savers being attracted by better rates elsewhere. However, this channel is not the one we are looking at here as it does not directly affect the contagion argument. The fact that deposit rates were stable throughout the period and not a part of the banks' toolbox renders the focus on quantities acceptable.

banks or early warning signs. Several methods of summarizing the data are used, starting from simple correlations and volatility exercises before using a VAR model and cointegration tests to approach the same questions from a different angle. We also look at possible interconnectedness between secondary banks and the Big Four in the equity market. This multi-method approach is taken for sake of robustness as well as minimizing the risk of bias that may arise due to any single method.

Figures 5.3a to 5.3c in the previous section show the main series used; the deposits, cash and advances for the Big Four. This section concentrates on these series and use the other series for support purposes. This is due to the fact that these are the three series that are available for the whole sample period. A better understanding of certain long-term characteristics of these series can thus be provided as well as these properties. Additionally, these are the three variables - out of the seven in total - that are of greatest interest for the purposes here.

5.4.1 Correlation

Table 5.4 shows the correlation matrix for log-differences of the cash series for all of the banks.⁴⁷² The series are positively correlated across all banks, indicating a certain, although not overwhelming, degree of co-movement between the liquidity positions of the banks. This would suggest that developments in liquidity were driven by system-wide shocks and adjustments as well as idiosyncratic ones.

Correlation coefficients obviously represent a very imperfect measure of co-movement, and several papers deal with these issues (such as omitted variable bias,

⁴⁷²Unless otherwise indicated, in all the below work on the balance sheet data we use first log-differences. This ensures stationarity - which was confirmed with an Augmented Dickey-Fuller test - and facilitates more readily cross-section comparisons.

heteroskedasticity and others).⁴⁷³ However, many of these issues arise due to the fact that researchers are trying to estimate relationships of different countries where difference in business cycles, separate markets and currency effects on time series all play a part. Due to our focus on fairly homogenous institutions within the same market, these issues are less of a concern. Nonetheless, the VAR and cointegration analysis provides more nuanced evidence later in the chapter.

Table 5.4: Cash Correlation

	Barclays	Lloyds	Midland	Natwest
Barclays	1.00	0.24	0.26	0.43
Lloyds		1.00	0.20	0.29
Midland			1.00	0.34
Natwest				1.00

Source: Author's calculations.

Table 5.5: Advances Correlation

	Barclays	Lloyds	Midland	Natwest
Barclays	1.00	0.69	0.37	0.70
Lloyds		1.00	0.26	0.67
Midland			1.00	0.31
Natwest				1.00

Source: Author's calculations.

Table 5.5 shows comparable numbers for the advances series. The correlation is higher still here, apart from Midland which is in the 0.3-0.4 range. Again, there is substantial co-movement between the developments of the banks' loan decisions. Table 5.6 finally presents the correlation figures for the banks' deposits. Yet again, we see a high degree of correlation throughout, remarkably similar across bank pairings

⁴⁷³See e.g. Claessens and Forbes (2004) who compare the different methodological approaches and the possible shortcomings of each.

apart from the numbers for Midland which are somewhat lower. The level of correlation is, furthermore, similar in size to that of the advances. As advances formed the largest part of the asset side of the balance sheet and deposits the largest part of the liability side, it is not surprising to see similar co-movements within the two series for each bank.

Table 5.6: Deposits Correlation

	Barclays	Lloyds	Midland	Natwest
Barclays	1.00	0.74	0.52	0.67
Lloyds		1.00	0.54	0.74
Midland			1.00	0.49
Natwest				1.00

Source: Author's calculations.

To look at the possibility of interconnectedness - including, but not exclusively, during the secondary crisis - we now look at the correlation of the three main series during separate sub-periods. Such approaches are common in the contagion literature and are amongst the most intuitive ways to look for interconnectedness. The most common contagion studies in the literature focus on contagion between countries which is somewhat harder to gauge.⁴⁷⁴

Furthermore, most of the studies that look at contagion between different institutions within the same country measure the amount of contagion via equity prices. For banks, this is a very indirect measure as the market value of banks' equity has no direct effect on banks viability. The reason for using equity prices is its availabil-

⁴⁷⁴See Claessens and Forbes (2004) for an overview. It should also be mentioned that while contagion between countries presents an additional challenge in terms of determining cause and effect, there are also added benefits due to the separation of local and global factors. That is to say, one can isolate effects - such as each institution's home market GDP - and see the effect of these as opposed to more global effects. This is not possible for interconnectedness studies within a country as the macro shocks faced by each institution are the same and they compete in the same market.

ity while the data that directly affects banks -such as deposit withdrawal and cash buffers - is generally confidential.⁴⁷⁵

Seeing as there are four banks in the sample, this gives rise to six cross-correlations which complicates any summary picture. Figures 5.4, to 5.6 presents cash, advances and deposit correlations, respectively, by bank-pair and decade. For the cash series, the most striking feature is the drop in correlation in the interwar period for all banks, presumably in relation to the Great Depression.⁴⁷⁶ As for the secondary crisis, there is no discernible increase in correlation during the 1970s. In fact, if anything, there is a slight decrease in correlation between banks. On the whole, there is considerable resemblance between each correlation by decade.

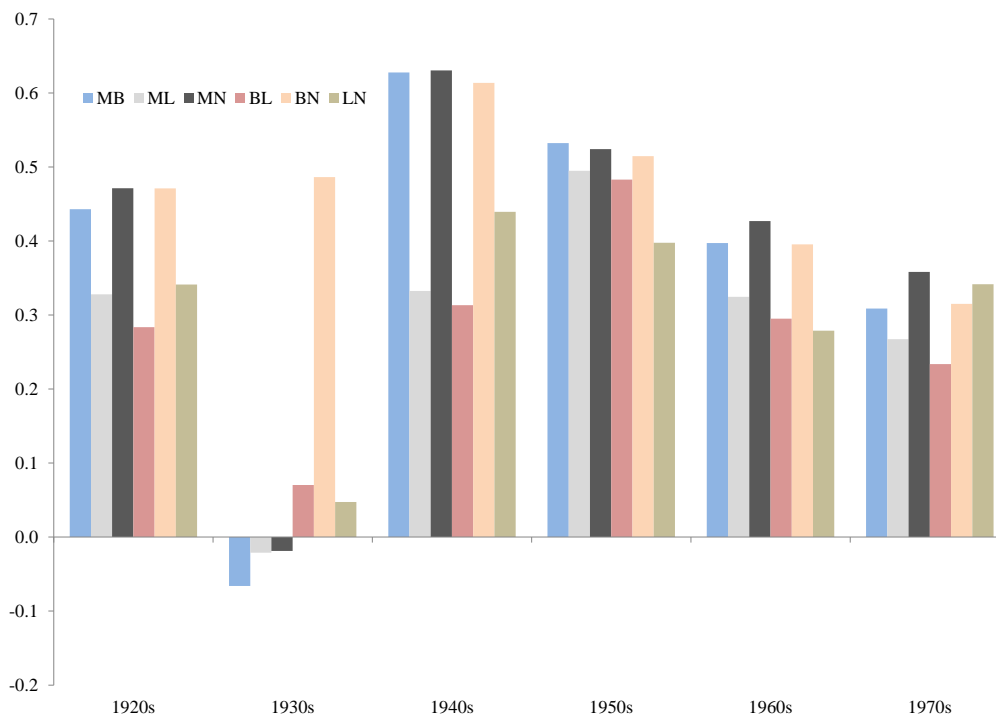
As for advances, we see that the general degree of correlation is higher than for cash. This suggests that loan growth decisions were made to a greater degree at a synchronized level amongst the banks, whether this was due to each bank looking to action by the competition and determining their own decisions in a relative manner, or whether loan growth was determined by the phase of the business cycle. As for the dynamics over time, advances show no similar drop in co-movement during the Great Depression. Again, there is no obvious change during the crisis decade of the 1970s, although there is perhaps a greater degree of heterogeneity across banks. If we look more granularly at specific years, as opposed to whole decades, there is no discernible difference to be found during the crisis years of 1973-1974 compared to the non-crisis years.

Finally, the last figure shows deposit correlation by decade. The degree of cor-

⁴⁷⁵While use is made of equity data to measure interconnectedness later in the chapter, it is as a piece of supporting evidence rather than as a stand-alone tool.

⁴⁷⁶See Ackrill and Hannah (2001), especially p. 110, for a discussion of developments during the period.

Figure 5.4: Cash Correlation by Decade

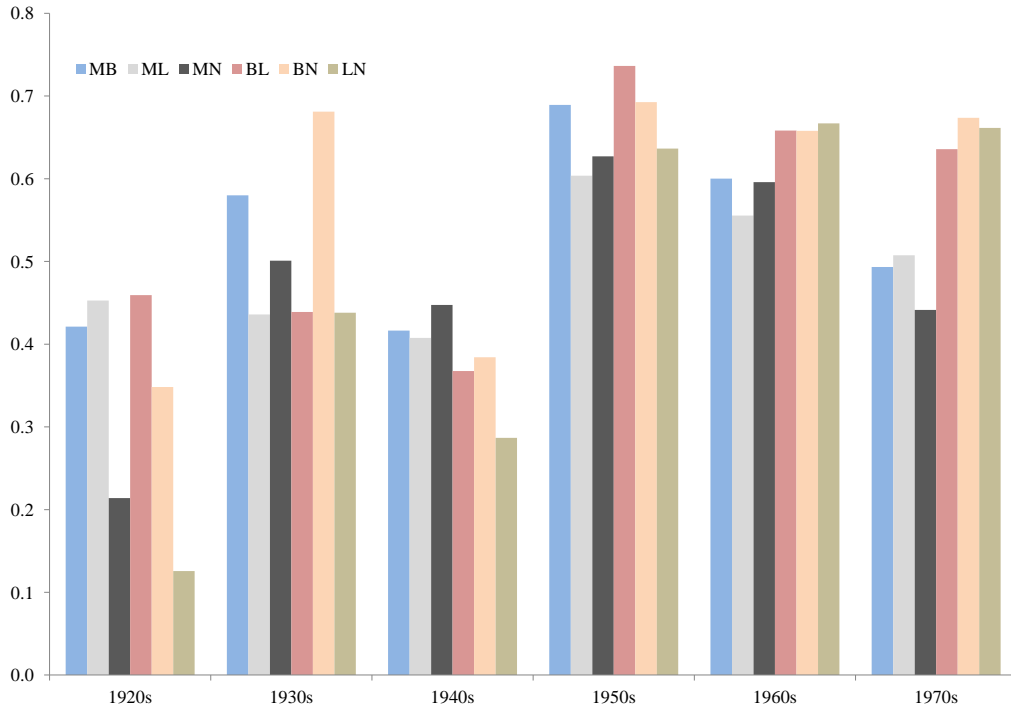


Source: Author's calculations.

relation - while high - is remarkably persistent by decade and also by bank up until the 1970s. During the last decade - the decade of the height of the property boom and subsequent crisis - there is a sharp drop-off in correlation across all banks. It is unclear why this is the case. One possibility is that the substantial spike in inflation during the decade distorted the numbers. However, re-running the calculations using real data (i.e. adjusted for inflation) does not change this finding.⁴⁷⁷ Another possibility would be a downward bias due to outliers but omitting the largest jumps in the series does not change the result and the fact that this behaviour is in place for all pairs suggests that this is not driven by some anomaly in one of the banks.

⁴⁷⁷The process of deflating the data is described more fully in Section 4.4.

Figure 5.5: Advances Correlation by Decade

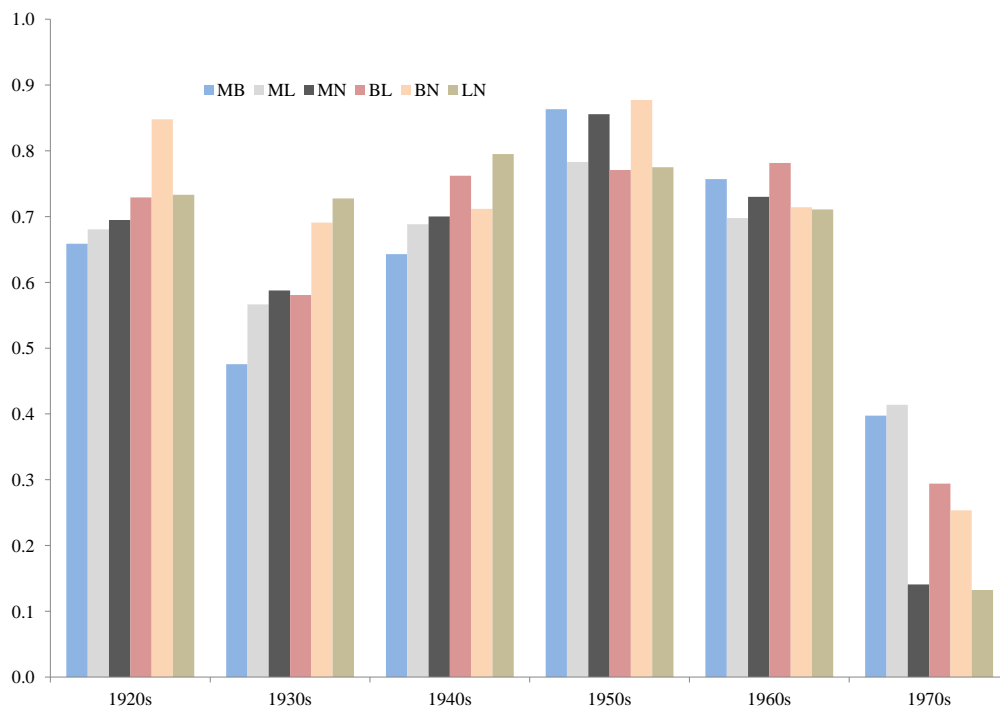


Source: Author's calculations.

Before moving on, we look at simple indices to get a more nuanced, high frequency view of the correlation dynamics. The rationale for this is that the grouping of decades above involves aggregation that may hide trends which can possibly be seen at a higher frequency. Indices are thus created for each of the three series. Each index consists of the average between 12 month moving averages for individual correlations. More concretely,

$$I_k = \frac{\sum_{i,j=1}^4 \text{corr}(i,j)}{4}, \text{ for } i \neq j \quad (5.1)$$

Figure 5.6: Deposits Correlation by Decade



Source: Author's calculations.

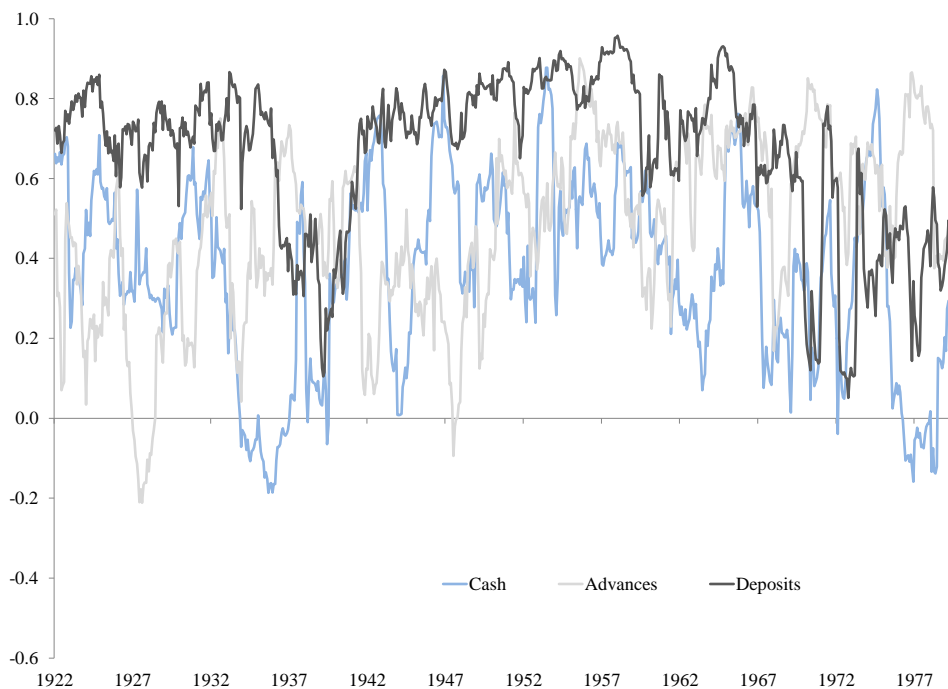
where $corr(i, j)$ represents the 12 month trailing average correlation for each respective pairing and k represents the three series; cash, advances and deposits. Note that by looking at the 12-month correlation potential seasonality issues are avoided.⁴⁷⁸ The admittedly messy Figure 5.7 shows the highly varying correlation of each series over time. However, there is no discernible trend throughout the sample period in any of the series.

As for individual series, it is hard to conclude anything concrete about cash correlations as cash represents such a small and volatile part of the balance sheet at

⁴⁷⁸Seasonality calculations showed that the bulk of new loans are made in the first three months of the year while cash and deposits decrease substantially during the same period. Whether this is due to window dressing or external seasonal effects, such as macroeconomic seasonality, is unclear.

any given time. Advances, on the other hand, is a large and sticky component of banks' balance sheets but is less responsive to sudden changes in banks' operating environment. Deposits are the most tractable of the three as they can respond rapidly and also account for a large chunk of the banks' financing. There is a noticeable drop in correlation both during the latter half of the 1930s as well as the drop which stood out for the 1970s in Figure 5.6.

Figure 5.7: 12-Month Moving Average Correlation Indices



Source: Author's calculations.

5.4.2 Volatility

Before turning to the econometric exercises, we look at standard volatility figures for individual series and sub-periods of series. We examine only the three key variables

for now - cash, deposits and advances - as they have the longest sample and can be thought of as having greater relevance with regard to interconnectedness. We look at the development of yearly volatility over the whole sample period. Volatility is defined traditionally and in logarithmic terms as

$$V_{YEAR} = \sigma \left(\sum_{t=1}^T \ln \left(\frac{r_t}{r_{t-1}} \right) \right) \cdot \sqrt{T} \quad (5.2)$$

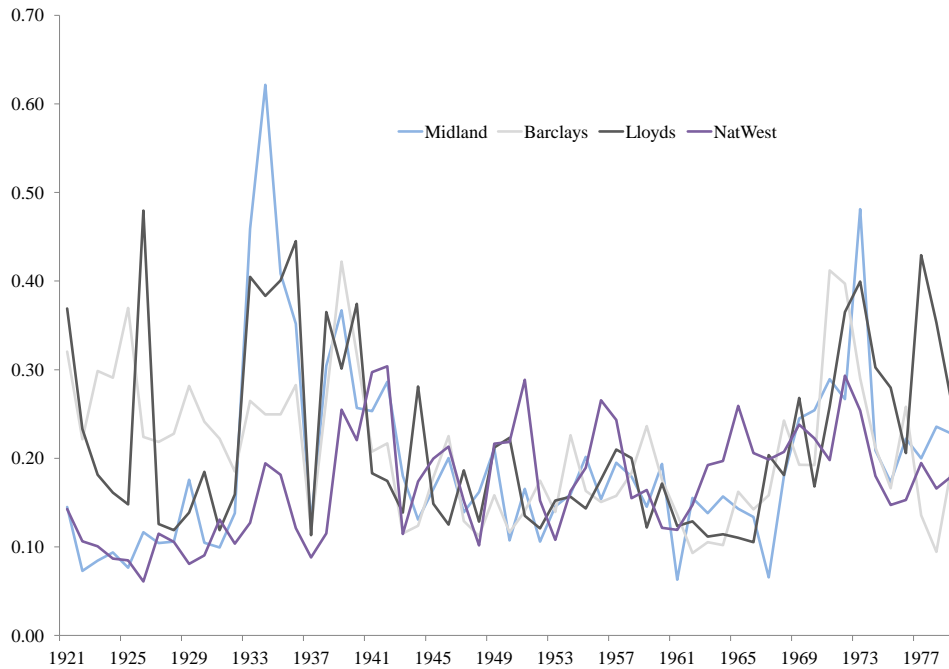
Where r_t represents the level of each variable at time t and $\sigma(x)$ is the standard deviation of x . In our case, T is set to 12 as the data used is monthly. The volatility calculation thus consists of calculating the stationary, monthly log returns and taking the standard deviation of the returns. Figures 5.11 to 5.13 show the results for the three series.

Several features stand out. Starting with the scale, we see that cash is by far the most volatile variable. This is to be expected as cash can act as a buffer to unexpected shocks that arise whereas deposits, and especially advances, are smoothed out so as to reflect fundamentals more succinctly.⁴⁷⁹ Looking at each series, deposit volatility seems to be characterized by cycles that last roughly a decade from peak-to-peak.

There is furthermore a noticeable increase in deposit volatility surrounding the secondary crisis for all banks. This is especially the case for NatWest although this jump is explained almost solely by a single 11% month-on-month drop in early 1972. Smoothing this single jump out leads to a drop in volatility from 0.22 to 0.16, which is still high but now in line with the other banks. Following the crisis, deposit volatility returned to its normal levels except in the case of Lloyds where it remained somewhat

⁴⁷⁹On the interplay between deposits, cash and advances, see Gatev et al (2009). The costs and benefits of cash holdings are also tackled in Myers and Rajan (1998), while Kashyap et al (2002) look at the issue more fundamentally through the coexistence of lending and depository services provided by banks.

Figure 5.8: Volatility of Cash



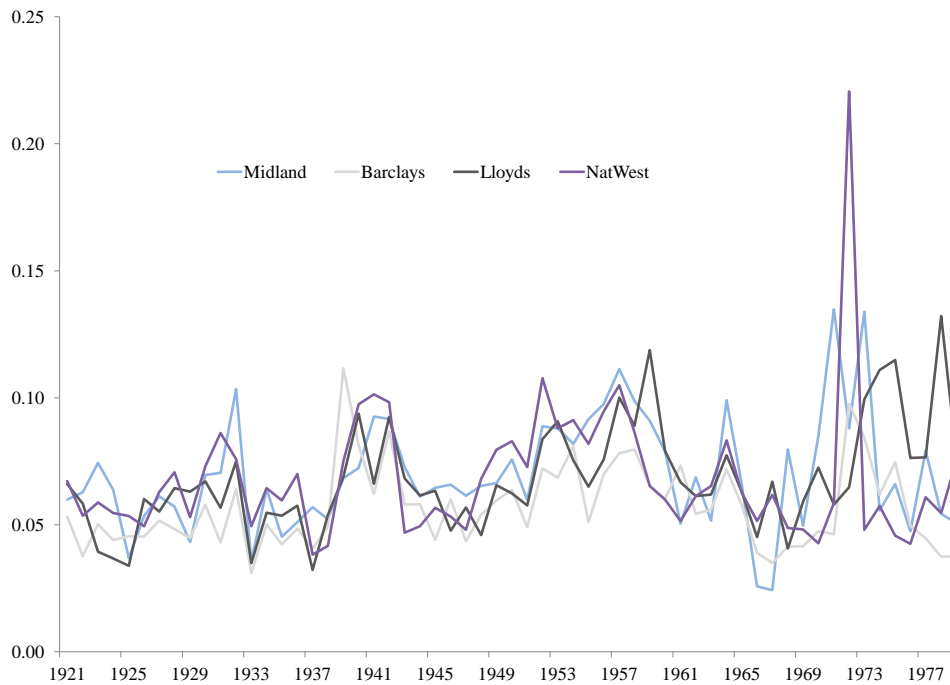
Source: Author's calculations.

elevated.

The volatility of cash exhibits a different, and somewhat surprising, pattern. Volatility increased in the build-up and during World War 2 but remained subdued in the post-war period. It then increased again during the secondary crisis but not beyond that seen during the war. Looking at the development for each bank, they exhibit a large degree of co-movement.

The volatility of advances exhibits something of a cyclical trend throughout the period. There are also some outliers during and following the secondary crisis as well as a more general uptick in volatility prior to and during the crisis. These outliers are despite the adjustments made to the advances series, described in Appendix 1.

Figure 5.9: Volatility of Deposits

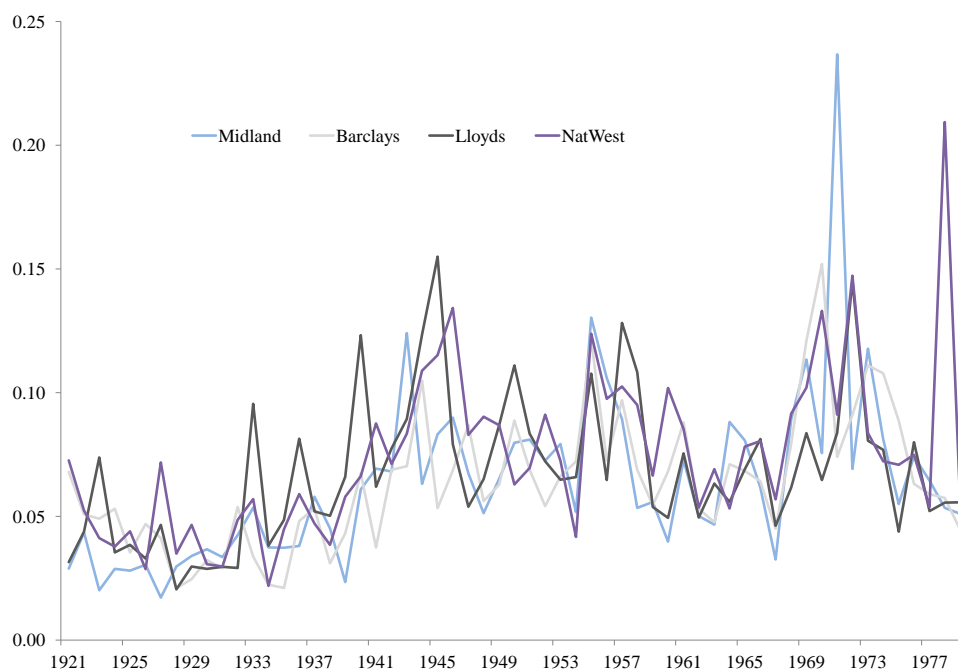


Source: Author's calculations.

Without these adjustments, the increase in volatility leading up to the crisis would have been even more pronounced. It is interesting that this increase happens for all banks and well before the crisis, showing the extent to which the clearers participated in the lending boom that precipitated the crisis.

We can look closer at these developments of the loan book by calculating the year-over-year loan growth for all banks. These figures do indeed confirm the above with substantial increases as loan growth increased a lot in the late 1960s and early 1970s. In fact, lending growth was especially high in the years immediately prior to the crisis - from 1971 to 1973. These dynamics persist when using the inflation-adjusted figures.

Figure 5.10: Volatility of Advances



Source: Author's calculations.

The lending boom in the late 1960s and early 1970s, which has been identified as a contributing factor to the secondary crisis, e.g. by Reid (1982) and Kynaston (2002), can thus readily be seen in the developments of the Big Four's loans at this higher frequency than has previously been looked at. This growth does not, however, translate into a withdrawal of deposits from creditors. This contrasts with the secondary banks who were ultimately punished with creditor withdrawal during the crisis. This suggests that the rescue operations and protection by the Bank of England - not prudent behaviour prior to the crisis - are to thank for the lack of crisis at the clearer level.

5.4.3 A Closer Look at Co-Movement and Interdependence

In this section a VAR model is presented in a further attempt to study interdependence between the banks using the data from the previous section. Our analysis and reasoning is similar to that of Bordo and Murshid (1999) who look at international transmission of crises before World War II. Using a sample of weekly bond prices for several countries, they estimate a one-lag VAR to quantify the cross-country effects of bond price shock during their sample period.

The VAR model used for the Big Four is similar to Bordo and Murshid and can help provide a closer look at the relationship between - and within - banks over our sample period. The variables used are advances and deposits for each of the four banks and the first-logarithmic difference is taken to ensure stationarity of all variables.⁴⁸⁰ The reasoning for this is, as before, the sample period available but additionally the fact that these items represent the vast sum of assets and liabilities of each of the banks. For example, deposits amounted to approximately 90% of the balance sheet for all the banks up through the 1970s.⁴⁸¹ Cash is thus omitted from the analysis for clarity and also due to the vast increase in the number of impulse responses created for each additional variable.⁴⁸²

For the initial model, a 12-period lag order is selected in accordance to the Akaike Information Criterion.⁴⁸³ Due to space restrictions, not all 64 impulse responses for

⁴⁸⁰Analysis of the levels of the variables is presented in the cointegration exercise below.

⁴⁸¹Source: Original annual reports.

⁴⁸²For clarity, Appendix B includes the impulse responses for a VAR that includes cash as well. The examples given are for Barclays advances and deposits and, as can be seen there, the results are very similar, confirming the validity of omitting cash from the main exercise.

⁴⁸³Out of five lag selection criteria tests, three - including the AIC - report a 12 month lag as optimal. The other two suggest using no or one lag. Using one lag does not alter the results substantially but for the sake of limiting the amount of explanatory variables, the one-lag model is used for some purposes below.

the eight variable VAR are presented here.⁴⁸⁴ Instead, we look at the results for Barclays only and present the same data for the other banks in Appendix 2. Suffice to say that the same general pattern holds for all banks.

The impulse response results for Barclays, shown in Figures 5.14 and 5.15, are that its advances are predominantly serially affected by shocks to its own advances in prior periods as well as that of Lloyds. Deposit shocks -including that of its own deposits - do not seem to impact Barclays' advances. For deposits, again we see serially autocorrelated shocks with Lloyds again affecting Barclays somewhat. The fact that Lloyds has a greater effect than the others is to a large extent driven by the Cholesky ordering of the series which determines where common variance gets assigned. A re-shuffle of the ordering retains the general results which supports these conclusions.⁴⁸⁵ The takeaway is thus that autocorrelation is the strongest shock effect while advances of rival banks affect each bank's own advances somewhat and rival deposits affect own deposits slightly. Note, finally, that the effect for both advances and deposits is predominantly felt in the first period, i.e. the first month.⁴⁸⁶

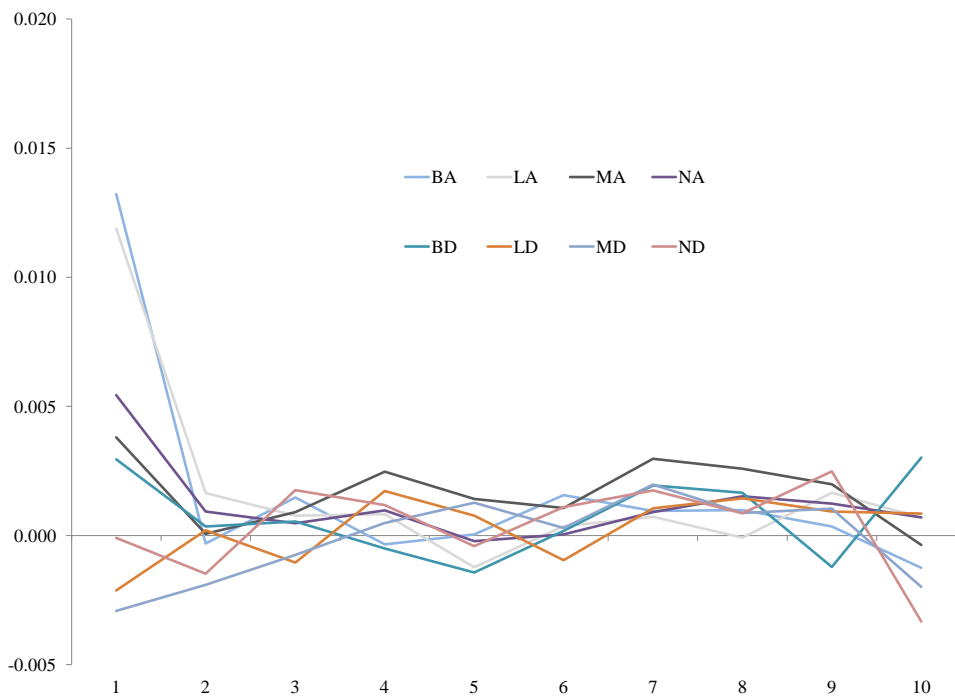
This would suggest that loan growth developments are generally determined less by the actions of competitors and rather that the correlation found in the previous section was due to banks facing, and reacting to, the same economic conditions. The fact that deposit shocks have little effects on subsequent loan growth, and vice versa, is also of some significance. This suggests a murky relationship between the two sides of the balance sheets - in both directions. This is despite the fact that, a priori, the

⁴⁸⁴The specification was valid along several criteria including serial correlation measures, roots lying inside the unit circle and cointegration validity (as discussed below).

⁴⁸⁵More concretely, each bank's own lagged variable shows the greatest effect in the impulse responses for all banks when looked at through all combinations of Cholesky ordering.

⁴⁸⁶It should be kept in mind that these results apply to the whole period in question, 1921-1979. There is thus heavy aggregation and averaging performed. This is addressed later in the chapter where various sub-periods are analyzed.

Figure 5.11: Impulse Response for Barclays Advances



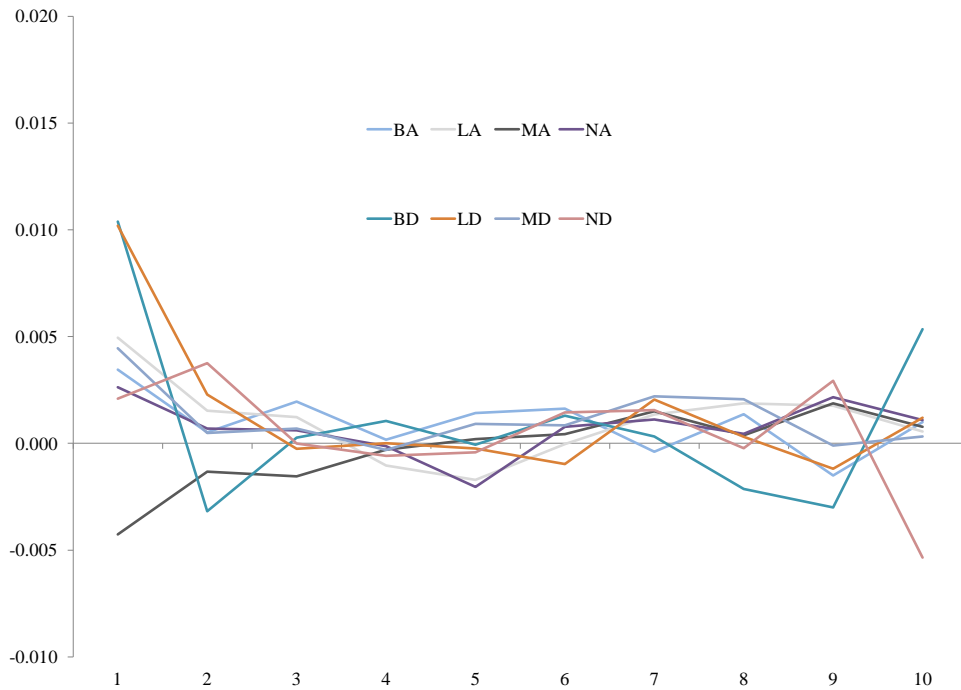
Source: Author's calculations.

B, L, M and N represents each bank while A represents advances and D represents deposits.

hypothesis that deposit growth would lead to a swift jump in loans seems plausible. Furthermore, the market disciplining hypothesis of creditors - i.e. depositors - to the actions of banks - i.e. loans advanced - is hard to see in the results. These results help shed some light on one of the main questions of this chapter. That is to say, is there any sign of deposit inflows (outflows) affecting subsequent loan growth (contraction)? The tentative answer here is no.

As for deposit interconnectedness between banks, it is, as mentioned above, the case that there are some effects to be found but only in the immediate period (month) following the shock. What effect there is in general is positive - meaning

Figure 5.12: Impulse Response for Barclays Deposits



Source: Author's calculations.

Same legend as in Figure 5.11.

that withdrawals at bank A would suggest withdrawals - rather than inflows - at bank B, although the effect is small. This is not necessarily trivial as withdrawals from one bank could readily be undertaken to move funds to another member of the Big Four, which would manifest itself as a negative relationship in the impulse responses.⁴⁸⁷ This result suggests that banks faced similar deposit dynamics, possibly driven by general liquidity in the economy or because they were thought to be very similar in nature.

In support of this data analysis, the Lloyds archives include graphic data on the

⁴⁸⁷ Archival data on the number of shareholders, debit accounts and other developments exists but the latest available data is for 1972 so the effects of the crisis are not included.

number of new accounts by area during the latter stages of the property bubble and through the secondary crisis. There is a marked increase in the number of current accounts open in the run-up to the crisis and a slight decrease during it. In late 1975, as the crisis was almost over, there is again an increase in accounts. Furthermore, similar graphs show bilateral deposit withdrawals and inflows between Lloyds on the one hand and the other Big Four on the other. These support the results from the impulse response, namely a positive association of deposit flows between banks.⁴⁸⁸

Before looking at possible differences between subsamples of the data, Granger causality tests are performed between each pair of variables in the VAR(12) model containing the necessary series. This is done to gain an additional look at the interplay between balance sheet variables on the one hand and different banks on the other. Granger causality tests have been widely used for various purposes in the literature, although the non-trivial distinction between genuine causality and Granger causality has often been highlighted.^{489,490} Nonetheless, such tests can help support the analysis and serve as part of the puzzle when looking at the interaction of distinct variables.

The Granger tests are performed for each of the eight variables (deposits and advances for each bank) in addition to simple pair wise Granger tests outside of the model for the sake of robustness. The full results of the tests can be found in Appendix 2 but here the main conclusions are sketched. As above, there are two main hypotheses to consider in these tests. The first is: how do the different sides of the balance sheets interact? As such, how do assets and liabilities interact and is there

⁴⁸⁸Lloyds Archives, HO/CA/Ana/54, data on cross-bank comparisons.

⁴⁸⁹See e.g. Sander and Kleimeier (2003) for use of Granger causality in a contagion study and Hiemstra and Jones (1994) for an equity market application.

⁴⁹⁰The approach taken here is similar to that of Lutkepohl and Reimers (1992) and also somewhat similar to measures taken in Campbell and Shiller (1987).

stronger explanatory power from one side to the other?⁴⁹¹ The second hypothesis centres on the core of this chapter; interconnectedness and interdependence. Are changes in deposits and advances at Bank A driven (in a statistical sense) by changes in deposits and advances at Bank B? This can be seen as a different presentation of the same question asked in previous sections.⁴⁹²

For the VAR Granger tests, we are able to reject at the 95% level, for all banks except Midland, the first hypothesis mentioned - the null being that deposits do not Granger cause the same banks' advances - and vice versa. The more interesting connection, especially for our purposes here, is that of possible deposit relationship between banks. For this, the 12-lag VAR is re-run using only deposits of the four banks.⁴⁹³

For each bank, three Granger results are obtained - one for each of the other banks - giving a total of 12 results. For 10 out of the 12 cases, we are able to reject the hypothesis that deposit movements in Bank A do not Granger cause deposit movements in Bank B.⁴⁹⁴ We therefore see a strong interconnectedness of deposits, although the dynamics behind this co-movement can not readily be determined.⁴⁹⁵ Nonetheless, the results add weight to the simple correlation analysis of the previous

⁴⁹¹This question also relates to the age-old "chicken and egg" story of money creation and the possible endogeneity of money. While not central to this chapter, a test can help shed light on the determination of deposits which is central to interdependence and the optimal design of lender of last resort policies.

⁴⁹²It should be noted that, as is the case in other empirical studies of interconnectedness, there is little structural analysis that can be made and also that the various methods of estimation used can be seen as an attempt to suggest and strengthen priors rather than genuinely authenticate the underlying structure.

⁴⁹³The impulse responses are relegated to Appendix B. Suffice to say that they show very similar patterns to the eight variable VAR from above.

⁴⁹⁴The two pairs that cannot be rejected are that Midland funding causes Barclays deposits and that NatWest deposits cause Midland deposits. There is thus lesser evidence of a relationship between Midland and the other banks.

⁴⁹⁵These results agree with the Bank's intuition, mentioned in Section 2, that there was a certain degree of coupling between banks, although the evidence then was informal.

section.

One of the shortcomings of Granger causality tests is their sensitivity to the lag structure specified.⁴⁹⁶ As a robustness check, we try looking at alternative lags and pair wise tests instead of within the VAR. Both adjustments - lag and pair-wise - do not change the results materially. Reducing the number of lags also reduces slightly the number of tests we are able to reject, but not substantially. As we are not interested in looking at exactly which ones hold, but rather whether there is general Granger causality within the system, this does not alter any of the substance.

Table 5.7: Granger Causality Test Result Summary

	Number of Granger relationships (out of 7)	Own bank's deposits/advances Granger cause
<i>Advances</i>		
Barclays	3	X
Lloyds	5	X
Midland	4	
NatWest	5	X
<i>Deposits</i>		
Barclays	6	X
Lloyds	5	X
Midland	3	
NatWest	5	X

Source: Author's calculations.

While the evidence above suggests that the correlation between banks stems from exogenous changes to their shared environment, such as macroeconomic shocks, it would be beneficial to examine further whether the relationship changes at times

⁴⁹⁶This is also true more generally for the other models used here. Thus no attempt is made to argue for them as predictive models or them delivering structural truths. We are simply interested in shedding light on the statistical relationships that are robust to alterations of specifications (such as lag selection).

of crisis and volatility. The sample is thus split into two periods to see whether the more tranquil period exhibits less interdependence than at times of crisis. 1921-1966 is chosen as the tranquil period as this roughly corresponds to the monotonous development of volatility for both deposits and advances shown in Section 4.2 above. The volatility exercise also strengthens our choice of deposits and advances since these series show similar volatility, with a spike during the property bubble and subsequent crisis towards the end of the period, while cash volatility is muddled by the behaviour during the Great Depression.

Table 5.8 shows the sub-sample results for the Granger causality tests.⁴⁹⁷ R indicates rejection of the null hypothesis of no Granger causality. In other words, R suggests a relationship between the two banks in question. As can readily be seen, there is much greater evidence of pair-wise relationships between banks deposits before the bubble and subsequent crisis of the 1970s.⁴⁹⁸

Another approach used in the contagion and co-movement literature is estimation of a Vector Error Correction Model (VECM) to account for possible cointegrating relationships between variables. Our approach here follows Johansen (1988) and Johansen and Juselius (1990) which has the advantage over the conventional Engle-Granger approach that it incorporates short-term and long-run dynamics. For simplicity and clarity, we stick to the deposits of the sample banks and omit the advances series from the previous exercise.⁴⁹⁹ The initial cointegration tests are

⁴⁹⁷In addition to Granger tests for the sub-samples, the same VAR models as above were run using the two periods. They confirm the same general results as in the Granger tests. The impulse responses from these sub-sample VARs are not printed for sake of brevity.

⁴⁹⁸To adjust for the fact that the normal period is substantially longer than the bubble and crisis period, the tests are run for both the full normal period as well as periods as long as the bubble/crisis period. The shorter samples allow for marginally less rejections of the null of no causality, but nowhere near that of the bubble/crisis period.

⁴⁹⁹The liability side of the balance sheet is generally where panic manifests itself and the effects are felt, through both customer deposits and more recently inter-bank deposits. See e.g. Demirguc-

Table 5.8: Granger Causality Sub-Sample Results

<i>Normal period (1921-1966)</i>							
Dependent: Barclays		Dependent: Lloyds		Dependent: Natwest		Dependent: Midland	
Lloyds	R	Barclays	R	Barclays	R	Barclays	R
Midland	N	Midland	R	Midland	R	Natwest	R
NatWest	R	NatWest	R	Lloyds	R	Lloyds	N
<i>Bubble and crisis period (1967-1979)</i>							
Dependent: Barclays		Dependent: Lloyds		Dependent: Natwest		Dependent: Midland	
Lloyds	N	Barclays	N	Barclays	N	Barclays	N
Midland	N	Midland	N	Midland	N	Natwest	N
NatWest	R	NatWest	N	Lloyds	N	Lloyds	R

Source: Author's calculations.

performed for the four deposits series. The null hypothesis of no cointegrating relationships is rejected for both pair-wise and system relationships.

In addition to the cointegration test, sub-sample cointegration exercises are also performed, similar to the correlation breakdowns by decade in the previous section. By looking at cointegration relationships by decade, we can see whether there is greater evidence of a relationship between banks at times of crisis. For the sake of brevity, tests of advances and deposits within the same bank are omitted with the focus exclusively on the back-and-forth between pairs of banks instead.

For the cointegration by decade, one lag is used in the level series to both capture the long-term relationship as well as the short-term adjustment between banks. We look at both cointegration in the system as a whole, i.e. the four banks, as well as pair-wise, to look specifically whether there are differences amongst the banks. Table 5.9 lists the cointegration findings for each pair of banks and Table 5.10 shows the result for the system. The pairings are represented according to the following

Kunt and Detragiache (1997).

abbreviation: M=Midland, B=Barclays, L=Lloyds, N=National Westminster. Both trace and eigenvalue methods are used but since the results were the same in most instances, only the trace test is reported with indications given when the tests gave differing results.

Table 5.9: Cointegration Relationships by Decade

	BL	BM	BN	LM	LN	MN
1920s	1	1*	1	2	2	2
1930s	0	0	0	0	0	1
1940s	1	1	1	1	0**	1
1950s	1	1	0	1	2	0
1960s	0	1	1	0	1	1
1970s	2	0	0	0	0	0
Full sample	2	2	2	2	2	2

Source: Author's calculations.

Note: Johansen test. *Eigenvalue result indicated no cointegration relationship. ** Eigenvalue result indicated one cointegration relationship

As Table 5.9 shows, there are definite similarities across banks over the decades. There exist cointegrating relationships for all pairings for the full sample. As for specific periods, there is strong cointegration in the 1920s and 1940s while considerable cointegration can be found in the 1950s and 1960s.⁵⁰⁰ It is, however, the 1970s, - the decade of the secondary banking crisis - which is the sub-sample where the null hypothesis of no cointegrating relationship can not be rejected for all but one pairing. Along with the Great Depression years of the 1930s, this is the only decade where there is a lack of evidence for cointegrating relationships.

As for Table 5.10, it shows the system-wide, as opposed to bilateral, existence of cointegrating relationships. We see that now there exists a relationship for the 1970s.

⁵⁰⁰The number of cointegrating relationships may be irrelevant, apart from the distinction between zero and a positive number. That is to say, the results for subsamples may be due to reduced power owing to smaller samples providing less information. This fact is emphasized by Lutkepohl and Reimers (1992) who divide their sample similarly into subperiods and analyze the cointegration relationships by subsample.

Table 5.10: Cointegration Relationships by Decade - Big Four Together

	Trace test	Max Eigenvalue test
1920s	2	1
1930s	0	0
1940s	2	1
1950s	2	2
1960s	1	1
1970s	1	1
Full sample	4	4

Source: Author's calculations.

This suggests that the relationship of deposit withdrawals and increases is weaker during the 1970s than in previous decades but that there still exists a semblance of a system-wide relationship. Taken together, the cointegration analysis supports the main results of the basic correlation analysis in the previous subsection. That is to say, there is no evidence of the banks facing any kind of market pressure in terms of access to funds on a monthly basis during the crisis. In fact, the empirical exercises all suggest that there was less of a relationship between in- and outflows of deposits during the crisis than in more normal times.

As a myriad of time-series exercises has been performed, the results are summarized in Table 5.11. The various exercises all suggest that, in general, there was substantial co-movement of banks' balance sheet developments - particularly deposits throughout the sample period of 1921-1979. However, in contrast to the contagion hypothesis suggesting greater co-movement during crises, the results all point to *less* co-movement during the property bubble, easy money and subsequent crisis in the 1970s.

Table 5.11: Empirical Exercise Result Overview

<i>Method</i>	<i>Main Results</i>
Correlation analysis	Decline in co-movement during crisis
Volatility	Disconnect between loans and deposits; former spiked during crisis, latter more stable
VARs - (impulse responses and Granger causality)	Decline in co-movement during crisis
Cointegration	Decline in co-movement during crisis

It is unclear what drives this development, although it would suggest that the rescue operations, discussed in Section 2, were successful in the primary goal of building a firewall around the core of the banking system to protect it from the crisis. This points to a "flight to safety" scenario which is also supported by the fact that the clearers' deposits base increased (nominally) in approximately 2/3 of the months during the main crisis period of 1973-1975. Whether such a development is desirable is debatable and discussed in Chapters 2 and 3 of this thesis. For now, the fact mentioned above bears repeating, that the clearers were not exempt from the large increase in loan growth during the property bubble as can be seen in Figure 5.3c. It is thus hard to argue that their ability to avoid the consequences of the crisis was due to prudent business operations in the run-up to the crisis.

Going back to the decrease in relationship between the banks' deposits during the 1970s, one possibility is that the substantial rise in inflation - discussed in the macroeconomic context in Chapter 2 - could be the culprit as the data used is nominal and covers an extended time period. We now look at whether this might be the case before finally looking at whether equity markets tell a similar story to that of the above balance sheet developments.

5.4.4 Deflating the Results

It is customary in the contagion literature to use nominal variables for empirical estimation, despite the distortionary effect that inflation can have on both financial and economic variables. This is the case for most studies - not only those that use equity prices but also stock variables such as interbank deposits. The use of nominal variables may be justifiable in certain cases, such as at high frequency over short samples or during periods of low and stable inflation. As many empirical tests of interconnectedness and contagion compare cross-sectional differences at various points of time, it may also be the case (although not necessarily) that inflation evens itself out across series. However, it can be considered prudent as a robustness check to deflate the time series and see whether it affects the results. This is especially the case in this chapter as we are dealing with series over a long time period with variable inflation - primarily during the anomaly decade of the 1970s.

The Retail Price Index (RPI) is used to deflate the series. This is the monthly consumer price indicator that covers the largest part of our sample period, starting from June 1947.⁵⁰¹ Table 5.12 shows summary statistics for the first differences of our main series, now in real terms. Note that certain elements do not change when the series have been deflated, such as the ranking of volatility between series, as the deflator is a common one.

However, we see that, in real terms, the developments of the series over the sample period are somewhat different. For example, we see that cash barely grew over the whole period in real terms, and in the case of Midland actually decreased.

⁵⁰¹The so-called Long Term Indicator of Prices of Consumer Goods and Services is available from the same month. The cumulative difference from their starting point until September 2013 is however only 3.6%, with the bulk of the discrepancy coming after our sample period. We thus focus here on the better-known RPI.

The same applies for deposits which grew a great deal in nominal terms over the 32 year period but were stagnant in real terms. Advances, on the other hand, grew considerably even in real terms. This can also be seen by the loan-to-deposit ratio which was at 20% in 1947 but was up to 74% at the end of the sample period in 1979. In fact, the ratio was up to 93% for Midland. As for volatility, as before it is greatest for the cash component while the other two components are similar.

Table 5.12: Summary Statistics for Real Series

	<i>Mean</i>	<i>St.dev</i>
<i>Deposits</i>		
Midland	0.04%	2.37%
Barclays	0.07%	1.84%
Lloyds	-0.01%	2.28%
Natwest	0.02%	2.35%
<i>Cash</i>		
Midland	-0.14%	5.71%
Barclays	0.04%	5.50%
Lloyds	0.06%	6.18%
Natwest	0.05%	5.60%
<i>Advances</i>		
Midland	0.43%	2.66%
Barclays	0.40%	2.47%
Lloyds	0.31%	2.39%
Natwest	0.31%	2.78%

Source: Author's calculations.

Moving to the main analysis from above, the exercise have been repeated using the deflated series. The full results are not displayed here but Appendix 2 contains replicated figures to those above using the deflated series. The basic result is that the results are mostly unchanged. There is some compositional difference for the basic empirical statistics, for example in comparison between decades due to varying

inflation, but nothing that changes the fundamental results.⁵⁰²

For volatility, the total level obviously decreases with the generally positive inflation lowering the numbers. What we are interested in here, however, is the development of volatility over the sample period. As can be seen in Appendix 2, the results hold here as well. This is somewhat important as the increase in calculated volatility in the 1970s, especially for advances, could well have been due to the dramatic increase in inflation during the decade.⁵⁰³

As for the Granger causality tests, there is less evidence of interconnectedness than when using the nominal variables. However, this could stem from the shorter sample period forced on us by the lack of RPI data available before 1947. By re-running the original Granger tests using the shorter sample, the results are very similar to the ones using the deflated data. For the sub-sampled nominal data, there are now four pairings where the null of no Granger causality can not be rejected versus five for the real data.⁵⁰⁴ Summing up, the findings of the various empirical exercises in the previous section are not driven by inflation. Especially crucial is the fact that the lack of relationship between banks found in the 1970s is not due to the rise in inflation during the decade.

5.4.5 The Informational Value of Equity Versus Deposits

A key obstacle regarding the measurement of interconnectedness, contagion, and other crisis mechanisms is the availability of data. In the analysis above, the data

⁵⁰²The seasonality effects, mentioned earlier, also persist, despite seasonality in inflation altering the numbers minimally.

⁵⁰³RPI inflation peaked at just over 24% in the summer of 1975.

⁵⁰⁴Another approach to see the possible effect of inflation is to include the RPI in the original VAR model. This approach confirms the general results. The RPI had very little effect, both the series itself and its effect on the other series when compared to the non-RPI VAR.

used was not readily available in real-time and not even after each crisis had subsided. As mentioned above, many other attempts to measure interconnectedness have relied on publicly available data, primarily equity data. This might be problematic. Equity returns measure the market's perception of the value of the given bank's capital, and while this indicator is an important one, its fluctuations do not directly lead to banks experiencing problems during a panic.

It may thus well be the case that the value of a bank's equity on the secondary market drops during market turbulence but recovers fully once the panic has subsided. If this is the case, the bank is only very indirectly affected. The reason that equity returns are considered a reasonable tool for measuring the seriousness of bank troubles is that they are implicitly assumed to be a good proxy for other variables, including general creditor unease. The argument goes that if there is unease amongst equity holders, leading to substantially lower equity valuation, then this unease would apply to other stakeholders as well, namely depositors and bondholders, who may cause bank panics by withdrawing funds from the bank and threatening their creditworthiness.

In this section, this assumption is tested by comparing the publicly available equity data of the time with our previously confidential bank deposit data. We look at the development of equity returns amongst the Big Four and study how closely the returns mirror that of bank deposits. We look at both the relative increase in volatility during the secondary crisis as well as the potential increase in co-movement between banks during the crisis. One possibility is that equity returns become more volatile (i.e. are less sticky) than deposits at times of crisis and that there is greater co-movement for equities as the public availability of equity data leads to greater awareness of equity holders in other banks. This latter possibility is similar in func-

tion to the classic Diamond and Dybvig (1983) mechanism.

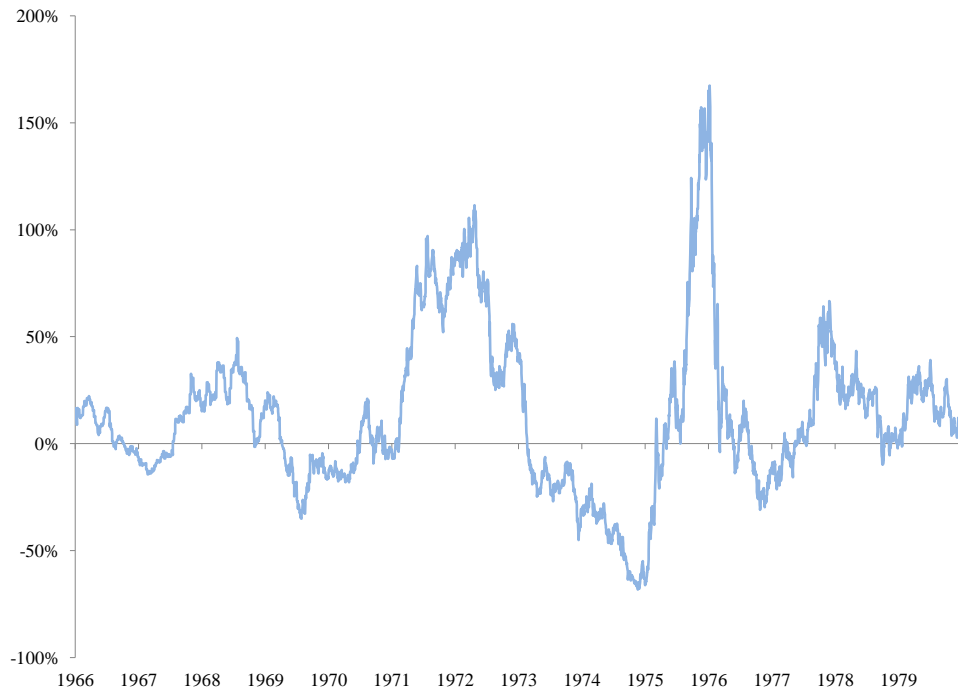
The equity data used is daily closing prices from Datastream covering the period 1965 to 1980. This is the same data as used for the option pricing framework in Chapter 3 of this thesis. Although Datastream covers a greater period than most other databases, 1965 is as far back as the series go. These 15 years are however a long enough time for our purposes. In fact, many similar studies use a sample period of only 1-2 years.⁵⁰⁵ Figure 5.13 shows the simple average yearly rise in equity prices for the Big Four. The rise during the property bubble, the subsequent drop during the secondary crisis and rapid recovery after it are all clearly visible in the equity data. Note that the rise in the early 1970s coincides with the large loan growth documented above. The subsequent drop does not look too dramatic due to the scale but the 12-month decline reached 68% in November of 1974.

We start the interdependence analysis by looking at simple cross-bank correlations of equity returns. As daily data is available, correlations are calculated for both daily and monthly returns. Comparing the two can indicate whether the use of monthly data for balance sheet data might bias those results. These series can in turn together give us a first approximation to the degree of co-movement between banks and whether looking at equity correlation may lead to overestimation of interconnectedness.

Figures 5.17 and 5.18 show a similar trailing 12-month average correlation for each of the pair wise correlations. The monthly index is calculated in the same way as the index in Figure 5.7 while the daily one is similarly constructed. Looking at the daily index first, we can see that there is a sharp drop in correlation in the beginning

⁵⁰⁵This was indeed the case for most studies of between-country contagion following the Asia crises, see for example Baur and Fry (2011).

Figure 5.13: Big Four 12M Equity Index



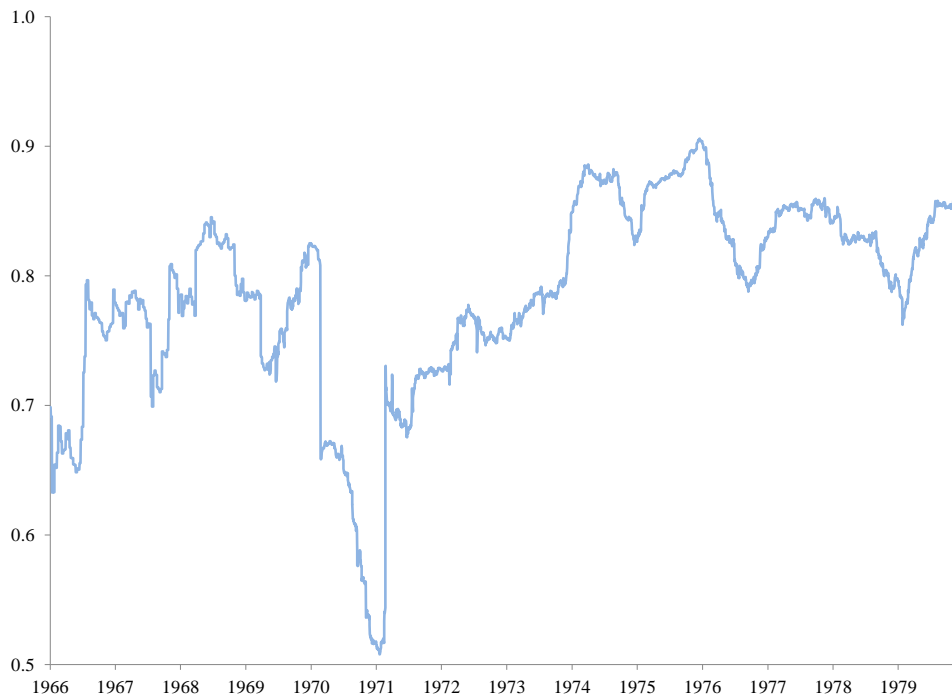
Source: Datastream, author's calculations.

of the 1970s but otherwise there is no discernible pattern and no evidence of the crisis in the correlations. In Figure 5.15 the monthly close of the daily index is added for comparison. We see that the two series are largely the same, apart from the fact that the monthly series does not capture the aforementioned drop in 1970.

We now use only the monthly returns for the whole period for each bank for complete comparability to the deposit series. The deposit series is of course the same series as that in Figure 5.7, although the sample period is shorter. The results are presented in Figure 5.16.

The importance of the fact that the equity correlation series is an informationally available figure at each time should be stressed. There is therefore scope for holders

Figure 5.14: 12-Month Moving Average Correlation Index

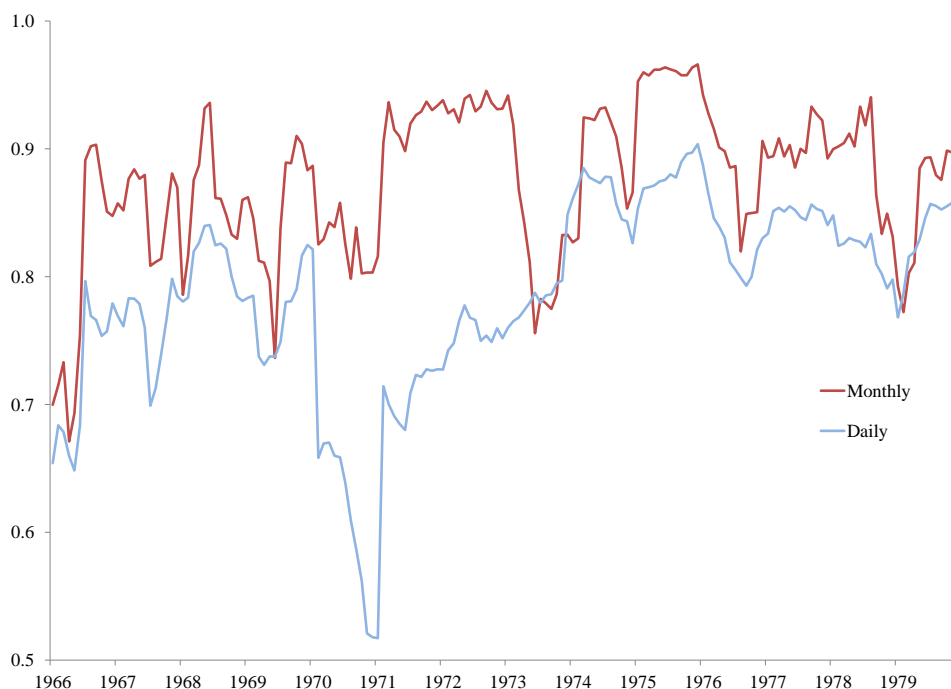


Source: Datastream, author's calculations.

of this instrument to adjust their position at each time in accordance with updated information. For example, holders of Barclays equity can respond to a decrease in the share price of Midland by selling their stake. Information on deposits, on the other hand, was not available, which means that depositors could not have made decisions regarding withdrawal based on what other depositors were doing. We can see that there is much greater persistence in equity correlation throughout both the boom of the late 1960s and early 1970s as well as the following crisis.

For deposits, on the other hand, there is a marked drop in correlation during both 1970, near the height of the boom, as well as towards the end of 1972, just before the onset of the crisis. Apart from the inflationary effect and bias due to

Figure 5.15: Comparison of Monthly and Daily Equity Data Correlation



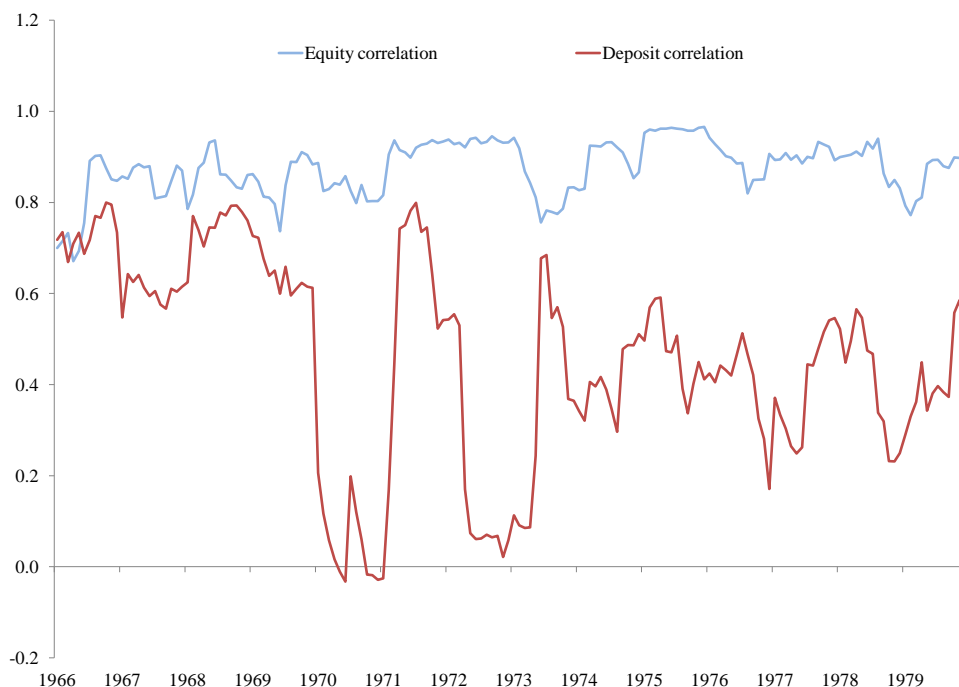
Source: Datastream, author's calculations.

outliers and anomalies in one of the banks - possibilities all ruled out above - there is no obvious reason for the disparity between the two series. One could argue for inherent differences in the properties of debt versus equity but it is hard to do so specifically for the anomalies between the two in Figure 5.16.

Finally, we look at the co-movement of equity returns and deposit movement.⁵⁰⁶ That is to say, we look at whether equity correlation increases are positively associated with deposit correlation, at the same time. A correlation index which takes the average of each bank's 12M moving average correlation is constructed for deposit

⁵⁰⁶For completeness, the relationship between the equity market and the other series were also studied - namely cash and advances. The results were very similar to the ones presented here and any further discussion on these other series is thus omitted.

Figure 5.16: Equity and Deposit Correlation Dynamics



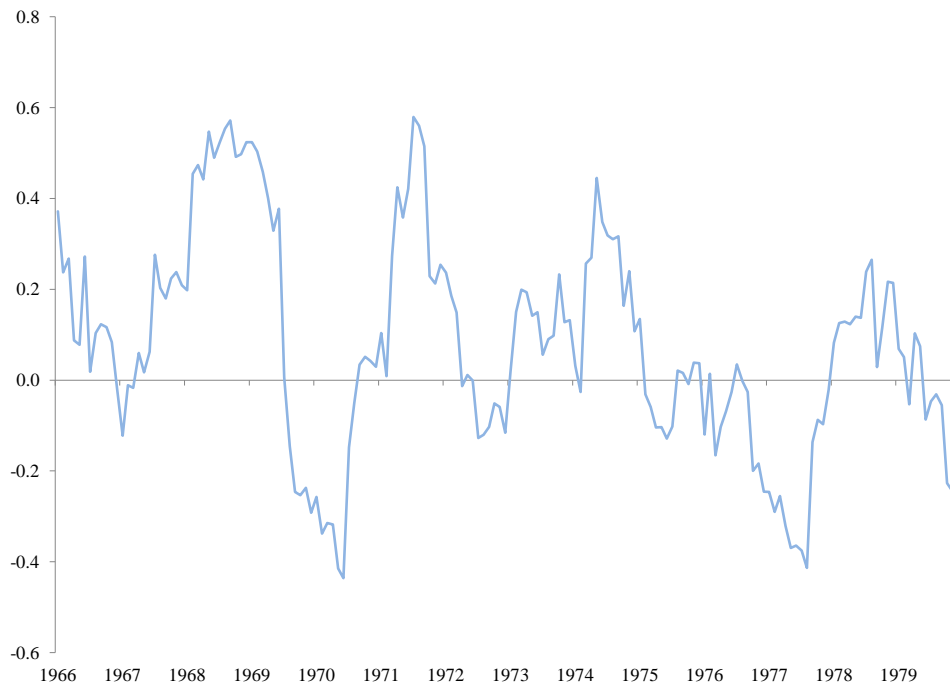
Source: Datastream, author's calculations.

moves and equity returns.⁵⁰⁷ The results can be seen in Figure 5.17. The correlation exhibits cycle like behaviour around zero as the co-movement between equities and deposits is periodically in negative territory. Yet again, we see no signs of a regime shift taking place during the crisis with similar dynamics as during the pre- and post-crisis periods. Furthermore, the asymmetry in response makes it is hard to argue for any case of systematic market discipline from creditors.⁵⁰⁸

⁵⁰⁷Aggregation of the series does not seem to lead to loss of information as the series for the individual banks all exhibit a similar trend over the time period.

⁵⁰⁸The hypothesis that depositors punish bad behavior by withdrawing their funds and thus denying banks access to capital is a popular one. During crises, however, the objective of central banks is of course in some sense to prevent this disciplining taking place. In this sense, the Bank of England can be said to have been successful as can be seen by the fact that the FTSE All Share index declined by over 50% during 1974 - the main year of the crisis - while, as we have seen, there were no such signs of exit in the market for deposit. For further reading, Peria and Schmukler

Figure 5.17: Deposit-Equity Correlation Index



Source: Datastream, author's calculations.

In addition to the informational difference between the two markets, another difference that may explain this result is the profile of stakeholders. Equity holders, or at least those responsible for day-to-day movements in equity markets, are often institutional investors and other participants from the financial sector.⁵⁰⁹ Deposit holders, on the other hand, tend to be individuals and non-financial companies which

(2001), reaching somewhat different results than are found here, represents one of many attempts to estimate the extent of market discipline via deposits.

⁵⁰⁹The Lloyds archive include a report which analyzes the banks' shareholders in 1971 and 1972. The total number of shareholders was approximately 76,000 at the time. As far as concentration was concerned, approximately 42% of the shares outstanding were held by individuals or institutions who had over 10,000 shares each. The analysis also notes, interestingly, that women outnumber men as individual shareholders on the scale of 6 to 4. Lloyds Archives, HO/CA/Ana/54, document titled "Analysis of Shareholders".

may be less inclined to remove their funds during market volatility. This may explain part of the reason for the difference in Figures 5.16 and 5.17.

From this subsection, we can conclude that there is no indication of heightened equity market interdependence between banks during the crisis. Furthermore, the *level* of interdependence is substantially greater amongst equity holders than deposit holders. Finally, it does not seem to be the case that depositors behaved similarly to equity holders - either in normal times or during the secondary crisis.

5.5 The Interplay between Secondary Banks and the Big Four

How are the results from the previous section altered when data on the secondary banks themselves is added? While there is little data available on the secondary banks, and particularly high-level data such as that used in previous sections, in this section we try to see whether there is evidence of any interconnectedness, or possible contagion, between the secondary banks on the one hand and the Big Four on the other. The data for the former comes in the form of monthly equity prices, obtained from the *Financial Times* archives, for the period 1965 to 1975 while the latter is from Datastream.

The banks in question are Bowmaker, Cedar Holdings, First National Finance Corporation, Keyser Ullmann, Slater Walker and U.D.T.⁵¹⁰ These banks were chosen due to data availability and the fact that they were both prevalent in the secondary banking scheme as well as in need of assistance during the crisis. We look at sim-

⁵¹⁰Data for Bowmaker is only available up until June of 1969, when it was acquired by C.T. Bowring, while Cedar data starts in April of 1971.

ilar slices of the data as in previous sections, namely simple correlations, Granger causality and cointegration tests as well as VAR models.

To begin with, an index of secondary bank prices is constructed for the period.⁵¹¹ This index is compared to that of the Big Four equity prices in Table 5.13. As can readily be seen, there is substantial correlation between the secondary banks and the Big Four but not nearly as large as between Big Four members.

Table 5.13: Correlation Matrix for Secondary Banks and Big Four

	Secondary banks	Barclays	Lloyds	Midland	NatWest
Secondary banks	-	0.57	0.61	0.58	0.61
Barclays		-	0.94	0.94	0.93
Lloyds			-	0.91	0.93
Midland				-	0.90
NatWest					-

Source: Author's calculations.

Table 5.14 shows the result when the sample is split in two, looking separately at developments prior to the crisis on the one hand and the height of the boom and crisis period on the other.⁵¹² The correlation between secondary banks and the Big Four is considerably higher for the crisis-period and while the same applies within the Big Four, the increase is noticeably greater for the former.⁵¹³

Turning to Granger causality tests, we perform tests that are equivalent to those used in the previous section. Instead of looking at aggregate figures for the

⁵¹¹We do not perform all the exercises of the previous sections, such as cointegration tests for sub-periods, due to the nature of the data and the limited time period.

⁵¹²The "normal" period is defined as 1965-1970 and the "abnormal" period, which incorporates the height of the boom and subsequent crisis, as 1971-1975.

⁵¹³Note also the extremely high correlation within the Big Four. This connects to the analysis in Section 4.5

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Table 5.14a: Sub-Samples of Correlation Matrix - Pre-crisis

	Secondary banks	Barclays	Lloyds	Midland	NatWest
Secondary banks	-	0.49	0.50	0.40	0.55
Barclays		-	0.87	0.91	0.79
Lloyds			-	0.81	0.86
Midland				-	0.77
NatWest					-

Source: Author's calculations.

Table 5.14b: Sub-Samples of Correlation Matrix - Crisis

	Secondary banks	Barclays	Lloyds	Midland	NatWest
Secondary banks	-	0.64	0.69	0.66	0.67
Barclays		-	0.96	0.95	0.97
Lloyds			-	0.95	0.95
Midland				-	0.94
NatWest					-

Source: Author's calculations.

secondary banks, however, we look at pair-wise Granger tests between individual secondary banks and individual members of the Big Four.

Four of the aforementioned secondary banks are used - F.N.F.C., Keyser Ullmann, Slater Walker and U.D.T. - as they are the banks that have data available for the whole period. We see the results in Table 5.15 below. Slater Walker and U.D.T. Granger cause the Big Four in all cases while there is less evidence for the other two. Interestingly, the reverse - i.e. the Big Four Granger causing the secondary banks - is never the case. Furthermore, the secondary banks do not Granger cause each other to any substantial degree. This suggests spillovers from problems

that the secondary banks were experiencing towards the Big Four. The fact that a relationship is not found in the reverse indicates that the driving forces were not exogenous developments that affected both sets of banks equally but rather that the fringe was affecting the core.

Table 5.15: Granger Causality for Secondary Banks

	Granger causes Big Four	Is Granger caused by Big Four
F.N.F.C.	1	0
Keyser Ullmann	2	0
Slater Walker	4	0
U.D.T.	4	0

Source: Author's calculations.

As before, there is the caveat that Granger causality tests are sensitive to the lag structure. The tests were therefore re-run with a 2 period lag as a test of robustness. The results are even more profound in this case with the test unable to reject the hypothesis of secondary bank Granger causing the core bank in all sixteen cases.⁵¹⁴

We now turn to our VAR model and the impulse response functions when the secondary banks are added. As before, we use a VAR(12) specification for sake of comparison. To limit the number of impulse responses required, we use the previously created index of secondary banks as opposed to the individual secondary banks. There are thus five endogenous variables; The Big Four and the secondary bank index.

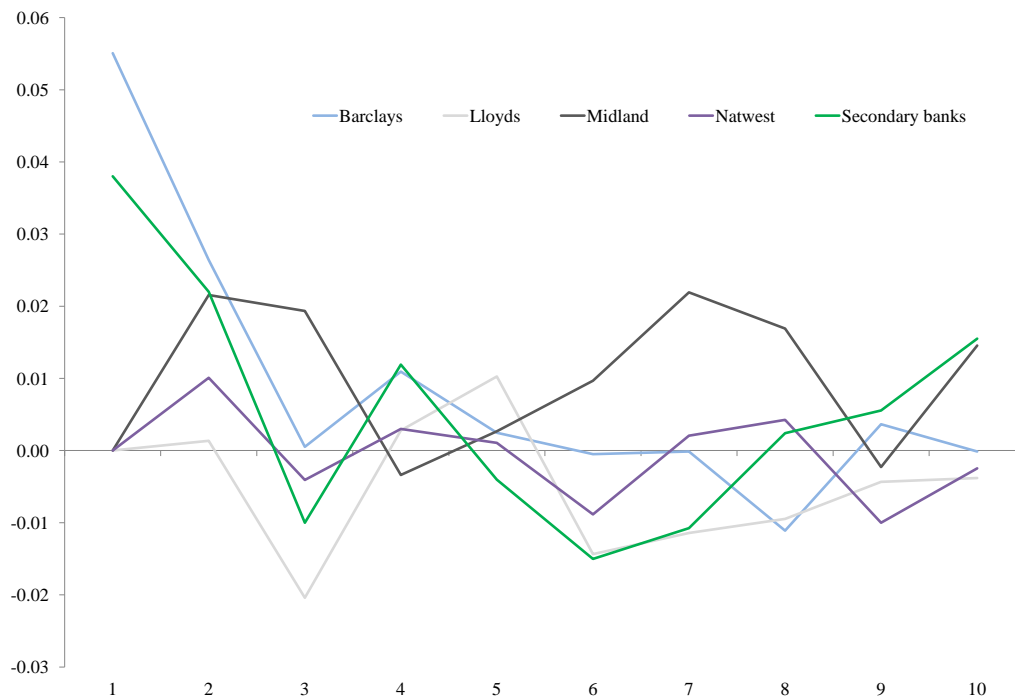
The results for Barclays can be seen in Figure 5.18 below.⁵¹⁵ As before, the

⁵¹⁴This may suggest that the effect of the fringe on the core was short lived in equity markets with longer term tests finding less evidence of the interconnectedness.

⁵¹⁵As before, Barclays is used as an example for illustrative purposes. The same general results

caveat that the Cholesky ordering has an effect applies. The below orders the secondary bank index first, thus assigning most of the variance to the index, while other orderings reduce this effect.⁵¹⁶ We see that the secondary index is positively aligned with Barclays, meaning that a positive (negative) share price shock to the fringe leads to a positive (negative) shock to Barclays.

Figure 5.18: Impulse Response for Barclays Share Price



Source: Datastream, Financial Times, author's calculations.

Meanwhile, running the Granger tests within the VAR yields the results in Table 5.16. As mentioned above, it is unclear how to interpret the effect of Cholesky ordering in the impulse responses which the Granger tests avoid. Each column in

apply to the other three. Further results available upon request.

⁵¹⁶The extent to which the ordering affect the results means that they should be interpreted with caution. Below we re-run the Granger tests within the VAR system as such tests are not sensitive to ordering.

the table shows results for each bank (and one for the secondary bank index). For example, there are two Big Four banks that Granger cause Barclays as well as the secondary bank index. We see that within the system, excluding the secondary banks is only suitable, according to the Granger causality tests, for Lloyds. The other three of the Big Four all seem to be Granger caused by the secondary banks while there is limited evidence amongst the Big Four themselves.

Table 5.16: VAR Granger Causality including Secondary Banks

	Barclays	Lloyds	Midland	Natwest	Secondary
Big Four	2	0	1	0	0
Secondary Bank Index	Yes	No	Yes	Yes	-

Source: Author's calculations.

The last exercise using the VAR model is a comparison between the above VAR and the VAR from the previous section to see if the explanatory power is increased by including the secondary banks. While simple VAR models are unable to capture episodes such as the secondary crisis, whether the model is improved by inclusion of the secondary banks can inform us about the relative performance and explanatory power of the fringe for the core. Using Barclays as our standard benchmark, we sum the square residuals for each model and find that the errors are considerably greater for the model that excludes the secondary banks, or by a factor of 1.8.⁵¹⁷ Restricting the forecast period to 1971-1975 raises the discrepancy factor to 2. Using the VAR(2) specification reduces the differences considerably although the residuals are still greater for the non-secondary bank model. There is thus substantial evidence that including the secondary banks increases the accuracy forecast for the core of

⁵¹⁷While we focus again on the forecast for Barclays, similar results apply to the other banks.

the system, supporting the evidence above.

Finally, we construct a simple Johansen cointegration model. This model differs significantly to the previous cointegration exercises as it uses, by necessity, equity data and only has data for approximately 10 years.⁵¹⁸ The sample thus most closely resembles the cointegration by decade section which found little evidence of cointegration for the 1970s. The first cointegration test is a system-wide test for the Big Four and the secondary bank index. This test indicates no cointegration relationship using the trace test and one using the eigenvalue test. If the tests are re-run with the secondary banks excluded, however, there is no cointegration found using either test. As for pairwise tests, there is little evidence to be found either for the secondary banks and the Big Four or within the Big Four with the latter resembling the results for the 1970s in the previous section. It should be noted that the short sample and the tumultuous period can pose problems for cointegration tests which are after all intended to detect long-term relationships between non-stationary series.

All in all, the results of this section confirm the evidence from Section 2 on both policymakers' and banks' concerns over the problems of the fringe. However, the results also highlight the importance of the analysis in Section 4.5. Namely that equity markets reacted very differently to credit markets, most notably that of deposits. While the problems of the fringe were echoed by concerns of both the management of the Big Four as well as their shareholders, Section 4.5 shows that this was definitely not the case for the debtholders.

Due to the short period available for the secondary banks, which was partly due to their short existence, and the fact that we only have equity price data means that

⁵¹⁸Note that above we have used first differences while for the cointegration levels of the data are used, as required.

a more thorough quantitative look at the relationship between the secondary banks and the Big Four, such as high frequency developments of the balance sheets, is not possible. The above results do, however, complement the analysis in other sections and chapters. That is to say, the concerns that led to the Lifeboat, documented in Section 2, as well as the discussion in Chapter 3 on the distinction between accepted institutions that were deemed central to the system and those fringe institutions that ultimately failed.

5.6 Conclusions

In this chapter, a closer look has been taken at the rationale for the rescue operations performed during the secondary banking crisis. The Bank of England, in collaboration with the clearers, decided that support to struggling institutions was required due to the effect the crisis could have on small, unprotected depositors as well as the possibility that the panic would spread to more healthy - or at least more important - parts of the banking system.

The evidence provided in this chapter points to the fact that these support operations were wholly successful in its primary goal: To safeguard the core of the banking system from the difficulties faced by the second tier of the system. Using data of a higher frequency than has been available thus far, we find no evidence of either monthly deposit withdrawal for the core of the system or an increased fragility, via interdependence or funding volatility, during the period. Two methods in the chapter are used to analyze these issues: Historical evidence and empirical methods using, firstly, the banks' balance sheets and, secondly, equity data for the same banks as well as selected secondary banks.

The historical evidence suggests that while the funds used for these rescue operations were only very partially provided by the Bank of England, the group of clearers considered the Bank's stamp of approval and guarantee during the operations all important. This is in contrast to some previous studies, including Ackrill and Hannah (2001), who concluded that the clearers took it upon themselves to rescue the system and that they were self sufficient in doing so. Our evidence shows that the clearers were adamant that the Bank of England provided assurances that it would provide a ceiling for the clearers' losses, and that the Bank would also provide the funds needed beyond some pre-defined maximum. The Lifeboat operations can thus readily be seen less as a project undertaken by the clearers, with nominal assistance from the Bank, but rather as an operation run by the Bank of England with contribution from the clearers which were in turn largely underwritten by the Bank.

Moving to the empirical study, no increase was found in co-movements of bank funding during the crisis. In fact, there was a decrease in co-movement between banks during the crisis period. This is confirmed by correlation analysis, VAR models and cointegration tests. The reason for this detachment is unclear although we are able to rule out the possibility that the substantial increase in inflation during the period is to blame. The fact that the clearers' deposits rose in 2/3 of the months during the crisis while the secondary banks suffered large withdrawals suggests a "flight to safety" scenario. Whether this was due to underlying soundness of the clearers' operations or due to their proximity to the Bank of England is unclear although the evidence in Chapter 3 would support the latter hypothesis.

Another slice of the data that supports this latter hypothesis is the clear evidence of a change in lending patterns in the late 1960s and early 1970s. This can be seen

in the data on advances in Sections 3 and 4. The clearers can thus be seen to have participated in the lending boom which accompanied the property bubble and easy credit environment. However, while such lending practices were cited as a core reason for the secondary bank's subsequent demise, a similar jump in lending growth by the clearers did not similarly lead to edginess amongst their creditors, as the data on deposits and cash shows. Furthermore, the analysis in Section 5 shows an increase in interdependence between the share prices of secondary banks and the Big Four during the crisis. There also seems evidence that the travails of the former affected the latter as far as share prices were concerned. The successful combating of this trend goes back to the historical evidence and the successful erosion of a firewall between the fringe and the core.

Finally, a wedge in behaviour between equity holders and deposit holders was documented. There was a substantial sell-off in the shares of the Big Four during the crisis with the average year-on-year decline reaching almost 70%. A similar sell-off is nowhere to be seen in the data on deposits, however - not even on a monthly basis. The correlation between the equity of banks is also much higher and more persistent than that of deposit holders. Two possible explanations for this difference were mentioned: Firstly, the availability of equity data leading to a self-reinforcing feedback process in the shares of the banks, which is not the case for deposits. Secondly, the fact that equity holders are often financial sector institutions and employees whereas deposit holders are generally individuals and non-financial companies that are less prone to react to the whims of markets.

The question remains however, that if interconnectedness was not present within the core of the system, and there were no signs of depositor withdrawal, how was contagion determined as a rationale to undertake drastic rescue operations of the

banking system? The historical evidence suggests that the build-up of interdependencies within the system was monitored on a casual basis. Liquidity dry-up was seen as affecting an increasing amount of firms and it was believed by both the Bank of England and the clearers that this domino effect would continue in the absence of action. As noted above, this was successfully managed via the Lifeboat although the secondary effects on the sector and the effect of the Bank's proximity to the clearers were neglected.

Appendices

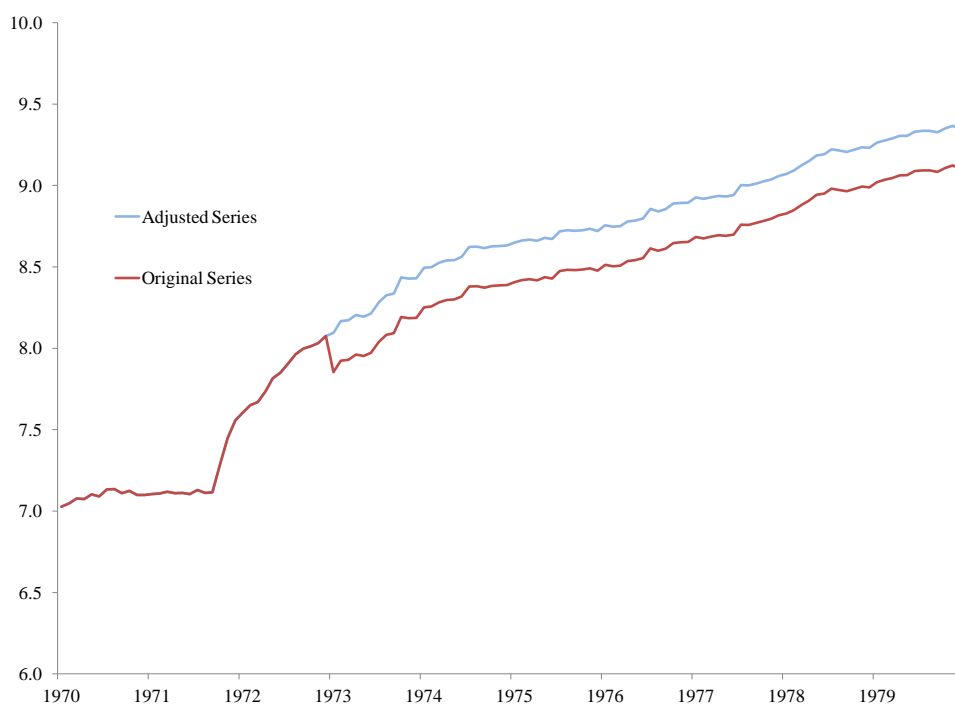
5.A Data Corrections

In this appendix the limitations of the main data series are detailed and how they were overcome. In some cases these were in the form of missing data for individual months and sometimes a re-classification of the data led to very large one-off jumps. When such re-classification seemed to be the case, the general rule used was to extrapolate historical growth to that single observation and then proceed with growth rates as before. This thus entails shifting the *level* of the series following the jump but sticking with the same *growth* developments as before. As levels of the series are not interpreted at any point in time, this method does not present any obvious additional problems.

Figure 5.19 exhibits an example of this level shift. The series depicted is advances for Midland from 1970 to the end of the sample, December 1979. The adjustment made, described below, is a jump that takes place in January 1973 where there is a large downwards jump in advances for all banks. For Midland, the original number would suggest a 22% drop in the level of advances between months but using the trailing 5-year average for January changes, which comes to 2.1%, results in the adjusted series in Figure 5.19. As noted above, the same dynamics of each series are kept at each time but adjustments are made for the large jumps as described below in each case.

In isolated cases, there was a large jump in single series but not across the board. This was only the case for the shorter series which are used much less in the empirical

Figure 5.19: Midland Advances Adjustment Example



Note: In logs.

analysis. These cases were not adjusted as they are generally more idiosyncratic in nature and single observations such as these do not affect any of the results in the main text. Such results can be seen indirectly in Table 5.3 in the main text which shows the summary statistics (including minimum and maximum changes). Not all such instances are listed here. As an example, though, this was the case for the series for bills at Barclays in May 1972. The April figure was 226.8 mGBP but May showed 69.1 mGBP - a drop of almost 70%. A similar case is Lloyds bills in early 1942 where they series goes from 25.1 mGBP in January, to 9.8 mGBP in February and back to 34.8 mGBP in March. As changes such as these two are very likely normal fluctuations rather than classification differences they are not adjusted for.

Data for the categories "Bills" and "Investments" started in 1939. Data for "Other assets" and "Eligible Liabilities" started in 1973. The other three categories - deposits, cash and advances - are available for the whole period, excluding the omissions mentioned above. Below each case of what was determined as data incompleteness is listed as well as what was done to adjust it.

No data was available for January 1971. Mid-point between December 1970 and February 1971 used.

No data was available for January 1972. Mid-point between December 1971 and February 1972 used.

The category "Other Assets" was missing for May 1975. Mid-point between April and June used.

Only Midland figures available for January and February 1970. Linear growth extrapolated between the figures available for other banks.

When using the whole time period, the cash series is adjusted to account for the change in classification starting in 1973. The series that was before the change called "Cash", exhibits a large one-time rise when it changes to "Cash and call". To negate this, the post-change series is normalized towards the pre-change series.

The average month-on-month change in the five previous January figures was taken and extrapolated to January 1973 due to the reclassification. Following that, the month-on-month change in the series is used, as opposed to the level of the series to preserve the trend while keeping the levels at the normalized level. This method is chosen to adjust the January 1973 figure, as opposed to for example using the 12 month average month-on-month change, due to the seasonality results described earlier.

The same procedure was applied for advances in June 1975. Again the average

for the five previous figures for the month (June) is used. The original figures resulted in a 20-30% drop in advances for each bank in a single month. The smoothed series assumes historical growth in this one month.

5.B Time Series Methods and Results

This Appendix presents a rough outline of the time-series methodology from Section 4.3 as well as the full results of the impulse responses and Granger causality tests. The methodology discussion is very brief and follows that of Greene (2008) and Tsay (2005) in emphasis and notation.

Granger Causality

Granger causality is in a sense analogous to exogeneity conditions and is determined by using F-tests to test for explanatory power. To see if x is Granger caused by y , we start by determining the lag length of a univariate AR model,

$$y_t = \alpha + \beta_1 y_{t-1} + \beta_2 y_{t-2} + \dots + \beta_n y_{t-n} + \epsilon_t$$

We then perform the same regression except we now include lagged values of x

$$y_t = \delta + \gamma_1 y_{t-1} + \dots + \gamma_m y_{t-m} + \theta_p x_{t-p} + \dots + \theta_q x_{t-q} + \zeta_t$$

where significant lags of x are included. The null hypothesis of no Granger causality from x to y is rejected if these lagged values of x are retained according to F-tests. For further details, see Granger (1969).

VAR model

The VAR models used in Section 4.3 are of a standard nature. Bayesian VAR models were also tested but provided neither superior or vastly different results.

The general VAR(p) specification, with k variables and p lags, can be defined as

$$x_t = \theta_0 + \theta_1 x_{t-1} + \theta_2 x_{t-2} + \dots + \theta_p x_{t-p} + \epsilon_t, \quad p > 0$$

Where x_t is a multivariate time series, θ_0 is a k -dimensional vector, $\theta_1, \dots, \theta_p$ are $k \times k$ matrices and ϵ_t is a serially uncorrelated random vector with mean zero and a positive-definite covariance matrix.

This can also be written in compact form as

$$\theta(L)x_t = \theta_0 + \epsilon_t$$

Where L is the lag operator and $\theta(L) = I - \theta_1 B - \dots - \theta_p B^p$ is a matrix polynomial.

The impulse responses then follow as functions of past error terms where Cholesky decompositions are used for transformation to remove correlation. For further details, see the seminal Sims (1980) which represents an intuitive and early adoption of VAR models.

Cointegration

The intuition between cointegration tests is to check for linear relationships between non-stationary variables which result in a stationarity process. If such a stationary relationship is found then the variables in question are said to be cointegrated. The Johansen approach to cointegration is used, as opposed to the original Engle-Granger, as the former facilitates better treatment of short- and long-term effects as well as allowing for more than one cointegrating relationship.

The Johansen approach consists of formulating the VAR(p) with k variables, and testing the rank of the parameter of lagged values. For this, a trace test statistic

is used. This is a likelihood ratio test of r or fewer cointegrating vectors, defined as

$$\text{Trace} = -T \sum_{i=r+1}^k \ln \left(1 - (r_i^*)^2 \right)$$

Where r_i is the squared canonical correlation between the adjusted series of the variables. The test statistic is then compared to the appropriate tables with $M - r$ degrees of freedom. For a detailed exposition see Johansen (1988), Johansen and Juselius (1990) and Johansen (1991).

Impulse Response Results

Figure 5.20a: Impulse Response for Lloyds Advances

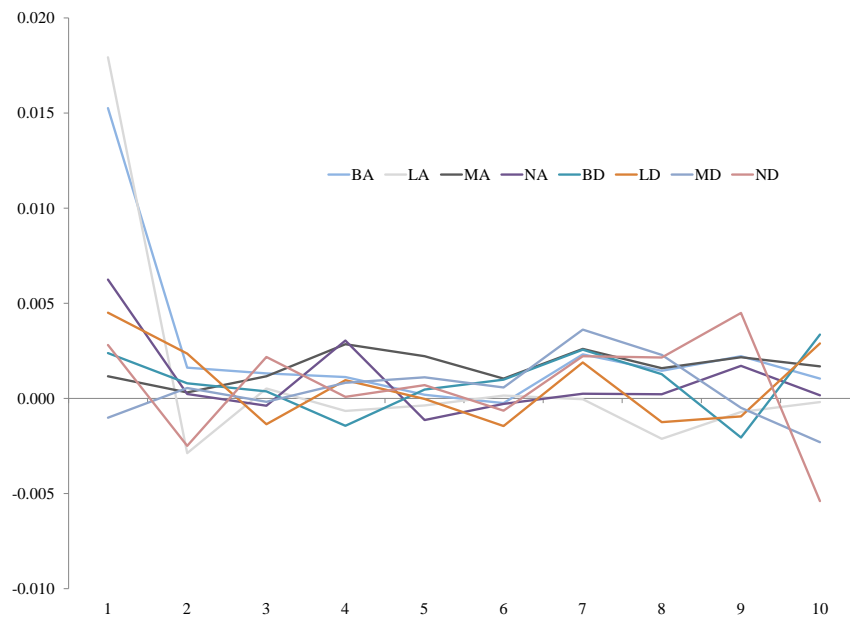


Figure 5.20b: Impulse Response for Midland Advances

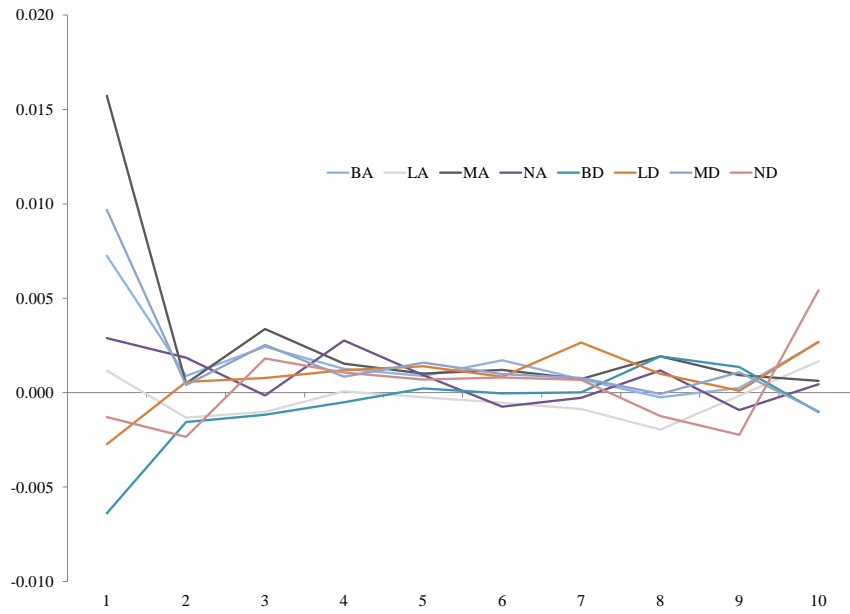


Figure 5.20c: Impulse Response for NatWest Advances

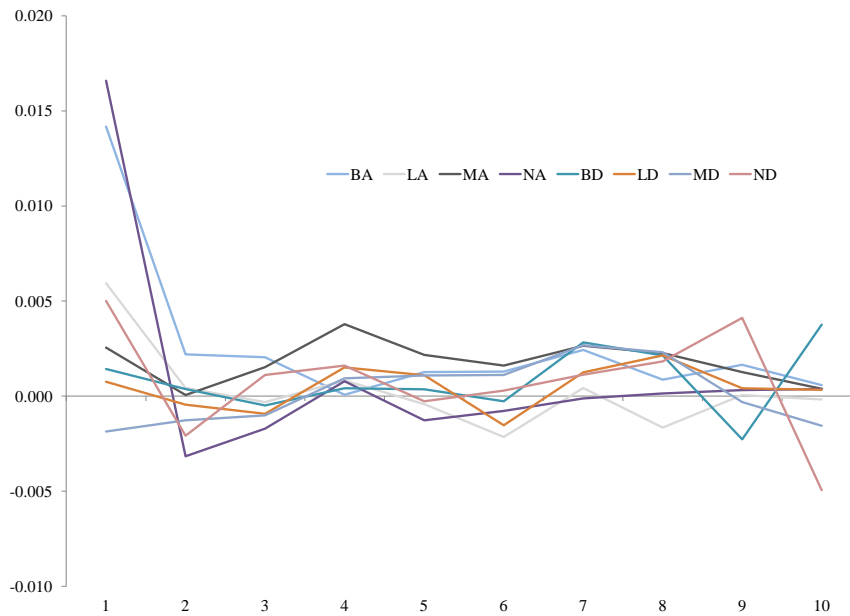


Figure 5.20d: Impulse Response for Lloyds Deposits

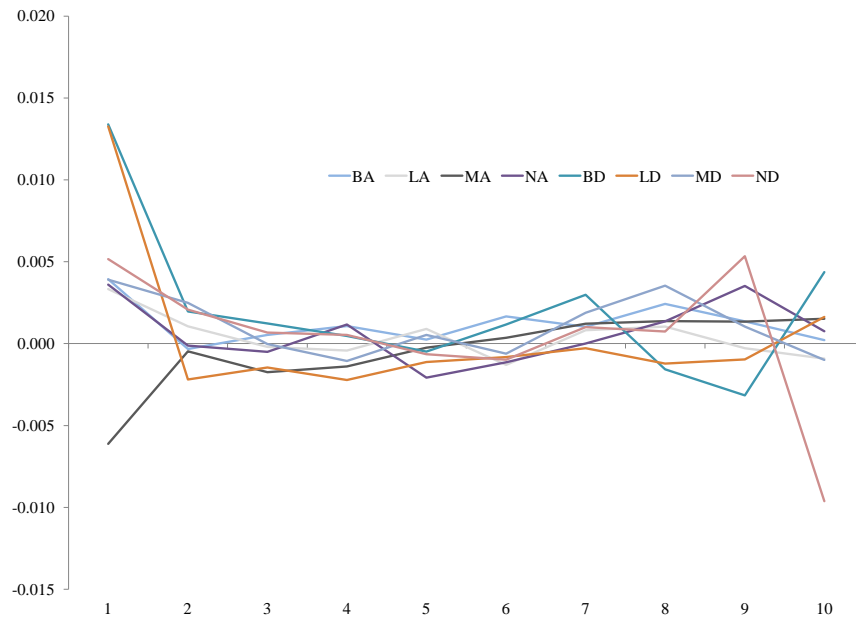


Figure 5.20e: Impulse Response for Midland Deposits

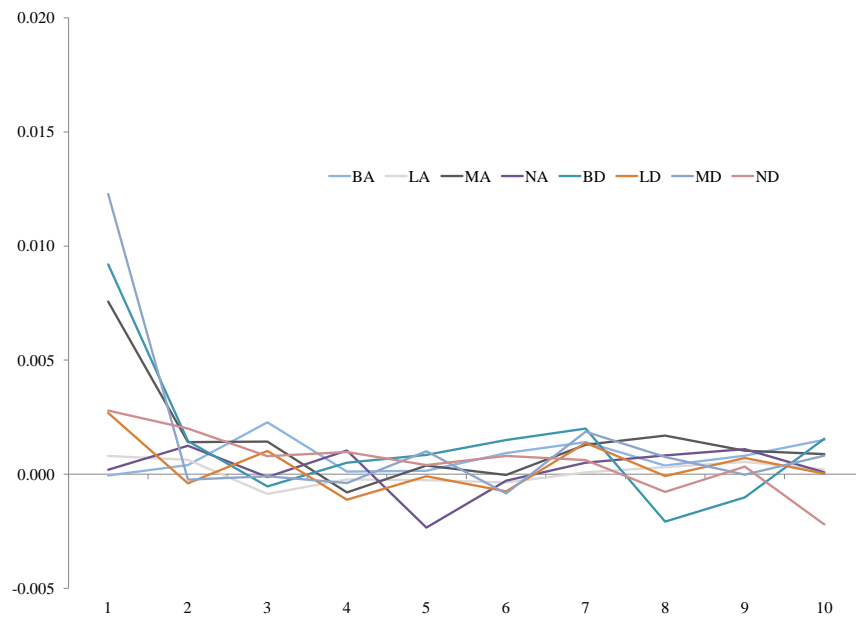
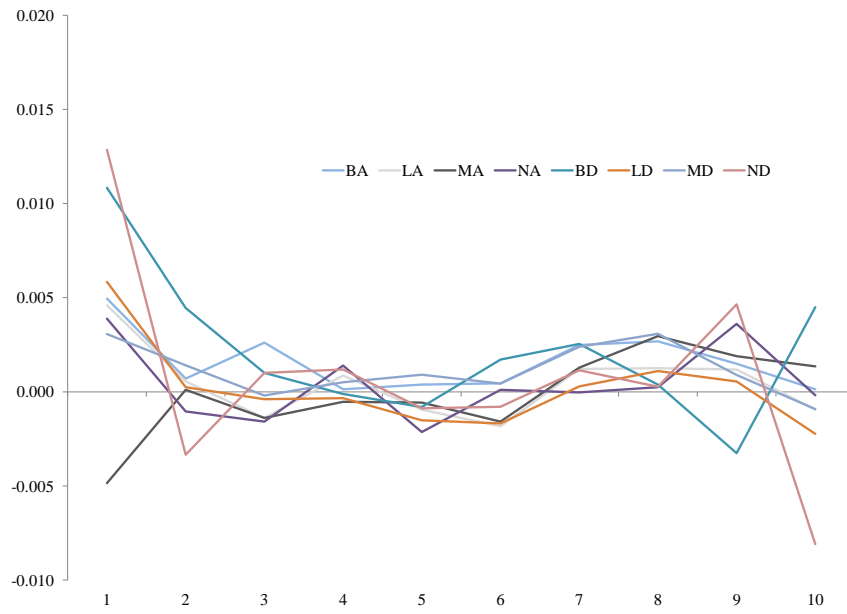


Figure 5.20f: Impulse Response for NatWest Deposits



Granger Causality Results

Table 5.17: Granger Causality Tests for Full VAR(12)

<i>Advances</i>				
	Barclays	Lloyds	Midland	NatWest
BA	-	G		G
LA		-	G	
MA			-	G
NA			G	-
BD	G	G	G	G
LD	G	G		
MD		G		G
ND	G	G	G	G
<i>Deposits</i>				
	Barclays	Lloyds	Midland	NatWest
BA	G		G	G
LA	G	G		G
MA	G			
NA	G	G		G
BD	-	G	G	G
LD		-		
MD	G	G	-	G
ND	G	G	G	-

Source: Author's calculations.

Table 5.18: Granger causality tests for deposits-only VAR(12)

<i>Deposits</i>				
	Barclays	Lloyds	Midland	NatWest
BD	-	G	G	G
LD		-		G
MD	G	G	-	G
ND	G	G	G	-

Source: Author's calculations.

Inflation Adjusted Results

Figure 5.21a: Volatility of Deposits - Inflation Adjusted

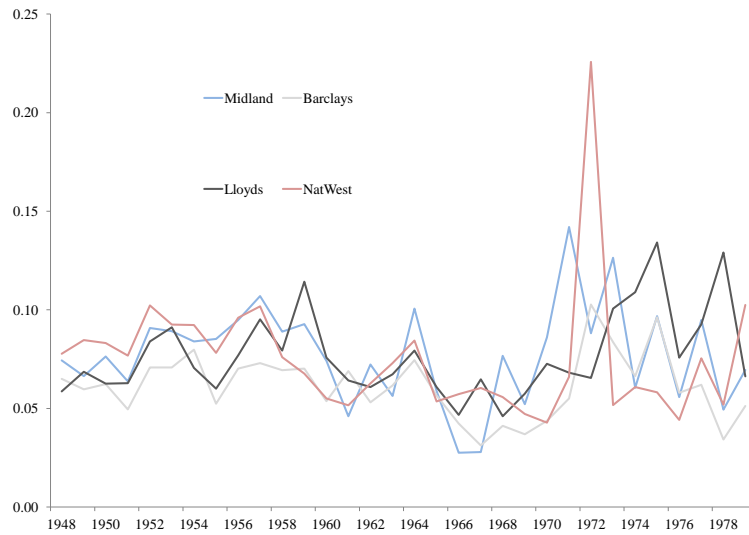


Figure 5.21b: Volatility of Advances - Inflation Adjusted

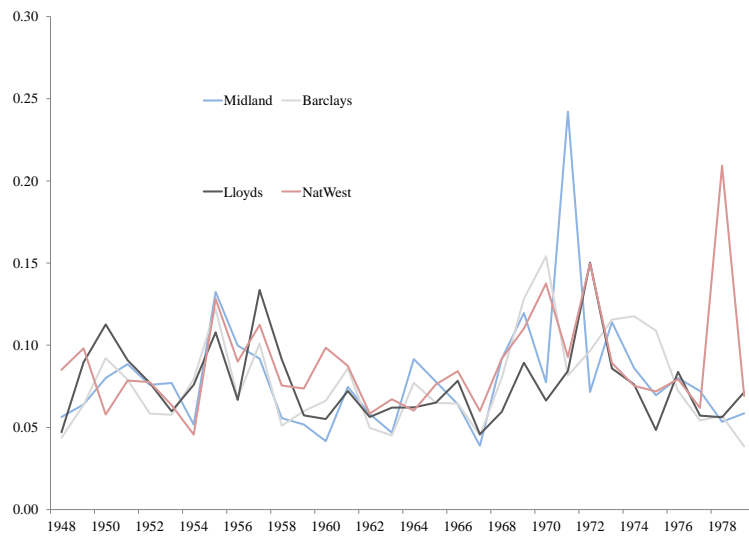


Figure 5.21c: Volatility of Cash - Inflation Adjusted

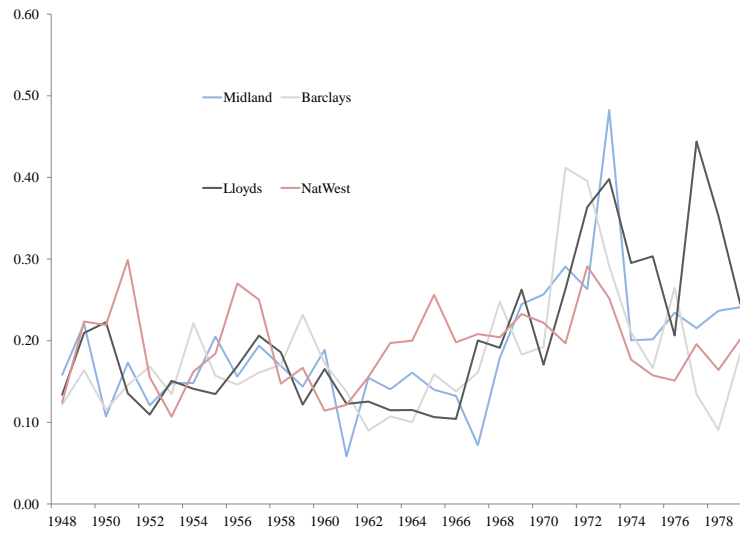
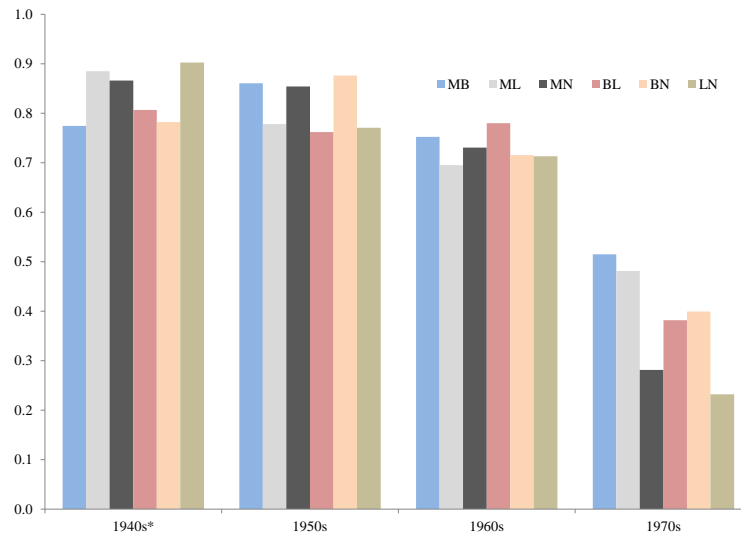
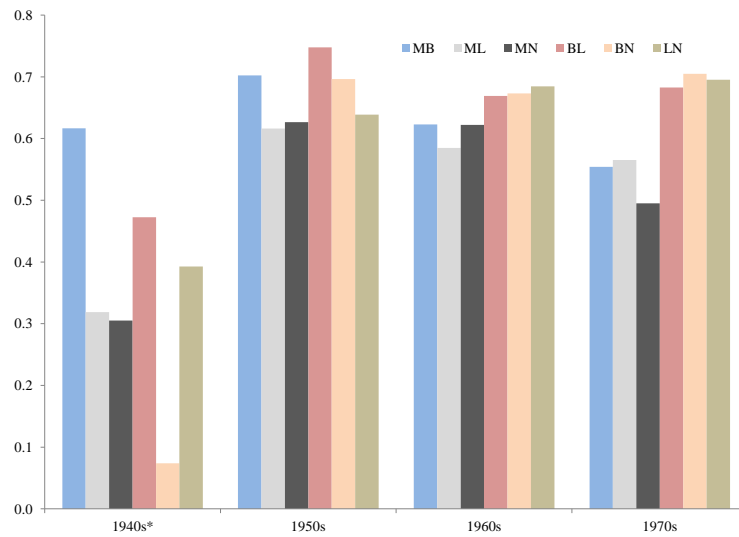


Figure 5.22a: Correlation of Deposits - Inflation Adjusted



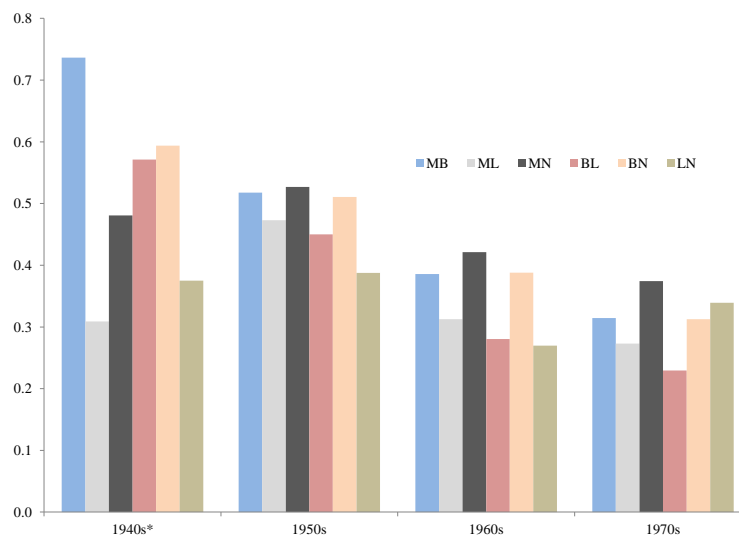
Note: *Data for 1940s only includes August 1947 until December 1949.

Figure 5.22b: Correlation of Advances - Inflation Adjusted



Note: *Data for 1940s only includes August 1947 until December 1949.

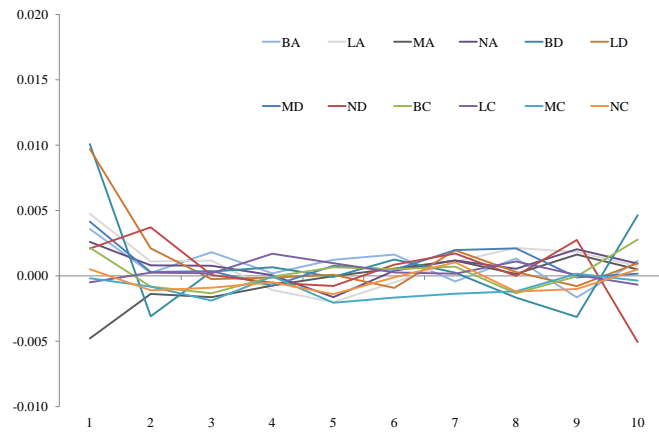
Figure 5.22c: Correlation of Cash - Inflation Adjusted



Note: *Data for 1940s only includes August 1947 until December 1949.

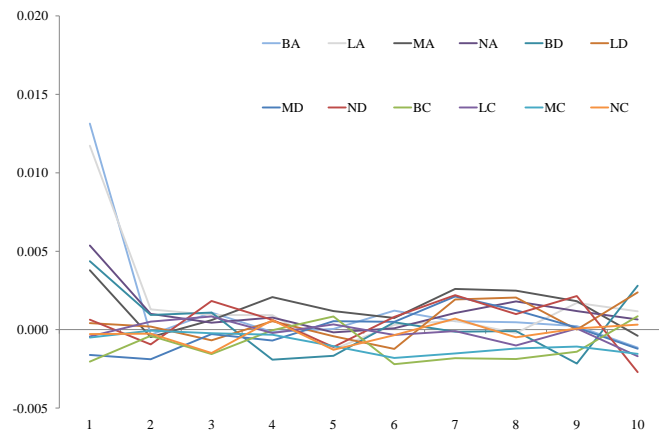
VAR Example with Cash Included

Figure 5.23a: Impulse Response for Barclays Deposits - VAR with cash included



Legend as in Figure 5.11, with cash additions represented by a second letter C.

Figure 5.23b: Impulse Response for Barclays Advances - VAR with cash included



Legend as in Figure 5.11, with cash additions represented by a second letter C.

VAR with Deposits Only

Figure 5.24a: Impulse Response for Barclays Deposits - VAR with deposits only

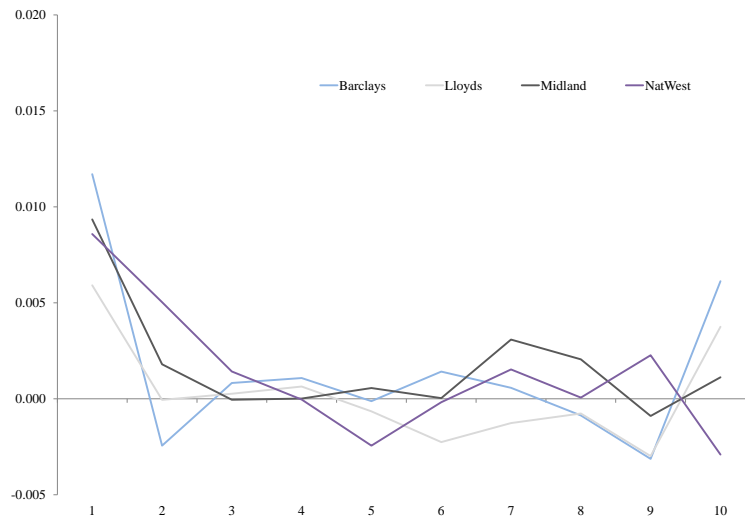


Figure 5.24b: Impulse Response for Lloyds Deposits - VAR with deposits only

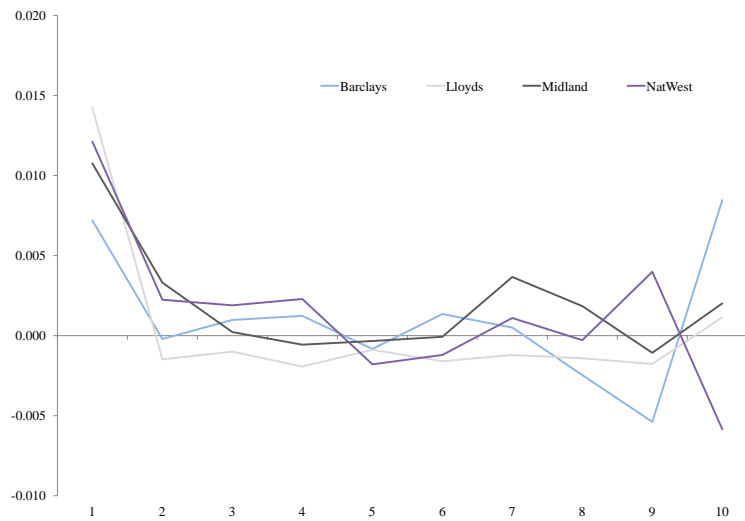


Figure 5.24c: Impulse Response for Midland Deposits - VAR with deposits only

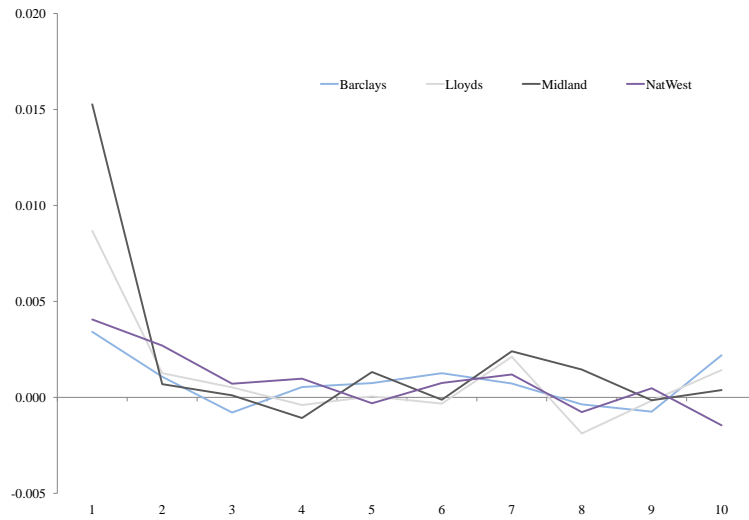
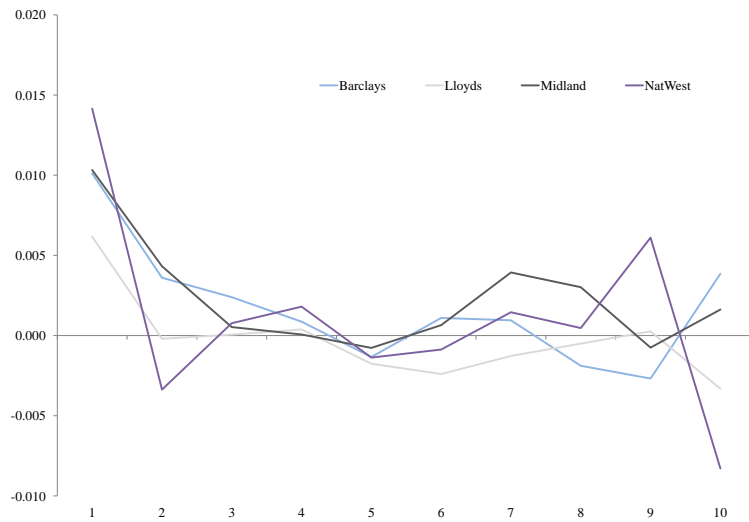


Figure 5.24d: Impulse Response for NatWest Deposits - VAR with deposits only



Chapter 6

Conclusions

The aim of this thesis has been to shed light on the role, implementation and effect of the financial crisis management measures performed by central banks. This has been done through the lens of British banking in the 1970s which signified the return to financial volatility, culminating in the so-called secondary banking crisis during the middle of the decade. Before synthesizing the findings and drawing conclusions, the results from each chapter are briefly summarized. Each chapter is also put in the context of the three aforementioned properties regarding the crisis management role - its role, implementation and effect - so as to facilitate better consolidation of individual chapters.

6.1 Chapter Summaries

6.1.1 Chapter 4 - Simplistic Approaches to Regulation

In a break from the traditional approach taken in the literature, when dealing with the *implementation* of the crisis management policies the emphasis was not primarily

on possible early crisis indicators or first-best policies. Instead, I have tried to answer the following question: Given the Bank of England's revealed goal of shielding depositors from losses, how different would its behaviour had to have been prior to the crisis if it were also to shield *itself* from losses stemming from the crisis? That is to say, how could it achieve its goal of protecting depositors without it involving a risk transfer from private to public parties.

One objection to this approach might be that shielding depositor is not, or should not be, the goal of central banks. Whether this goal should be pursued is a valid question but the historical experience - not just of the secondary crisis but also more generally in most recent banking crises - shows that this goal has in fact often been pursued to a great extent by central banks. Furthermore, the extent of protection of depositors is also to some extent unavoidably a political question and the desirability of this goal was therefore taken as a given. Instead I looked at how it could be achieved without risk transferring performed under severe time pressure during a crisis.

To tackle this issue, the Bank of England's actions and thinking were documented both before and during the secondary crisis in perhaps greater detail than is required to gain an understanding of the dynamics of the story. The reason for taking this granular approach, however, was to understand how the Bank slowly came to realize that private risks taken by private institutions and individuals had morphed into what was decided had to be public risks to be underwritten by the Bank. I then tried to answer the question of what the Bank would have to have done differently for Slater Walker's liabilities to be both safe and not guaranteed by the Bank of England itself.

A key result from Chapter 4 was that the extent to which the framework that

central banks operate under is discretionary cannot be overestimated. To paraphrase this slightly, despite its best intentions, the things a central bank says during non-crisis times can be vastly different to what a central bank does during a crisis. Therefore, while policymakers may in normal times lay out honest intentions of allowing market forces to allocate capital to those banks that can make best use of it, it is not until a crisis breaks that it becomes clear what the true response to instability is.

The details of the rescue of Slater Walker, laid out in Chapter 4, show the extraordinary lengths that the Bank of England went to in order to prevent depositors from experiencing losses during the crisis. If this actual crisis-contingent policy would have been communicated before the crisis, it would have amounted to the Bank publicly stating that depositors need not worry about certain risks as the Bank itself would guarantee their deposits. Such an announcement was of course completely unacceptable to the Bank and didn't even occur to it but given the rescue operations later undertaken, it would have been the logically consistent policy communication.⁵¹⁹

As for what the Bank would have needed to do differently, I documented in detail how minutely the Bank was forced to manage Slater Walker's balance sheet after having assumed responsibility for it. Only after Slater's collapse did the Bank realize the practical complexities involved with running a commercial banking operation, such as managing a diverse loan book and dealing with maturity transformation on a daily basis. Upon taking responsibility for the operations, the Bank realized quickly that it knew very little about what the firm had been doing prior to the crisis

⁵¹⁹How unacceptable such a statement was can for example be seen in Chapter 3 where the Bank responds to similar requests by the clearers in a very decisive manner.

and how solid - or not - its operations were.

In what little monitoring the Bank had performed of firms such as Slater Walker prior to the crisis, it had relied exclusively on a handful of ratios to evaluate the strength of these firms. To the extent that the Bank realized that this was not sufficient to gain a deep understanding of the firm's strength, it rationalized this lack of understanding by the fact that this was a private firm with private creditors. The crisis demolished this argument.

It was concluded in the chapter that in order to prevent excessive risk taking, which was ultimately to become public risk, the Bank would have needed to have as deep an understanding of the day-to-day operations as it was later to gain once the balance sheet had been taken over by the Bank. Additionally, it would have needed to be willing and able to limit these risks as they mounted. Such interference was unprecedented and it is very questionable whether the Bank would ever have sought, or gotten permission for, such measures. While such a granular analysis of the accounts, and subsequent actions, can be considered drastic for a public institution to undertake, it is unavoidable if said institution is adamant that the credit risk of the liabilities of banks such as Slater Walker be minimized, if not eliminated, during a crisis.

6.1.2 Chapter 3 - Subsidies and Stability

When looking at the *effect* of the crisis management policies, the traditional approach of measuring cumulative macroeconomic effects due to the crisis, such as output losses and employment figures, has not been taken in this thesis. Instead, the goal has been to measure whether the Bank of England's policies, by shielding creditors, had the effect of redistributing funds from private to public parties. In Chapter 3, an option

pricing model was developed which served to estimate how much a deposit guarantee was worth in light of the riskiness of the underlying business of the Big Four banks during the decade of the crisis.

Most previous attempts to measure the value of such guarantees via option pricing have used a standard Black-Scholes framework which assumes that the distribution of asset returns seldom deviates far from zero. This assumption, in addition to being in contradiction with empirically realized time series, means that financial crises are all but impossible, rendering the guarantee worth very little. In Chapter 3 this assumption was relaxed and instead a model introduced that states that, with a small possibility in each period, prices will drop substantially, rendering the bank in hand insolvent.

It was shown that even an extremely low, but positive, probability of such a scenario is worth a lot to the guaranteed party. For the guarantee to be rendered trivial, the robustness analysis showed, it is necessary that *both* the probability of crisis as well as the cost of crisis be all but eliminated. As this guarantee is not a risk-free provision, I concluded that it entails an implicit subsidy to the banks from the Bank of England. In other words, risky operations on the lending side of the balance sheet can only result in truly riskless funding on the liability side through implicit third-party guarantees on behalf of the central bank.⁵²⁰

Alongside the empirical analysis, the Bank's changing viewpoint on these issues before and during the crisis was also documented as it reluctantly took on the role of the financial system's saviour. The new evidence used in the chapter showed that the Bank devoted very little time to this function in the period before the secondary

⁵²⁰Here the reference to risky operations on the lending side is in relative terms. That is to say, while assets on banks' balance sheets can be judged low risk they are not risk-free and are thus risky in comparison to any instrument that is considered risk-free.

crisis. Furthermore, as the crisis intensified, there were only glimpses of fundamental re-thinking as to what effect the rescue operations might have on prices, risk-taking and the structure of the financial sector.

Only on rare occasions were discussions started inside the Bank on a similar level as that taken in the chapter. This included the consequences of accepted institutions, by being part of the inner core of the financial system, being shielded from loss to some extent and how such a system could work. However, going through with such analysis of underlying fundamentals would ultimately have led to a radical re-think on the viability and consequences of the Bank's crisis management operations. Such questions therefore petered out quickly with no solutions found. The debate was in turn replaced by more practical and more manageable reform of the Bank's policies.

6.1.3 Chapter 5 - Interdependence and Contagion

In Chapter 5, the focus switched to analyzing the recipient of the crisis management assistance, as opposed to the provider. We thus looked at the largest banks, in particular the so-called Big Four, and tried to shed light on why there is a need for the facilities and how strong the argument is. This chapter thus represents a look at the *role* of the facilities. While the first main role, that of whether to protect depositors, is a subjective, political one, the second role, contagion detection and prevention, requires an understanding of the co-movements of creditors and subsequent effects.

Deciding to use public institutions, such as the Bank of England, to intervene with normal market processes is a big decision which can have drastic effects on real and contingent balance sheet of public accounts, as seen in Chapter 3. The aim of this chapter was thus to document the Bank's developing relationship with the Big Four as the crisis unwound and how decisions were made regarding provision of

funds. One striking finding is that the common narrative in the literature - that the Bank acted as coordinator of the operations with the bulk of the financing coming from the clearers - is not wholly correct.

While the clearers did indeed provide a large part of the funds used, they put a lot of pressure on the Bank of England to limit - if not guarantee - the exposure they faced. Furthermore, multiple conversations took place where the clearers stated that there had to be a pre-determined cap on the funds extended by the banks and that the Bank would have to provide any additional funds needed. The Bank, while never committing to an explicit arrangement along those lines, was nonetheless wholly sympathetic to the argument. It was thus more financially exposed to the operations than the literature indicates when the figures involved are taken at face value.

To complement this analysis, high frequency financial data was also obtained and a new dataset constructed for the Big Four's balance sheet throughout a large part of the 20th century on a monthly basis. The properties of these time series could then be connected to the historical record to see how well the fundamentals tied in with the decision making. Several cuts of the data were presented, looking at, amongst other things, the co-movement between banks, the developments during the crisis and volatility properties of the series.

No increase was found in co-movement of deposits - measured and supported in various ways - during the crisis and if anything there was less co-movement than during other periods. This could most plausibly be attributed to either better management of the clearers, compared to the secondary banks, or the success of the Lifeboat operations.

To shed light on these distinct hypotheses, another interesting finding was doc-

umented, that of a certain structural break in lending by the Big Four during the run up to the crisis, even when taking account of inflation. Yearly increases in lending which had averaged approximately 3-4% in the post-war period through to the 1960s, started to take off at the same time as the secondary banks experienced their rapid growth. As one would expect, the effect of this rapid growth was felt through the share price which rose rapidly during the growth period and then fell sharply during the crisis.

This effect, however, was not felt within the deposit base, which represented by far the largest part of the liability side of the balance sheet. In the chapter, I compared not only the level changes in deposits to the banks' share prices, but also the co-movement between the two instruments and also between banks. The effects of so-called market discipline are almost solely to be seen on the equity side, while the debt, or deposit, side shows little response to the banks' operations.

The reason for this discrepancy between the two stakeholders is hard to establish from the available data but its existence shows that the dynamics at play are far from the same for the two instruments. One hypothesis that immediately springs to mind is that creditors, as opposed to equityholders, do not foresee any losses by the bank being forced onto them. This should also raise scepticism regarding the common procedure of drawing conclusions about the funding pressures felt by banks during crises by looking at equity prices. That is to say, a rapid decline in the share price won't necessarily materially affect a banks' operations unless it is accompanied by a similar response by debt holders.

Finally, to complement the balance sheet analysis, another data set was constructed consisting of equity prices for the Big Four and selected fringe banks. This analysis pointed to fairly strong evidence of interconnectedness between the core of

the fringe. This relationship was not symmetric, however, as the fringe was statistically far more significant for the core than vice versa. To paraphrase, the problems of the fringe were felt in the equity price of the core although, as mentioned above, these problems did not spread to other instruments such as deposits. Again, this disconnect is not easy to explain and may possibly point to an area of concern regarding market discipline and crisis management.

6.2 Conclusions, Context and Implications

Taken together, what do these three chapters, and the thesis as a whole, have to say about the policies undertaken during the secondary crisis and the theory of the central bank as crisis manager in general? Going back to the most renowned anchor in the LOLR literature, this thesis does nothing to downplay the sensibility of Bagehot's dictum of lending freely to illiquid but solvent institutions, against good collateral at an appropriate interest rate. However, the conclusions point to the fact that in practicality, crisis management can easily involve taking only the first two words of that dictum - lending freely - to heart.

While the organizers of the Lifeboat approached each rescue on a case by case basis under the guise of adhering to Bagehot's "illiquid but solvent" criteria, it was clear in each instance that maintaining stability and confidence was a greater requirement than avoiding individual losses. The participants were thus well aware that funds committed were very much at risk and that a sizeable proportion of them would not be repaid. This can also be seen by the pressure put on the Bank of England by the clearers with regard to the former underwriting potential losses.

As for taking good collateral and lending at an appropriately high rate, the

same bending of Bagehot's rule applied. The Lifeboat organizers thus took what collateral they could find and it was very much a case of making do with resources available. Furthermore, the price of these loans was set in the region of 2-3% over the participants own funding costs (LIBOR), as laid out in Chapter 5. This rate can hardly be considered exorbitant, especially given that the high inflation rate of the period meant that the price represented a negative real interest rate.

Turning to the context of the thesis, how do these findings contrast with the previous literature on the secondary banking crisis? Firstly, it should be reemphasized that the secondary crisis is an understudied one. There are very few scholarly treatments of the crisis and the main writings come either as narratives from journalists or as one component of a larger look at some broader topic.⁵²¹

The material that does exist is, however, in general agreement about the causes, consequences and effect of the crisis.⁵²² The loosening of restrictions and emergence of new, relatively unregulated, institutions, coupled with easy access to funding, led to a sharp rise in credit and subsequently property prices which affected balance sheets negatively when reversed. The threat of panic amongst depositors spreading from these new institutions towards the core of the banking system in turn required assistance which was provided by the clearer banks in collaboration with the Bank of England. This assistance involved some losses, borne by the banks and the Bank, but ultimately lower than would have been the case if the crisis had spread to the core.

⁵²¹The journalist Margret Reid provided the most detailed analysis of the crisis, in a book published over thirty years ago. Capie (2010) is an example of the latter type of coverage of the secondary crisis as it features as a subplot within a larger look at the Bank of England during a long period.

⁵²²The synthesis provided here is a condensed overview of the findings of the main works on the crisis, such as Reid (1982), Capie (2010) and Kynaston (2002). The reader is referred back to Chapter 2 for a more thorough overview of the literature.

Taken at face value, this narrative does not seem to differ substantially from the results of this thesis, or in fact many other narratives of banking crises. However, the main goal of this thesis was not to necessarily challenge these main points but to dig deeper through to the fundamentals. This has led to some challenges to the popular narrative.

Firstly, while the exact amount of losses borne by the Bank of England is hard to estimate, the literature states that they were in some sense small and in any case smaller than under the plausible alternatives. The thesis challenges this assertion on the grounds that it doesn't deal with the implicit subsidy involved with providing assurances to the core of the system. In fact, the evidence in Chapter 3 indicated that the effect of making bank deposits of the Big Four in effect risk free, the Bank of England provided an option-like guarantee worth considerably more than any direct loss of the Lifeboat operations.

On a related note, Chapter 5 showed that there was a rapid increase in the provision of credit by the Big Four during the build up to the crisis. As such rapid lending is a primary culprit in the literature for the fall of the secondary banks, one could assume that the fact that the Big Four took part in this lending boom would lead to a similar demise for them. This was of course not the case, as the Big Four went through the crisis without any real disruption felt on the liability side of their balance sheets as laid out in the same chapter. The natural development of a lending boom leading to a funding crisis when the business cycle turned was therefore only evident for the secondary banks themselves, while the Big Four's lending boom did not result in the same market disciplining or scepticism by creditors.

This difference in fate between the Big Four and the secondary banks is attributed in the literature by the implicit interpretation that the secondary banks

pursued more reckless lending than the large, established banks which ultimately led to the formers' downfall. The discussion in Chapter 3 thus contradicted this explanation and puts greater weight on the big banks' position at the core of the system and their relationship with the Bank of England.

This, in turn, relates to the findings of Chapter 4. The Bank, as self-proclaimed guardian of the financial system, enforced its role very differently during the crisis than it had in previous decades. The episode of Slater Walker was a high-profile version of a general phenomena whereby the Bank came to the conclusion that the company's liabilities had ceased to be a private concern of the borrower and the lender. This gradual realization was documented in the chapter as well as how the Bank took it upon itself to ensure that all credit risk was removed from SW's liabilities. The actual information the Bank would have needed prior to the crisis to prevent this de facto nationalization of losses was also highlighted. In effect, the Bank would have required to have the same information and manpower at its disposal as the management team of SW itself.

Another part of the narrative in the literature that does not stand up to great scrutiny is the way in which the Lifeboat was implemented. It is generally concluded that the Lifeboat was a joint operation with the commercial banks and the Bank of England acting as peers, driven by the same motivation and collaborating to achieve that end. In addition to the principal-agent problems such a partnership would introduce, the thesis has also cast doubt as to the accuracy of this view as the Bank was under great pressure to minimize the extent of losses faced by the clearers on funds provided and also, no less crucially, to take on any additional exposure and subsequent losses by itself. The Bank's proportion of the total exposure to the crisis, and especially the tail effects of it, are thus argued to be greater than has generally

been the case in the previous literature.

Finally, what subsequent policy lessons can be drawn from the above conclusions? Most prominently, a better weighing of sticks and carrots is required during crisis management. Setting aside the questionable premise that a central bank is better able than market participants to separate cases of insolvency and illiquidity at times of crisis, the need to take adequate collateral and charge adequate compensation needs to be highlighted.

Secondly, financial stability policies should be managed through the cycle and not reinvented at times of stress. In the case studied in this thesis, this would have meant a disciplining session of soul searching by the Bank of England well before the crisis as to what the tolerance rate for depositor losses was to be in an adverse scenario. With such a truthful re-think, the Bank could have better understood that much of the funding of both secondary and primary banks was in fact of a nature that would prevent any losses to be taken by the holder of the debt. This would in turn have had a serious effect on policy as the activities that these funds were allowed to support would have been much more limited.

Finally, the disconnect between the thought process of savers and the business of regulation must be confronted. During the period studied in this thesis, as is the case now, a general depositor of any recognized banking institution thought of his funds as literally "money in the bank". He did not analyze - and re-analyze throughout the lifetime of his investment- the extent of the bank's solvency, its liquidity or the state of the loan book at the arrival of new information. The effect of this can be seen in the required rate of return of depositors and how they reacted at signs of trouble, as documented in Chapter 5.

Policymakers thus faced (and face) a very real but daunting trade-off. They

can maintain the public perception of a deposit being risk-free and sitting on the balance sheet as cash to be withdrawn at any time, at the expense of taking on the risk themselves at times of crisis. Or deposits can be treated in a novel way, as an investment product with a risk-return trade-off like any other where the state contingent payoffs are a bargaining matter between the borrower and the lender. This latter scenario may not be deemed feasible but reaching such a conclusion only serves to highlight the inherent problems - which can't be ignored - of deposits being risk-free in the minds of the lenders.

Appendix A

List of Relevant Public Sector Officials

Bank of England

Governors

Sir Leslie O'Brien - 1966–1973

Gordon Richardson - 1973–1983

Deputy Governors

Sir Maurice Henry Parsons - 1966–1970

Jasper Quintus Hollom - 1970–1980

Chief Cashiers

Jasper Hollom - 1962–1966

John Standish Fforde - 1966–1970

John Page - 1970–1980

Government Officials**Prime Ministers**

Harold Wilson - 1964–1970

Edward Heath - 1970–1974

Harold Wilson - 1974–1976

James Callaghan - 1976–1979

Chancellors of the Exchequer

Anthony Barber - 1970–1974

Denis Healy - 1974–1979

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- Bank of England Archives
- Lloyds Archives
- HSBC Archives
- London Metropolitan Archives
- National Archives

Annual reports. Chapters 3, 4 and 5 make use of annual reports of the following institutions, for the years 1970-1980.

- Bank of England
- Barclays
- Lloyds
- Midland

- National Westminster
- Slater Walker

Newspapers. Archived articles from the following newspapers were used for the analysis in Chapter 4.

- Accountancy
- The Economist
- The Evening Standard
- The Financial Times
- Investors Chronicle
- Investors Review
- The Observer
- The Sunday Times
- The Telegraph

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