

IFF

THE RUN ON NORTHERN ROCK

An IFF Case Study



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What we have learned about liquidity risk

In examining liquidity risk an excellent case study of what can go badly wrong during periods of market stress for financial institutions is provided by the run on Northern Rock in 2007. This was a regional bank within the UK which specialized in providing residential mortgages as well as having branch operations which provided basic “banking” services including deposit taking to many retail customers throughout the UK.

Despite the fact that the asset side of its balance sheet was robust (as we shall see below the UK Parliament’s Treasury Select Committee which investigated the collapse was of this opinion as was the Bank of England (BOE)), the bank relied on funding on a relatively short term basis from wholesale money markets, and in August of 2007 these became “frozen”. Ultimately the bank lost the confidence of market participants, was forced into taking advantage of emergency funding from the BOE in its guise as “lender of last resort” and eventually was nationalized and taken into public ownership by the UK government. As the photograph below clearly shows, as the bank’s difficulties became more apparent there was a “run” on the bank – which was the first such run in the UK banking sector for more than 100 years and – to put it rather bluntly – this is the kind of phenomenon that is every central banker’s nightmare scenario.

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Angela Knight, chief executive of the British Bankers' Association, said in September 2007:

“This isn't about solvency, this is about a short-term problem that the Northern Rock has in getting liquidity -- that is, getting some cash from the normal inter-bank lending market.”

It will be shown during this case study that the comment above, made by the CEO of the British Bankers' Association, at the first instance of line-ups outside Northern Rock's branches – and intended to defuse the crisis – was completely wrong in that the difficulty in obtaining liquidity was not a temporary issue but one where illiquidity of the bank's balance sheet turned into insolvency.

This case study will quote directly from the Treasury Select Committee's report (TSC) entitled *The Run on the Rock* which can be found at the following location on the web:

<http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/56/56i.pdf>

OVERVIEW OF THE FACTORS LEADING TO THE RUN ON NORTHERN ROCK

At the end of 1997, Northern Rock had assets on a consolidated basis of £15.8 billion. By the end of 2006, its consolidated balance sheet had grown more than six-fold so that the value of its assets was £101.0 billion, comprised mainly of secured lending on residential properties; as of end 2006, 89.2% of its assets were residential mortgages

The Governor of the Bank of England, Mervyn King, was also supportive of the quality of the asset book of Northern Rock:

What I would say about Northern Rock is that most of the staff that worked in Northern Rock on the lending side, all the evidence shows, did an excellent job in appraising the loans that they were making, and that they monitored very carefully and they did not lend money to people who should not be borrowing from them. The lending side was handled extremely well.

However, in order to achieve this level of growth in assets, the company changed the structure of its liabilities. Northern Rock began to borrow more money from the wholesale markets, adopting an 'originate to distribute' model of funding. In the 'originate to distribute' model banks no longer hold loans to maturity but instead sell on loans to investors.

Another funding strategy introduced by Northern Rock in 2004 was the use of covered bonds. The Bank of England provided the following explanation of a covered bond:

In recent years, UK banks and building societies have increasingly chosen to use limited liability partnerships (LLPs) for funding and risk transfer of assets. The main difference between securitisations through SPVs [special purpose vehicles] and LLPs is that, in the latter structure, the banks themselves (rather than the SPVs) continue to hold the assets and issue the so-called covered bonds which are secured against them. The LLP effectively only comes into operation in case the issuing bank defaults, thereby providing additional security to investors in the bonds

While wholesale funding to Northern Rock grew markedly, there was no correspondingly rapid growth in its retail funding. On a group basis, retail deposits and funds made up £9.9 billion of the liabilities of Northern Rock at the end of 1997. By the end of 2006, retail deposits and funds had only grown to £22.6 billion, compared with the six-fold increase in Northern Rock's assets. As a proportion of the total liabilities and equity of Northern Rock, retail deposits and funds had fallen from 62.7% at end-1997 to **22.4% at end-2006**. This figure is low when compared to other banks that were previously building societies: at the end of 2006, Alliance & Leicester's proportion was 43% and Bradford & Bingley's was 49%, for example.

In the middle of this change of strategy, on 9 August 2007, Northern Rock's traders noted a "dislocation in the market" for its funding. This dislocation was the result of a global shock to the financial system, with the American sub-prime mortgage market as its centre.

Northern Rock had not foreseen all its funding markets closing simultaneously, as happened after 9 August. Northern Rock's chairman told the TSC:

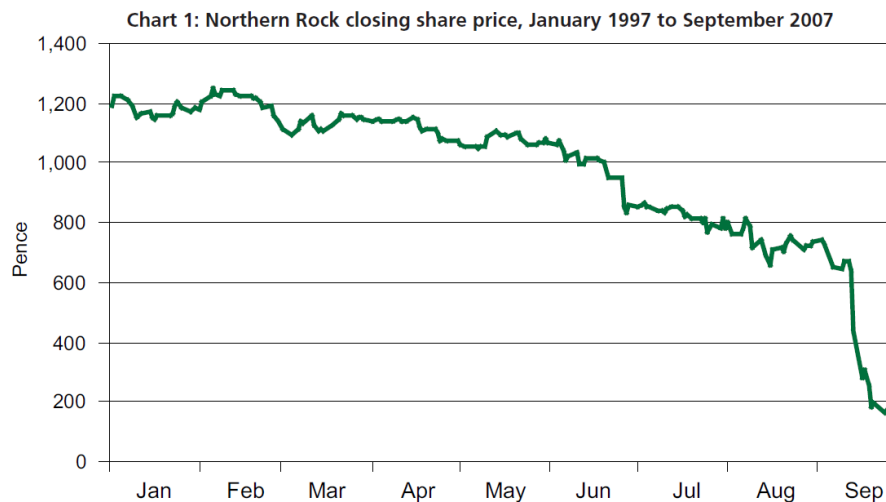
We deliberately diversified our funding platform so that we would have ... three different types of funding and indeed a diversified programme within the wholesale funding, and geographically we had programmes in the United States, Europe, the Far East, Canada and Australia. That was deliberately so that if one market closed we would still have access to others. The idea that all markets would close simultaneously was unforeseen by any major authority.

The idea of all markets closing to Northern Rock was repeatedly characterised to the TSC by Northern Rock officials as “unforeseeable”.

According to its CEO, Northern Rock had, before 13 September 2007, “two or three months’ worth of liquidity”. Despite this, on 16 August, the possibility of the Bank of England giving emergency support was first discussed as a “theoretical” possibility with the Governor. At this point, the intention of Northern Rock was not to use such a Bank of England facility, but to have it as a “backstop”. The CEO explained that “The problem we had was you could not tell how long the markets were going to be closed and it was a reasonable and proper thing to do to put a backstop facility in place”.

The second potential warning signal was the fall in Northern Rock’s share price, especially in comparison to other banks, after the profits warning issued in late June 2007, and well before the announcement of the Bank of England support operation

During the course of 2007, the market had become increasingly aware that there were issues surrounding Northern Rock’s business model ... In its profit warning of 27 June 2007, Northern Rock stated it was suffering from a ‘structural mismatch between LIBOR [London Interbank Offered Rate] and bank base rates’ and its share price fell by 10% on that day. This was therefore a very clear signal both to the market and to the authorities that Northern Rock was experiencing increasing difficulties in respect of its funding as the ‘credit crunch’ speedily impacted interbank lending arrangements generally. By mid-July the share price was some 30% lower than at the start of the year.



THE BASEL II WAIVER

When adopting the Basel II requirements for capital adequacy, a bank may choose to adopt certain ‘advanced approaches’ to their management of credit risk. The Basel Committee on Banking Supervision explains the choice faced by banks under the Internal Ratings-Based Approach to the management of credit risk:

The Committee has made available two broad approaches: a foundation and an advanced. Under the foundation approach, as a general rule, banks provide their own estimates of PD [probability of default] and rely on supervisory estimates for other risk components. Under the advanced approach, banks provide more of their own estimates of PD [probability of default], LGD [loss given default] and EAD [Exposure at default], and their own calculation of M [Effective maturity], subject to meeting minimum standards.

The adoption of an advanced approach requires a waiver from the UK’s Financial Services Authority (FSA). On 29 June 2007, Northern Rock was told by the FSA that its application for a Basel II waiver had been approved. Due to this approval, Northern Rock felt able to announce on 25 July 2007 an increase in its interim dividend of 30.3%. The waiver and other asset realisations meant that Northern Rock had an “anticipated regulatory capital surplus over the next 3 to 4 years”

The Treasury Select Committee pointedly criticized the decision by the FSA to agree to the Basel II waiver:

The Basel II waiver, and the dividend increase this allowed to Northern Rock, came at exactly the wrong moment. While we accept that Basel II is a capital accord and the problems at Northern Rock that soon became all too evident were ones of liquidity, it was wrong of the FSA to allow Northern Rock to weaken its balance sheet at a time when the FSA was itself concerned about problems of liquidity that could affect the financial sector.

GENERAL OBSERVATIONS ON MARKET LIQUIDITY FROM THE TSC REPORT

There were sharp reductions in liquidity after 9/11 in 2001. That lasted for a matter of days. What was not expected was that all global markets would shut down and remain shut down for as long as they have. The BOE’s Mervyn King observed:

If we had a system of proper liquidity regulation, although Northern Rock would have shown up as doing very well on the capital side, it would have looked very flawed on the liquidity side, and that would have been picked up

The TSC’s own analysis made some astute observations about the failure by regulators and financial analysts to recognize the “tail” risks that became so much a part of the developing financial crisis and which culminated in the market collapse in the second half of 2008.

If we use the normal ... distribution to estimate probabilities, it seems that institutions such as Northern Rock could not have reasonably anticipated such extreme outcomes. If this analysis is

sufficient, then the risk is indeed very unusual and regulators would not expect organisations necessarily to be robust to this situation.

However, the problem lies in the extreme tails of the distributions. This is exactly the same problem which arose in the collapse of Long Term Capital Management. The data may appear to be normally distributed, but more careful inspection shows that the tails are fatter i.e. there are more extreme observations in the data than the normal distribution allows. Rare events are not as rare as you might think. The bulk of the data follows a normal distribution. It is the extremes which do not.

HOW THE CRISIS UNFOLDED

Soon after inter-bank and other financial markets froze on 9 August 2007, it became evident that Northern Rock would face severe problems if the markets were to stay frozen for long. The problems were especially severe for Northern Rock because its funding model required mortgage-backed securities and plain mortgages to be securitised, and its next securitisation was scheduled for September 2007.

On the evening of Thursday 13 September 2007 the BBC reported that Northern Rock plc had asked for and received emergency financial support from the Bank of England. The terms of the funding facility were finalised in the early hours of Friday 14 September and announced at 7.00 am that day. That day, long queues began to form outside some of Northern Rock's branches; later, its website collapsed and its phone lines were reported to be jammed. The first bank run in the United Kingdom since Victorian times was underway.

This is how the Financial Times reported the events:

Northern Rock has been forced to borrow about £3bn from the Bank of England over the past week it emerged yesterday in the first official estimate of the extent of its funding crisis. Northern Rock's recourse to borrowing from the Bank of England (revealed in the central bank's weekly publication of its balance sheet) represents some 10 per cent of its deposit base. In recent days the share price of some smaller British lenders, such as Alliance & Leicester and Bradford & Bingley, have gyrated wildly, amid a flood of market rumours about their liquidity positions.

Northern Rock is the UK's fifth largest mortgage lender. In the first six months of the year, it made pre-tax profits of just under £300m, barely changed from the previous year. However it massively increased its share of the mortgage market, taking 18.9% of all net mortgage lending in the UK against its previous peak of 14.5%, seen in the second half of 2006.

The firm's shares have almost halved in value this year and talk that it may be in further trouble left it as the biggest loser on the FTSE 100 on Thursday, closing down 4.9%.

On Monday 17 September 2007, as anxious depositors continued to flock to some Northern Rock bank branches to withdraw their savings, it was reported that an estimated £2 billion had been withdrawn since the bank applied to the Bank of England for emergency funds. By early afternoon in London,

Northern Rock's shares, which had lost 32% on the previous Friday, fell a further 40% from 438 pence to 263 pence.

Later that day, the Chancellor of the Exchequer, announced that the British Government and the Bank of England would guarantee all deposits held at Northern Rock. The announcement by the Chancellor restored a calmer disposition for the depositors as the next day the queues outside Northern Rock's branches gradually disappeared.

Northern Rock was subsequently nationalized and eventually split into a good bank which was subsequently sold to Virgin Money, and a bad bank which remains in the public sector.

The following summarizes the findings reached by the TSC and highlights the kind of liquidity risk that transform a liquidity problem into a solvency problem:

The directors of Northern Rock were the principal authors of the difficulties that the company has faced since August 2007. It is right that members of the Board of Northern Rock have been replaced, though haphazardly, since the company became dependent on liquidity support from the Bank of England. The high-risk, reckless business strategy of Northern Rock, with its reliance on short- and medium-term wholesale funding and an absence of sufficient insurance and a failure to arrange standby facility or cover that risk, meant that it was unable to cope with the liquidity pressures placed upon it by the freezing of international capital markets in August 2007. Given that the formulation of that strategy was a fundamental role of the Board of Northern Rock, overseen by some directors who had been there since its demutualisation, the failure of that strategy must also be attributed to the Board. The non-executive members of the Board, and in particular the Chairman of the Board, the Chairman of the Risk Committee and the senior non-executive director, failed in the case of Northern Rock to ensure that it remained liquid as well as solvent, to provide against the risks that it was taking and to act as an effective restraining force on the strategy of the executive members.

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