Financial Risk: Key Fundamentals and Case Studies

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Strathmore University GARP Chapter Meeting

29th July 2011

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1. Background
2. Credit Risk and the Case of Washington Mutual
3. Operational Risk and the Case of Rogue Brokers in Kenya and Barings
4. Market Risk and the Case of LTCM
5. Liquidity Risk and the Case of Northern Rock
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BACKGROUND

Main Types of Financial Risk

Risk Type	Definition
Credit Risk	The potential that a bank's borrower or counterparty will fail to meet its obligations in accordance with agreed terms.
Market Risk	The risk that movements in market prices will adversely affect the value of on- or off-balance sheet positions. The risk is attributable to movements in interest rates, foreign exchange (FX) rates, equity prices or prices of commodities.
Operational Risk	Risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. The definition includes legal risk, but excludes reputational and strategic risk.
Liquidity Risk	Liquidity is the ability to fund increases in assets and meet obligations as they become due. It is crucial to the ongoing viability of any organization.

Source: Financial Stability Institute

CREDIT RISK AND THE CASE OF WASHINGTON MUTUAL

Sources of Credit Risk

Apart from traditional types of loans, credit risk can also be found in a bank's:

- Investment portfolio
- Overdrafts
- Letters of credit

Credit risk also exists in a variety of bank products, activities, and services, such as:

- Derivatives
- Foreign exchange
- Cash management services
- Trade financing

Source: Financial Stability Institute

Case Study: Washington Mutual (1)

Year	Events
2004	Embarked upon a lending strategy to pursue higher profits by emphasizing high risk loans
2006	High risk loans began incurring high rates of delinquency and default,
2007	▪ Mortgage backed securities began incurring ratings downgrades and losses ▪ Began incurring losses due to a portfolio that contained poor quality and fraudulent loans and securities ▪ Its stock price dropped as shareholders lost confidence ▪ Depositors began withdrawing funds, eventually causing a liquidity crisis at the bank
2008	▪ Seized by its regulator, the Office of Thrift Supervision (OTS) ▪ Placed in receivership with the Federal Deposit Insurance Corporation (FDIC) ▪ Sold to JPMorgan Chase for $1.9 billion.

Source: Wall Street and the Financial Crisis: Anatomy of a Financial Collapse

Case Study: Washington Mutual (2)

Some of the lending practices included:

- Qualifying high risk borrowers for larger loans
- Steering borrowers from conventional mortgages to higher risk loan products
- Accepting loan applications without verifying the borrower's income
- Using loans with low, short term "teaser" rates
- Promoting negatively amortizing loans
- Authorizing loans with multiple layers of risk

Source: Wall Street and the Financial Crisis: Anatomy of a Financial Collapse

Case Study: Washington Mutual (3)

Other shortcomings included:

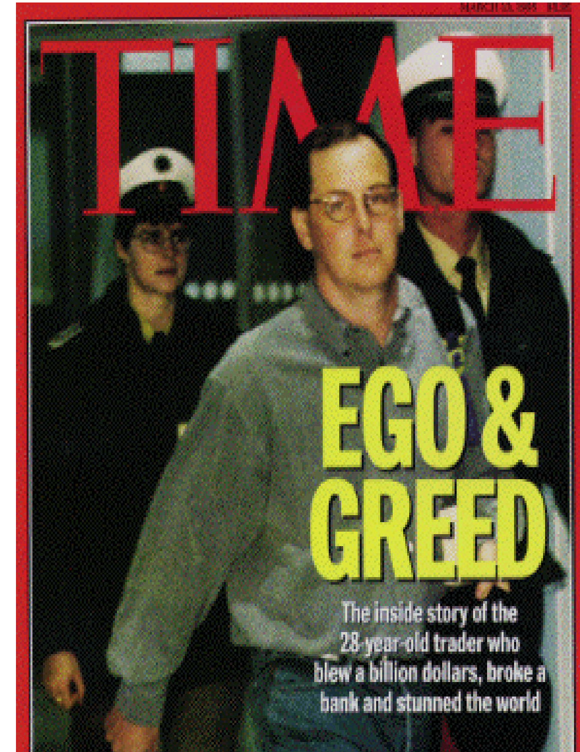
- Failure to enforce compliance with lending standards
- Excessive loan error and exception rates
- Weak oversight over the 3rd party mortgage brokers
- Tolerated loans with fraudulent or erroneous borrower information
- Compensation incentives that rewarded loan personnel for issuing a large volume of higher risk loans

Source: Wall Street and the Financial Crisis: Anatomy of a Financial Collapse

Best Practice in Management of Credit Risk

A. An appropriate credit risk environment
B. Operating under a sound credit granting process
C. Appropriate credit administration, measurement and monitoring process
D. Adequate controls over credit risk

Source: Principles for the Management of Credit Risk



OPERATIONAL RISK AND THE CASE OF ROGUE BROKERS IN KENYA AND BARINGS

Operation Risk

Includes losses that arise from events such as:

- Internal and external fraud
- Employment practices and workplace safety
- Clients, products and business practices
- Damage to physical assets
- Business disruption and system failures
- Execution, delivery and process management

Source: Financial Stability Institute

Lines of Defence

1st Line	Business line management	Responsible for identifying and managing the risks inherent in the products, activities, processes and systems for which it is accountable
2nd Line	Functionally Independent (CORF)	A key function of the corporate operational risk function (CORF) is to challenge the business lines' inputs to, and outputs from, the bank's risk management, risk measurement and reporting systems.
3rd Line	Independent review	Independent review and challenge of the bank's operational risk management controls, processes and systems.

Source: Principles for Sound Management of Operational Risk

Case Study: Kenyan Stock Brokers (1)

The recent failure of some stock brokers in Kenya could be attributed to:

- Poor corporate governance and management practices
- Fraudulent practices such as unauthorized selling of client's shares
- Weak internal control environment and poor financial management
- Key person risk and lack of a proper succession planning

Some of the recently failed stock brokers in Kenya includes: Discount Securities, Francis Thuo and Partners, Nyaga Stock Brokers and Ngenye Kariuki & Co. Ltd

Case Study: Kenyan Stock Brokers (2)

The failures could have been averted if the following were in place:

- Comprehensive framework for the management of all material risks
- Code of Conduct to be observed by all the market participants
- Proper procedures for safekeeping and transfer of securities
- Risk-based capital requirement for stock brokers

Case Study: Barings

- Management failed to institute proper control systems
- Lack of adequate segregation between various functions
- Systems of checks and balances failed at a number of levels
- Dubious practices designed to conceal losses
- Failure to implement the auditor’s recommendations

Source: Barings – A Case Study in Risk Management and Internal Controls by Hubert Edwards

Tools for Assessment of OpRisk

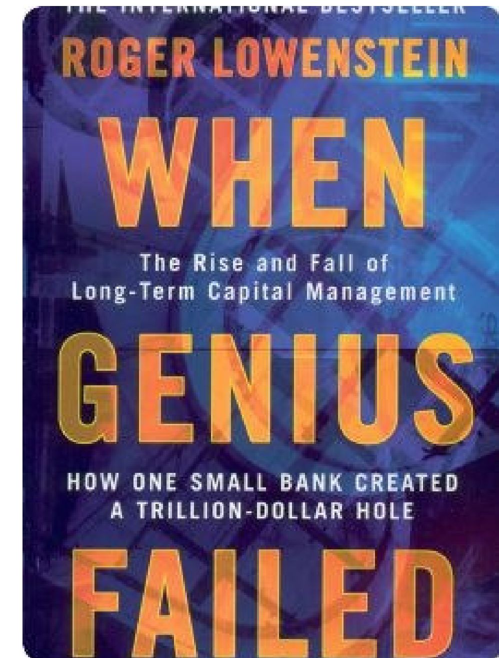
- Audit Findings
- Loss Data Collection and Analysis (Internal and External)
- Risk Self Assessment (RSA)
- Business Process Mapping
- Scenario Analysis
- Comparative Analysis

Source: Principles for Sound Management of Operational Risk

Traditional Internal Controls

- Segregation of duties and dual control
- Established processes for approval
- Monitoring of adherence to risk limits
- Restricted access to assets and records
- Appropriate staffing level and training
- Verification and reconciliation of transactions
- Appropriate vacation policy

Source: Principles for Sound Management of Operational Risk



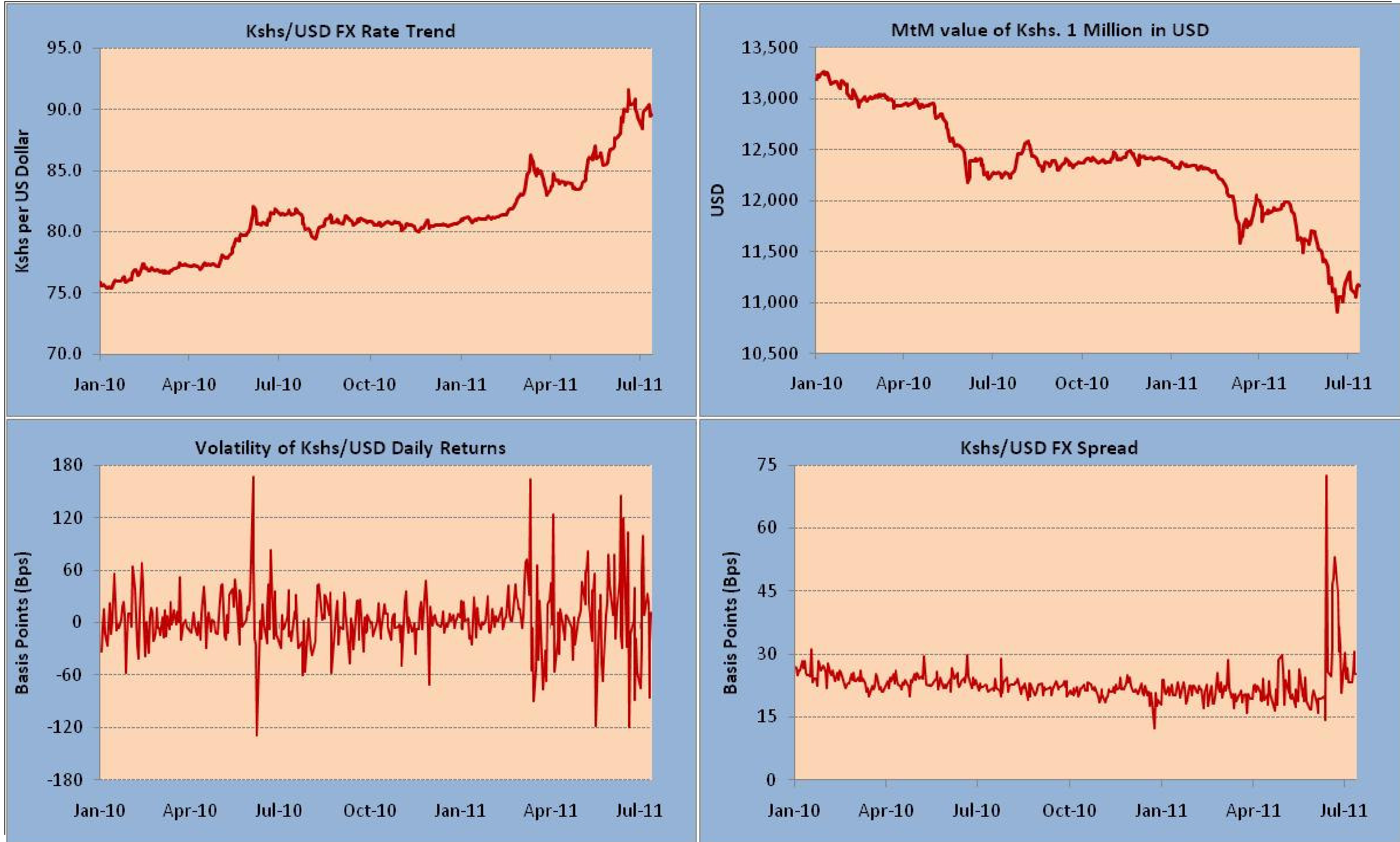
MARKET RISK AND THE CASE OF LONG-TERM CAPITAL MANAGEMENT

Market Risk

Market risk is the risk that movements in market prices will adversely affect the value of on- or off-balance sheet positions. These movements can occur in:

- Interest rates
- Foreign exchange (FX) rates
- Equity prices
- Commodity prices

Case Study: Kshs/USD FX Rate



Data Source: Central Bank of Kenya

Case Study: LTCM (1)

- It traded on its good name
- Meriwether was renowned as a relative-value trader
- LTCM's on balance sheet assets totalled around $125 billion, on a capital base of $4 billion, a leverage of about 30 times
- Off balance sheet notional principal ran to around $1 trillion
- The fund lost $2.5 billion or 52% of its value in 1998

Source: Lessons From Collapse of Hedge Fund, Long-Term Capital Management, David Shirreff

Case Study: LTCM (2)

Factors playing against LTCM

- Nobody could predict the time-frame within which rates would converge again
- Counterparties had lost confidence in themselves and LTCM
- Many counterparties had put on the same convergence trades
- Some counterparties saw an opportunity to trade against LTCM's positions.

Source: Lessons From Collapse of Hedge Fund, Long-Term Capital Management, David Shirreff

Case Study: LTCM

The LTCM fiasco is full of lessons about:

1. Model risk
2. Breakdown in historical correlations
3. The need for stress-testing
4. The value of disclosure and transparency
5. The danger of over-generous extension of trading credit
6. The woes of investing in star quality
7. Investing too little in game theory.

Source: Lessons From Collapse of Hedge Fund, Long-Term Capital Management, David Shirreff

LIQUIDITY RISK AND THE CASE OF NORTHERN ROCK (NR)

Liquidity Risk

- Liquidity is the ability of a bank to fund increases in assets and meet obligations as they come due
- The fundamental role of banks in the maturity transformation makes banks inherently vulnerable to liquidity risk
- Every financial transaction or commitment has implications for a bank's liquidity
- Liquidity shortfall at a single institution can have system-wide repercussions

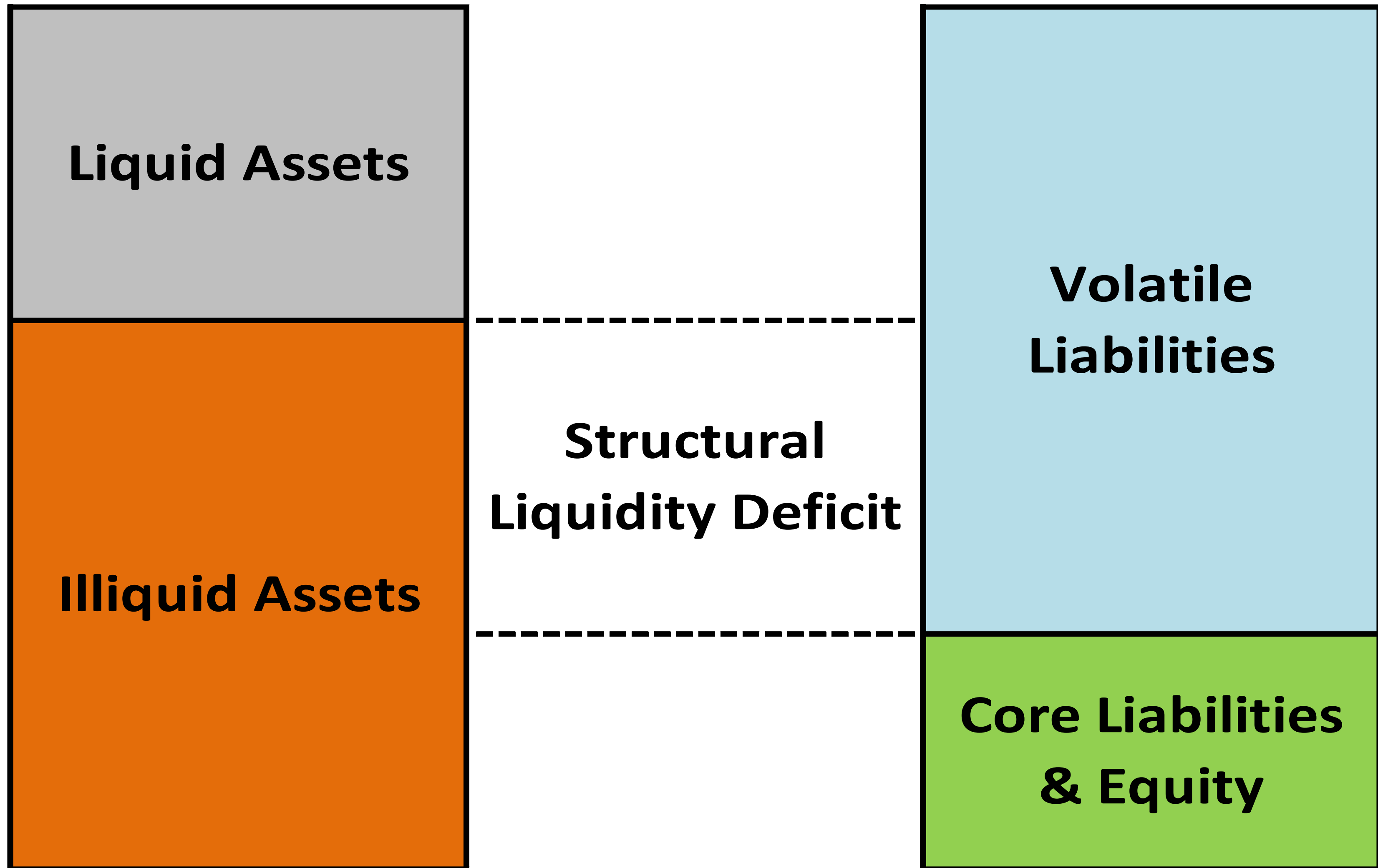
Source: Principles for Sound Liquidity Risk Management and Supervision

Some of the Best Practice

- Defined liquidity risk tolerance
- Maintenance of an adequate level of liquidity
- Identification and measurement of the full range of liquidity risks
- Allocation of liquidity costs, benefits and risks
- Use of severe stress test scenarios
- A robust and operational contingency funding plan

Source: Principles for Sound Liquidity Risk Management and Supervision

Structural Liquidity Risk



Source: David Silk, State Street, Liquidity Risk Management and Stress Testing

Examples of Early Warning Indicators

- Rapid asset growth funded with potentially volatile liabilities
- Increasing concentrations in assets or liabilities
- Currency mismatches
- Decline in weighted average maturity of liabilities
- Negative publicity
- Credit rating downgrade
- Rising wholesale or retail funding costs
- Increasing retail deposit outflows

Source: Principles for Sound Liquidity Risk Management and Supervision

Case Study: Northern Rock (1)

- Run on bank - £ 3 bln of deposits were withdrawn
- Bank of England (BOE) had to step in as lender of last resort (LoLR)
- Funding strategy mainly based on wholesale money and other capital market funding
- The bank remained legally solvent
- The quality of its assets were never in question
- For many years regarded as a star performer

Source: The Northern Rock Crisis: A Multi-dimensional Problem Waiting to Happen, David T. Llewellyn

Case Study: Northern Rock (2)

LPHI risk	Business model exposed it to low-probability high-impact (LPHI) risk
Business model	Centrepiece of its business strategy was securitisation
Solvency and Liquidity	Distinction is more difficult to make in practice than in theory
Moral Hazard:	Deposit protection and BOE money market operations
Corporate Governance	Practical ability of the board to monitor risk taking activities
Role of Government:	Raised credibility issues regarding deposit guarantee system in place

Source: The Northern Rock Crisis: A Multi-dimensional Problem Waiting to Happen, David T. Llewellyn

Case Study: Northern Rock (3)

Lessons Learned

1. Need to focus on liquidity management
2. Business model should be subjected to stress tests
3. Greater transparency with regard to banks’ risk exposures
4. Deposit protection arrangements to be made more credible
5. A review of the role of credit rating agencies
6. Corporate governance with a focus on monitoring of risk models
7. Improve management of LPHI risks

Source: The Northern Rock Crisis: A Multi-dimensional Problem Waiting to Happen, David T. Llewellyn

Q&A