AN ANALYSIS OF CHALLENGES AND BARRIERS IN IMPLEMENTING BASEL III IN THE LICENSED COMMERCIAL BANKS OF SRI LANKA

By

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By

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The work described in this research was carried out by me under the supervision of Professor Kennedy D. Gunawardana and a report on this has not been submitted in whole or in part to any university or any other institution for another Degree/Diploma.

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Since the early days of banking, it was identified that a uniform regulatory framework needs to be introduced to safeguard the global financial sector. With the exponential increase of international trade during the 2nd half of the 20th century, the need for international regulations for banking was more evident.

The Basel Accord has its origins in the financial turmoil of 1973. After the collapse of Bretton Woods's system of managed exchange rates, banks worldwide faced considerable foreign exchange losses which led to banking supervisors globally to formulate a regulatory framework for the banking sector.

As a result the Basel Committee of Banking Supervision formulated a minimum set of requirements for the operation of banks in 1988 and the G10 countries adopted this framework in 1992. This accord was heavily criticized in subsequent years for measuring risk only in terms of credit. This resulted in the introduction of Basel II which had a more wide angled approach to risks faced by the banking sector. However with the financial crisis that occurred in Western Countries in 2007; the need of putting forward a new accord to replace Basel II was identified. The Basel III was first
introduced in 2010/11 and was modified in 2013. This accord gives emphasis to areas like Capital Adequacy, Stress Testing and Liquidity Coverage.

As the March 2019 deadline for Basel III compliance looms ever closer, banks across the globe including Sri Lanka race against the clock to meet the requirements outlined by Basel III. In this research the main barriers and challenges faced by Licensed Commercial Banks in Sri Lanka and their relationship for the successful implementation of Basel III will be identified. Further methods to overcome these barriers and challenges will be briefly discussed.

Primary and Secondary data were collected and analyzed using statistical and other methods to prove/disprove the objectives of the research. SPSS software was used for the statistical analysis of data. The outcome of the data was used to test the 6 Hypotheses developed in Chapter 3 of this research and the steps that can be taken to overcome these were briefly identified.
Chapter 1 - Introduction

1.1 Background on the Research Topic

Business of Banking naturally entails assuming "Risks" in all business transactions. As a result, "Risk Management" remains to gain prominence as a key strategic focus in managing banks effectively in today's impulsive financial markets. The vision of Risk Management, as per Bertsch et al (2006), is to proactively assist the business in delivering superior shareholder value by ensuring an optimal trade-off between risks and rewards whilst upholding strong liquidity and adequate capital positions at all times combined with a robust asset quality.

The changing nature of today's business world is increasing the scope and potential impact of the risks faced. As per Schwerter (2011) ability of a bank to take strategic initiatives within pre-defined and consistent risk framework can be considered as a speciality that can make a distinction for a bank to ensure safety to all stakeholders in today's competitive market scenario. Hence, the Bank has recognised the risk management capabilities as a journey rather than a destination and is committed to maintain and continuously improve its risk management framework and capabilities through a number of initiatives including substantial investments in IT, training and development of human resources.

As explained in NDB Bank PLC, Annual Report (2013) “Risk Management” can be divided into three major categories as Credit, Market and Operational risk. Credit risk is the risk of financial loss if a customer or counterparty to a financial instrument fails to
meet a payment obligation under a contract. It arises principally from direct lending, trade finance and leasing business, and also from off-balance sheet products such as letters of credit and guarantees. Credit Risk generates the largest regulatory capital requirement of the risks a bank can incur.

With the evolvement of Risk Management in Banks the management of Market Risk has become an important and a vital area. The NDB Bank PLC, Annual Report (2014) identifies the main reasons to focus the attention on Market Risk is due to risk of exchange rates, interest rate or prices as they deal more on trading activities to gain profits by the volatilities in the Financial markets and a sudden or unexpected economic condition could turn the whole organisation to a crisis situation with in a very short period.

Moreover in broader terms Market risk is defined as the risk of losses in both on and off-balance sheet positions caused by movements in prices or rates of foreign exchange, interest rates, equity, commodity, and credit spreads. When talking about Market Risk we cannot talk about it in isolation as Management of Liquidity Risk goes hand in hand with Market Risk Management. Liquidity risk is the risk that the Bank is unable to meet its financial obligations in a timely manner at reasonable prices such financial obligations include liabilities to depositors, payments due under derivative contracts, settlement of securities borrowings and repurchase transactions, lending and investment commitments.

As per NDB Bank PLC, Annual Review (2013) operational risk consists of losses incurred due to the inadequacy or failure of the internal processes, human errors,
systems or external events such as natural disasters, including legal risk. The Bank has developed frameworks, management tools and a control infrastructure to enhance the management and control of the operational risks that are inherent to its various activities across the Group.

Risk governance of banks is driven by the regulatory framework laid down by Central Bank and also the BASEL accord. The BASEL committee on banking supervision was designed to enhance the financial stability by improving the supervisory know how and the quality. According to Ojo (2010) the BASEL committee has come a long way from the days of 1988 BASEL Capital Accord which not only established minimum capital requirements for internationally active banks and it was able to increase capital levels during this period.

The licensed commercial banks in the country are fully compliant with the BASEL II regulatory requirements. Banks identifies and measures all material risks faced in its business and ensures that the Banks have adequate capital to support all risks at all times. The Bank also ensures that its capital is adequate to absorb losses even under stressed conditions. These details are disclosed to all stakeholders of the Bank to ensure awareness among them on how the Bank manages its risks.

BASEL III is the new global regulatory standard on managing capital and liquidity of banks. As explained by Ojo (2010), the introduction of BASEL III the capital requirements of banks will increase with an aim to raise the quality, quantity, consistency and transparency of capital base and improve the loss absorbing capacity.
Further with the implementation of BASEL III the banks will be required to increase and also improve the quality of capital. Considering the requirements the Banks will have to initiate steps to automate its capital computation process in terms of Credit and Market Risk which would help to optimise usage of shareholder capital. From a liquidity point of view, Bank will have to identify processes in order to calculate the new Liquidity ratios required as per the BASEL III guidelines.

As per Eubanks (2010) an effective implementation of BASEL III will demonstrate to regulators, customers and shareholders that the bank has sound risk governance principles and thus a speedy implementation will also contribute to a Bank’s competitiveness by delivering better management insight into the business allowing it to take advantage of future opportunities.

Although implementing BASEL III serves only as an evolutionary step for many banks, the impact of BASEL III on the banks and the banking sector should not be underestimated, because it will drive significant challenges that need to be understood and addressed. For every bank working out the most cost effective model for implementing BASEL III will be a critical issue.

On a further note as per Schwerter (2011) and Brunnermeier et al. (2009) BASEL III addresses numerous flaws in financial regulations, firstly the stronger equity base with higher standards and stricter criteria to improve the financial stability in banks and financial institutions, secondly new regulations to cover risk will stabilize the system as well, thirdly the new capital conservation buffer counters this problem since it can be cut back in times of distress. It provides banks with flexibility and simultaneously
incentives to strengthen the capital base to avoid restriction on capital distribution and thus a major advantage of the new BASEL III framework.

Lehar (2005) and Kaserer (2010) argues that the main idea behind the BASEL II was to minimize the default probability of single bank because this should also lead to a stable and overall resistant banking sector, however the core task of regulation should be to ensure the stability of the whole financial system. Since BASEL II focuses on micro prudential regulation that is to focus on that is to guarantee single banks financial wellbeing, thereby the accord lacked its concern for liquidity risk and interconnectedness.

Even on a worst case scenario under BASEL II banks have significant incentive to become “too big”, “too many” or “too interconnected” argues Lehar (2005) and Kaserer (2010) since it increases the probability that bank will be bailed out in times of distress. This means that the current regulatory framework subsidizes those institutions that cause negative externalities on the other market participants. Therefore all of these issues have being addressed in new BASEL III framework.

1.2 Problem Statement

“What are the barriers and challenges faced by Licensed Commercial Banks in Sri Lanka in implementing BASEL III and how to overcome such barriers?”
1.3 Objectives

1) To find out the disclosures practices of BASEL II in the annual reports of Licensed Commercial Banks in Sri Lanka for the period 2010-2014.

2) To examine the existing barriers and challenges in implementation of BASEL II.

3) To investigate the relationship between BASEL III implementation barriers and annual report disclosure practices relating to capital adequacy and liquidity.

4) To find out a mechanism to overcome the barriers and challenges in implementing BASEL III.

1.4 Significance of Study

BASEL III is a comprehensive set of reform measures developed by the BASEL Committee on banking supervision, to strengthen the regulation supervision and risk management of the banking sector. These measures will strengthen the banks transparency and disclosures and improve bank’s ability to absorb shocks arising from financial and economic stress.

Therefore the Central Bank of Sri Lanka has also issued their final guideline on liquidity and draft guidelines on capital management. This new reforms under the BASEL III is currently under discussion at regulatory and single bank levels.

Nevertheless Research always focuses on different areas. For example, market research focuses on the demand for a product or service. In this study the significance of BASEL III accord is discussed thoroughly by analyzing the guidelines issued by local and
foreign regulatory bodies whilst critically evaluating the shortcomings in previous BASEL accords.

In this research the perceptions and level of awareness regarding Basel III among employees of the Sri Lankan banking sector has been analyzed along with other identified barriers and challenges like IT Systems, Cost, Accounting and Regulatory Standards and Human Resource element. Trends in the key ratios required for Basel computation in local and foreign banks which will help identify the readiness for successful Basel III implementation in Sri Lanka has also been found using secondary data.

It is identified that a study of this nature will aid users to benchmark the readiness of Sri Lankan banks in comparison to other foreign banks and also to identify the key barriers and challenges which need to be conquered in order to have a successful implementation, whilst gathering knowledge on BASEL accord and its significance.

1.5 Limitations of the Study

Below are some of the limitations faced whilst conducting the research;

1) Sample population is limited to thirty respondents covering the twenty five Licensed Commercial Banks in the country
2) When deciding the sample population, employees who are directly involved are mostly considered in the span of senior management, middle management and non-executives.
3) Respondents of the primary research were limited to credit risk, corporate banking and finance and compliance division of the banks as they are directly involved with BASEL related and Central Bank reporting requirements.

4) Liquidity coverage ratio is a new addition, thus there’s no secondary data available on the same.

5) Foreign banks financial information could not be obtained for a period of five years as they are not publicly quoted and hence they do not possess a comprehensive annual report but rather a country report with financial statements for Sri Lanka operation.

6) Financial statement for Cargills Bank was not available since it’s recently incorporated

1.6 Conclusion

In summary form this chapter highlights the significance of prudent risk management procedures guided by the BASEL regulation and other local regulatory guidelines. Further this chapter summarizes the shortcomings of previous BASEL accords which enhances the significance of the new BASEL accord. The objectives and the limitations of the study is also mentioned in this chapter.
Chapter 2 – Literature Review

2.1 Introduction

This chapter highlights the evolution of the BASEL accord over the period and its strengths and drawbacks which brought in the new BASEL III framework on capital and liquidity. The new accord is explained in detail with reference to the new guidelines given. The readiness of implementing BASEL III is discussed by evaluating challenges and barriers which needs to be overcome with examples from the Asian and the European region.

2.2 History of the BASEL Committee

The Basel Committee on Banking Supervision has its origins in the financial market turmoil that followed the breakdown of the Bretton Woods Bank in 1973. As mentioned in Bank for International Settlements (2011) after the collapse of Bretton Woods, many banks incurred large foreign currency losses. In 1974, Germany’s Federal Banking Supervisory Office withdrew banking licence of a single bank after finding that the bank’s foreign exchange exposures amounted to three times its capital. Banks outside Germany took heavy losses on their unsettled trades, adding an international dimension to the turmoil.

In response to these and other disruptions in the international financial markets, the Central Bank governors of the G10 countries established a Committee on Banking Regulations and Supervisory Practices at the end of 1974 as highlighted in the Bank for International Settlements (2011). Later renamed the “Basel Committee on Banking Supervision”, the Committee was designed as a forum for regular cooperation between
its member countries on banking supervisory matters. Its aim was and is to enhance financial stability by improving supervisory knowhow and the quality of banking supervision worldwide.

Bank for International Settlements (2011) explains that the Committee seeks to achieve its aims by setting minimum standards for the regulation and supervision of banks; by sharing supervisory issues, approaches and techniques to promote common understanding and to improve cross-border cooperation; and by exchanging information on developments in the banking sector and financial markets to help identify current or emerging risks for the global financial system. Also, to engage with the challenges presented by diversified financial conglomerates, the Committee also works with other standard-setting bodies.

Since the first meeting in February 1975, meetings have been held regularly three or four times a year. After starting life as a G10 body, the Committee expanded its membership in 2009 and again in 2014 and now includes many jurisdictions. Bank for International Settlements (2011) further explains that the Committee now also reports to an oversight body, the Group of Central Bank Governors and Heads of Supervision, which comprises Central Bank governors and non-Central Bank heads of supervision from member countries.

The Committee's decisions have no legal force. Rather, the Committee formulates supervisory standards and guidelines and recommends sound practices in the expectation that individual national authorities will implement them. Bank for International Settlements (2011) highlights that the Committee encourages full, timely
to improve the resilience of the global banking system, promote public confidence in prudential ratios and encourage a regulatory level playing field for internationally active banks.

2.2.1 BASEL I: The BASEL Capital Accord

With the foundations for supervision of internationally active banks laid, capital adequacy soon became the main focus of the Committee's activities. Ojo (2010) stresses that in the early 1980s, the onset of the Latin American debt crisis highlighted the Committee's concerns that the capital ratios of the main international banks were deteriorating at a time of growing international risks. Backed by the G10 Governors, Committee members resolved to halt the erosion of capital standards in their banking systems and to work towards greater convergence in the measurement of capital adequacy. This resulted in a broad agreement on a weighted approach to the measurement of risk, both on and off banks' balance sheets.

Ojo (2010) indicate that there was strong recognition within the Committee of the overriding need for a multinational accord to strengthen the stability of the international banking system and to remove a source of competitive inequality arising from differences in national capital requirements. Following comments on a consultative paper published in December 1987, a capital measurement system commonly referred to as the Basel Capital Accord (1988 Accord) was approved by the G10 Governors and released to banks in July 1988.
The 1988 Accord called for a minimum capital ratio of capital to be implemented by the end of 1992. Ultimately, this framework was introduced not only in member countries but also in virtually all other countries with active international banks. In September 1993, the Committee issued a statement confirming that G10 countries' banks with material international banking business were meeting the minimum requirements set out in the Accord.

Alexander (2004) as summarised by Ojo (2010) the Accord was always intended to evolve over time. It was amended in November 1991. The 1991 amendment gave greater precision to the definition of general provisions or general loan-loss reserves that could be included in the capital adequacy calculation. In April 1995, the Committee issued an amendment, to take effect at end of 1995, to recognise the effects of bilateral netting of banks' credit exposures in derivative products and to expand the matrix of add-on factors. In April 1996, another document was issued explaining how Committee members intended to recognise the effects of multilateral netting.

The Committee also refined the framework to address risks other than credit risk. Ojo (2010) provides evidence that in January 1996, the Committee issued the Market Risk Amendment, to take effect at the end of 1997. This was designed to incorporate within the Accord a capital requirement for the market risks arising from banks' exposures to foreign exchange, trading in debt securities, equities, commodities and options. An important aspect of the Market Risk Amendment was that banks were, for the first time, allowed to use internal models (value-at-risk models) as a basis for measuring their market risk capital requirements, subject to strict quantitative and qualitative standards.
2.2.2 BASEL II: The New Capital Framework

According to Bruggink and Buck (2002) in June 1999, the Committee issued a proposal for a new capital adequacy framework to replace the 1988 Accord. This led to the release of the Revised Capital Framework in June 2004. Generally known as "Basel II", the revised framework comprised three pillars, namely:

- Minimum capital requirements, which sought to develop and expand the standardised rules, set out in the 1988 Accord.
- Supervisory review of an institution's capital adequacy and internal assessment process.
- Effective use of disclosure as a lever to strengthen market discipline and encourage sound banking practices.

Bruggink and Buck (2002) states that the new framework was designed to improve the way regulatory capital requirements reflect underlying risks and to better address the financial innovation that had occurred in recent years. The changes aimed at rewarding and encouraging continued improvements in risk measurement and control.

The framework's publication in June 2004 followed almost six years of intensive preparation. During this period, the Basel Committee consulted extensively with banking sector representatives, supervisory agencies, central banks and outside observers in an attempt to develop significantly more risk-sensitive capital requirements.

Soon after the June 2004 release, which focused primarily on the banking book, the Committee turned its attention to the trading book. Bank for International Settlements

Bruggink and Buck (2002) demonstrate that one challenge that supervisors worldwide faced under Basel II was the need to approve the use of certain approaches to risk measurement in multiple jurisdictions. Basel II extended the scope of such approvals and demanded an even greater degree of cooperation between home and host supervisors. To help address this issue, the Committee issued guidance on information-sharing. In the following year, it followed up with advice on supervisory in the context of the advanced measurement approaches for operational risk.

2.3 Shortcomings of BASEL II

As summarized by Schwerter (2011) the main idea behind BASEL II is to minimize the default probability of each bank because it leads to a stable and overall resistant banking sector and invariably ensures the stability of the whole financial system.

Schwerter (2011) argues further that BASEL II focuses on the micro-prudential regulation that is trying to guarantee each bank's financial wellbeing. However the accord failed to fulfill this task due to lack of concern for systemic risk and interconnectedness. Schwerter (2011) demonstrates that under BASEL II banks have
significant incentive to become “too big”, “too many” or “too interconnected” since it increases the probability that the bank will be bailed out in times of distress. This means that the regulatory framework subsidizes those institutions that cause negative externalities on other market participants.

Nevertheless Schwerter (2011) indicates that it’s mandatory to support special business units of distressed banks which are systematically or economically important since this supports the overall objective to stabilize the whole financial system.

Borio (2003) and Hellwig (2009) as summarized by Schwerter (2011) the financial crisis has demonstrated numerous drawbacks of the BASEL II framework such as;

- Necessity for a macroprudential view on regulation and supervision.
- Necessity for international coordination.
- Treatment of systemic (liquidity) risk.
- Treatment of procyclicality.
- Improvements in transparency.
- Incentives for sustainability/long term orientation.

2.4 Introduction to BASEL III

Bank for International Settlements (2011) states that the need for a fundamental strengthening of the Basel II framework have become apparent, since the banking sector had entered the financial crisis with build-up of excessive on-and-off balance sheet leverage, gradual erosion of the level of and quality of the capital base, inability to absorb systematic trading and credit losses, interconnectedness of systematic
institutions through complex transactions, inability to cope with the intermediation of large off-balance sheet exposures in the banking system and inadequate liquidity buffers. These defects were associated with poor governance and risk management, as well as inappropriate incentive structures. This factor was demonstrated by the mispricing of credit and liquidity risk, and excess credit growth.

Responding to these risk factors, the Basel Committee issued Principles for sound liquidity risk management and supervision. Bank for International Settlements (2011) highlights that in July 2009, the Committee issued documents to strengthen the Basel II capital framework, notably with regard to the treatment of certain complex securitisation positions and trading book exposures. These enhancements were part of a broader effort to strengthen the regulation and supervision of internationally active banks, in the light of weaknesses revealed by the financial market crisis.

Bank for International Settlements (2011) further states that in September 2010, the Group of Governors and Heads of Supervision announced higher global minimum capital standards for commercial banks. This followed an agreement reached in July regarding the overall design of the capital and liquidity reform package, now referred to as "Basel III". In November 2010, the new capital and liquidity standards were endorsed at the G20 Leaders Summit in Seoul and subsequently agreed at the December 2010 Basel Committee meeting.

The proposed standards were issued by the Committee in mid-December 2010. The December 2010 versions were set out in Basel III: International framework for liquidity risk measurement, standards and monitoring and Basel III: A global regulatory
framework for more resilient banks and banking systems. The enhanced Basel framework revised and strengthen the three pillars established by Basel II. It also extended the framework with several innovations as stated in Bank for International Settlements 2011, namely:

- An additional layer of common equity - the capital conservation buffer - that, when breached, restricts payouts of earnings to help protect the minimum common equity requirement;
- A countercyclical capital buffer, which places restrictions on participation by banks in system-wide credit booms with the aim of reducing their losses in credit busts;
- A leverage ratio - a minimum amount of loss-absorbing capital relative to all of a bank's assets and off-balance sheet exposures regardless of risk weighting (defined as the "capital measure" (the numerator) divided by the "exposure measure" (the denominator) expressed as a percentage);
- Liquidity requirements - a minimum liquidity ratio, the liquidity coverage ratio (LCR), intended to provide enough cash to cover funding needs over a 30-day period of stress; and a longer-term ratio, the net stable funding ratio (NSFR), intended to address maturity mismatches over the entire balance sheet; and
- Additional proposals for systemically important banks, including requirements for supplementary capital, augmented contingent capital and strengthened arrangements for cross-border supervision and resolution.

In January 2012, a comprehensive process was proposed by the Committee to monitor members' implementation of Basel III. The Regulatory Consistency Assessment Programme consists of two distinct but complementary work streams to monitor the
timely adoption of Basel III standards, and to assess the consistency and completeness of the adopted standards including the significance of any deviations in the regulatory framework.

Linsley and Shrires (2005) argues that these tightened definitions of capital, significantly higher minimum ratios and the introduction of a macro prudential overlay represent a fundamental overhaul for banking regulation. In addition, time is needed to translate the new internationally agreed standards into national legislation. To reflect these concerns, a set of transitional arrangements for the new standards was announced, although national authorities are free to impose higher standards and shorten transition periods where appropriate.

The strengthened definition of capital will be phased in over five years: the requirements were introduced in 2013 and should be fully implemented by the end of 2019. It is stipulated by the Basel Committee on Banking Supervision (2011) that capital instruments that no longer qualify as common equity Tier 1 capital or Tier 2 capital will be phased out over a period, beginning 1 January 2013.

Turning to the minimum capital requirements, the higher minimums for common equity and Tier 1 capital were phased in from 2013, and will become effective at the beginning of 2015. The schedule is as follows:

- The minimum common equity and Tier 1 requirements increased from 2% and 4% to 3.5% and 4.5%, respectively, at the beginning of 2013.
- The minimum common equity and Tier 1 requirements rose to 4% and 5.5%, respectively, at the beginning of 2014.
The final requirements for common equity and Tier 1 capital will be 4.5% and 6%, respectively, beginning in 2015. (Please Refer Annex 01 for further details)

Basel Committee on Banking Supervision (2011) states that the Liquidity Coverage Ratio will be phased in from 1 January 2015 and will require banks to hold a buffer of high-quality liquid assets sufficient to deal with the cash outflows encountered in an acute short-term stress scenario as specified by supervisors. To ensure that banks can implement the Liquidity Coverage Ratio without disruption to their financing activities, the minimum Liquidity Coverage Ratio requirement will begin at 60% in 2015, rising in equal annual steps of 10 percentage points to reach 100% on 1 January 2019.

The other minimum liquidity standard introduced by Basel III is the net stable funding ratio. This requirement, which takes effect as a minimum standard by 1 January 2018, will promote longer term funding mismatches and provide incentives for banks to use stable funding sources.

2.4.1 Basel III key focus areas

Given below are the key focus areas under the new Basel Accord, which will be discussed in detail under the Key elements in BASEL 3 framework;

<table>
<thead>
<tr>
<th>Liquidity Risk</th>
<th>Credit and Counterparty Risk</th>
<th>Market Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity Coverage Ratio</td>
<td>Changes to standardize &amp; internal risk based approaches.</td>
<td>Stressed Value at Risk.</td>
</tr>
<tr>
<td>Level 1 and 2 buffer assets.</td>
<td></td>
<td>Incremental Risk Coverage.</td>
</tr>
<tr>
<td>Additional supervisory tools</td>
<td></td>
<td>Correlation trading portfolio.</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td></td>
<td>Settlement Risk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New mitigation rules.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collateral management.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capital Management</th>
<th>Profitability</th>
<th>Finance &amp; IFRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible capital requirements.</td>
<td>Return on Equity</td>
<td>IFRS rules and timelines.</td>
</tr>
<tr>
<td>Common Equity Tier 1 limits and adjustments.</td>
<td>Operating margins.</td>
<td>Classification &amp; measurement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impairment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Taxation.</td>
</tr>
</tbody>
</table>

Table 2.1 Key Focus Areas of Basel III. Source: Hensen (2014)

2.4.2 How Global Banks are responding to BASEL III

Below is the capital, funding and business model changes identified by Ernst and Young survey on major financial institutions across the globe.

Capital Changes

Re-invest earnings.

Offer right issue.

Selling assets to comply with Tier 1 capital requirements.
Look at risk weighted assets by products and geography.

Improve transparency of internal reporting.

Integrating certain capital costs into strategy and business line management.

Keeping shareholders, investors and analysts confident with more transparency of reporting and communication.

### Funding Changes

Diversifying funding sources to reduce dependency and to tap into new markets.

Price more aggressively to encourage long term funding.

Increase loan pricing.

Incentivizing longer term deposits.

### Business Model Changes

Exiting certain businesses and adjust product offerings.

Purchase retail banks to access long term deposits.

Shedding non-core business.

Reduce headcount.

Focus more strictly on risk return basis profits of the business to cover higher capital cost.

Readjusting legal and operating models to improve efficiency.

Table 2.2 Main Changes of Basel III identified by Ernst and Young. Source: Wilson(2014)
### 2.4.3 Key Changes in BASEL III in comparison to BASEL II

<table>
<thead>
<tr>
<th>Under BASEL II Regime</th>
<th>BASEL III Changes</th>
<th>Likely Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher capital ratios and enhanced quality and quantity of capital</td>
<td>Increased quality, consistency and transparency of the capital base. Tier 1 capital must be predominantly in the form of common shares and retained earnings. Tier 2 capital instruments will be harmonized. Tier 3 capital instruments will be eliminated.</td>
<td>Increase capital raising activities. Retention of earnings.</td>
</tr>
<tr>
<td>Low “Core Tier 1” levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of loss absorption capacity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower risk weights accumulated for trading assets.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>over the counter derivatives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Introduction of conservation and pro-cyclicality buffers.**

<table>
<thead>
<tr>
<th>Lack of symmetry of prudential, monetary and fiscal policies.</th>
<th>Introduction of capital conservation buffer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem of pro-cyclicality.</td>
<td>Introduction of countercyclical buffer.</td>
</tr>
<tr>
<td></td>
<td>Addressing systematic risk and interconnectedness.</td>
</tr>
<tr>
<td></td>
<td>Additional capital requirements- common equity issuances and/or reduced dividends.</td>
</tr>
<tr>
<td></td>
<td>Pressure during stress periods- to draw on capital conservation buffer or dividend expectations.</td>
</tr>
</tbody>
</table>

**Introduction of leverage ratio as a safety net**

<table>
<thead>
<tr>
<th>Leverage-led growth model: ROE achieved through excessive leverage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shadow banking not being properly accounted for.</td>
</tr>
<tr>
<td>Risk weighted assets calculation based on</td>
</tr>
<tr>
<td>Leverage ratio to serve as a check towards banks leverage builds up to help avoid destabilizing deleveraging process which can damage the financial system and the economy.</td>
</tr>
<tr>
<td>Additional safeguards against risk weights from model risks.</td>
</tr>
<tr>
<td>Allow a non-risk weighted</td>
</tr>
<tr>
<td>Focus more on high-risk/high-return loans.</td>
</tr>
<tr>
<td>Market expectation of the leverage ratio might be higher than the regulatory requirements.</td>
</tr>
<tr>
<td>historical experience.</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Liquidity Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy reliance on short-term wholesale funding.</td>
</tr>
<tr>
<td>No market to liquidate own assets.</td>
</tr>
</tbody>
</table>

| Introduction of a liquidity coverage ratio. |
| Introduction of net stable funding ratio. |
| Introduction of a common set of liquidity monitoring tools. |

| Reduction in profitability- Banks will hold more liquid but low-yielding assets. |
| Alteration of banks asset mix. |
| Stable banks can influence market pricing of assets. |

<table>
<thead>
<tr>
<th>Enhanced Market Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less transparency on bank’s capital base.</td>
</tr>
<tr>
<td>Lack of disclosure of a bank’s risk and liquidity information to market participants.</td>
</tr>
</tbody>
</table>

| New disclosure requirements on: |
| Securitization |
| Concentration risks |
| Compensation practices |
| Valuation practices: stress testing |
| Corporate governance |

| Additional disclosures may require system enhancements. |

| Table 2.3 Comparison between Basel II and Basel III. Source: Hensen (2014) | 24 |
2.4.4 The Key elements in BASEL III framework

The proposed BASEL III capital standards are largely applicable to the capital components of banks and as per Central Bank Directions the risk weighted assets will be calculated based on the existing BASEL II Capital Adequacy Framework that is the Banking Act Directions No 09 of 2007 and 10 of 2007 issued to licensed commercial banks and licensed specialized banks, respectively.

As per Banking Supervision Department, Central Bank of Sri Lanka (2015) the BASEL III minimum capital requirements will be applicable at two levels namely;

- The standalone level of capital adequacy measures the capital adequacy of a bank on its standalone capital strength and risk profile.
- The consolidated level of capital adequacy of a bank measures the capital strength and risk profile after consolidating the assets and liabilities of its subsidiaries, joint ventures and associates in terms of Sri Lanka Accounting standard.

**Computation of Capital Adequacy Ratios**

**Tier 01 Capital Adequacy Ratio**

<table>
<thead>
<tr>
<th>Common Equity Tier 01 Capital + Additional Tier 01 Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWAs for Credit Risk + RWAs for Market Risk + RWAs for Operational Risk</td>
</tr>
</tbody>
</table>
Total Capital Adequacy Ratio

<table>
<thead>
<tr>
<th>Common Equity Tier 01 Capital + Additional Tier 01 Capital + Tier 02 Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWAs for Credit Risk + RWAs for Market Risk + RWAs for Operational Risk *100</td>
</tr>
</tbody>
</table>

Limits and ratios for the Capital Components

These are as follows;

1) Common Equity Tier 01 Capital must be at least 4.5% of Risk Weighted Assets at all times.

2) Tier 01 capital must be at least 6% of Risk Weighted Assets at all times and thus Additional Tier 01 Capital shall be 1.5% of Risk Weighted Assets.

3) Total Capital (Tier 01 Capital + Tier 02 Capital) must be at least 10% of Risk Weighted Assets at all times. Thus Tier 02 Capital shall be 4% of Risk Weighted Assets.

Source: (Banking Supervision Department, Central Bank of Sri Lanka 2015)

Common Equity Tier 01 Capital

Common Equity Tier 01 Capital for licensed banks incorporated in Sri Lanka consists of sum of the following elements as indicated by Banking Supervision Department, Central Bank of Sri Lanka 2015 are as follows;

- Equity capital shall comprise of both voting and non-voting ordinary share capital.
➢ Reserve fund created in terms of section 20 of the banking act.

➢ Accumulated retained earnings reflected in the statement of changes in equity.

Dividend declared/paid shall be deducted from retained earnings.

➢ Accumulated other comprehensive income and any other disclosed reserves in the latest audited financial statements. However revaluation reserve shall be treated as Tier 02 capital subject to a regulatory discount.

➢ Unpublished current year profit and other income gains of the latest reporting period.

➢ Ordinary voting or non-voting shares issued by a consolidated subsidiary, that is the financial institutions regulated by the Central Bank of Sri Lanka and held by third party investors. (minority interest)

Additional Tier 01 Capital

Additional Tier 01 Capital consists of instruments issued by the bank that meet the criteria for inclusion in additional Tier 01 capital subject to satisfying the following minimum criteria as indicated by Banking Supervision Department, Central Bank of Sri Lanka 2015;

➢ Net proceeds received from the issuance of the capital instrument shall be included as capital.

➢ Subordinated to the claims of depositors, creditors and subordinated debt.

➢ Is neither secured nor covered by a grantee of the issuer, related entity or any other arrangement that legally or economically enhances the seniority of the claim.

➢ Has no maturity date or other incentives for early redemption.
The capital instrument may be callable at the initiative of the issuer only after a minimum of five years from the date of issue, subject to satisfying the minimum requirements.

Any repayment of principal is done only with the prior approval of Central bank of Sri Lanka.

Based on dividend/coupon discretion of the bank.

Dividend/coupon must be paid out of distributable items.

The capital instrument shall not have a credit sensitive dividend feature. In this regard, the capital instrument shall not have a divided or a coupon that is reset periodically.

The instrument cannot contribute to liabilities exceeding assets if such a statement of financial position forms part of the solvency test as specified in the Companies Act No 07 of 2007.

Instruments classified as liabilities for accounting purposes must have principal loss absorption through a write down mechanism which allocates losses to the instrument at a pre-specified trigger point.

Neither the bank nor the banking group over which the bank exercises control or significance influence can have purchased the instrument, nor can the bank directly or indirectly have funded the purchase of the instrument.

The capital instrument does not have any feature that hinders recapitalization, such as provisions.

If the capital instrument is not issued by an operating entity or the holding company of the bank, the proceeds from the issuance of the capital instrument shall be immediately available without limitation to an operating entity or the holding company of the bank.
in a form which meets or exceeds all other criteria for inclusion in Additional Tier 0 capital.

Tier 02 Capital

Tier 02 Capital consists of instruments issued by the bank that meet the criteria for inclusion in Tier 02 capital subject to satisfying the following minimum criteria as indicated by Banking Supervision Department, Central Bank of Sri Lanka 2015;

- Issued and fully-paid in cash. Only the net proceeds received from the issuance of the capital instrument shall be included as capital.
- Subordinated to the claims of depositors, creditors.
- Is neither secured nor covered by a grantee of the issuer, related entity or any other arrangement that legally or economically enhances the seniority of the claim.
- Maturity of the capital instrument should be at least five years, where the agreement provides for the loan to be drawn down in a series of tranches, the minimum original maturity for each tranche shall be five years from the date of its draw down and the recognition in the regulatory capital in the remaining five years before maturity will be amortized on a straight line basis as specified in the table below;

<table>
<thead>
<tr>
<th>Remaining maturity of the instrument</th>
<th>Cumulative rate of discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than one year</td>
<td>100%</td>
</tr>
<tr>
<td>More than one year but less than two years</td>
<td>80%</td>
</tr>
</tbody>
</table>
More than two years but less than three years  

More than three years but less than four years  

More than four years but less than five years  

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than two years but less than three years</td>
<td>60%</td>
</tr>
<tr>
<td>More than three years but less than four years</td>
<td>40%</td>
</tr>
<tr>
<td>More than four years but less than five years</td>
<td>20%</td>
</tr>
</tbody>
</table>

Table 2.4 The amortization schedule for Tier 02 capital instruments

➢ The capital instrument may be callable at the initiative of the issuer only after a minimum of five years from the date of issue, subject to satisfying the minimum requirements.

➢ The investors in the instrument have no right to accelerate the repayment of the future scheduled payments, except in bankruptcy and liquidation of the bank.

➢ The capital instrument shall not have a credit sensitive dividend feature. In this regard, the capital instrument shall not have a divided or a coupon that is reset periodically.

➢ Neither the bank nor the banking group over which the bank exercises control or significance influence can have purchased the instrument, nor can the bank directly or indirectly have funded the purchase of the instrument.

➢ If the capital instrument is not issued by an operating entity or the holding company of the bank, the proceeds from the issuance of the capital instrument shall be immediately available without limitation to an operating entity or the holding company of the bank in a form which meets or exceeds all other criteria for inclusion in Additional Tier 02 capital.
Revaluation Reserve- May be included in Tier 02 once in every three years subject to a
discount of 50% on the difference between the book value and the market value/fair
value of the immovable property provided that such revaluation is prudently valued to
reflect the current market prices.

General provisions/ general loan-loss reserves – Provision/loan loss reserves held
against performing loans and advances for the future, presently unidentified losses are
freely available to meet losses which subsequently materialize and therefore qualify for
inclusion within Tier 02.

Excess of eligible provisions over total expected loss amount under the Internal Rating
Based (IRB) approach - where the total expected loss amount is less than the total
eligible provisions that is specific, general provisions and write-offs, the bank may
recognize the difference in Tier 02 up to maximum of 0.5% of risk weighted assets for
credit risk.

Regulatory adjustments/ deductions applicable for Common Equity Tier 01 Capital +
Additional Tier 01 Capital + Tier 02 Capital

Below are the regulatory adjustments that need to be applied to regulatory capital as
specified by Banking Supervision Department, Central Bank of Sri Lanka, 2015;

1) Goodwill and other intangible assets: Should be deducted from Common Equity Tier
01 Capital. For this purpose, the definition of goodwill shall be in accordance with Sri
Lanka Accounting Standard on Business Combinations and Intangible Assets.

2) Cumulative gains/losses on re-measuring of financial investments classified as
"available for sale": 40% of cumulative gains arising from the changes in fair value of
financial instruments classified as “available for sale” shall be deducted from Common Equity Tier 01 Capital.

3) Gains/losses arising from translating the financial statements of the foreign operation: 50% of gains arising from translating the financial statements of foreign operation shall be deducted in calculating Common Equity Tier 01 Capital.

4) Revaluation losses: Cumulative unrealized losses arising from the changes in fair value or revaluation of land and buildings shall be fully deducted from Tier 02 Capital.

5) Deferred tax assets: Deferred tax assets due to the future profitability of the bank to be realized are to be deducted from Common Equity Tier 01 Capital.

6) Cash flow hedge reserve: The amount of the cash flow hedge reserve which relates to the hedging of items that are not fair valued on the statement of financial position should be derecognized in the calculation of Common Equity Tier 01 Capital.

7) Gains on sale from securitization transactions: An increase in equity capital resulting from a securitization must be deducted from Common Equity Tier 01 Capital.

8) Changes in own credit risk: Unrealized gains and losses resulting from changes in fair value of liabilities due to changes in bank’s own credit risk must be derecognized from Common Equity Tier 01 Capital. Hence, positive amounts of changes in fair value of financial liabilities shall be deducted and negative amount shall be added back in the calculation.
9) Defined benefit pension fund assets and liabilities: Pension fund assets should be deducted from Common Equity Tier 01 Capital, net of any deferred tax liability. The pension fund liabilities, as included in the statement of financial position, shall be fully recognized in the calculation.

10) Investments in the capital of banking and financial institutions: Direct and indirect holdings of issued capital carrying voting rights and holdings in both the trading book and the banking book shall be included for capital calculation.

12) Reciprocal cross holdings in the ordinary shares of financial institutions that are designed to inflate the capital position of the reporting bank shall be deducted in the calculation of Common Equity Tier 01 Capital.

Transitional Arrangement

The transitional arrangements for BASEL III implementation as lay down by the Banking Supervision Department, Central Bank of Sri Lanka is as follows;

1) BASEL III capital requirements will commence from 01st January 2016. Capital requirements for Common Equity Tier 01 Capital, Tier 01 and Total Capital ratios will be at 4.5%, 6% and 10% of the risk weighted assets respectively, from 01 January 2016.

2) Capital instruments that no longer qualify as Additional Tier 01 Capital and Tier 02 Capital will be phased-out beginning from January 2016 from the commencement of
each financial year by 20% on the outstanding value of the instrument up to January 2020, as shown below;

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Remaining value of the instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 January 2016</td>
<td>80%</td>
</tr>
<tr>
<td>01 January 2017</td>
<td>60%</td>
</tr>
<tr>
<td>01 January 2018</td>
<td>40%</td>
</tr>
<tr>
<td>01 January 2019</td>
<td>20%</td>
</tr>
<tr>
<td>01 January 2020</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 2.5 Phasing-out-arrangement of Additional Tier 01 /Tier 02 capital

3) 100% of the regulatory deductions will be applied from January 2016.

Capital Conservation Buffer

The objective of the capital conservation buffer is to ensure that banks build up capital buffers during normal times which can be drawn down during a stressed period.

The key features of the Capital Conservation Buffer as specified by Banking Supervision Department, Central Bank of Sri Lanka, 2015 is as follows;
1) Banks should hold buffers of capital above the regulatory minimum. When buffers have been drawn down, banks should rebuild them through reducing dividend payments and staff bonus payments.

2) Banks may choose to raise additional capital from the market as an alternative mechanism to conserve internally generated capital.

3) In the absence of raising capital from the market, the share of earnings retained by banks for the purpose of rebuilding their capital buffers should help to maintain the capital above the regulatory minimum.

4) Capital conservation buffer can be drawn down only when a bank faces a systemic or bank specific risk. In normal times, banks should not choose to operate in buffer range simply to compete with other banks.

5) The banks which draw down on conservation buffer during a stressed period should have a plan to replenish the buffer as part of its Internal Capital Adequacy Assessment Process.

**The Framework**

- Capital conservation buffer should be 2.5% of risk weighted assets.
- Capital distribution constraints will be imposed on a bank when capital levels fall. However banks will be able to conduct business as normal when their capital levels fall into the conservation range as they experience losses.
The tables given below show the minimum capital conservation ratios a bank must meet at various levels of Common Equity Tier 01 Capital and Total Capital ratios, respectively;

For instance, bank with a Common Equity Tier 01 Capital ratio in the range of 5.75% - 6.375% is required to conserve 60% of the earnings in the financial year, that is the total payout should not be more than 40% on dividends, share buy backs and bonus payments.

<table>
<thead>
<tr>
<th>Common Equity Tier 01 Capital</th>
<th>Minimum Capital Conservation Ratio (% of earnings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5% - 5.125%</td>
<td>100%</td>
</tr>
<tr>
<td>&gt;5.125% - 5.75%</td>
<td>80%</td>
</tr>
<tr>
<td>&gt;5.75% - 6.375%</td>
<td>60%</td>
</tr>
<tr>
<td>&gt;6.375% - 7.00%</td>
<td>40%</td>
</tr>
<tr>
<td>&gt;7.0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 2.6 Banks Minimum Capital Conservation Standards for Common Equity Tier 01 Capital

For instance, a bank with 10.85% Common Equity Tier 01 Capital and no Additional Tier 01 Capital Tier 02 in order to meet all minimum capital requirements and having a
0.85% capital conservation buffer would therefore be subject to the 80% constraint on capital distribution.

<table>
<thead>
<tr>
<th>Total Capital Ratio</th>
<th>Minimum Capital Conservation Ratio (% of earnings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0% - 10.625%</td>
<td>100%</td>
</tr>
<tr>
<td>&gt;10.625% - 11.25%</td>
<td>80%</td>
</tr>
<tr>
<td>&gt;11.25% - 11.875%</td>
<td>60%</td>
</tr>
<tr>
<td>&gt;11.875% - 12.50%</td>
<td>40%</td>
</tr>
<tr>
<td>&gt;12.5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 2.7 Banks Minimum Capital Conservation Standards for Total Capital

Transitional Arrangements
Capital conservation buffer will be phased in over 4 years commencing from January 2016.

Will become fully effective on January 2019.

It will begin at 0.625% Common Equity Tier 01 Capital of risk weighted assets on January 2016 and increase each subsequent year by an additional 0.625%, to reach 2.5% of risk weighted assets by January 2019. (Please Refer Annex 02 for further details)

The phased-in-arrangement for conservation buffer is shown below;

<table>
<thead>
<tr>
<th>Period</th>
<th>Capital Conservation Buffer as a % of Risk Weighted Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 January 2016</td>
<td>0.625%</td>
</tr>
<tr>
<td>01 January 2017</td>
<td>1.250%</td>
</tr>
<tr>
<td>01 January 2018</td>
<td>1.875%</td>
</tr>
<tr>
<td>01 January 2019</td>
<td>2.500%</td>
</tr>
</tbody>
</table>

Table 2.8 The phased-in-arrangement for conservation buffer

Source: (Banking Supervision Department, Central Bank of Sri Lanka, 2015)
Counter Cyclical Buffer

Losses incurred in the banking sector can be extremely large when a downturn is preceded by a period of excess credit growth. These losses can destabilize the banking sector, whereby problems in the financial system can contribute to a downturn in the real economy that then feedback on to the banking sector.

Therefore the BASEL Committee on Banking Supervision has introduced a counter cyclical buffer which aims to ensure that the banking sector capital requirement takes account of the macroeconomic environment in which banks operate. Further this looks at the excessive credit growth which could lead to future potential losses which in turn trigger a system wide risk.

As stipulated by Banking Supervision Department, Central Bank of Sri Lanka, 2015 there are two countercyclical buffer requirements that is National Countercyclical Buffer and Bank Specific Countercyclical buffer. Thus banks should meet this buffer with Common Equity Tier 01 Capital.

National Countercyclical Buffer will vary between 0-2.5 percent on risk weighted assets with Common Equity Tier 01 Capital.

Bank Specific Countercyclical Buffer will vary between 0-2.5 percent on risk weighted assets with Common Equity Tier 01 Capital. The buffer that will apply to each bank and will reflect the geographic composition of its portfolio of its credit exposures.
2.4.5 Reporting and Disclosure Requirements

Reporting Requirements

Below are the reporting requirements laid down by the Banking Supervision Department, Central Bank of Sri Lanka, 2015;

- The observation period will commence from 3rd quarter of 2015.
- The implementation of the BASEL III Capital Standards from 01st April 2016 to commence the parallel reporting in addition to the reporting on the existing BASEL II Capital Adequacy requirements
- It is expected to discontinue the existing BASEL II Capital Adequacy return with effect from 31st December 2018.
- The transitional arrangements for capital ratios will begin on January 2016 and will be phased-in over four years to be fully implemented with effect from January 2019.

Disclosure Requirements

In order to improve the transparency of regulatory capital and improve market discipline, banks are required by the Central Bank of Sri Lanka to disclose the following in the audited financial statements with effect from 31st December 2016.

Therefore the requirements imposed by the Banking Supervision Department, 2015 are as follows;

Transitional period disclosures: Banks are requested to apply the full BASEL III deductions with effect from January 2016.
1) Separate disclosures of all regulatory adjustments are needed.

2) A full reconciliation of all regulatory capital elements back to the statement of financial position in the audited financial statements: This requirement has been introduced to avoid the mismatch between the numbers used for the calculation of regulatory capital and the numbers used in the published financial statements.

3) Banks are required to disclose a description of the main features of the regulatory capital instruments issued.

4) Banks are required to disclose key ratios involving components of regulatory capital that is Common Equity Tier 01 Capital, Tier 01, Total Capital and Capital Conservation Buffer in their websites.

2.4.6 Liquidity Coverage Ratio

The Monetary Board of Central Bank issues directions for the implementation of Liquidity Coverage Ratio of Licensed Commercial Banks in accordance with “BASEL III: International Framework for Liquidity Risk Measurement, Standards and Monitoring” and “BASEL III: Liquidity coverage Ratio and Liquidity Risk Monitoring Tools” issued by the BASEL Committee on Banking Supervision.

Liquidity coverage ratio is expected to improve the banking sectors ability to absorb shocks arising from financial and economic stress, thus reducing the risk of spillover from the financial sector to the real economy.
The objectives of liquidity coverage ratio as per Monetary Board of Central Bank of Sri Lanka, 2015 is;

- Promote short term resilience of the liquidity risk of banks ensuring that banks have an adequate stock of high-quality liquid assets that can be converted easily and immediately into cash in secondary market to meet their liquidity needs for a period of 30 calendar days.
- Improve the banking sectors ability to absorb shocks arising from financial and economic stress, thus reducing the risk of spillover from the financial sector to the real economy.

**Liquidity Coverage Ratio Computation**

<table>
<thead>
<tr>
<th>Stock of High Quality Liquid Assets</th>
<th>Total Net Cash Outflows Over the Next 30 Calendar Days *100</th>
</tr>
</thead>
</table>

**Definition of High Quality Liquid Assets**

As per Monetary Board of Central Bank of Sri Lanka, 2015 High Quality Liquid Assets are assets that satisfy the following conditions;

- Can be easily converted into cash with no loss of value.
- Can be readily sold or used as collateral to obtain funds in a range of stress scenarios
- Without legal, regulatory or operational impediments.
Characteristics of High Quality Liquid Assets

In determining, banks shall consider the fundamental characteristics and market related characteristics of such assets.

Below are such fundamental characteristics indicated by Monetary Board of Central Bank of Sri Lanka (2015);

1) Low credit and market risk: Assets that are less risky tend to have high liquidity. High credit standing of the issuer and a low degree of subordination increases assets liquidity. Low duration, low volatility, low inflation risk and denomination in a convertible currency with low foreign exchange risk enhance an asset’s liquidity.

2) Ease and certainty of valuation: Assets liquidity increases if market participants are more likely to agree on its valuation. The pricing formula of high liquid assets must be easy to calculate and should not depend on strong assumptions. The inputs into the pricing formula must also be publicly available.

3) Low correlation with risky assets: Liquid assets should not be subject to highly correlated risk.

4) Listed on a developed and recognized exchange market: Being listed increases an assets transparency.

Below are such market related characteristics indicated by Monetary Board of Central Bank of Sri Lanka, 2015;
1) Active and sizable market: The asset should have active outright sale or repurchase agreement market at all times. That is large number of market participants and a high trading volume.

2) Low market concentration: A diverse group of buyers and sellers in an asset’s market increases the reliability of its liquidity.

3) Capital flight towards quality assets: The market should have shown tendencies to move into these types of assets in a systemic crisis.

**Categories of High Quality Liquid Assets**

High quality liquid assets are categorized into two broad categories by Monetary Board of Central Bank of Sri Lanka, 2015. Assets to be included in each category are those that the bank is holding on the first day of the stressed period, irrespective of their maturity.

1) Level 01 Assets: Include cash in hand, qualifying Central Bank reserves and marketable securities that attract a 0% risk weight under the BASEL II Capital Adequacy Framework.

2) Level 02 Assets: Include level 2A assets and 2B assets up to a maximum of 40% of total high quality liquid assets.

- Level 2A Assets: include qualifying marketable securities and qualifying non-financial corporate debt securities that attract a 20% risk weight under the BASEL II Capital Adequacy Framework and qualifying investments in unit trust, subject to a 15% haircut.
Level 2B Assets: include qualifying non-financial corporate debt securities with an external credit rating between A+ to BBB- and qualifying non-financial common equity shares, subject to a 50% haircut. Level 2B assets are limited to a maximum of 15% of total high quality liquid assets.

Assets to be included in each category with the applicable factors and limitations are indicated below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock of High Quality Liquid Assets</td>
<td></td>
</tr>
<tr>
<td>Level 01 Assets</td>
<td></td>
</tr>
<tr>
<td>Cash in hand</td>
<td>100%</td>
</tr>
<tr>
<td>Qualifying Central Bank balances and reserves in the excess of the Statutory Reserve Ratio (SRR)</td>
<td></td>
</tr>
<tr>
<td>Qualifying marketable securities with a 0% risk weight.</td>
<td></td>
</tr>
<tr>
<td>Level 02 Assets (maximum of 40% of High Quality Liquid Assets)</td>
<td></td>
</tr>
<tr>
<td>Qualifying marketable securities with a 20% risk weight.</td>
<td>85%</td>
</tr>
<tr>
<td>Qualifying non-financial corporate debt securities.</td>
<td></td>
</tr>
<tr>
<td>Qualifying investments in unit trust backed by government of Sri Lanka securities.</td>
<td></td>
</tr>
</tbody>
</table>
Level 02B Assets (maximum of 15% of High Quality Liquid Assets)

| Qualifying non-financial corporate debt securities with an external credit rating between A+ to BBB- | 50% |
| Qualifying non-financial common equity shares. | |
| Total value of stock of High Quality Liquid Assets | |

Table 2.9 Description of High Quality Assets and Limitations

Source: (Monetary Board of Central Bank of Sri Lanka, 2015)

Total Net Cash Outflows

As indicated by Monetary Board of Central Bank of Sri Lanka, 2015 total net cash outflows are defined as the total expected cash outflows minus total expected cash inflows for the subsequent 30 calendar days. Total expected cash outflows are calculated by multiplying the outstanding balances of various categories or types of liabilities and off-balance sheet commitments by the rates at which they are expected to run off or be drawn down. Total expected cash inflows are calculated by multiplying the outstanding balances of various categories of contractual receivables by the rate at which they are expected to flow in up to an aggregate cap of 75% of the total expected cash outflows.
Further Monetary Board of Central Bank of Sri Lanka stresses that banks shall not double count items that is if an asset is included as part of the “stock of high quality liquid assets” the associated cash inflows cannot be counted as “cash inflows”.

Minimum Liquidity Coverage Ratio Requirement

As per Monetary Board of Central Bank of Sri Lanka, 2015 commencing from 1st April 2015, every bank shall maintain liquidity coverage ratio in respect of Rupee Liquidity Minimum requirement for local currency operations and All Currency Liquidity Minimum requirement for the overall operations effective from the dates indicated below;

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>1 April 2015</th>
<th>1 January 2016</th>
<th>1 January 2017</th>
<th>1 January 2018</th>
<th>1 January 2019 onwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Requirement (%)</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2.10 Timelines for Liquidity Coverage Ratio

Source: (Monetary Board of Central Bank of Sri Lanka, 2015)

Further as stipulated by Monetary Board of Central Bank of Sri Lanka, every bank must monitor its liquidity position using the monitoring tools to monitor contractual
maturity mismatch, concentration of funding, available unencumbered assets and liquidity coverage ratio by significant foreign currency.

2.5 BASEL III Implementation in a Sri Lankan Context

BASEL II

Majority of Sri Lankan banks are fully compliant with the BASEL II regulatory requirements. Most banks identifies and measures all material risks faced in its business and ensures that the Bank has adequate capital to support all risks at all times, thus it also ensures that its capital is adequate to absorb losses even under stressed conditions. These details are disclosed to all stakeholders of a Bank through annual report to ensure awareness among them on how the Bank manages its risks.
BASEL III & CAPITAL MANAGEMENT

With the introduction of BASEL III the capital requirements of Sri Lankan banks will increase with an aim to raise the quality, quantity, consistency and transparency of capital base and improve the loss absorbing capacity.

The BASEL III implementation Road Map for Sri Lanka is given below.

Figure 2.2: Implementation Road Map 1 for Basel III in Sri Lanka
With the implementation of BASEL III the banks will be required to increase and also improve the quality of capital. Considering the requirements Sri Lankan banks should initiate steps to automate its capital computation process in terms of Credit and Market Risk which would help to optimise usage of shareholder capital.

Financial System Stability Review (2012) published by the Central Bank of Sri Lanka identifies the new capital and liquidity reforms required to be adopted for the successful
implementation of Basel III. This article identifies importance of improving the Quality and Quantity of capital compared to the requirements of Basel II and the importance of the Liquidity coverage ratio as tool for liquidity management. It states that the Liquidity Coverage Ratio is important at covering short-term mismatches, through the comparison of expected cumulative net cash flows over a 30 calendar day time horizon with high quality unencumbered liquid assets at a banks disposal. The article identifies the importance of Sri Lankan banks to plan business expansions strategically in order manage the capital adequacy and liquidity ratios to comply with Basel III in the long run. In conclusion the Central Bank of Sri Lanka comments considering the favourable capital position in the banking sector in Sri Lanka the effect on business expansion and credit growth due to Basel III implementation will be low.

2.6 Implementation of Basel Accords and the Challenges and Barriers identified for Implementation – A Global Perspective

After the introduction and subsequent implementation of Basel 1 in the late 1980’s the model helped financial institutions across the Globe to evaluate risk on using a common yardstick. However this model was criticized for its shortcomings; mainly for its crude assessment of risk and the inability to identify the sensitivity to risks beyond credit (Lastra: 2004) Hence the Basel II Accord was introduced in 2004 and was fully published in 2006. Banks and financial institutions in over 100 countries adopted this new accord in 2007. However after the financial crisis that affected the banking sector in Western Countries in the latter years of the 2000’s decade the Basel committee started developing a new framework; Basel III which is still in its initial implementation stages across the world.
Implementation of the Basel II and Basel III Accords with the barriers and challenges that have been identified in several countries is discussed below in brief.

2.6.1 United Arab Emirates (UAE)

The UAE has emerged as the financial hub of the Middle East and has a strong financial and services sector. The country has identified the need to develop these sectors to face the eventuality of its crude oil reserves depleting with time and the emphasis of the use of renewable energy worldwide.

Pre Basel II studies were conducted by the University of Sharjah to identify the preparedness of the UAE banking sector on Basel II. The research ‘Implementing Basel II: an investigation of the UAE banks’ Basel II preparations’ (Al-Tamimi, H.A.H; 2008) of The University of Sharjah primarily tried to identify the Level of Awareness on Basel II of the banking sector employees who were directly and indirectly involved in its implementation, giving priority to individuals who were Basel II drivers in their respective banks. The study has tried to identify the awareness of these employees on the positive impacts of Basel II, the cost involved for implementation, the availability of the required resources and the ability to overcome the challenges of implementation.

The study identified that the national and foreign banks in the UAE were ready for the implementation of Basel II since the banking sector employees who were directly involved in the implementation of Basel II had sound knowledge on the key areas tested in the study. The study further concluded that knowledge and awareness regarding Basel II was the key factor for the successful implementation of Basel.
Further this study also identifies the importance of upgrading IT systems, allocation of costs and the human resources element (educational level of employees, providing training on Basel and recruiting specialists) as important factors in the success of Basel II implementation. Data analysis techniques like Anova, Linear Regression and Standard Deviation has been used to identify and evaluate the data collected and to arrive at the findings. This research shows a positive correlation between the above mentioned factors and the dependent variable which is the successful implementation of Basel II.

Even though this study relates to Basel II Accord, the factor for successful implementation remains the same even in the current context for Basel III. This study about implementation of Basel II is the most closely related study to this research.

2.6.2 Pakistan

The research ‘Risk management and Basel Accord Implementation in Pakistan’ by Masood, O. and Fry, J. (2012) discusses the Impact of Basel II implementation on wider regulatory and disclosure practices in Pakistan. This study further identifies several other factors as key barriers to the successful implementation on Basel II in Pakistan like lack of awareness and lack of training and expertise of Basel.

A primary data analysis has been conducted using a survey and the data has been analyzed using statistical methods like Linear Regression and Standard Deviation. The result of the study identifies Human Resources and IT Systems as the key barriers to overcome in Basel Implementation.
Further awareness and technical expertise, minimum capital levels and operational risk factors are taken as barriers for Basel II implementation. It clearly identifies the lack of awareness and technical expertise on Basel as the main reason for slow pace of implementation.

2.6.3 A European Context

A journal written on implementation of Basel II in the Norwich and Peterborough (In United Kingdom) Building Society (Pritchard, J. 2004) identifies the knowledge about Basel II and aligning of current regulatory standards with the Basel II requirements as the key elements for the successful implementation of Basel II.

It further gives emphasis to identify the impact of implementing a new Basel Accord on the existing capital regulations and its effect on business. This study also discusses about the implications of introducing the operational risk factor in Basel II since operational risk was introduced properly through Basel II and used in calculations for the 1st time.

A brief research carried out at Rabobank in the Netherlands identifies the aligning of wider regulatory framework with Basel Accord as the key to successful implementation. (Bruggink, B, and Buck, E. 2002)

2.6.4 India

A study carried out by Amity University in Dubai on the readiness of public sector banks on Basel III implementation in India (Mirchandani, A. and Rathore, S. 2013) analyzes secondary data collected from 5 large public sector banks operating in India.
This study has identified the Tier I and Tier 2 capital ratios as per Basel II between the years 2008 – 2012 and since the Tier I and Tier 2 capital ratio calculation does not have much deviation from Basel II to Basel III, direct analysis of these ratios with the stipulated minimum values for Basel III has been compared.

As per this study the banks analyzed have sufficient capital levels to comply with the guidelines given under the Basel III accord. However the researchers have identified the need to generate awareness in order to ensure 100% Basel III compliance.

2.6.5 Latin America and the Caribbean

An article written on a lecture about the importance of Basel III implementation in Latin America and the Caribbean by Caruana, J: (2010) identifies the role Basel II played in protecting the banking sector of Latin America and Caribbean region from financial meltdown during the worldwide financial crisis between 2007-09. As per the author the regulatory framework adopted under Basel II was the key to regional resilience to the financial crisis.

Although Basel II failed to provide much resilience to the banking sectors of Europe, United States and other developed and emerging countries in Asia, based on the different factors and circumstances Basel II was sufficient to protect the Latin American and Caribbean region during this crisis.

However the article further illustrates the importance of successfully implementing Basel III since Basel II may not be resilient for a financial crisis in present times even for the Latin American and Caribbean region. The article identifies the importance of...
the Capital Adequacy Ratios and Liquidity Calculations under Basel III regulations for the survival of a future financial crisis.

2.6.6 The Main Barriers and Challenges for Implementation of Basel Accord

As per in the above research carried out in different parts of the world relating to the implementation of Basel II and Basel III, a few common barriers and challenges can be identified. The main barriers and challenges identified are Lack of Awareness and Expertise, IT Systems, Cost of Implementation, Accounting and Regulatory Standards (Disclosure Practices) currently prevalent, the Human Resources element, Capital Adequacy and Liquidity requirements.

Even though some research are with regard to Basel II the barriers and challenges identified are the same for Basel III except for Capital Adequacy and Liquidity which have different minimum stipulated levels identified under Basel II and Basel III.

2.7 Advantages of BASEL III

1. Raising the quality, consistency and transparency of the capital base.

It is critical that bank’s risk exposures are backed by a high quality capital base. To this end Switzerland Basel Committee on Banking Supervision (2011) stresses that the predominant form of Tier 1 capital must be common shares and returned earnings and the remainder of the capital base must be comprised of instruments that are subordinated, have fully discretionary non-cumulative dividends or coupons and have neither a maturity date nor an incentive to redeem. Further deductions from Tier 01 and
tier 02 capital instruments have been harmonized to improve the market discipline and the transparency of the capital base.

2. Enhancing risk coverage

One of the key lessons of the crisis has been the need to strengthen the risk coverage of the capital framework. Failure to capture major on and off balance sheet risks, as well as derivative related exposures, was a key destabilizing factor during crisis.

As per Banks for International Settlements (2011) the BASEL committee has completed a number of reforms to the BASEL 2 framework which will raise capital requirements for the trading book and securitization exposures. It further explains a stressed value-at-risk (VaR) capital requirement based on a continuous twelve month period of significant financial stress. The reforms also, raise the standards of the Pillar 2 supervisory review process and strengthen Pillar 3 disclosures.

3. Supplementing the Risk based Capital Requirement

As indicated by Switzerland Basel Committee on Banking Supervision (2011) one of the underlying features of the crisis was buildup of excessive on and off balance sheet leverage in the banking system. The committee therefore is introducing a leverage ratio that is intended to mitigate the risk of the de-stabilizing processes which can damage the financial system and economy through constrained leverage in the banking sector and introduces additional safeguards against model risk by supplementing a risk based measure which is simple, transparent and independent.
4. Reducing procyclicality and promoting counter cyclical buffers

As explained by Switzerland Basel Committee on Banking Supervision (2011) the major reasons for the financial crisis have been the procyclical amplifications of financial shocks throughout the banking system and the broader economy. The tendency of market participants to behave in procyclical manner has been amplified through accounting standards for both mark-to-market assets and held-to-maturity loans, margining practices and through the buildup and release of leverage among financial institutions. Therefore as per Basel Committee on Banking Supervision (2011) they have introduced several measures such as dampen any excess cyclicality of the minimum capital requirement, promote more forward looking provisions, conserve capital to build buffers at individual banks which can be used in stress, achieve the goal of protecting the banking sector from periods of excess credit growth which will ensure that the banking sector serves as the shock absorber, instead of transmitter of risk to the entire economy.

5. Addressing systemic risk and interconnectedness

Excessive interconnectedness among banks also transmits shocks across the financial system and economy. Accordingly, the BASEL committee on financial stability board is developing an integrated approach to financial institutions which could include combinations of capital surcharges, contingent capital and bail-in debt.

The Basel Committee on Banking Supervision (2011) introduces several capital requirements to mitigate the risk arising from firm- level exposures among financial
institutions which will also help to address systemic risk and interconnectedness. These include;

- Capital incentives for banks to use central counterparties for over-the-counter derivatives.
- Higher capital requirements for trading and derivative activities, securitizations and off-balance sheet exposures.
- Higher capital requirements for inter-financial sector exposures
- Introduction of liquidity requirements which penalize excessive reliance on short term interbank funding.

2.8 Disadvantages of BASEL III

Certain authors are of the view that the proposals for capital reform under the new BASEL III accord do not address the fundamental problems with the risk weighting approach, instead have made some improvements with respect to some aspects of the capital management process under the BASEL II regime.

Some of the criticisms made by the authors in the assessment of the capital can be summarized as follows;

1) The model framework problems are not addressed: Blundell-Wignall and Atkinson (2010) argues that the weighting system continues to suffer from the assumption of portfolio invariance or linear weighting that facilitates additivity in the model. Hence it penalizes concentration in portfolios and depends on exposure size in the treatment of counterparty risk.
2) The required level of capital is not dealt within the proposals: There is no BASEL Committee view on the level at which the leverage ratio should be set, nor on how it will interact with the capital weighting approach. Blundell-Wignall and Atkinson (2010) identifies this as a major concern, as these issues are discussed with the banks across diverse jurisdictions with very different banking structures and via qualitative impact studies involving those banks.

3) Mismatch in risk weighting and leverage ratio approaches: Blundell-Wignall and Atkinson (2010) discusses the banks’ ability to arbitrage the capital weights to reduce capital and expand leverage. If the leverage ratio is set too high, banks will have an incentive to arbitrage the weights to ensure they do not hold any more capital than needed. This is a cost minimization exercise for banks that will see regulators effectively setting maximum rather than minimum capital ratios.

4) Problems with the liquidity proposals: if banks are solvent and have adequate capital then the management of their liquidity and funding should in principal, be left up to them. Maturity transformation is a key function of the banking system, therefore Blundell-Wignall and Atkinson (2010) indicates that the liquidity coverage ratio has biasness towards government bonds. Furthermore the liquidity proposals require more liquid assets to be held which other things given, may lower returns. This may increase the incentive for excess risk taking in other areas.

Allen, Milne and Thomas (2010) indicates that BASEL III will force banks to shift their business model from liability management, with the financing found in short term markets as necessary, to asset management in which asset volumes are constrained by the availability of funding. However Allen, Milne and Thomas (2010) argues that once there is a full adjustment, the cost of credit to low risk bank borrowers to will only be
moderately affected but there will be a reduction in availability and higher cost at the riskier end of the credit spectrum. Therefore the authors argue that alternative arrangements are needed for financing of risky exposures if a fall in economic growth is to be avoided.

2.9 Conclusion

This chapter has explored the history of the Basel accords and its implementation and has discussed the disadvantages of Basel II which have led to the development of Basel III.

A comprehensive analysis of Basel III as given in the international guidelines, Central Bank of Sri Lanka draft guidelines and other literature have been illustrated to improve the understanding on the subject and the advantages and disadvantages of Basel III have also been discussed.

Finally scholar articles, research papers and past studies on the implementation of Basel II and Basel III and the main challenges and barriers identified in the successful implementation has been discussed.

The aim of this research will be to independently identify the relationship between the main barrier and challenges and the successful implementation of Basel III. A framework of the research will be built based on the past research material given in this chapter.
Chapter 3 – Methodology

3.1 Introduction

Research is a diligent and systematic inquiry or investigation designed with a process of collecting data, analyzing and reporting of data and findings in order to prove or disprove a Hypothesis.

This chapter identifies and develops a suitable conceptual framework to conduct the research. This framework has been developed based on the literature review which analyzed past research materials and identified methods in which similar research has been carried out in the past.

This chapter also describes the Hypothesis Development based on the conceptual framework which is outlined and identifies the primary and secondary methods of obtaining data to evaluate the developed Hypotheses.

The operationalization is also given which has been used to develop the questionnaire which has been circulated as the primary research.
3.2 Nature and Scope of Research

Research is a restless and ever changing field of study. The importance of making sound decisions has become vital for the success or failure of a business or project, and obtaining the required information to make that decision has become a key feature. In response to this requirement, a formalized means of acquiring information to assist in making such decisions has emerged.

Research is always focused on different areas. For example market research will focus on the demand for a product or service. In this research the perceptions and level of awareness regarding Basel III among employees of the Sri Lankan banking sector has been analyzed along with other identified barriers and challenges like IT Systems, Cost, Accounting and Regulatory Standards and Human Resource element. Trends in the key ratios required for Basel computation in local and foreign banks which will help identify the readiness for successful Basel III implementation in Sri Lanka has also been found using secondary data.

A research or a thesis can be successfully carried in numerous ways. There are many factors that need to be taken into consideration when drawing an outline for the research.
3.3 Brief Overview on Research Techniques

The researcher will have identified and differentiated primary and secondary data collection methods.

Research is mainly divided into 2 types:

1) Primary Research

Researcher collects the required data from independent sources using a number of methods for the purpose of conducting his or her specific research.

Example – Using Interviews with low income individuals to identify their financial hardships

2) Secondary Research

Secondary data is information that is already collected by other researchers in order to conduct a research that is different from the researcher’s own research. However, secondary data gives very important information on certain areas that we cannot independently research.

Example – Using Annual Reports of Banks to identify the Capital Adequacy Ratios to analyze their readiness for Basel III

Either when conducting primary or secondary research, there are many sources and many methods of collecting the necessary data.
This research will try to obtain data to further strengthen or contradict a number of specific studies from around the world conducted in different time periods, as discussed in the literature review, which identify the main barriers and challenges for the successful implementation of the Basel accords.

The next section of this chapter will look at these different methods and justification of the selection of the method that is used for collecting primary data for this thesis.

3.3.1 Primary Data Collection and the rationale for choosing a specific technique

Primary data is the information collected or generated by the researcher for the purpose of the project immediately at hand. Giddens (2001) Sociology: An Introduction

Several methods exist for the purpose of collecting primary data.

1) Interview

Different authors give numerous definitions to the field of interviewing. An interview basically involves two parties, The Interviewer and the interviewee. The interviewer has a different number of questions that he/she asks to obtain the opinion of the interviewee.

Lancaster (2005) identifies 3 types of Interviews:

- Structured Interviews – in this type of interview the researcher uses predetermined, standard set of questions. The interview is formally conducted. After asking the questions the researcher writes down the responses in a standard manner. Long answers
are not expected from the interviewees. This eliminates or greatly reduces interviewer bias.

- Semi-structured Interviews – this type of interview is conducted in a more informal manner compared to a structured interview. But the topics of discussion are predetermined. The researchers has a rough idea on what type of questions that he or she will ask but they are of a flexible nature and can vary depending on the situation or based on answers given to the previous questions. Questions that are asked in one instance may not be asked at from another interviewee. The data collected might be recorded or written down. These interviews are helpful for explorative studies.

- Unstructured Interviews – in this type of interview the interviewee is interviewed for a prolonged period and probed over some answers in order to get a more detailed account of the topic in question. Hence these interviews are called “in-depth Interviews.” There is not any pre determined questions and the interviewees are free to talk about other concerns related to the topic of the interview. These interviews are mainly used for Qualitative Exploratory studies since the Validity of these data is high but the reliability is low.

2) Observation or Ethnography

Observation is one of the cheaper and more effective techniques of data collection. For instance, instead of asking consumers what brands they buy or what television programs they view, a better alternative may be to simply observe what products are bought and what programs are viewed.
Observation is also a method that is commonly used in research to obtain data. This method is used mostly in the field of sociology but can also be used for different areas of research. As explained by Anthony Giddens in his book Sociology – 5th Edition (2006) defines Ethnography as ‘the investigator hangs out or lives with a group, organization or community, and perhaps takes direct part in their activities. Where it is successful, ethnography provides information on the behavior of people in groups, organizations and communities, and also on how those people understand their own behavior.’

Observation can be divided into 2 main areas: Covert and Overt.

Covert research is conducted where it is deemed necessary to observe the subjects in its natural environment.

Overt research is where the subjects are aware of the presence of the researcher. This may affect the behavior of the subjects but this method of overt observation is considered to be ethical compared to Covert observation.

3) Questionnaires

This is the most popular data collection tool used by researchers. Questionnaires involve a series of questions that are asked from all subjects in the research. The questions are aimed to discover key information in the area of research.
Ghauri and Gronhaug (2010) suggest that questionnaires maybe open ended or closed ended. Closed ended questionnaires do not have a choice of answers where open ended questionnaires give the subjects a choice from which to answer.

4) Surveys

Surveys are questionnaires that are sent or administered directly to a selected group of people which maybe several thousands in some instances. This selected group is defined as the population of the research. Surveys are suited to identify or test a theory for a broader scope.

Survey techniques are mostly used in descriptive or explanatory research. In a survey the researcher asks a certain amount of questions from people and tabulates or summarizes the collected data for easy analysis.

3.4 Research Design

This section will focus on the methods that the researcher will use in order to collect data for the research. Primary data will be collected using questionnaires circulated on a sample population of bank employees who are directly and indirectly involved in the implementation of Basel III in their respective organizations. Questionnaires were circulated among employees covering around 16 banks, both local and foreign owned, out of the twenty five licensed commercial banks in the country.

The questionnaires tries to identify the relationship between the main barriers and challenges prevalent for Basel III implementation which were identified through previous studies carried out in different parts of the world.
The responses to the questionnaire were analyzed using Mean, Mode, Linear Regression, Anova and Standard Deviation similar to carried out in researches by Al Tamimi (2008) and Masood and Fry (2012) The SPSS software was used to analyze and calculate the relevant ratios relating to the collected data.

Secondary data was collected by studying Annual Reports and Financial Disclosures among local and foreign banks operating in Sri Lanka. A Total of 17 banks were taken into account. Relevant capital adequacy and liquidity ratios were identified for a period of 5 years for locally owned banks and a period of 3 years for foreign owned banks. This was conducted in a similar was to the analysis on Basel III implementation in India conducted by Mirchandani and Rathore (2013)

3.5 Reliability and Validity

These two concepts are eternally related to the field of research. Neuman (2010) identifies that Reliability and Validity are important in establishing the truthfulness, credibility, or believability of findings.

“Reliability means dependability or consistency. It suggests that the same thing is repeated or recurs under the identical or very similar conditions.”

“Validity suggests truthfulness and refers to the match between a construct, or the way a researcher conceptualizes the idea in a conceptual definition, and a measure”

### 3.6 Conceptual Framework

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Barriers and Challenges</strong></td>
<td></td>
</tr>
<tr>
<td>- Level of Awareness</td>
<td></td>
</tr>
<tr>
<td>- IT Systems</td>
<td></td>
</tr>
<tr>
<td>- Cost</td>
<td></td>
</tr>
<tr>
<td>- Accounting and Regulatory Standards (Disclosures)</td>
<td>H1</td>
</tr>
<tr>
<td>- Human Resources</td>
<td></td>
</tr>
<tr>
<td>- Capital Adequacy &amp; Liquidity</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.1 Conceptual Framework
3.7 Hypotheses Development

The List of Hypothesis

| H1 | Ho1 – There is no relationship between the Level of Awareness and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |
|    | Ha1 – There is a relationship between the Level of Awareness and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |

| H2 | Ho2 - There is no relationship between IT Systems and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |
|    | Ha2 - There is a relationship between IT Systems and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |

| H3 | Ho3 - There is no relationship between Cost and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |
|    | Ha3 - There is no relationship between Cost and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |

| H4 | Ho4 - There is no relationship between the Accounting and Regulatory Standards |

Ha4 - There is a relationship between the Accounting and Regulatory Standards (Disclosure Practices) and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka.

| H5  | Ho5 - There is no relationship between Human Resources and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |
|     | Ha5 - There is a relationship between Human Resources and the Successful Implementation of Basel III in Licensed Commercial Banks in Sri Lanka. |

| H6  | Ho6 – Based on Capital Adequacy and Liquidity ratios licensed commercial banks in Sri Lanka are not ready for successful implementation of Basel III |
|     | Ha6 - Based on Capital Adequacy and Liquidity ratios licensed commercial banks in Sri Lanka are ready for successful implementation of Basel III |

Table 3.1 Hypotheses Development
### 3.8 Operationalization

<table>
<thead>
<tr>
<th>Construct</th>
<th>Dimensions</th>
<th>Indicator</th>
<th>Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Awareness</strong></td>
<td>- Expertise on Basel III</td>
<td>- Level of Expertise and Knowledge of changes in Basel III compared to Basel II</td>
<td>Your level of awareness with regard to the new Basel accord/Basel 3 is sufficient?</td>
</tr>
<tr>
<td></td>
<td>- Challenges of Implementing Basel</td>
<td>- Identification of different Challenges faced in Implementation</td>
<td>Are you aware of the main changes in Basel 3 compared with Basel 2?</td>
</tr>
<tr>
<td></td>
<td>- Compliance with Basel III</td>
<td>- Level of Compliance with Basel III</td>
<td>Does your bank’s Annual Report for 2014 contain relevant information relating to Basel 3 implementation?</td>
</tr>
<tr>
<td></td>
<td>- Local and Foreign Guidelines on Basel III</td>
<td>- Contents of the Basel guidelines and deviations from the local guidelines</td>
<td>Do you think implementation of Basel 3 will face many</td>
</tr>
</tbody>
</table>
Do you think Sri Lanka can be 100% Basel 3 compliant by 2019?

The Central Bank of Sri Lanka has taken the necessary steps to compliment Basel 3 implementation.

Do the local guidelines (issued by CBSL) differ considerably with the International Basel 3 Accord?
<table>
<thead>
<tr>
<th><strong>IT Systems</strong></th>
<th>- Current IT systems and Basel III implementation</th>
<th>- Awareness on the ability of current IT systems to manage Basel III implementation</th>
<th>In your opinion can the current IT system support Basel 3 implementation?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Upgrades for Basel III</td>
<td>- Knowledge of any upgrades or intent for upgrades to the current IT system in the respective bank</td>
<td>System upgrades have commenced in my bank to complement Basel 3 implementation?</td>
</tr>
<tr>
<td></td>
<td>- IT related issues of Basel III</td>
<td>- Identification of IT related issues and knowledge on how to overcome them</td>
<td>Have you/your bank checked whether the Basel 3 capital computations can be carried out in the existing calculation models used for Basel 2?</td>
</tr>
<tr>
<td>Cost</td>
<td>- Costs of implementing Basel</td>
<td>- Cost Computations carried out relating to Basel III</td>
<td>Has sufficient attention been given to address IT/system related issues relating to Basel 3?</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------</td>
<td>-----------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- Allocation of Budgets for Basel III implementation</td>
<td>- Involvement and the stage of budgeting for Basel III in the respective bank</td>
<td>Have you been involved in the Basel 3 implementation cost computation?</td>
</tr>
<tr>
<td></td>
<td>- Drawback of cost of Basel III implementation</td>
<td>- Level of knowledge to minimize costs</td>
<td>Has your bank conducted a detailed cost evaluation on Basel 3 implementation?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Has sufficient financial resources being allocated for Basel 3 implementation?</td>
</tr>
</tbody>
</table>
Is cost a serious barrier for successful implementation of Basel 3?

Your bank has taken the necessary steps to minimize costs of Basel 3 implementation?
<table>
<thead>
<tr>
<th>Accounting and Regulatory Standards (Disclosure Practices)</th>
<th>Calculations used in regulatory practices</th>
<th>Knowledge on Main Regulatory disclosures for Banks</th>
<th>The Calculations used in Basel 2 varies greatly with the calculations recommended in Basel 3?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Currently used</td>
<td>- Knowledge on Main</td>
<td>- Level of Variation of the disclosures required under Basel II compared to Basel III</td>
<td></td>
</tr>
<tr>
<td>- Variations from</td>
<td>- Knowledge on new</td>
<td>Do Sri Lankan banks currently calculate the ratios required for Basel 3 computations?</td>
<td></td>
</tr>
<tr>
<td>Basel II to Basel III</td>
<td>disclosures required under Basel III</td>
<td>Sri Lankan banks do not have the capital structure to give meaningful (be in line with the recommendations of the Accord) results when Basel 3 ratios are computed?</td>
<td></td>
</tr>
<tr>
<td>- Basel III calculations in the current context</td>
<td>- Knowledge on new</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>disclosures required under Basel III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Resources</td>
<td>- Training on Basel III</td>
<td>- Level/Hours of Training given to improve knowledge on Basel III</td>
<td>Does the level of training you have received on Basel 3 satisfactory?</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------</td>
<td>---------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- Basel III specialists</td>
<td>- Level of requirement to recruit Basel III specialists</td>
<td>Does your bank require new specially trained employees to implement BASEL 3?</td>
</tr>
<tr>
<td></td>
<td>- Basel Expertise among bankers in Sri Lanka</td>
<td>- Amount of individuals with Basel III expertise in Sri Lanka</td>
<td>Are there enough individuals with expertise on BASEL to facilitate a smooth transition in Sri Lanka?</td>
</tr>
</tbody>
</table>

Table 3.2 Operationalization Table
3.9 Conclusion

This chapter has developed the methodology for conducting the primary and secondary research based on previous studies carried out on similar subjects which were explained under chapter two. This is used to develop the Research Design.

This chapter presents a brief overview on the methods of primary and research, different techniques and I believe the appropriateness of using Questionnaires in this research is reasonable.

Further the Conceptual Framework and the development of the Hypotheses and Operationalization which has been used to design the questionnaire is discussed.
Chapter 4- Data Collection and Analysis

4.1 Introduction

In this chapter the data collected through Primary and Secondary Research will be critically analyzed to evaluate the research objectives.

Initially the responses to the questionnaires which were filled out by banking sector employees will be analyzed. In this section the 22 questions for which responses were obtained will be broken down into 5 different areas. These questions try to identify the individual perceptions among banking sector employees on the variety of barriers/challenges that are present when implementing the Based III accord in Sri Lanka.

The second part of the analysis will evaluate the data collected from annual reports of several Local and Foreign Licensed Commercial Banks. Three separate ratios in terms of Capital Adequacy and Liquidity will be analyzed to identify whether the Sri Lankan banking sector is in line with the Capital and Liquidity Requirements of Basel III.

The calculation of Capital Adequacy ratios under Basel II and III differs marginally. In Basel III, a figure named additional tier 1 capital is included to the numerator of both Tier 1 and Tier 2 capital ratios. The instruments that can be included as additional tier 1 capital is described in detail in the 2nd chapter of this research under section 2.2.3 – Key Areas of Basel III
At the end of this chapter based on the findings from Primary and Secondary Research, the researcher’s viewpoint with regard to the Research Questions will be presented.

4.2 Pilot Study

A total of 8 questionnaires were circulated among the sample population and feedback was obtained. This is 20% of the total no of questionnaires that were distributed. The feedback obtained in the pilot study was used to improve the questions in the questionnaire when deemed necessary.

4.3 Reliability Analysis

The Cronbach’s Alpha was used to determine the reliability or internal consistency of the analysis. This method is one the most popular techniques to identify the reliability of a study which involves Likert scale questions in a questionnaire or survey.

Using the SPSS software a scale with a Cronbach’s coefficient exceeding 0.70 is considered acceptable. The Cronbach’s coefficient calculated for this research involving the questionnaires was high at 0.98.
4.4 Sample Profile

The profile of the sample is explained using several demographical factors. These factors are

1) Age
2) Gender
3) Level of Education
4) Hierarchy
5) Level of Involvement with Basel III implementation

4.4.1 Age

![Age Distribution Chart]

Figure 4.1 – Age Distribution of Questionnaire Respondents. Source: Questionnaire Data
The pie chart given in figure 4.1 shows the age wise distribution of the respondents of the questionnaire. The age of the respondents was divided into 3 separate categories. The highest no of respondents were from the age category between ages 30 – 39. This comprised of 60% of the respondent population. The no of respondents between the ages of 20 – 29 and 40 - 49 were same with each consisting of 20% of the population.

4.4.2 Gender

![Gender Distribution Chart]

Figure 4.2 – Gender Distribution of Questionnaire Respondents

Source: Questionnaire Data

Bar chart given in figure 4.2 shows the gender distribution among the respondents. Among the 30 respondents 60% was female and 40% was male. It was identified when carrying out the survey that employee directly involved in Basel 3 implementation and who were carrying out Basel 2 regulatory calculations were females.
4.4.3 Level of Education

The educational level of the sample population is divided into 4 categories; Post Graduate Qualification, Degree Qualification, Diploma and Advanced Level. The highest percentage was recorded among the Post Graduate Qualified individuals. Further 30% of the population had a degree level qualification. This shows that the sample population consisted of well-educated bankers.

Source: Questionnaire Date

Figure 4.3 – Education Level of Questionnaire Respondents

The educational level of the sample population is divided into 4 categories; Post Graduate Qualification, Degree Qualification, Diploma and Advanced Level. The highest percentage was recorded among the Post Graduate Qualified individuals. Further 30% of the population had a degree level qualification. This shows that the sample population consisted of well-educated bankers.
The above pie chart (figure 4.4) depicts the Hierarchy of the respondents within their respective organizations. The largest proportion consisted of employees who were in the Middle management (60%) Individuals in the senior management level and non-executive levels were similar at 20% each.

Source: Questionnaire Respondents
4.4.5 Involvement in Basel III implementation

The sample population consisted of employees in Risk Management, Finance and Planning, Compliance, Corporate and SME Credit and Operations. Based on the bank the Basel implementation is handled by one or more different departments. Most commonly involved departments were Risk Management and Finance and Planning while the compliance department of certain banks monitored the adherence to the Basel guidelines.

From the respondents 40% were directly involved in the implementation of Basel III and some of them were involved in the calculation of Basel II ratios which are mandatory requirement of the Central Bank of Sri Lanka

Source: Questionnaire Respondents

Figure 4.5 – Involvement in Basel III Implementation
4.5 Descriptive Analysis of Primary Research Data

The questionnaire was divided into five distinctive areas consisting of five independent variables which were linked to one dependent variable which is the successful implementation of Basel III. (Please Refer Annex 03 for questionnaire details)

4.5.1 Variable: Level of Awareness on Basel III Accord

<table>
<thead>
<tr>
<th>Your level of awareness with regard to the new Basel accord/ Basel III is sufficient?</th>
<th>You are aware of the main changes in Basel III compared with Basel II?</th>
<th>Your bank’s Annual Report for 2014 contain relevant information relating to Basel III implementation?</th>
<th>Do you think the Central Bank of Sri Lanka can be 100% compliant with Basel III by 2019?</th>
<th>Do you think Sri Lanka has taken steps to comply with Basel III accord?</th>
<th>Do the necessary consideration steps to comply with the International Basel III Accord?</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3.20000</td>
<td>3.40000</td>
<td>2.90000</td>
<td>3.40000</td>
<td>3.30000</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>3,4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Std.</td>
<td>0.76112</td>
<td>0.8136</td>
<td>0.95953</td>
<td>0.93218</td>
<td>0.65126</td>
</tr>
<tr>
<td>Dev.</td>
<td>0.78160</td>
<td>0.6620</td>
<td>0.92069</td>
<td>0.86897</td>
<td>0.42414</td>
</tr>
</tbody>
</table>

Table 4.1 Variable: Awareness on Basel III Accord

The table 4.1 shows the descriptive statistics relating to the primary data collected using the questionnaires in terms of the five questions relating to the variable Awareness on Basel III Accord. The mean values of the questions range from 2.5 – 3.4, while the mode values vary based on the question. Some questions have two mode values meaning equal level of response for two answer choices. The values were 2, 3 and 4. Two modes for the same question can be justified since the population consisted for employees in different departments and some were directly involved in Basel III implementation and some were only indirectly involved. The average standard deviation for the set of questions is 0.78160. This is an estimate on the dispersion from the mean.
4.5.2 Variable: Upgrades to IT Systems required for Implementation of Basel III

<table>
<thead>
<tr>
<th></th>
<th>In your opinion can the current IT system support Basel III implementation?</th>
<th>System upgrades have commenced in whether the Basel III capital computations can be carried out in the existing calculation models used for Basel II?</th>
<th>Have you/your bank checked whether the Basel III has sufficient attention been given to IT/system related issues relating to Basel III?</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>2.80000</td>
<td>2.80000</td>
<td>3.10000</td>
</tr>
<tr>
<td>Mode</td>
<td>2,3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.76112</td>
<td>0.88668</td>
<td>0.54772</td>
</tr>
<tr>
<td>Variance</td>
<td>0.57931</td>
<td>0.78621</td>
<td>0.30000</td>
</tr>
</tbody>
</table>

Table 4.2 Variable: Upgrades to IT Systems required for Implementation of Basel III
The table 4.2 depicts the descriptive statistics relating to the primary data collected in connection with the variable upgrades to IT Systems required for Implementation of Basel III Accord. The mean values of the questions range from 2.6 – 3.1, while the mode value is 2 and 3 based on the questions. One question has two mode values meaning equal level of response for two answer choices. Two modes for the same question can be justified since the population consists of a mix of employees who are involved in the IT upgrades required for Basel III implementation and individuals who are not involved.

The average standard deviation for the set of questions is 0.71755. This is an estimate on the dispersion from the mean value of a data set.

4.5.3 Variable: Cost of Implementation of Basel III

<table>
<thead>
<tr>
<th>Have you been involved in the Basel III implementation</th>
<th>Has your bank conducted a detailed cost computation?</th>
<th>Has sufficient financial resources being allocated for Basel III implementation?</th>
<th>Is cost a serious barrier for successful implementation of Basel III?</th>
<th>Your bank has taken the necessary steps to minimize costs of Basel III implementation?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong> Valid</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>
The above table depicted in 4.3 shows the descriptive statistics collected using the questionnaire with regard to the variable Cost of Implementation of Basel III. The mean values are ranging from 1.9000 – 3.0000. A relatively low mean of 1.9000 for the first question suggests that the sample population was not very directly involved with the cost computation for Basel III in their relevant organizations.

The average standard deviation is 0.72246 for this set of five questions. This shows the dispersion of the data set from the mean values.
4.5.4 Variable: Accounting and Regulatory Standards (Disclosure Practices)

<table>
<thead>
<tr>
<th>The Calculations used in Basel II varies greatly with the calculations recommended in Basel III?</th>
<th>Do Sri Lankan banks currently calculate the ratios required for Basel III computations?</th>
<th>Sri Lankan banks do not have the capital structure to give meaningful (be in line with the recommendations of the Accord) results when Basel III ratios are computed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Valid</td>
<td>30</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>3.400000</td>
<td>3.400000</td>
</tr>
<tr>
<td>Mode</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.674665</td>
<td>0.813676</td>
</tr>
<tr>
<td>Variance</td>
<td>0.455172</td>
<td>0.662069</td>
</tr>
</tbody>
</table>

Table 4.4 Variable: Variable: Accounting and Regulatory Standards (Disclosure Practices)

The table 4.4 gives the descriptive statistics for the questions asked to assess the current accounting and regulatory standards or Disclosure practices and its implications on Basel III implementation. The mean values ranges from 3.0000 - 3.40000. The mode
values for the individual questions were 3 and 4. This can be justified since the respondents were from different departments in their respective organizations and some were directly involved in Basel III implementation and others were not.

The average standard deviation is 0.64773 for this set of five questions. This shows the dispersion of the data set from the mean values.

4.5.5 Variable: Human Resources and the Implementation of Basel III

<table>
<thead>
<tr>
<th></th>
<th>Does the level of training you have received on Basel III satisfactory?</th>
<th>Does your bank require new specially trained employees to implement BASEL III?</th>
<th>Are there enough individuals with expertise on BASEL to facilitate a smooth transition in Sri Lanka?</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>2.300000</td>
<td>3.46667</td>
<td>3.100000</td>
</tr>
<tr>
<td>Mode</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.91539</td>
<td>0.62881</td>
<td>0.84486</td>
</tr>
</tbody>
</table>

94
Variance  |  0.83793  |  0.39540  |  0.71379

Table 4.5 Variable: Human Resources and the Implementation of Basel III

The table 4.5 shows the descriptive statistics for the questions relating to the importance of Human Resources for the successful implementation of Basel III. The mean values ranges from 2.30000 – 3.46667. The mode values for the individual questions were 2, 3 and 4. This can be justified since the respondents of the questionnaires were from different departments in their respective organizations and some were directly involved in Basel III implementation and others were not.

The average standard deviation is 0.79635 for this set of five questions. This shows the dispersion of the data set from the mean values.

4.6 Correlation Analysis

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Basel III Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>1) Awareness</td>
<td>0.974</td>
</tr>
<tr>
<td>2) IT Systems</td>
<td>0.910</td>
</tr>
<tr>
<td>3) Cost</td>
<td>0.919</td>
</tr>
<tr>
<td>4) Accounting and Regulatory</td>
<td>0.928</td>
</tr>
</tbody>
</table>
As pre table 4.6, there is a positive correlation between the Level of Awareness and the successful implementation of Basel III. This means that a change in one variable is correlated to the change in the other. The Pearson Correlation Coefficient (r) for this relationship is 0.974, which shows that there is a high positive correlation ship between the Level of Awareness and the Successful Implementation of Basel III.

The Significant Value or the P value is less than 0.05 and in this instance is 0.00. Therefore it can be concluded that there is a statistically significant correlation between these two variables. An increase or decrease in one variable will significantly relate to the increase or decrease in the other variable.

There is a positive correlation between the IT Systems and the successful implementation of Basel III. The Pearson Correlation Coefficient (r) for this relationship is 0.919, which shows a high degree of correlation ship between the IT Systems and the Successful Implementation of Basel III.

The Significant Value or the P value is less than 0.05 and here it is 0.00. Therefore it can be concluded that there is a statistically significant correlation between these two

<table>
<thead>
<tr>
<th>Standards</th>
<th>0.975</th>
<th>0.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>5) Human Resources</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6 Correlation between the Independent Variables and Implementation of Basel III
variables. An increase or decrease in one variable will significantly relate to the increase or decrease in the other variable.

When analyzing the positive correlation between Cost and the successful implementation of Basel III, The Pearson Correlation Coefficient ($r$) is shown as 0.919, which shows a high degree of correlation between the IT Systems and the Successful Implementation of Basel III.

The Significant Value or the $P$ in this instance is 0.00. Therefore it can be concluded that there is a statistically significant correlation between these two variables. An increase or decrease in one variable will significantly relate to the increase or decrease in the other variable.

A positive correlation exists between Accounting and Regulatory Standards (Current Disclosure Practices) and the implementation of Basel III, The Pearson Correlation Coefficient ($r$) is shown as 0.928, which shows a positive correlation between the Accounting and Regulatory Standards and the Successful Implementation of Basel III.

The Significant Value or the $P$ in for this set of questions is 0.00. Therefore it can be concluded that there is a statistically significant correlation between these two variables. An increase or decrease in one variable will significantly relate to the increase or decrease in the other variable.

As given in table 4.6, a positive correlation is evident between Human Resources and the successful implementation of Basel III; The Pearson Correlation Coefficient ($r$) is
shown as 0.975, which shows a high degree of correlation between the Human Resources and the Successful Implementation of Basel III.

The Significant Value or the P here is 0.00. Therefore it can be concluded that there is a statistically significant correlation between these two variables. An increase or decrease in one variable will significantly relate to the increase or decrease in the other variable.

4.7 Hypothesis Testing

As per the literature review in chapter 2 and the conceptual framework under the methodology in chapter 3, the researcher developed several hypotheses relating to the five independent variables and their relationship with the successful implementation of Basel III in order to carry out the research. Based on the analysis of data collected using the primary research the validity of the hypotheses is tested.

4.7.1 H1: There is a relationship between the Level of Awareness and Successful Implementation of Basel III

Model Summary

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.974</td>
<td>.949</td>
<td>.947</td>
<td>.15083</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Awareness
Table 4.7 Model Summary - Level of Awareness and Successful Implementation of Basel III

The above table gives the R and R squared values for the specified relationship. The R value depicts the correlation that exists between the two variables and is 0.974 ("R" Column), which indicates a very high degree of positive correlation between the Level of Awareness and the Successful Implementation of Basel III. The R square value ("R Square" Column) shows how much of the variation in the Dependent Variable, Successful Implementation of Basel III, can be explained by the Independent Variable, Level of Awareness. In this instance it is 94.9% which is very high.

ANOVA\textsuperscript{b}

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Regression</td>
<td>1</td>
<td>11.738</td>
<td>515.933</td>
<td>.000\textsuperscript{a}</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>28</td>
<td>.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Awareness

b. Dependent Variable: Successful Implementation of Basel III

99
Table 4.8 Anova Table – Level of Awareness and Successful Implementation of Basel III

The above table indicates that the Regression Model predicts the dependent variable significantly well. Significant Value (p) calculated is 0.00 which is less than 0.05. This depicts a statistical significance in the calculated regression model and the regression model statistically significantly predicts the outcome of the variable.

**Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.292</td>
<td>.122</td>
</tr>
<tr>
<td>Awareness</td>
<td>.869</td>
<td>.038</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Successful Implementation of Basel III

Table 4.9 Coefficient Table - Level of Awareness and Successful Implementation of Basel III

This table provides the required information to predict the Success of Basel III Implementation and Level of Awareness required and to determine whether the
contribution of the Level of Awareness is statistically significant to the model. The simple regression analysis depicts a significant value less than 0.05. The significant value is 0.000. With reference to the hypothesis developed to identify the relationship between the Level of Awareness and Successful Implementation of Basel III, it was found out using simple linear regression techniques that a relationship exists between the two variables. Hence Ha1 is accepted and Ha0 is rejected. The relationship that exists between the two variables is a positive correlation.

4.7.2 Ha2: There is a relationship between IT Systems and Successful Implementation of Basel III

Model Summary

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.910a</td>
<td>.828</td>
<td>.822</td>
<td>.27581</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), IT Systems

Table 4.10 Model Summary – IT Systems and Successful Implementation of Basel III

The above table gives the R and R squared values for the specified relationship. The R value depicts the correlation that exists between the two variables and is 0.910 ("R" Column), which indicates a high degree of positive correlation between IT Systems and the Successful Implementation of Basel III. The R square value ("R Square" Column)
shows how much of the variation in the Dependent Variable, Successful Implementation of Basel III, can be explained by the Independent Variable, Level of Awareness. In this instance it is 82.8% which is relatively high.

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>10.245</td>
<td>1</td>
<td>10.245</td>
<td>134.679</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>2.130</td>
<td>28</td>
<td>.076</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12.375</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), IT Systems

b. Dependent Variable: Successful Implementation of Basel III

Table 4.11 Anova Table – IT Systems and Successful Implementation of Basel III

Table 4.11 indicates that the Regression Model predicts the dependent variable significantly well. Significant Value (p) calculated is 0.00 which is less than 0.05. This depicts a statistical significance in the calculated regression model and the regression model statistically significantly predicts the outcome of the variable.
Table 4.12 Coefficient Table – IT Systems and Successful Implementation of Basel III

The above table provides the required information to predict the Success of Basel III Implementation and IT Systems and to determine whether IT Systems is statistically significant to the model. The simple regression analysis depicts a significant value less than 0.05. The significant value is 0.000. With reference to the hypothesis developed to identify the relationship between the IT Systems and Successful Implementation of Basel III, it can be identified using simple linear regression techniques that a relationship exists between the two variables. Hence $H_{1}$ is accepted and $H_{0}$ is rejected. This relationship that exists between the two variables is a positive correlation.
4.7.3 Ha3: There is a relationship between Cost and Successful Implementation of Basel III

Model Summary

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.919a</td>
<td>.844</td>
<td>.839</td>
<td>.26233</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Cost

Table 4.13 Model Summary - Cost and Successful Implementation of Basel III

The table 4.13 gives the R and R squared values for the specified relationship. The R value depicts the correlation that exists between the two variables which is 0.919 ("R" Column), this indicates a high degree of positive correlation between Cost and the Successful Implementation of Basel III. The R square value ("R Square" Column) shows how much of the variation in the Dependent Variable, Successful Implementation of Basel III, can be explained by the Independent Variable, Level of Awareness. In this instance it is 84.4% which is relatively high.

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
</table>
Table 4.14 Anova Table – Cost and Successful Implementation of Basel III

Table 4.14 depicts that the Regression Model predicts the dependent variable significantly well. Significant Value (p) calculated is 0.00 which is less than 0.05. This depicts a statistical significance in the calculated regression model and the regression model statistically significantly predicts the outcome of the variable.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td></td>
<td></td>
<td>t</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig.</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Cost
b. Dependent Variable: Successful Implementation of Basel III
a. Dependent Variable: Successful Implementation of Basel III

Table 4.15 Coefficient Table – Cost and Successful Implementation of Basel III

The above table provides the required information to predict the Success of Basel III Implementation and Cost and to determine whether Cost is statistically significant to the model. The simple regression analysis depicts a significant value less than 0.05. The significant value is 0.000. With reference to the hypothesis developed to identify the relationship between Cost and Successful Implementation of Basel III, it can be identified using simple linear regression techniques that a relationship exists. Hence Ha1 is accepted and Ha0 is rejected. The relationship that exists between cost and successful implementation of Basel III is a positive correlation.

4.7.4 Ha4; There is a relationship between Accounting and Regulatory Standards (Disclosure Practices) and Successful Implementation of Basel III

Model Summary

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.16 Model Summary – Accounting Standards and Successful Implementation of Basel III

Table 4.16 gives the R and R squared values for the specified relationship. The R value is 0.910 ("R" Column), which indicates a high degree of positive correlation between Accounting Standards and the Successful Implementation of Basel III. The R square values ("R Square" Column) in this instance it is 86.0% which is relatively high.

### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>10.648</td>
<td>1</td>
<td>10.648</td>
<td>172.663</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>1.727</td>
<td>28</td>
<td>.062</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12.375</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Account Standards
ANOVAb

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>10.648</td>
<td>1</td>
<td>10.648</td>
<td>172.663</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>1.727</td>
<td>28</td>
<td>.062</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12.375</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Dependent Variable: Successful Implementation of Basel III

Table 4.17 Anova Table – Accounting Standards and Successful Implementation of Basel III

Table 4.17 depicts that the Regression Model predicts the dependent variable significantly well. Significant Value (p) calculated is 0.00 which is less than 0.05. This depicts a statistical significance in the calculated regression model and the regression model statistically significantly predicts the outcome of the variable.
Table 4.18 Coefficient Table – Accounting Standards and Successful Implementation of Basel III

The simple regression analysis depicts a significant value less than 0.05. The significant value is 0.000. With reference to the hypothesis developed to identify the relationship between Accounting and Regulatory Standards (Disclosure Practices) and Successful Implementation of Basel III, it can be said using simple linear regression techniques that a relationship exists. Hence $H_a$ is accepted and $H_0$ is rejected. The relationship
that exists between Accounting Standards and successful implementation of Basel III is
a positive correlation.

4.7.5 Ha5: There is a relationship between Human Resources and Successful
Implementation of Basel III

**Model Summary**

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.975^a</td>
<td>.950</td>
<td>.949</td>
<td>.14810</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Human Resources

Table 4.19 Model Summary – Human Resources and Successful Implementation of Basel III

Table 4.19 gives the R and R squared values for the specified relationship. The R value
is 0.975 ("R" Column), which indicates a very high degree of positive correlation
between Human Resources and the Successful Implementation of Basel III. The R
square values ("R Square" Column) in this instance it is 95.0% which is significantly
high.
**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>11.761</td>
<td>1</td>
<td>11.761</td>
<td>536.217</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>.614</td>
<td>28</td>
<td>.022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12.375</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Human Resources

b. Dependent Variable: Successful Implementation of Basel III

Table 4.20: Anova Table – Human Resources and Successful Implementation of Basel III

Table 4.20 depicts that the Regression Model predicts the dependent variable significantly well. Significant Value (p) calculated is 0.00 which is less than 0.05. This depicts a statistical significance in the calculated regression model and the regression model statistically significantly predicts the outcome of the variable.
The simple regression analysis depicted in table 4.21 shows a significant value less than 0.05. The significant value is 0.000. With relation to the hypothesis developed to identify the relationship between Human Resources and Successful Implementation of Basel III, it can be said using simple linear regression techniques that a relationship exists. Hence $H_a$ is accepted and $H_0$ is rejected. The relationship that exists between Human Resources and successful implementation of Basel III is a positive correlation.
### 4.7.6 Summary of the Hypotheses Analysis

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>P Value</th>
<th>R Value</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha1</td>
<td>There is a relationship between Level of Awareness and Successful Implementation of Basel III</td>
<td>0.000</td>
<td>0.974</td>
<td>Accepted</td>
</tr>
<tr>
<td>Ha2</td>
<td>There is a relationship between IT Systems and Successful Implementation of Basel III</td>
<td>0.000</td>
<td>0.910</td>
<td>Accepted</td>
</tr>
<tr>
<td>Ha3</td>
<td>There is a relationship between Cost and Successful Implementation of Basel III</td>
<td>0.000</td>
<td>0.919</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>Hypothesis</td>
<td>Test Statistic</td>
<td>P-value</td>
<td>Significance</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>----------------</td>
<td>---------</td>
<td>--------------</td>
</tr>
<tr>
<td>Ha4</td>
<td>There is a relationship between Accounting Standards and Successful Implementation of Basel III</td>
<td>0.000</td>
<td>0.928</td>
<td>Accepted</td>
</tr>
<tr>
<td>Ha5</td>
<td>There is a relationship between Accounting Standards and Successful Implementation of Basel III</td>
<td>0.000</td>
<td>0.975</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Table 4.22 Hypothesis Analysis (Source: Questionnaire Data)
4.8 Analysis of Secondary Data Collected from Annual Reports of Banks operating in Sri Lanka

4.8.1 Capital Adequacy and Liquidity Ratios among Sri Lankan LCB’s

In order to successfully identify the trends in Capital Adequacy and Liquidity among the Sri Lankan LCB’s, the Tier 1 (Core Capital) and Tier 2 (Total Capital) ratios and the Liquidity Ratio has been obtained from several banks from the Annual Reports. Most local banks had this information readily available since they are listed in the Colombo Stock Exchange and disclosing of these ratios is a Regulatory Requirement. Hence the above mentioned ratios were obtained for the past 5 years (from years 2010 to 2015).

For foreign banks, the financial statements pertaining to the Local (Sri Lankan) operation was only considered as a measure of prudence. However due to detail financial reports not being available for the Sri Lankan operation, the said ratios were only obtained for the past three years.

The Tier 1 (Core Capital) and Tier 2 (Total Capital) and the Liquidity Ratio is taken into account for this study since Capital Adequacy and Liquidity can be considered as the two main aspects of Basel III.

As per the Basel II accord and Central Bank Guidelines a Licensed Commercial Bank is required to have the Capital Adequacy and Liquidity ratios above a specified minimum level. Based on Basel standards the Central Bank of Sri Lanka outlines a minimum level required for Sri Lankan banks.
4.8.2 Tier 1 / Core Capital Requirements

Formula for Computation of Tier 1 Capital Ratio

<table>
<thead>
<tr>
<th>Basel 2</th>
<th>Basel 3¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Equity Tier 1 Capital X 100% / Total Risk Weighted Assets</td>
<td>Common Equity Tier 1 Capital + Additional Tier 1 Capital X 100% / Total Risk Weighted Assets</td>
</tr>
</tbody>
</table>

Tier 1 or Core Capital Ratios of 8 Locally Owned Banks

<table>
<thead>
<tr>
<th>Bank</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDB Bank Plc</td>
<td>12.79%</td>
<td>10.05%</td>
<td>11.16%</td>
<td>12.05%</td>
<td>10.09%</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>10.87%</td>
<td>12.11%</td>
<td>12.63%</td>
<td>12.93%</td>
<td>15.97%</td>
</tr>
<tr>
<td>Nations Trust Bank</td>
<td>13.43%</td>
<td>13.42%</td>
<td>13.82%</td>
<td>14.78%</td>
<td>14.16%</td>
</tr>
<tr>
<td>Sampath Bank</td>
<td>10.20%</td>
<td>10.70%</td>
<td>11.80%</td>
<td>10.08%</td>
<td>8.83%</td>
</tr>
<tr>
<td>Hatton National Bank</td>
<td>10.99%</td>
<td>12.76%</td>
<td>13.85%</td>
<td>12.95%</td>
<td>12.15%</td>
</tr>
<tr>
<td>Bank of Ceylon</td>
<td>10.30%</td>
<td>7.80%</td>
<td>8.30%</td>
<td>8.40%</td>
<td>9.50%</td>
</tr>
<tr>
<td>Peoples Bank</td>
<td>7.90%</td>
<td>9.60%</td>
<td>9.80%</td>
<td>10.40%</td>
<td>10.90%</td>
</tr>
</tbody>
</table>

Seylan Bank Plc | 10.58% | 14.22% | 14.36% | 14.58% | 13.75%
Union Bank of Colombo Plc | 34.82% | 25.63% | 21.24% | 17.90% | 41.70%
Pan Asia Bank | 14.60% | 13.91% | 13.34% | 10.27% | 8.97%
DFCC Bank Plc | 26.20% | 26.70% | 21.00% | 20.80% | 18.70%

Table 4.23 Tier 1 or Core Capital Ratios of 8 Locally Owned Banks

Source: Bank’s Annual Reports: 2010-2014

Figure 4.6 Tier 1 or Core Capital Ratios of 8 Locally Owned Banks

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The above table and line chart (Figure 4.6) shows the Tier 1 capital levels of eleven locally owned Sri Lankan banks. As per the Basel 2 Guidelines the Tier 1 capital requirement is 4% of Risk Weighted Assets (RWA) and the Central Bank of Sri Lanka (CBSL) guideline is 5%.

Bank of Ceylon which is the largest bank in Sri Lanka in terms of Assets and is Government Owned shows the lowest tier 1 capital ratio at 7.80% in 2011 which is still well above the Basel and CBSL guidelines. As per the latest available ratios (for year 2014) the lowest level is depicted by Sampath Bank PLC at 8.83%.

Other banks like Seylan Bank, Commercial Bank and Hatton National bank record the tier 1 capital level above 12% during 2014 and have maintained a figure above 10% during the past 5 years.

Tier 1 or Core Capital Ratios of 6 Foreign banks Operating in Sri Lanka

<table>
<thead>
<tr>
<th>Bank</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSBC Bank</td>
<td>20.27%</td>
<td>22.46%</td>
<td>22.94%</td>
</tr>
<tr>
<td>Citibank</td>
<td>29.67%</td>
<td>33.86%</td>
<td>42.36%</td>
</tr>
<tr>
<td>Deutsche Bank</td>
<td>46.56%</td>
<td>54.26%</td>
<td>45.97%</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>28.00%</td>
<td>30.39%</td>
<td>24.64%</td>
</tr>
<tr>
<td>MCB Bank Ltd</td>
<td>42.60%</td>
<td>48.20%</td>
<td>38.60%</td>
</tr>
<tr>
<td>Public Bank</td>
<td>90.05%</td>
<td>119.07%</td>
<td>100.12%</td>
</tr>
</tbody>
</table>

Table 4.24 Tier 1 or Core Capital Ratios of 6 Foreign banks Operating in Sri Lanka

Source: Bank’s Annual Reports: 2012-2014

Figure 4.7 Tier 1 or Core Capital Ratios of 6 Foreign banks Operating in Sri Lanka

Table 4.24 and Figure 4.7 depicts the Tier 1 or Core Capital levels of 6 Foreign owned banks operating in Sri Lanka. As per these data, the local operation of these foreign owned banks have depicted a Tier 1 capital level well above the Basel 2 or CBSL guidelines.

These banks have Tier 1 capital ratios above 20% and therefore have a considerable safety buffer in terms of capital adequacy.
4.8.3 Tier 2 / Total Capital Requirements

Formula for Computation of Tier 2 Capital Ratio

<table>
<thead>
<tr>
<th>Basel 2</th>
<th>Basel 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Equity Tier 1 Capital + Tier 2 Capital X 100% / Total Risk</td>
<td>Common Equity Tier 1 Capital + Additional Tier 1 Capital + Tier 2 Capital X 100% / Total Risk</td>
</tr>
<tr>
<td>Weighted Assets</td>
<td>Weighted Assets</td>
</tr>
</tbody>
</table>

Tier 2 or Total Capital Ratios of 8 Locally Owned Banks

<table>
<thead>
<tr>
<th>Bank</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDB Bank Plc</td>
<td>14.82%</td>
<td>11.33%</td>
<td>12.41%</td>
<td>17.87%</td>
<td>14.68%</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>12.27%</td>
<td>13.01%</td>
<td>13.84%</td>
<td>13.27%</td>
<td>16.91%</td>
</tr>
<tr>
<td>Nations Trust Bank</td>
<td>15.74%</td>
<td>17.44%</td>
<td>18.18%</td>
<td>20.00%</td>
<td>18.28%</td>
</tr>
<tr>
<td>Sampath Bank</td>
<td>12.90%</td>
<td>11.50%</td>
<td>13.60%</td>
<td>14.22%</td>
<td>13.62%</td>
</tr>
<tr>
<td>Hatton National Bank</td>
<td>12.64%</td>
<td>14.51%</td>
<td>16.63%</td>
<td>16.52%</td>
<td>14.83%</td>
</tr>
<tr>
<td>Bank of Ceylon</td>
<td>13.70%</td>
<td>11.40%</td>
<td>10.90%</td>
<td>12.10%</td>
<td>13.60%</td>
</tr>
<tr>
<td>Peoples Bank</td>
<td>12.80%</td>
<td>14.80%</td>
<td>14.00%</td>
<td>15.00%</td>
<td>14.30%</td>
</tr>
</tbody>
</table>

120
Seylan Bank Plc & 12.07% & 14.57% & 14.37% & 15.75% & 14.73% \\
Union Bank of Colombo Plc & 35.11% & 24.35% & 20.24% & 16.90% & 40.96% \\
Pan Asia Bank & 15.25% & 14.29% & 15.76% & 11.91% & 14.19% \\
DFCC Bank Plc & 23.10% & 25.80% & 19.90% & 19.30% & 17.20% \\

Table 4.25 Tier 2 or Total Capital Ratios of 8 Locally Owned Banks

Source: Bank’s Annual Reports: 2010-2014

Figure 4.8 Tier 2 or Total Capital Ratios of 8 Locally Owned Banks

The above table (Table 4.25) and line chart (Figure 4.8) shows the Tier 2 capital levels of eleven locally owned Sri Lankan banks. As per the Basel 2 Guidelines the Tier 2
capital requirement is 8% of Risk Weighted Assets (RWA) and the Central Bank of Sri Lanka (CBSL) guideline on same is 10%.

As per these data all the banks depict a minimum tier 2 capital ratio in excess of 10% and same has been maintained throughout the duration of the past five years (2010 – 2014)

Tier 2 or Total Capital Ratios of 6 Foreign Banks operating in Sri Lanka

<table>
<thead>
<tr>
<th>Bank</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSBC Bank</td>
<td>20.49%</td>
<td>22.66%</td>
<td>23.12%</td>
</tr>
<tr>
<td>Citibank</td>
<td>29.89%</td>
<td>34.02%</td>
<td>42.55%</td>
</tr>
<tr>
<td>Deutsche Bank</td>
<td>53.22%</td>
<td>59.14%</td>
<td>48.56%</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>28.00%</td>
<td>30.42%</td>
<td>24.66%</td>
</tr>
<tr>
<td>MCB Bank Ltd</td>
<td>43.00%</td>
<td>48.20%</td>
<td>38.60%</td>
</tr>
<tr>
<td>Public Bank</td>
<td>90.38%</td>
<td>119.45%</td>
<td>101.58%</td>
</tr>
</tbody>
</table>

Table 4.26 Tier 2 or Total Capital Ratios of 6 Foreign Banks operating in Sri Lanka

Source: Bank’s Annual Reports: 2012-2014
Table 4.26 and Figure 4.9 depict the Tier 2 or Total Capital levels of 6 Foreign owned banks operating in Sri Lanka. As per these data, the local operation of these foreign owned banks have depicted a Tier 2 capital level well above the Basel 2 or CBSL guidelines.

These banks have Tier 2 capital ratios above 20% and therefore have a considerable safety buffer in terms of capital adequacy.

4.8.4 Comparison of Liquidity Requirements under Basel II and Basel III

<table>
<thead>
<tr>
<th>Bank</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDB Bank Plc</td>
<td>21.55%</td>
<td>21.70%</td>
<td>22.02%</td>
<td>26.22%</td>
<td>23.85%</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>29.74%</td>
<td>26.35%</td>
<td>25.79%</td>
<td>34.05%</td>
<td>33.11%</td>
</tr>
<tr>
<td>Nations Trust Bank</td>
<td>22.13%</td>
<td>21.37%</td>
<td>27.50%</td>
<td>25.30%</td>
<td>26.00%</td>
</tr>
<tr>
<td>Bank</td>
<td>Basel II</td>
<td>Basel I</td>
<td>Basel II</td>
<td>Basel I</td>
<td>Basel II</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
<td>---------</td>
<td>----------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Sampath Bank</td>
<td>26.30%</td>
<td>25.00%</td>
<td>22.40%</td>
<td>27.62%</td>
<td>24.54%</td>
</tr>
<tr>
<td>Hatton National Bank</td>
<td>23.55%</td>
<td>24.48%</td>
<td>23.28%</td>
<td>24.67%</td>
<td>27.25%</td>
</tr>
<tr>
<td>Bank of Ceylon</td>
<td>28.70%</td>
<td>23.40%</td>
<td>21.80%</td>
<td>27.70%</td>
<td>30.80%</td>
</tr>
<tr>
<td>Peoples Bank</td>
<td>21.00%</td>
<td>21.50%</td>
<td>21.80%</td>
<td>25.20%</td>
<td>30.30%</td>
</tr>
<tr>
<td>Seylan Bank Plc</td>
<td>25.07%</td>
<td>21.51%</td>
<td>21.51%</td>
<td>25.74%</td>
<td>27.60%</td>
</tr>
<tr>
<td>Union Bank of Colombo Plc</td>
<td>22.50%</td>
<td>23.38%</td>
<td>23.11%</td>
<td>22.00%</td>
<td>51.10%</td>
</tr>
<tr>
<td>Pan Asia Bank</td>
<td>20.00%</td>
<td>20.19%</td>
<td>21.15%</td>
<td>23.79%</td>
<td>21.88%</td>
</tr>
<tr>
<td>DFCC Bank Plc</td>
<td>51.50%</td>
<td>50.00%</td>
<td>52.00%</td>
<td>40.30%</td>
<td>67.50%</td>
</tr>
</tbody>
</table>

Table 4.27 Comparison of Liquidity Requirements under Basel II and Basel III

Source: Bank’s Annual Reports: 2012-2014
The above table 4.27 and chart 4.10 shows the liquidity ratio among 11 locally owned Sri Lankan banks. As per the Basel II accord the stipulated minimum capital requirement is 20%. The Basel III accord identifies the importance of liquidity by calculating a ratio called Liquidity Coverage Ratio which was not part of Basel II. This is the level of High Quality Liquid assets held by a bank to cover its short term obligations. Types of high quality liquid assets are described in chapter 2.

The level of High Quality Liquid Assets (HQLA) that should be held will differ from bank to bank. This ratio aims to identify the average level of HQLA that should be held a bank to overcome a period of stress (on cash requirement) lasting 30 days.
Although the level of HQLA can be identified using an Annual Report, the level of liquid assets required to survive a stress scenario lasting 30 days for each bank cannot be determined to calculate the ratio.

Since this ratio is not yet calculated in Sri Lankan banks and is not disclosed in the annual reports, it is not possible to directly identify whether Sri Lankan banks can comply with the Basel 3 requisite for Liquidity.

Hence based on the analysis of the above given data hypothesis Ha6 can be accepted partially because even though the current Capital Adequacy Ratios are satisfactory in terms of the Basel III requirements, available data is not sufficient to assess the Liquidity Coverage.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>Capital Adequacy</th>
<th>Liquidity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha6</td>
<td>Based on Capital Adequacy and Liquidity ratios licensed commercial banks in Sri Lanka are ready for successful implementation of Basel III</td>
<td>Accepted</td>
<td>Data not sufficient for conclusion</td>
<td>Partially Accepted</td>
</tr>
</tbody>
</table>
Table 4.28 Capital Adequacy and Liquidity Coverage Hypothesis

4.9 Conclusion

This chapter has analyzed the primary data collected from the questionnaires and used statistical methods like Mean, Mode, Standard Deviation and Linear Regression to identify the relationship between the independent and dependent variables. Anova technique and the SPSS software has been used to obtain the relevant ratios required for analysis.

Secondary data collected from the Annual Reports of 11 locally owned banks and 6 foreign owned banks have been analyzed to identify the current Capital Adequacy and Liquidity Levels and its compliance with Basel III stipulated guidelines.

Based on the analysis of the data from the six hypotheses developed in chapter two pertaining to this research, five have been accepted and one has been partially accepted.
Chapter 5 – Discussion and Findings

5.1 Introduction

This chapter will discuss the findings of the data analysis and identify the connection it has to the previous studies carried out with regard to the same subject. Further this chapter will also briefly discuss the methods to overcome the barriers and challenges based by Sri Lankan Banks in Basel III implementation. The main focus of the discussion and the findings is to add value to the past researchers and to extend those studies further.

Firstly the findings from the primary research will be discussed and related to the previous studies carried out. Afterwards the findings from the secondary data will be discussed briefly. Possible areas for future research will also be identified at the end of this chapter.

5.2 Key Findings from the Analysis of Primary Data

The thirty questionnaires which were obtained from a sample of respondents were aimed at identifying the relationships that existed between the Challenges and Barriers identified under chapter 2 in relation to the successful implementation of Basel III in Sri Lanka.

The 1st seven questions were aimed at identifying the significance of the Level of Awareness and the Successful Implementation of Basel III. The level of awareness referred to the knowledge the respondents had with regard to Basel III. The mean values of the answers provided in this section (especially answers to questions One and
Two) shows that the respondents were satisfied with their Level of Knowledge regarding Basel III. This figure was relatively high since 40% of the respondent population was directly involved in Basel III implementation in their respective organizations. However a similar number of respondents have responded ‘neither/nor’ suggesting that the individuals who are not directly involved in the implementation of Basel III were not satisfied with their level of knowledge with regard to the Basel III accord. It should also be noted that half of the respondents had commented ‘neither/nor’ for question Seven since the Central Bank of Sri Lanka guidelines on Basel III is still in its draft stage. It has been circulated among the banks operating in Sri Lanka, however is not yet finalized.

The questions in this section which were aimed at identifying the level of awareness about Basel III were developed with reference to previous research articles. Data were analyzed using Linear Regression as carried out in Risk Management and Basel-Accord Implementation in Pakistan (Omar Masood and John Fry; 2012)

The results from the analysis depicted a Linear Regression of 0.974 with a significant value (p) of 0.000 which depicts a very high positive correlation between the Level of Awareness and the Successful Implementation of Basel III. This finding is consistent with the previous research carried out on the Barriers and Challenges of Basel implementation like Implementing Basel II: an investigation of the UAE banks’ Basel II preparations (Hussien A. Hassan Al Tamimi; 2008) which identifies Education as a pre-requisite for successful implementation of the Basel Accord. This can be identified as being similar important for Basel III implementation since Basel III is an upgrade to Basel II. Hence generating awareness among all bank employees on the key factors of
the Basel III Accord and the importance of complying with same as per the timelines depicted by Basel Accord and Central Bank of Sri Lanka must be carried out in all banks operating in Sri Lanka to successfully overcome this barrier.

The 2nd part of the questionnaire (questions 8-11) was connected with the identification of the importance of IT Systems in the successful implementation of Basel III. It should be stated that certain respondents informed the researcher that their respective organizations were still mostly using manual methods to calculate the regulatory statistics required for submission to the Central Bank of Sri Lanka as per their guidelines on Basel II. However a clear majority of respondents identified the need for relevant IT Systems to help with the calculation of the Basel III disclosure requirements. Response to question 11 suggests that the respondents were not very satisfied with the level of IT readiness for Basel III implementation. The study carried out by Hussien A. Hassan Al-Tamimi in 2008 identifies the availability of resources like IT Systems and Experienced Individuals on Basel Accord as a key factor of successful implementation. In order to conquer thus barrier; the Central Bank of Sri Lanka and all banks operating in Sri Lanka needs to identify the IT Systems used in foreign countries for monitoring and calculation of Basel III regulatory/disclosure information and encourage the adoption of them systematically.

The findings from the data give a linear regression coefficient of 0.910 with a significant value (p) of 0.000 which shows a relatively high degree of correlation between IT Systems and Implementation of Basel III.
The 3rd set of questions (questions 12-16) focused on the Cost element for Basel III implementation. The questionnaire data with mean values ranging from 1.9000 to 3.0000 depicts that respondents feel adequate costing relating to Basel III is not yet conducted by Sri Lankan banks. The responses to question 14 – 'Has sufficient financial resources being allocated for Basel 3 implementation?' and question 16 – 'Your bank has taken the necessary steps to minimize costs of Basel 3 implementation?' reflect that the process of Basel III implementation in Sri Lanka is still at its infancy. Most respondents had answered 'neither/nor' to these two questions suggesting that cost allocations and budgeting for Basel III implementation is not yet finalized among Sri Lankan banks.

Lower mean values for these questions further suggests that cost allocations for Basel III implementation are still at its primary stages among Sri Lankan banks. The mode value is 2 and 3 for the set of questions.

The findings from the data give a linear regression coefficient of 0.919 with a significant value (p) of 0.000 which shows a high degree of correlation between Cost and Implementation of Basel III. Although 100% compliance to the Basel III Accord is required in 2019; all banks operating in Sri Lanka must allocate costs and carrying out budgeting for successful implementation of Basel III.

The next set of questions focused on the currently practiced Accounting and Regulatory Standards or Disclosure Requirements and its relationship to Basel III implementation. This area of study tried to identify whether calculation of the current Accounting Standards were a barrier to Basel III implementation. The findings depict that there is a
relationship between Basel III implementation and Accounting Standards/Disclosure Practices. Although the data does not clearly relate the connection between the two variables; with the analysis of secondary data which is also carried out in chapter 4, it is clear that the use of disclosure practices which are in line with the requirements of Basel III is necessary for the successful implementation of the Basel III Accord. For example Central Bank of Sri Lanka can introduce calculation of Tier 1 and Tier 2 capital and Capital Adequacy ratios as per Basel III guidelines from present and eliminate the requirement of calculating same as per Basel II guidelines. These findings further strengthen the research Challenges and failure of Implementation of Basel II and reasons to adopt Basel III both in Islamic and Conventional Banks (Muhammed S. Hussain, Dr. Muhammad Ramzan, Muhammed S. Khan Ghauri, WaqasAkthar, WaqarNaeem, Khalil Ahamed; 2012)

The mean values ranges from 3.0000 – 3.40000. This shows that the respondents think that there are certain changes in the disclosure practices from Basel II to Basel III which may be significant. A mean value of 3.00000 for the third question shows that the respondents have not yet been involved in a calculation of Basel III capital adequacy ratios for their organizations in the current context. The mode values for the above set of questions are between 3 and 4.

The findings from the data give a linear regression coefficient of 0.928 with a significant value (p) of 0.000 which shows a high degree of correlation between Accounting and Regulatory Standards (Disclosure Practices) and Implementation of Basel III.
The 5th and final set of questions (questions 20 -22) aimed at identifying the importance of Human Resources in the successful implementation of Basel III. The mode values for questions 20 and 21 were 2 and 4 respectively. This indicates that the respondents feel the level of training on Basel III provided to them is not sufficient and that more trained professionals on Basel III are required for the successful implementation of Basel III.

The regression coefficient for the relationship between Human Resources and Successful Implementation took a very high value of 0.975 with significant value (p) of 0.000. This depicts a High Positive correlation between the two variables. This further strengthens the study conducted on the Implementation of Basel II in UAE Banks (Hussien A. Hassan Al-Tamimi; 2008) In order to successfully overcome this barrier adequate training must be provided to the employees, both directly and indirectly involved in Basel III implementation. Further trained staff needs to be recruited if the organizations expertise on Basel III is relatively low to conduct Basel III implementation and to carry out workshops on Basel III. This will help in the implementation process by improving the Level of Awareness regarding Basel III across the organization.
5.3 Key Findings from the Analysis of Secondary Data

The secondary data was collected through the extensive study of Annual Reports of Local and Foreign Banks for a 5 year period. The foreign owned banks which have local operations have to disclose their financial position to Central bank of Sri Lanka and the general public on a periodic basis. However records prior to a three year period were difficult to obtain for the Sri Lankan operation of certain foreign banks.

The Tier I capital ratios of a majority of banks operating in Sri Lanka which comes under the guidelines of the Central Bank of Sri Lanka were collected. The Tier I capital ratio for eleven locally owned banks was above the stipulated level under the Basel II and Basel III accords and As observed all the eleven banks depicted a minimum tier I capital ratio in excess of 6.0% and this has been maintained consistently during the past five years (from Year ending Dec 2010 to Year ending Dec 2014) The minimum Tier I capital levels under Basel II and Basel III are 4.0% and 6.0% respectively. The minimum Tier I capital as per the Central Bank of Sri Lanka guidelines for Basel II and Basel III is 5.0% and 6.0% respectively.

The local operation of all six foreign banks was well above the stipulated Tier I capital level. These banks have Tier I capital ratios above 20% and therefore have a considerable safety buffer in terms of capital adequacy even under Basel III.

The Tier 2 capital ratios of the eleven locally owned banks which were observed depicted a value above 10.0% with the lowest value being 10.90%. This figure is above the stipulated level given under Basel II and the corresponding guidelines issued by Central Bank of Sri Lanka. These values are 8.0% and 10.00% respectively. The Tier 2
capital level as per the Basel III accord is 8.0%. However the corresponding guideline by Central Bank of Sri Lanka is 12.50%. Hence it should be noted that even though most of the locally owned banks depict a Tier 2 capital ratio above 12.50% during the past 5 years, Bank of Ceylon, NDB Bank PLC and Sampath Bank PLC has had this ratio below the required level on two occasions during the past five year period. Most recently Pan Asia Bank PLC has had a figure lower than the level stipulated in 2013.

It should further be noted that as per Basel III guidelines, in the calculation of Tier 1 and Tier 2 capital, a new element referred to as Additional Tier 1 capital in addition to the Common Equity Tier 1 capital is taken into the equation. This additional capital element may help banks to further improve the Tier 1 and Tier 2 capital levels. However as per the Basel III accord this Additional Capital is developed to absorb losses in an eventuality.

The six foreign banks depict a Tier 2 capital level above 20.0%. Hence they are well above the stipulated levels under Basel and Central Bank of Sri Lanka guidelines.

It should also be noted that the Central Bank of Sri Lanka guideline on the Basel III accord is still in the draft stage and has been circulated among banks for feedback. This has not yet been finalized and the gazette has not been released.

As per the Basel II accord the stipulated liquidity ratio was 20.0%. All the eleven local banks and the six foreign banks show a figure greater than 20.0% during the last few years. However as per the Basel III accord the traditional liquidity ratio has been modified and a new ratio called Liquidity Coverage Ratio needs to be calculated. Since this ratio is not yet calculated in Sri Lankan banks and is not disclosed in the annual
reports, it is not possible to directly identify whether Sri Lankan banks can comply with the Basel 3 requisite for Liquidity. Even though as per the given equation the level of High Quality Liquid Assets can be identified the cash requirement for a 30 day period of Stress will vary from bank to bank and cannot be calculated directly using available data. A type of Trial and Error method will have to be used to identify the level of High Quality Liquid Assets that are required to survive a 30 day period of stress on the cash flows.

5.4 Conclusion

From the analysis and the discussion of the data it can be identified that the each of the five barriers identified has a correlation with the successful implementation of Basel III. It has also related to the previous research material that were discussed in detail in chapter 2 and how the findings of this research have further strengthened the previous researchers.

This chapter has discussed the primary and secondary data analyzed in chapter 4 and has also briefly provided steps that can be taken to overcome each of the discussed barriers/challenges.
Chapter 6 – Summary and Conclusion

6.1 Introduction

This chapter will recap the entire research carried out in brief. The purpose of this research was to identify the Barriers and Challenges to the successful Implementation of the Basel III Accord among banks operating in Sri Lanka and to briefly identify the methods to overcome these barriers and challenges.

Chapter One provided an introduction on the Basel Accord governing banks worldwide and outlined the research objectives. In order to support these objectives, Chapter Two, which analyzed the available literature on the subject, was important. Data relating to the implementation of Basel III and the previous accords were studied in order to justify that the Barriers and Challenges selected are the most crucial.

A basis for the study was identified in Chapter One and a framework was created in the 3rd Chapter – Methodology. When deciding the framework research conducted on Basel Implementation, the outlines of previous research conducted were of utmost importance. Using of Likert Scale questionnaire for Primary Data Collection, use of Anova and Linear Regression and selection of secondary data were influenced mainly by previous studies like ‘Implementing Basel II: an investigation of the UAE banks’ Basel II preparation’ by Al-Tamimi H.A.H (2008), ‘Risk Management and Basel Implementation’ by Masood, O. and Fry, J. (2012) and ‘Why Basel III matters for the Latin American and Caribbean financial Markets’ by Caruana, J. (2010) among several others. The conceptualization framework was developed in this chapter with the aid of the above mentioned literature.
The primary data collected with the aid of the questionnaires and the secondary data obtained from the Annual Reports/Financial Statements of banks operating in Sri Lanka were analyzed in Chapter Four. Different statistical methods like Mean, Standard Deviation and Linear Regression were used to identify the relationships between the successful implementation of Basel III and the identified barriers and challenges.

6.2 Recommendations of the Study

The 5th Chapter was a discussion on the analysis of the data carried out in the Chapter Four. From the data analyzed and the trends identified using the Simple Regression Method it was concludes that the Barriers and Challenges identified in this research were all positively correlated with the successful implementation of Basel III.

The Pearson’s Correlation Coefficient was very high for factors like Level of Awareness and Human Resources (0.974 and 0.975 respectively) which depicted their importance for the implementation of Basel III. This further strengthens the previous studies carried out on the subject. After identifying the relationship between the barriers and the implementation of Basel III, methods to overcome these barriers are briefly discussed.

The secondary data was evaluated to identify readiness of Sri Lankan banks for Basel III implementation by comparing the current Capital Adequacy Ratios and Liquidity Ratio by collecting data for a period ranging from 3 – 5 years through the Annual Reports.
As per the Capital Adequacy Calculations for Tier 1 and Tier 2 capital the locally owned banks and the foreign owned banks depicted a satisfactory standing. During the last 5 years only on a very few instances have any bank operating in Sri Lanka has recorded a ratio below the minimum stipulated by the guidelines. Furthermore this was only for Tier 2 capital stipulated under Basel III. The minimum Tier 1 capital ratio as per in Basel II and Basel III has always been satisfied.

The liquidity ratio under Basel II cannot be directly compared with Basel III, since Basel III has identified a new ratio called Liquidity Coverage Ratio for the calculation of the Liquidity requirement.

Hence it can be concluded that the barriers and challenges identified in this research are directly related to successful implementation of Basel III and methods must be identified to overcome these to make Basel III implementation a success in Sri Lanka. Learning of this study has direct implications to Basel Implementation in Sri Lanka and other similar emerging markets.
6.3 Scope for Future Research

Further research can be conducted to identify barriers when the implementation of Basel III is actively in motion. A covert study can identify the employee reaction towards the new accord and the resistance, if any, towards its implementation.

The readiness of Sri Lankan banks for Basel III implementation can be further studied when information like Liquidity Coverage and Stressed Capital Adequacy Ratios are disclosed in the Annual Reports which certain local banks are already planning to disclose in their annual reports for year 2015, which will be published prior to 31st of March 2016.
References


Annexure

Annex 1 – Basel III Transitional Phase

<table>
<thead>
<tr>
<th>Components of Capital</th>
<th>Observation Period</th>
<th>Standard in force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Equity Tier 1 (CET 1)</td>
<td>4.50%</td>
<td>4.50%</td>
</tr>
<tr>
<td>Capital Conservation Buffer</td>
<td>-</td>
<td>0.625%</td>
</tr>
<tr>
<td>Minimum CET 1 + Capital Conservation Buffer</td>
<td>4.50%</td>
<td>5.125%</td>
</tr>
<tr>
<td>Surcharge on Domestic Systemically Important Banks (D-SIBs)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional Tier 1 Capital</td>
<td>1.50%</td>
<td>1.50%</td>
</tr>
<tr>
<td>Minimum Tier 1 Capital</td>
<td>6.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Minimum Total Capital Ratio + Capital Conservation Buffer</td>
<td>10.00%</td>
<td>10.625%</td>
</tr>
<tr>
<td>Minimum Total Capital Ratio</td>
<td>10.00%</td>
<td>10.625%</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>+ Capital Conservation Buffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Capital Surcharge on D-SIBs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.00%</td>
<td>10.625%</td>
</tr>
<tr>
<td>Countercyclical Buffer</td>
<td>As and when necessary</td>
<td></td>
</tr>
<tr>
<td>Leverage Ratio</td>
<td></td>
<td>Observation Period</td>
</tr>
</tbody>
</table>

**Source:** Basel III Implementation – Basel Committee on Bank Supervision (2011)
Annex II – Phase in Arrangement (Shading includes transition periods – all dates as of 1st January)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel run - 1 Jan 2013 - 1 Jan 2014</td>
<td>3.5%</td>
<td>4.0%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>Leverage Supervisory monitoring</td>
</tr>
<tr>
<td>Minimum Common Equity Capital Ratio</td>
<td>3.5</td>
<td>4.0%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>Leveraged Supervisory monitoring</td>
</tr>
<tr>
<td>Capital Conservation Buffer</td>
<td>1.875</td>
<td>0.625%</td>
<td>1.25%</td>
<td>%</td>
<td>2.5%</td>
<td>Minimum common equity plus</td>
<td>3.5</td>
<td>4.0%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Migrating on to Pillar 1</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>capital conservation buffer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase-in of deductions from CET 1 (including amounts exceeding the limit for DTAs, MSRs and financials)</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Tier 1 Capital</td>
<td>4.5</td>
<td>%</td>
<td>5.5%</td>
<td>6.0%</td>
<td>6.0%</td>
<td>6.0%</td>
<td>6.0%</td>
<td>6.0%</td>
<td></td>
</tr>
<tr>
<td>Minimum Total Capital</td>
<td>8.0</td>
<td>%</td>
<td>8.0%</td>
<td>8.0%</td>
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<td>8.0%</td>
<td>8.0%</td>
<td>8.0%</td>
<td></td>
</tr>
<tr>
<td>Minimum Total</td>
<td>8.0</td>
<td>%</td>
<td>8.0%</td>
<td>8.0%</td>
<td>8.625%</td>
<td>9.25%</td>
<td>%</td>
<td>10.5%</td>
<td></td>
</tr>
</tbody>
</table>

154
<table>
<thead>
<tr>
<th>Capital plus conservation buffer</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Phased out over 10 year horizon beginning 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital instruments that no longer qualify as non-core Tier 1 or Tier 2 capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquidity coverage ratio</th>
<th>Observations on period begins</th>
<th>Introduce min. standard</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net stable funding ratio</td>
<td>Observations on period begins</td>
<td>Introduce min. standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annex III – Questionnaire used for Primary Data collection

Dear Participant,

I invite you to participate in a research study entitled “Barriers and Challenges in Implementing BASEL 3 in Licensed Commercial Banks in Sri Lanka.” I am currently enrolled in the MBA program at University of Sri Jayawardhanapura, and am in the process of writing my Master’s Thesis. The enclosed questionnaire has been designed to collect information on Main Barriers in Implementing Basel 3.

Your views will be appreciated and will help decide research findings. Thank you in advance for taking the time to complete the questionnaire.

Name of the Bank: ..............................................................

Department: ..............................................................

Designation: ..............................................................

Please tick where appropriate.

Demographic Analysis (Please tick at appropriate)

1) Age

<table>
<thead>
<tr>
<th>Under 20 years</th>
<th>20 – 29 years</th>
<th>30 -39 years</th>
<th>40 – 49 years</th>
<th>50 year and above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

157
2) Gender

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3) Level of Education

<table>
<thead>
<tr>
<th>Advanced Level Qualification</th>
<th>Diploma Qualification</th>
<th>Degree Qualification</th>
<th>Post Graduate Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4) Hierarchy

<table>
<thead>
<tr>
<th>Senior Management</th>
<th>Middle Management</th>
<th>Non-Executive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5) Involvement in Basel Implementation

<table>
<thead>
<tr>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Your level of awareness with regard the new Basel accord/Basel 3 is sufficient?</td>
<td>5</td>
</tr>
<tr>
<td>You are aware of the main changes in Basel 3 compared with Basel 2?</td>
<td>5</td>
</tr>
<tr>
<td>Your bank’s Annual Report for 2014 contain relevant information relating to Basel 3 implementation?</td>
<td>5</td>
</tr>
<tr>
<td>Do you think implementation of Basel 3 will face many challenges?</td>
<td>5</td>
</tr>
<tr>
<td>Do you think Sri Lanka can be 100% Basel 3 compliant by 2019?</td>
<td>5</td>
</tr>
<tr>
<td>The Central Bank of Sri Lanka has taken the necessary steps to compliment Basel 3 implementation</td>
<td>5</td>
</tr>
<tr>
<td>Do the local guidelines (issued by CBSL)</td>
<td>5</td>
</tr>
<tr>
<td>Question</td>
<td>Rating</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>differ considerably with the International Basel 3 Accord?</td>
<td></td>
</tr>
<tr>
<td>In your opinion can the current IT system support Basel 3 implementation?</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>System upgrades have commenced in my bank to complement Basel 3</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>implementation?</td>
<td></td>
</tr>
<tr>
<td>Have you/your bank checked whether the Basel 3 capital computations can</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>be carried out in the existing calculation models used for Basel 2?</td>
<td></td>
</tr>
<tr>
<td>Has sufficient attention been given to address IT/system related issues</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>relating to Basel 3?</td>
<td></td>
</tr>
<tr>
<td>Have you been involved in the Basel 3 implementation cost computation?</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>Has your bank conducted a detailed cost evaluation on Basel 3</td>
<td>5 4 3 2 1</td>
</tr>
<tr>
<td>implementation?</td>
<td></td>
</tr>
<tr>
<td>Has sufficient financial resources being</td>
<td>5 4 3 2 1</td>
</tr>
</tbody>
</table>

160
<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is cost a serious barrier for successful implementation of Basel 3?</td>
<td>5</td>
</tr>
<tr>
<td>Your bank has taken the necessary steps to minimize costs of Basel 3?</td>
<td>5</td>
</tr>
<tr>
<td>The Calculations used in Basel 2 varies greatly with the calculations recommended in Basel 3?</td>
<td>5</td>
</tr>
<tr>
<td>Do Sri Lankan banks currently calculate the ratios required for Basel 3 computations?</td>
<td>5</td>
</tr>
<tr>
<td>Sri Lankan banks do not have the capital structure to give meaningful (be in line with the recommendations of the Accord) results when Basel 3 ratios are computed?</td>
<td>5</td>
</tr>
<tr>
<td>Does the level of training you have received on Basel 3 satisfactory?</td>
<td>5</td>
</tr>
<tr>
<td>Does your bank require new specially trained employees to implement BASEL 3</td>
<td>5</td>
</tr>
</tbody>
</table>
Are there enough individuals with expertise on BASEL to facilitate a smooth transition in Sri Lanka?

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
</table>