

**A COMPARATIVE ANALYSIS OF DERIVATIVE REGULATION FOLLOWING
THE GLOBAL FINANCIAL CRISIS: AN EMERGING MARKETS
PERSPECTIVE**

NQOBILE N MPALA

STUDENT NUMBER: 612M2693

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF

MASTER OF COMMERCE (FINANCIAL MARKETS)

IN THE

DEPARTMENT OF ECONOMICS AND ECONOMIC HISTORY

RHODES UNIVERSITY, GRAHAMSTOWN

JANUARY 2015

SUPERVISOR: ROBERT STUART

ABSTRACT

The international financial environment has become riskier due to the recent developments in product offerings and failure of regulation to keep abreast with these changes. The Global Financial Crisis exposed inadequacies of regulation, thus consensus on the need for comprehensive and uniform regulation was made by G-20 member states. Imposing exchange trading, clearing, reporting and capital requirements on the derivatives market are some of the ways of dealing with the problems caused by lax regulatory oversight. In this study, through the comparative analysis of derivatives regulation in South Africa, Brazil, India and Turkey, it was established that emerging countries are taking active steps to implement the G-20 agreement. Uniformity in the core rules was noted, with differences in the supportive legislation. Country specific rules which support the macroeconomic factors that are faced by these countries and the infrastructure available for regulatory execution are used amongst countries. The study concluded that current regulation in emerging countries is accommodative and regulatory differences are in line with economic factors in each country.

Keywords: *Derivatives regulation, Emerging markets*

DECLARATION

Except where explicitly stated otherwise and acknowledged, this thesis is wholly my own work and has not been submitted to any other University, Technikon or College for degree purposes.

ACKNOWLEDGEMENTS

Immeasurable gratitude and deepest appreciation goes to the following people for the support and help extended during my master's tenure:

The Mpala Family, thank you for the love and financial support throughout this arduous journey. You made the load so much easier.

My husband, Edgar Samkange, for all the times you were my advisor, editor, teacher and friend thank you. Your support has been invaluable.

Lynsey and Taurai, thank you for all the laughter and words of encouragement when the workload seemed too much.

Rob Stuart, my supervisor, I am grateful for your advice, wisdom and unparalleled guidance and support throughout this project.

To all those I forgot to mention by name, your help didn't go unnoticed. Thank you too. You are the real MVPs.

ACRONYMS

CCP	Central Clearing Party
CD	Credit Derivative
CDO	Credit Debt Obligation
CEA	Commodity Exchange Act
CFMA	Commodity Futures Modernisation Act
CFTC	Commodity Futures Trading Commission
CMB	Capital Markets Board
CRMPG	Counterparty Risk Management Policy Group
CVM	Comissao de Valores Mobiliarios
DFA	Dodd Frank Act
EMIR	European Market Infrastructure Regulation
FMA	Financial Markets Act
FSB	Financial Stability Board
GFC	Global Financial Crisis
G20	Group of Twenty
MBA	Mortgage Based Assets
NFA	New Financial Architecture
OTC	Over the Counter
PWG	Presidents Working Group
RBI	Reserve Bank of India
SEC	Securities and Exchange Commission
TR	Trade Repository
UK	United Kingdom
US	United States

TABLE OF CONTENTS

Abstract	i
Declaration	ii
Acknowledgements	iii
Acronyms	iv
Table of Contents	v
List Of Figures	vi
 CHAPTER ONE: INTRODUCTION	 1
 CHAPTER TWO: FINANCIAL CRISES AND DERIVATIVES MARKET REGULATION HISTORY	 5
2.1 Financial crises	6
2.2 The role of credit derivatives in the 2007 Global Financial Crisis	8
2.3 History of derivatives market regulation	12
2.4 Conclusion	188
 CHAPTER THREE: REGULATION: THE CASE OF DEVELOPED AND EMERGING COUNTRIES	 18
3.1. Country specific regulation	20
3.1.1 The United States: Dodd Frank Wall Street reform and Consumer Protection Act.	20
3.1.2 Europe: The European Market Infrastructure Regulation (EMIR) No 648/2012.	23
3.1.3 South Africa: The Financial Markets Act (FMA) 19 of 2012 and Financial Markets Act Regulations	26
3.1.4 Brazil	299
3.1.5 India	30
3.1.6 Turkey	322
3.2 Developed versus Emerging market regulation	333
3.3 Conclusion	35
 CHAPTER FOUR: COMPARISON OF REGULATION IN SOUTH AFRICA, BRAZIL, INDIA AND TURKEY	 37
4.1 Registration of market participants	377
4.2 Exchange trading platforms	388

4.3 Centralised clearing/ Central Clearing party	399
4.4 Trade Reporting and Trade Repositories (TRs)	422
4.5 Capital Requirements	455
4.6 Margin Requirements	466
4.7 Possible explanations for regulatory disparities	477
4.8 Conclusion	533
 CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS	 54
5.1 Major Findings	544
5.2 Recommendations and Areas of Further Study	577
 REFERENCES	 58

LIST OF TABLES AND FIGURES

Table 4.1: Major CCPs in the world	41
Table 4.2: Major Trade Repositories	44
Figure 4.1: GDP Growth (Annual %)	50

CHAPTER ONE

Introduction

Warren Buffet describes derivatives as “....time bombs for the economic system” and “financial weapons of mass destruction” (Berkshire Hathaway Inc, 2002: 13). The recent financial crisis highlighted the detrimental effects that could arise from the excessive use of certain types of derivatives. In the United States, for example, credit default swaps were used to securitise mortgage-based securities, creating collateralised debt obligations (CDO's) which contributed to the collapse of certain banks (Jackson and Miller, 2013). An example is Lehman Brothers, due to its large positions in subprime mortgages and related derivatives, suffered losses of \$613 billion which led to its bankruptcy in 2008 (Siskos, 2013). These ‘exotic’ derivatives, the embodiment of innovativeness, were complex and opaque (regarding the associated risk) and could not be properly priced (Crotty, 2008). This was compounded by the fact that these derivatives were far removed from the underlying and therefore inherently non-transparent. Boorman (2009) argues that the complexity of these products renders them legislatively uncontrollable; their design is difficult to comprehend, even to the mathematically gifted.

Bankers, pursuing profits from the surging demand for these products, perpetuated the creation of complicated derivative products. Using the principle of ‘originate and distribute’ in buoyant markets, increased trades, led to higher fee income for bankers without taking on the excessive risks (Crotty, 2008). This was aggravated by the fact that some trades could be carried out ‘off balance sheet’, as such, transparency regarding the size of the market and extent of the transactions between major firms could be seriously understated (Dodd, 2003). According to Nystedt (2004) the resulting concealment of the financial position of one (or both) of the parties to a transaction would aggravate counterparty risk. An example is the American International Group's (AIG) near bankruptcy in 2008 when it posted a \$99 billion loss, requiring a bailout of over \$180 billion from the government (Barofsky, 2012). Large American and foreign firms would also have suffered tremendous losses arising from their contracts with AIG had the bailout not been provided. It is clear that the misuse, overuse and mismanagement of

derivatives can have serious direct and indirect consequences, and that the need for more disclosure of information and regulation of derivatives has never been greater.

Derivatives were originally defined as financial contracts whose value is derived either from the value of an underlying asset or an instrument in the underlying (FSB, 2012). There are two broad categories of derivatives, namely futures and options contracts. Futures are financial contracts which obligate the buyer to purchase (or a seller to sell) an asset at a predetermined price and future date (Hull, 2008). An option, on the other hand, gives the buyer the right *but not the obligation* to purchase (or a seller to sell) an asset at a specific price and date (Kolb, 1997). Participants in these types of derivatives markets are either hedgers or speculators. Hedgers use derivatives to safeguard their assets from adverse changes in value; in contrast, speculators aim to profit by anticipating changes in prices or credit events by entering into derivative contracts. As noted by Jarrow and Turnbull (1999:6), “Hedging / risk reduction and speculation / risk augmentation are flip sides of the same coin” and are at the opposite sides of each derivative transaction.

Despite the adverse effects, derivatives provide social benefits. Liquidity enhancement and the expansion of funding opportunities in financial markets result from their use; more participants covering risk by entering into derivative contracts lead to increases in liquidity through rising trade volumes, and funding opportunities are increased due to the fact that projects are secured (Jackson and Miller, 2013). Derivatives can also serve to limit the volatility of companies’ cash flow, since a minimum upfront investment is required when entering into a contract. This in turn assists in more reliable forecasting, higher capital productivity and lower capital costs, ultimately contributing to economic growth (Dutch Borse Group, 2009).

Crotty and Epstein (2009) argue that the uncontrolled increase in the use of derivative products that bear little or no relationship to the original concept, and the associated costs, mean that the era of the ‘New Financial Architecture’ (NFA) has manifestly come to an end. Gone are the days when the ‘light touch’ regulation of commercial banks, investment banks and hedge funds was sufficient to avert crises in the financial world. The Financial Stability Board (FSB) and the G-20 countries have identified certain features of over the counter (OTC) derivatives markets, such as interconnectedness, substitutability and aggregate exposures, as having the potential to amplify systemic risk in the financial

markets (FSB, 2012). This has led to an agreement to overhaul the global derivatives markets through regulation designed to increase counterparty risk management and promote exchange traded derivatives markets.

In the developed world, Europe and America have instituted laws to ‘safeguard their financial turf’. The Dodd-Frank Wall Street Reform and Consumer Protection Act was implemented in America and the European Market Infrastructure Regulation (EMIR) in Europe (Quaglia, 2013). These acts have a common purpose, to enhance transparency and investor protection within the market. As a result all standardised OTC contracts should be traded on exchanges or electronic platforms, and clearing of OTC derivative contracts should take place via central counterparties and be reported to trade repositories. Accountability and transparency should also be enhanced as the contracts are guaranteed by the exchange (South African National Treasury, 2012). A deterrent for non-centrally cleared contracts would be implemented through higher capital requirements.

While emerging markets were, as a result of both banking regulation and exchange controls, sheltered from the direct (financial) impact of the financial crisis, action has been taken to improve market safety. The G20 recommendations formed the basis of the Financial Markets Bill (FMB) that was passed in South Africa in 2011. The Bill aims to enhance the scope of regulation of OTC markets, improve risk management, boost cooperation and data sharing between local and foreign regulators and increase investor protection by augmenting transparency and disclosure (National Treasury, 2011). Another example of an emerging market response is Turkey, where new regulation was instituted after the financial crisis; the Capital Markets Law was implemented in 2012 with the objective of regulating, supervising and providing secure and orderly functioning capital markets (Budak and Degertekein, 2012,).

Against this background, the question that will be addressed in this study is: How did the “fragile five” Morgan Stanley (2013) (i.e. South Africa, Turkey, India, Brazil and Indonesia¹) which share macroeconomic problems such as endemic current account deficits, high inflation and budget deficits, react to the financial crisis. The question will be addressed from two perspectives: Firstly, changes in derivatives regulation in these

¹ Indonesia is not considered here as a result of relevant research papers only being available in the native Bahasa – Indonesian language.

countries post 2009 will be compared with those adopted in the advanced economies and secondly, to consider any macroeconomic differences between the “fragile five” that could explain any differences found in the regulatory responses adopted.

The analysis will be supported through the use of illustrative data sourced from various reports and journal articles. These include, *inter alia*, the World Federation of Exchanges (WFE), the Johannesburg Stock Exchange (JSE), the International Options Market Association (IOMA), the Bank of International Settlements (BIS), the South African National Treasury and the Financial Services Board.

The rest of this study is arranged as follows: Chapter 2 provides an overview of financial crises and the history of derivatives regulation. In this chapter, past crises and historical trends in regulation are explored; the role derivatives played in the recent financial crisis is discussed. Chapter 3 provides a comparison between developed and emerging countries in terms of changes to existing regulation. Chapter 4 provides a specific focus on regulatory trends in South Africa, Brazil, India and Turkey. Chapter 5 concludes, presenting major findings and recommendations for further research.

CHAPTER TWO

HISTORICAL OVERVIEW OF FINANCIAL CRISES AND DERIVATIVES MARKET REGULATION

A financial system is a conduit for the inter-temporal smoothing of expenditure by firms and households as well as being used for the transfer and sharing of risk. Allen and Gale (2001) note that forms of financial systems are country specific; the types of securities used in one country may differ from those of another. The level of investment needs and institutions available are unique in any market, resulting in distinct securities markets. During the past twenty years, the global financial system has evolved in various aspects. In a bid to globalise markets exchange controls have been relaxed, with the ensuing increased capital flows leading to greater interest rate volatility. In addition, Tickell (2000) notes that these transformations in financial markets have contributed to an increase in the creation of new securities, such as derivatives. While the original *raison d'être* for derivatives was to enable investors to manage risk by hedging against the effects of volatility in the financial markets, Tickell (1996) argues that their widespread use can be destructive; the misuse and abuse of derivatives instruments can trigger cascading losses in the financial system as a whole, with interrelationships between the financial markets creating global 'systemic' risk. This may explain how a local crisis like the American subprime meltdown in 2007 turned into a global financial crisis.

Derivatives regulation has, since the Global Financial Crisis, been topical internationally in the supervisory and financial communities. To examine this renewed interest in market regulation, this chapter highlights a few prominent episodes in the history of financial crises. This is followed by a discussion on the crucial role played by derivatives in fanning the global crisis, and any differences between this and previous crises considered. The chapter concludes by discussing the key highlights of pre-crisis regulatory changes.

2.1 Financial crises

Financial crises have been a recurring phenomenon throughout the history of the financial world and are therefore not as rare as they are often perceived to be. Bordo *et al* (2001) found that the frequency of crises in the 1990s has almost doubled compared to the Gold Standard and Bretton Woods eras. While new crises tend to appear in different guises, Acharya (2013) argues that there are some common underlying economic factors; these include, *inter alia*, poor regulatory oversight, excess exuberance, and market and banking failures.

Allen *et al* (1993) note that the series of savings and loans crises, which occurred between 1980 and 1989, saw more than 700 US savings and loan associations going under due to regulatory loopholes which allowed institutions to lend long-term at fixed rates using short-term funds. Adequate capital could not be attracted at the time of interest rates increasing, leading to the insolvency of these institutions. Well before the last of these crises, regulators had started working on the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (Chancellor, 1999); before the Act took effect, however, two further crises occurred. The most noteworthy was “Black Monday” (which took place in 1987) with a stock market crash which spread globally. According to Anderson (2000), the collapse in global stock markets was due to high-frequency trading programmes that kept selling stocks whose prices were falling. A notable event followed in 1989 when the junk-bond market collapsed and triggered a recession in the United States (US). In July 1989, with higher interest rates leading to the returns on high-yield bonds turning negative, a wave of selling and losses ensued. Bond holders lost a significant amount of capital, causing a temporary market collapse with Mackay (1996) regarding the crash as having been initiated by the fifth largest bank (Drexel Burnham Lambert) filing for bankruptcy due to its exposure to junk bonds. It may be argued that, given the provisions of the Act, lenders took advantage of the fact that regulation was not yet in place and capitalised through excessive dealing in bonds; artificial price increases resulted which led to the crash.

The “Tequila crisis”, as it has become known, followed in 1994. Mishkin (1999) argues that a reversal in Mexican monetary policy, where capital controls were removed, led to increased instability in financial markets and the start of the crisis. Increased interest rates in turn caused the need for a sudden devaluation of the Mexican peso; investors exited the market, bond prices fell and the crash followed. Also the result of activity in the financial sector, the Asian crisis in 1997 and the “Dotcom bubble” in 2002 occurred. The Thai Baht collapsed when the government was forced by economic conditions to float its currency on the open market, leading to a devaluation of the baht. Thailand was at that time burdened by foreign debt which had been used extensively for the financing of real estate; being unproductive, no revenue was produced. The devaluation also increased the Thai Baht value of the debt, adding to the problem of servicing the debt. The crisis spread across the region to South Korea, Hong Kong, Malaysia, Laos, Indonesia and further afield. According to Corsetti *et al* (1999), the Asian currency and financial crisis in 1997-1998 revealed underlying structural and policy problems amongst the countries within the region. A stock market crash occurred in 2002 in the form of a “Dotcom bubble” which was preceded by increasing share prices as a result of high demand for technology and other internet-related stocks. The bubble burst (Johansen and Sornetti (2010)) when, with US interest rates increasing and the economy slowing, the market became bearish and the inflated stock prices fell sharply.

These crises, while they were initiated in different parts of the financial sector, were linked (as argued by Reinhart and Rogoff (2008)), by herding behaviour, speculation that prices would continuously rise and consumer irrationality.

The biggest financial and economic crisis since the Great Depression wreaked havoc in the world’s financial markets in 2007-08. A burgeoning literature on the Global Financial Crisis (GFC) (see, for example, Dobson, 2009; Stiglitz, 2008; Faber, 2009 and Garnaut, 2009) is characterised by wide-ranging disagreement on its main causes; it has been portrayed as an act of God, the result of under-regulated free markets, globalisation and the failure of existing regulation. The New Financial Architecture (NFA) was blamed in part as having aided the crisis; under the NFA, “light-touch” regulation of commercial banks and hedge funds was emphasised, because neoclassical economists regarded capital

markets as having the ability to properly price securities in relation to expected returns and risk (Crotty, 2008). However, the increased complexity of innovative derivatives resulted in this regulation model proving to be inept at curbing financial disaster; bankers and investment agencies were able to deal in complicated and poorly priced risky assets. Whether or not the causes lie in structural flaws in the regulatory system or in the creation of the NFA, it cannot be denied that the “global tsunami” was partly caused by the collapse of a speculative bubble in the US housing market which was fuelled by extensive derivative usage (Dobson, 2009). As is typical of bubbles, a house-price boom coupled with favourable interest rates attracted buyers to the market; when rising prices slowed and then started reversing, investors fled and the market crashed.

As argued above, while the apparent causes of crises differ with each new crisis, they share common features. The GFC, on the other hand, had characteristics that distinguished it from prior crises; the rising use of derivatives, combined with an integrated global financial market, provided a new framework for the underlying problems related to financial crises in the 21st century.

2.2 The role of credit derivatives in the 2007 Global Financial Crisis

Derivatives are beneficial in enabling the transfer of credit risk (Capelle-Blanchard (2010); they can be used to hedge against exposures of a business, such as movements in interest and exchange rates and asset prices, which companies have no control over. In order to take positions in derivatives, minimum upfront investment is required therefore enabling companies to forecast cash flows and increase capital productivity at lower costs. According to Jackson and Miller (2013), derivatives encourage agents with the objectives of hedging and speculation to participate in the market, thereby increasing competition. As a result, there are more agents keeping track of prices and trading actively in the market, resulting in price discovery and lower transaction costs.

Despite these benefits of derivative usage, they have been blamed, at least in part, for the difficulties associated with the subprime credit crisis. Partony and Skeel (2007) argue that credit derivatives “create the risk of systemic market failure”, chiefly because they reduce incentives to monitor borrowers and consequently drive credit expansion. As was

illustrated by the increased use of derivatives prior to 2007, traders in credit derivatives (CD's) or mortgage backed assets (MBA's) did not fully assess the ability of their counterparties to service and repay their obligations. Moral hazard was perpetuated by the rapid creation of increasingly complicated derivatives, combined with the use of an originate-to-distribute intermediation model, where loans were resold and the on-packaging of loans as derivatives amplified the possibility of market systemic failure. Incentives for due diligence declined as most banks overlooked credit quality and assumed that risk was hedged elsewhere (Claessens et al, 2010).

Archarya and Johnson (2007) argue that, when the US subprime mortgage crisis occurred, financial contagion and derivative exposures led to credit exposures spreading rapidly amongst banks and other financial institutions. Crotty (2008) explains how, in the 1990s, banks were allowed to hold risky instruments off-balance-sheet with minimal capital required to support them; this resulted in banks moving assets off-balance-sheet by creating structured investment vehicles which were in turn used to invest in credit derivatives such as MBAs and credit debt obligations (CDO's). Problems arose when the demand for these off-balance-sheet securities cooled in mid-2007 and they became illiquid. The resulting inability of banks to properly price the securities meant that they had to be moved back onto balance-sheets, eroding their capital base and ultimately causing losses for shareholders and investors. Crotty (2008) argues that the use of OTC derivatives perpetuated the effects of the crisis, and that this could have been avoided if trades were carried out on exchanges and that sufficient regulation was imposed on the market.

The debate extends to the misuse, and toxic nature, of derivatives. Stulz (2010) argues that credit derivatives contributed to the crisis in three ways. Firstly, market participants such as Lehman Brothers constructed huge risky positions within the credit derivatives market. Contrary to the nature of their normal business (insurance), American International Group (AIG) invested in risky products across mortgage backed assets, credit default swaps and credit debt obligation contracts (Alnassar et al, 2014). Many of these were "piggy-backing" on bad underlying assets like sub-prime debt. When the value

of the underlying (house prices) fell and a “credit event” took place (defaults on sub-prime debt), AIG suffered losses and had to be bailed out by the U.S government.

The second issue raised by Stulz is that the CD market lacked transparency, enabling agents to manipulate the market by misrepresenting their financial positions. By trading off-balance-sheet, transparency regarding the sheer size of the market and the transactions of major counterparties was seriously understated. This resulted in ill-advised investors incurring massive losses when their over-exposure to risky investments was affected by the GFC. Furthermore, the lack of transparency prevented regulators from recognising the concentration of holdings of derivatives by banks and the associated expanding risks which were masked by off-balance sheet transactions; this contributed to the financial instability and the post crisis experience (Yang and Zhou, 2012).

Stulz’s final argument is that the use of derivatives enabled connectivity to increase within the global financial markets, as trades were not limited by the geographical spread of participants. Heavy reliance on these products in an integrated market generated conduits for contagion that raised systemic risk when the housing market crashed. The crisis which started in America in one product (subprime mortgages) spread like wildfire to other products (MBAs, CDOs, credit cards, home loans, loans to construction firms) throughout the world because of the link that these derivatives products provided amongst various countries’ economies and market participants (Brunnermeier, 2009).

In a similar vein, Crotty (2009) supports the notion that the use of innovative exotic derivatives that were complex, opaque and difficult to price correctly, led to the crisis. In a critique of the NFA, Crotty argues that the mathematical programs used to price these instruments could not be incorporated into a generalised model or formula that was practical to use (See Chacko *et al*, (2006) and Roubini (2008) for an in-depth explanation). The widely used but unreliable pricing of derivatives powered uncertainty and risk within the market; subsequently, immense system wide fragility was created by the complexity of the networks linking markets together and the mathematical “black box” of derivative pricing (Roubini, 2008).

Brunnermeier (2009) proposed that the build-up of a high degree of leverage by financial institutions and borrowers fostered the grounds for crisis. Rising leverage was facilitated by cheap money policies facilitated by the US Federal Reserve (Fed). Following the 1990s' internet and stock market crises, the Fed reduced short term interest rates in order to stimulate economic expansion. Interest rates were held at historically low levels up to mid-2005, enabling bankers to obtain money at minimal cost (Morris, 2009). However, returns to risk-taking provided abnormal incentives in the financial markets, as funds were used for speculative financial investments. Speculative bets were placed on asset backed securities whose underlying lay mainly in the housing market. According to Capelle-Blanchard (2010), any decline in the cash flows required to maintain security prices would trigger de-leveraging. This was the case with the GFC as falling house prices and rising mortgage defaults provided the trigger for de-leveraging to occur. In a bid to salvage their money, panic ensued as agents began hedging against further losses and selling their positions in the investment contracts. In an address to the Council on Foreign Relations Corporate Conference, Geithner (2008: 1) remarked that "...the shock was amplified and the brake became the accelerator in the crisis".

The unregulated multitrillion dollar credit derivative market greatly heightened the risks posed by securitisation of subprime loans. The insatiable demand for these opaque and regulatory immune products fomented the grounds for crisis. Greenberger (2011) reasoned that the deregulation of the CDs market contributed to the crisis. Trading on credit derivatives was regarded by the authorities as being between two parties with the risk contained and therefore did not require regulation. As evidenced by the enormity of the market prior to 2008 (\$600trillion), the risk of heavy losses was increased by the decline in prices of the assets underlying the derivatives and non-performing contracts (BIS, 2009). This lack of regulatory oversight on the OTC market has brought about scrutiny on how such a market managed to bring down the financial system without being restrained.

2.3 History of derivatives market regulation

The derivatives markets have gone through various cycles of regulation and deregulation. The history of derivatives regulation is also characterised by frequent disputes over jurisdiction, regulatory overlaps, gaps, legal uncertainties over product classification and the enforceability of exemptions. The United States of America has been the pioneer of derivative trade and regulations hence the emphasis on its regulatory involvement in this section.

The earliest form of regulation in the derivatives market was implemented after the Great Depression period by the Roosevelt administration. In 1936, the Commodity Exchange Act (CEA) was enacted in the wake of the Securities Act of 1933 (amended 1934). This regulation focused on the equities market, primarily in futures contracts, which were required to be traded publicly on regulated exchanges, supported by collateral and requirements on the use of the marking-to-market trading rule² (Roosevelt, 1938). At that time futures were the dominant derivative type available as most transactions carried out involved farmers and grain merchants. Under the CEA, futures contracts were subjected to:

² Marking to market is the daily settling of profits and losses due to changes in the market value of a security or portfolio. Initial margin (percentage of a security's value) is used as collateral for a loan to finance the security's purchase. When this margin drops below the minimum amount allowed, a top up margin is deposited into the margin account in order to maintain the margin (Hull, 2008).

- Transparent and public pricing of derivatives based on market demand;
- Disclosure requirements of the traders to the government;
- Regulation of the brokers and employees;
- Strict rules for customer protection;
- Exchanges which were self-regulating organisations were placed under the supervision of a federal regulator to prevent and detect unlawful trading;
- Prohibitions against market manipulation, fraud and speculative bets;
- The federal regulator, the state and private individuals were regarded as enforcers of law suits and granted private rights of action if these requirements were breached (Greenberger, 2011).

In addition, the prerequisite that futures contracts be cleared was essential to the Commodity Exchange Act's regulatory mission; this was necessitated by the aim for a well-regulated and adequately capitalised organisation to play middleman between parties to a derivative contract by collecting margin (Johnson and Hazen, 2004). Having clearing houses provided insurance against any contractual failure as well as an incentive for traders to maintain adequate capital. To this end, clearing facilities made available efficient assessments of the futures market prices, collected initial margin when trades were executed and obtained top-up margin when prices moved against either of the counterparties to the contract (Hull, 2008); the regulation was thus focused primarily on safeguarding market participants and promoting fair trade. By the 1980s, however, the effectiveness of the Commodity Exchange Act was reduced by the introduction of swaps which fell outside the scope of the act.

The Commodity Futures Trading Commission (CFTC) defines swaps as agreements between two parties to exchange a series of cash flows - measured by interest rates, prices or exchange rates - with the payment calculated using a notional amount (CFTC, 1989). The similarities between futures and swaps as hedging and risk-mitigating instruments, coupled with both regulators' and market participants' inability to determine whether or not swaps were to be exchange-traded as required by the Commodity Exchange Act, prompted a debate. Swaps were regarded as securities which aided in reducing price volatility in markets, as were futures. However, swaps were not solely commodity-based

instruments and nor were they standardised, as were futures. At the time (1980s) swaps were bilateral and privately negotiated contracts believed to be "...self-insuring instruments without the aid of prescriptive regulation" (Young, 2010:1). This caused confusion as to the applicability of the Commodity Exchange's Act on swaps.

Despite the similarities pointed out, the CFTC used its discretion to exempt swaps from the exchange-traded requirement, arguing that swaps could not be regarded as being exchange-traded if "... (they were) negotiated by parties as to their agreed terms, based on individual credit determinations and documented by the parties in an unstandardised agreement" (CFTC, 1989: 30). Johnson and Hazen (2004) concurred, arguing that swaps had to be marketed privately in order to be regarded as over-the-counter-trades (OTC) and thus that the exemption was in line with the nature of swaps.

Despite this apparent consensus, regulatory uncertainty permeated the derivative market; dealers and bankers failing to understand the legality of the exemption since the Commodity Exchange Act never authorized the CFTC to give such exemption. The lack of authority was reversed in 1992 when the US Congress allowed the CFTC to create swap exemptions from the Commodity Exchange Act's exchange-trading requirement "...for swap agreements which are not a part of (an) interchangeable class of agreements that are standardised in their economic terms..." (CFTC, 2010: s.4). Swap agreements were also prohibited from being traded through multilateral transaction facilities (CFTC, 2009). A multilateral transaction facility enables one party to trade electronically with numerous parties instead of on a bilateral basis. Swap trades were therefore restricted to privately negotiated offerings in a bid to avoid them being traded on exchange. Prior to the implementation of the CFTC exemption rule, the International Swaps and Derivatives Association (ISDA), in a bid to standardise swap execution, had created a Master Agreement (ISDA, 1992); this was to enable the multilateral execution of trades which the exemption rule later repealed.

The volume of OTC derivatives which had been standardised by the ISDA Master Agreement had, despite the actions by the CFTC, been growing rapidly. The CFTC circulated a concept release in 1998, ruling that trades in standardised derivatives

almost certainly fell under the Commodity Exchange Act's exchange trading requirement (CFTC, 1998); some swaps were thus trading in violation of the law, as the Commodity Exchange Act dealt with futures contracts only. According to CFTC (1998), the regulatory system for swaps was being applied prospectively by way of exemption and the existing market handled retrospectively by using the Commodity Exchange Act. This highlighted the misunderstanding(s) regarding derivatives and the exemption of swaps, thereby creating gaps in the regulatory system. The use of unregulated swaps was causing financial problems; for example, the Orange County scandal where the municipality defaulted on the back of poorly regulated interest rate swaps, which lost value when interest rates rose too quickly (Public Policy Institute of California, 1998). It was the prevention of such problems that the CFTC was pursuing.

The CFTC's release was opposed by the President's Working Group, which included the Treasury, Fed and the Securities and Exchange Commission (PWG, 1999a). The President's Working Group sought a statutory moratorium on the related regulation, and this was granted by Congress in 1999. The need for regulation was, however, highlighted by the collapse of the Long Term Capital Management hedge fund after it sustained massive losses in the OTC derivative market. The collapse of Long Term Capital Management brought about fears of systemic risk that had not been considered in previous rules.

Following this collapse the PWG was forced into a rapid reversal of its position and was told to make recommendations to tighten regulation of OTC swaps. The resulting PWG report noted that the problems of one firm could affect other financial institutions and even threaten the health of the financial system as a whole (PWG, 1999b). The PWG accordingly proposed that the CFTC, the Security and Exchange Commission and the treasury should have extended power to require counterparties to an OTC derivative contract to keep records of market concentration, risk models, trading strategies as well as providing credit risk profiles for assessment (PWG, 1999a).

A further probe was undertaken by a group of banks under the banner of the Counterparty Risk Management Policy Group (CRMPG). Like the PW, they acknowledged that faulty

institutions were governing the OTC swap market; they accordingly recommended new management practices such as supervision and reporting requirements for OTC derivative trades. Regular meetings between bankers and regulators were proposed as a contingency plan to detect any financial trouble before it turned into a disaster (CRMPG, 1999). Even though the PWG and CRMPG were both in favour of regulatory reform, both were against to the regulation of swaps by government. The CRMPG regarded any new regulation as being a mistake because the regulation itself would not be able to codify risk management properly (CRMPG, 1999). The PWG argued that the threat of regulation as advanced by the CFTC would shift trades to countries with laxer rules (regulatory arbitrage) (PWG, 1999b). This move to allow the swap market to be self-regulating was a setback in the development of regulation. The PWG's "flip-flopping" stance regarding the treatment of derivatives was already a sign of how the evolution of the derivatives market needed increased regulatory scrutiny. It is ironic that the tell-tale signs of a troubled market were already present and observable, yet regulatory authorities decided not to take action.

Bankers and dealers continued trading risky assets without any regulatory sieve to separate socially beneficial hedging contracts from purely speculative wagers (DuPont, 2009). The Commodity Futures Modernisation Act (CFMA) was signed into law in 2000; it involved, *inter alia*, the removal of OTC derivative trades from exchange-trading and clearing requirements established by the Commodity Exchange Act as long as the counterparties to a swap contract were *eligible contract participants* (CEA, 2009). According to Jason and Hazen (2004), an eligible contract participant is a party with more than \$10 million in total assets. Limited exceptions were, however, granted to individuals who used swaps for risk management purposes. Similarly, the SEC was banned from any OTC derivatives supervision except for the fraud jurisdiction they possessed over securities-based swaps (CEA, 2009).

By passing the CFMA, Congress ensured that speculative trading in swaps and a new variant of energy futures products would remain unregulated. The CFMA accordingly removed the Commodity Exchange Act's ban on speculative trading in excess of the markets' need for liquidity, and deregulated energy futures were now sold OTC (CEA,

2009). Any challenge against the legality of a swap was quashed by a statute that provided that "...no swap agreement, transaction or contract between eligible participants shall be null, void or unenforceable..., based solely on the failure to comply with this Act" (CEA, 2009: s.25). Swap markets were thus unregulated and derivatives could be traded freely.

In spite of the obvious risks associated with derivatives, the CFMA removed a multi-trillion dollar OTC market from regulatory oversight. At least part of the explanation for this had been the growth of practices, such as regulatory arbitrage, which made it genuinely difficult for regulators to dictate to the industry. The advent of globalisation and increasing innovation did, however, highlight the flaws of a non-regulated environment (Leyshon and Tickell, 1994); such regulatory changes that did take place failed to keep pace with growing market and product creation.

To sum up, changes in the nature of derivative products and trading methods that led to a sophisticated market after the CFMA was a direct result of a lenient regulatory environment which fostered growth and risk taking (DuPont, 2009). Speculative bets grew substantially as traders took advantage of regulatory ambiguities. The near-collapse of the American International Group (2007), like the fall of Long Term Capital Management (1998), brought a renewed focus on the use and abuse of OTC derivatives generally and CDSs in particular. The emergence of swaps and their variants stirred debate on the applicability of the regulation currently in place, and whether or not these instruments could be regulated on the basis of exchange-traded or OTC requirements. New reforms such as the Dodd Frank Act (2010) sought to safeguard a market that nearly brought the financial system to collapse. America's failure to properly regulate their OTC derivative market, and the ensuing crisis, prompted America and the G20 countries to increase market safety by updating regulations to cover new, previously unregulated, exotic derivatives (Greenberger, 2011).

2.4 Conclusion

This chapter considered the evolution of derivatives regulation and highlighted some of its flaws; the failure of both the Commodity Exchange Act and Commodity Futures Modernization Act to cope with on-going developments in the derivatives market (such as product innovation, globalised trade and speculation) led to the need for its revision and, crucially, its replacement with a more risk-minimising approach. Members of the G20 took heed of the dangers of systemic risk and thus adopted countermeasures in an attempt to avoid another crisis.

CHAPTER THREE

REGULATION: THE CASE OF DEVELOPED AND EMERGING COUNTRIES

The global financial crisis that started in 2007 exposed the numerous flaws and inadequacies of pre-existing regulation. The dominant paradigm of *light touch* and *self-regulation* within the derivatives market proved to be inadequate in dealing with systemic and stability issues. As a result, reform of derivatives regulation became one of the top priorities of regulators. In response to the financial and economic crisis, G-20 leaders' commenced reforms of the OTC derivatives markets in order to improve transparency, accountability, mitigate systemic risk and protect against market abuse. Included in the G-20 leaders agreement statement at the 2009 Pittsburgh summit is the following stipulation:

“All standardized OTC derivatives should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counter parties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.” (G-20, 2009:9)

The G20 leaders thus agreed to transform the derivatives markets into safer and better-regulated markets. To accommodate different country characteristics, varying legislative suggestions were put forward to member states. In light of this, legislation that was or is being implemented in both the developed and emerging markets in this study will be examined through a comparative analysis of these two types of economy. The focus is to identify differences in macroeconomic features that may be able to explain any observed differences in the countries' approach to regulation.

3.1 Country specific regulation

The following will highlight key legal texts guiding derivatives regulation in the US, Europe, South Africa, Brazil, India and Turkey. A synopsis of the relevant regulation is also provided.

3.1.1. The United States: Dodd-Frank Wall Street Reform and Consumer Protection Act.

America is in the process of converting its OTC derivative market from being loosely regulated to a stricter and well-regulated market, particularly regarding the troublesome swaps and exotic derivative types. Regulation is, *inter alia*, focusing on exchange trading, central clearing and margin requirements. Regulation of OTC derivatives in America resides in the Dodd Frank Wall Street reform and Consumer Protection Act. Title VII of the Act deals specifically with OTC derivatives regulation pertaining to transparency and accountability. Firstly, the title repeals security-based swaps exemption from regulation, as was previously granted by the CEA Act. Secondly, the title gives the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) regulatory authority over derivatives trading and market participants (Greenman *et al*, 2012). In order to tighten and secure regulation, the Act distinguishes the regulation of swaps between the SEC and CFTC, based on the characteristics of the underlying. The SEC regulates swaps whose underlying are based either on a security-based index or the occurrence or non-occurrence of an event. The CFTC regulates swaps such as options and forwards that are based on an underlying financial product.

The Dodd Frank Act requires all swap dealers and major swap participants to register with either banking regulators, the CFTC or the SEC (DFA, 2010 s.731). A swap dealer is any person who regularly makes a market in swaps and trades for own account in the course of doing business. Major swap participants maintain large positions in swaps, excluding transactions used for risk-hedging, and whose exposure can undermine financial markets or banking systems (DFA, 2010 s.721:13;21). These registered swap dealers and major swap participants must disclose material incentives, risks and any conflict of interest that may arise when trading (DFA, 2010: s.731;764). Capital and margin requirements are imposed on the swap dealers and business conduct rules relating

to fraud and market manipulation apply. These financial entities have to conform to position limits when trading in commodity derivatives as set by exchanges (DFA, 2010 s.737).

In line with the G20 agreement, the US has established Swap Execution Facilities as platforms for the trading of OTC derivatives. A swap execution facility is defined as a trading platform which, while it is not an exchange, allows participants to execute trades by receiving bid and an offer price made by market participants, and is open to multiple participants (Semmler and Young, 2010). No person may operate a facility for the trading and execution of swaps unless the facility is registered as a swap execution facility (DFA, 2010 s.733). This rule is intended to enable the safe and secure trading of swaps on a platform that upholds financial stability and promotes pre-trade price transparency. Swaps that are not required to trade through swap execution facilities are carried out via other available means of interstate commerce; these are subject to approval by the SEC or CFTC. Generally, registration of swap execution facilities is done when certain core principles are met. These principles include discretion regarding trades, compliance with position limits, trade processing and compliance with rules pertaining to market manipulation and participation (DFA, 2010 s.733:2B).

The Act requires all swaps to be cleared, either by a derivatives clearing agent registered by either the SEC or CFTC, or a derivatives clearing organisation that is exempt from registration under statutes of the Act (DFA, 2010 s.723:3H). Before accepting any new category, class or type of swap for clearing, the clearing organisation is obliged to submit the swap for approval by the CFTC or SEC (DFA, 2010 s.723: 3H (b)). Additionally, the CFTC or SEC has the right to require the clearing of a swap that was previously not required to be cleared; an exception to this is that it may not require the clearing of a swap by a clearing organisation if such clearing would negatively affect the financial integrity of that organisation (Chance, 2010). The tough stance on clearing organisations seeks to reduce the risk of over-exposure and also to limit regulatory arbitrage by derivative traders. Further exemptions from clearing are provided for in the Act. Where a clearing organisation is not willing to clear a swap, clearing of that swap cannot be enforced. Also, any counterparty that is not a financial counterparty, or uses swaps to hedge commercial

risk, need only notify the CFTC or SEC on how it intends to meet its financial obligations (DFA, 2010 s.723). This is known as the “end user” exception. Reason for this exemption lie in the fact that end users³ are not deemed to pose systemic risk because they deal in swaps specifically to mitigate risk.

Reporting and record keeping requirements for swaps that are not cleared are dealt with in section 729 of the DFA. The general rule states that any swap that is not cleared must be reported to a swap data repository or, where such a data repository does not exist, the SEC or the CFTC. Furthermore, the counterparties to swaps that are not cleared or accepted by a swap data repository must maintain books and records and make these available to the regulatory authorities if requested to do so (DFA, 2010 s.729:3B(c)). The DFA imposes a real-time reporting requirement for all standardized swaps. Real-time reporting is the public dissemination of data relating to swap transactions, including price and volume, as soon as it is technologically possible once the transaction has been executed (DFA, 2010 s.727: 763(i)). In turn, real-time reporting enables price discovery and transparency; regulators can properly monitor and supervise any entities that could pose risks to the financial system.

Another provision in the Dodd Frank Act is the “Push Out” rule, which prohibits federal assistance to swap entities (i.e. swap dealers and major swap participants) with regards to certain credit derivatives, equity derivatives and most commodity derivatives (DFA,2010 s.716). The rule does, however, allow entities that deal in interest rate, currency, silver/gold and credit derivatives in investment grade securities to have access to federal aid (DFA, 2010 s.716 (b)). The logical effect of the Push Out rule is to encourage the holding companies of American banks to reduce or get rid of their risky swap trades and in so doing access federal banking assistance; this should, or at least is intended to, maintain the health of the financial system. Similarly, the Volcker Rule prohibits insured depository institutions and their associates from engaging in proprietary trading (i.e. when a bank trades on its own behalf and not for the customer) (DFA, 2010 s.619). The rule also prohibits banking entities from retaining, or acquiring, stakes in excess of 3% of the

² End users are businesses that “rely on derivatives to hedge commodity price changes and to insulate their businesses and consumers from risk” (Commodity Markets Oversight Coalition, 2010: 1).

value of hedge or private equity funds. This minimises potential conflict of interest as banks are restricted solely to banking activities. Both the Push Out and Volcker rule are aimed to reduce the size, complexity and interconnectedness of banks, so as to allow for orderly unwinding of banks should they fail in the future.

The DFA imposes extra-territorial obligations on third country counterparties who deal with American brokers. Section 722(d) directs the CFTC to regulate any activity which has a direct and significant relationship with activities in, or effect on, US commerce. Further, any extra-territorial activities that violate rules and regulations endorsed by the CFTC are regulated. The extra-territorial scope of the DFA regulates swap activities that directly or indirectly involve or threaten US interests or persons, even if these transactions occur outside American territory. Swap dealing and margin collection requirements under the DFA thus apply to both US and foreign counterparties involved in swap transactions. Regulatory reforms in America are moving towards a transparent and more accountable trading approach. The rules outlined above show that trading in OTC derivatives is being prompted to move to Swap Execution Facilities; this would facilitate risk management by avoiding the opacity of OTC markets. Also important are the reporting and clearing obligations which enhance / foster trade accountability and the monitoring of concentration risk. Bank business activities are, therefore, limited to the main functions of banking: i.e. lending, borrowing and transactional services. This is intended to reduce the systemic and contagion risks that are posed by bank involvement in OTC derivatives.

3.1.2. Europe: The European Market Infrastructure Regulation (EMIR) No 648/2012.

Much like America, the EU's OTC derivative market was largely unregulated prior to the Global Financial Crisis. In response to the catastrophic effects of the crisis, the EMIR was instituted so as to both regulate trading and mitigate risk by promoting the trading of derivatives on an exchange. The EMIR came into effect in 2012, and took into account the scope of regulatory oversight made by other countries in derivatives regulation, particularly that of the US.

The EMIR imposes new requirements on derivatives market participants. Any entity that is founded within the EU and enters into any derivative contracts (such as equity,

commodity, interest rate, credit and foreign exchange derivatives) is subject to the provisions of the EMIR. According to EMIR (2012, Article 2 (8)), two main categories of entities are defined for purposes of the regulation: these are financial counterparties (FC) and non-financial counterparties (NFC). The definition of FCs includes investment firms, insurers' pension funds and alternative investment managers; NFCs are any firms established in the EU other than FCs such as energy companies.

The EMIR imposes an obligation on counterparties to clear certain derivatives. Where the clearing obligation applies, the eligible derivative must be cleared through an authorised central clearing party (CCP) (EMIR, 2012 Article 4). Application of the clearing obligation applies when the OTC derivative falls within a certain class of derivatives, subject to (i) the clearing rule and (ii) that the contract must involve either FCs or NFCs on both sides. The determination of contracts which are subject to clearing is done with the simultaneous use of a bottom-up and top-down approach. The bottom-up approach involves the clearing agent applying to the relevant regulator for permission to clear the contracts, and then informing the European Securities and Markets Authority (ESMA) to assess whether the clearing obligation is relevant to that class of derivatives. In the top-down approach, the ESMA acts on its own initiative to identify and notify the EU Commission whether clearing obligations apply on derivatives, even where no central clearing counterparty has applied for authorisation to clear such contracts (EMIR, 2012 Article 4(5)). These approaches ensure that new financial products do not fall through the net and also that no central clearing counterparty clears products which should not be cleared; therefore both approaches seek to reduce systemic risk.

Financial counterparties which are not obliged to be cleared by / through a central clearing counterparty are subject to bilateral collateral requirements (EMIR, 2012 Article 10, 11). Non-financial counterparties are subject to clearing and bilateral requirements where (i) their positions are large enough, (ii) are related to treasury financing activities and (iii) do not reduce commercial risks directly. When deducing whether or not OTC contracts for need to be cleared, the ESMA considers liquidity, systemic risk, pricing and levels of standardisation; this information is regarded as important because it allows

contracts to be safely cleared and increases market transparency without the risk of fortuitously concentrating systemic risk.

Trading obligations do not fall within the EMIR's jurisdiction; the Markets in Financial Instruments Regulation (MiFIR) act is designed to ensure that the G20 commitment is implemented accordingly. Trading of standardised derivatives has to be done on exchanges and electronic trading platforms; these would include regulated markets, multilateral trading facilities and organised trading facilities (MiFIR, 2012 Article 28). The key purpose of the MiFIR trading obligation is to determine which of the derivatives that are subject to the EMIR clearing obligation should also be required to trade on exchange. Determination of the relevant classes of derivatives affected by the MiFIR is based on the class of derivatives as defined by Article 10(1)(b) of the EMIR. The derivatives also have to be either very liquid or that there is sufficient third party buying and selling interest. This means that before a derivative contract is considered for the trading obligation, the derivative class should meet the clearing obligation, must be traded on at least one trading venue and be sufficiently liquid to trade only "on venue".

As part of the international drive to increase the stability of the OTC derivatives markets, risk-mitigation obligations are levied on OTC derivatives which are not subject to the clearing obligation. The EMIR, with the intention of reducing credit risk, imposes these extra rules on the counterparties to these derivatives. The EMIR (2012, Article 11) requires that both FCs and NFCs provide timely confirmation of OTC derivatives contracts by electronic means, and design processes to reconcile portfolios, manage risk, identify and resolve disputes as well as monitor the value of outstanding contracts. Financial counterparties have to hold a proportionate amount of capital to manage the inherent risks not covered by the exchange of collateral (EMIR, 2012 Article 11(3)). In addition, Article 11 envisages that financial counterparties who enter into contracts are subject to daily valuation, mark-to-market pricing and the segregated exchange of collateral. This ensures the portability of client positions and collateral in the event of a clearing counterparty's default.

The reporting obligation is applied to both FCs and NFCs and to both cleared and non-cleared derivatives contracts. Article 9 of the EMIR(2012), obliges market participants to report all details concerning OTC contracts into which they have entered to the authorised trade repositories or, if that is not possible, to the ESMA. The rule also provides that trade depositories established in the EU are to be registered by ESMA. A third country-based depository may be registered by ESMA, but only if it is subject to similar rules in the home country. The trade repositories are required to publish details of OTC trade positions by classes of derivative contract. Details of the contract include the size, price and volume of the contracts concluded. ESMA provides a list of the regulated trade repositories and the EU regulators may request access to this data when deemed necessary (EMIR, 2012 Article 9(4)). A central clearing or other counterparty may delegate the reporting of contract details, but remains responsible for ensuring that contracts are reported without duplication. These disclosure requirements are done in a bid to enhance transparency and to avoid the contagion risk which would occur when trades are not monitored and become concentrated in the OTC derivatives market.

3.1.3 South Africa: The Financial Markets Act (FMA) 19 of 2012 and Financial Markets Act Regulations

The FMA lays the groundwork for OTC derivatives regulation in line with the G20 commitments and thus aligns South African financial market regulation with international norms. The Securities Services Act of 2004 was replaced by the FMA which, by addressing South Africa's securities markets in general, expands the regulatory parameters of OTC derivatives instruments. South African authorities have adopted a carefully planned and phased implementation of OTC derivative regulation changes as outlined overleaf:

- Phase 1: a code of conduct for the registration of market participants and the implementation of central reporting of OTC derivative transactions;
- Phase 2: risk management, i.e. capital and margin requirements for non-centrally cleared derivatives; and
- Phase 3: standardisation, central clearing and central trading.

A phased implementation was adopted because of the nature of the South African derivatives markets, which were formerly entirely unregulated; the effects of a sudden regulatory burden on agents were taken into account. The phased approach was seen as allowing for consultation on proposed reforms (should the need arise) and also as enabling a natural sequence of implementation (FSB, 2013). Various Working Groups governed by the Financial Stability Board (SA) and National Treasury are being used to facilitate the process but, since National Treasury is still in the process of consulting stakeholders regarding the proposed regulatory framework, South African derivative market regulation is not fully definitive. The discussion that follows is therefore framed in terms of the FMA (2012) insofar as the OTC market is concerned, as well as Treasury's proposed Financial Markets Act Regulation.

Under the FMA, an OTC derivatives provider has to be registered as a regulated person in terms of section 5(1)(b) of the Act. A regulated person can be a bank, financial institution or any other person who deals with derivatives on a daily basis. These providers require authorisation from the Registrar of Securities Services (Registrar) for them to operate in South Africa. Once the providers are registered, they are subject to a code of conduct stipulating that honesty, fairness, due diligence and skill have to be maintained so as to uphold the integrity of the financial markets (FMA, 2012 s.75).

The Act provides for the creation of a trade repository which will maintain a central electronic database of transaction data (FMA, 2012 s.54). Licensing requirements listed in section 56 of the Act include the requirement for electronic systems enabling the calculation of open positions as well as effective monitoring of systemic risk. OTC derivatives trading can be subject to large open positions developing and, to the extent that these are spread within the financial system, the associated default risk could result in

systemic problems; accordingly, all OTC derivative trades have to be reported to the trade repository. The Registrar is also granted unlimited access to these records to enable the monitoring of all open exposures per asset class. Further, in section 57(1)(i), trade repositories are required to maintain adequate business continuity policies, disaster recovery plans and to establish and maintain back-up facilities. The prime objective is to allow the South African Reserve Bank and the Registrar to continuously assess systemic risk and promote financial stability in the derivatives market.

In terms of the G20 clearing obligations, the FMA introduced a new set of regulations; the creation of two types of clearing houses for the clearing of derivative transactions is envisaged. These are (i) a traditional clearing house appointed by an exchange and (ii) an independent clearing house which can be used for the clearing of unlisted securities via a central counterparty (Van Wyk, 2012). An independent clearing house will have the status of a self-regulatory organisation which can issue rules to its members, subject to authorisation from the registrar (FMA, 2012 s.50 (3)). Clearing houses have to be licensed and also have to inform the Registrar of any potential systemic threats to the financial system. Independent clearing houses are allowed to impose fees on either one or both parties to a transaction so as to maintain an insurance / compensation / guarantee fund where required in terms of licencing requirements (FMA, 2012 s.51(1-2)). Prudential regulatory requirements for central clearing counterparties seek to ensure that these institutions are sufficiently capitalised so that losses to their stakeholders in their OTC business operations are minimised. Prudential supervision of central clearing counterparties also helps to assess the adequacy of systems and risk management controls that are designed to mitigate market failure.

The extra-territorial nature of OTC securities required that the regulatory authorities to put in place regulation promoting the efficiency and competitiveness of the SA financial markets. To this end, the FMA allows for a licensed central securities depository (CSD) to authorise an external CSD to perform settlement services, custody and the administration of securities (FMA, 2012 s.5 (1)(c)). Membership of foreigners on a South African exchange is only permitted when the company is subject to a regulatory framework similar to that established by the FMA; it is also required that the foreign

company is regulated and supervised by an authority that is a current member of International Organisation of Securities Commissions (IOSCO) (National Treasury, 2014). Local markets can thus make use of international business opportunities with entities that are safe and reliable, reducing downside risk.

3.1.4. Brazil

Brazilian financial regulation is heavily prudential and aims to safeguard the use of derivatives within financial institutions, as they are deemed to be the biggest source of risk in the financial system. The derivatives market in Brazil is dominated by exchange trading; over 90% of contracts are traded as standardized contracts (International Council of Securities Associations (ICSA, 2012)). The relevant rules safeguarding derivative usage are set forth by the Brazilian Monetary Council (*Counselho Monetario Nacional* (CMN)) and the regulators in the Central Bank of Brazil. These include *Banco Central do Brasil* (Bacen) which monitors and supervises the enforcement of regulation and the Brazilian Securities Exchange Commission (*Comissao de Valores Mobiliarios* (CVM)) deals with the securities markets. Derivatives are effectively regulated solely by the CVM in terms of Law 6.385/76, which defines them as securities regardless of the underlying assets.

Derivative trading in Brazil takes place on organised markets and OTC venues which are registered by either the Brazilian Equities and Derivatives Exchange (BM&FBovespa) or the Centre of Custody and Financial Settlement of Securities (CETIP), depending on collateralisation of each trade. BM&FBovespa handles collateralised trades whereas CETIP is in charge of non-standard and non-collateralised trades (International Council of Securities Associations (ICSA), 2012). CVM Instruction No. 461, Chapter VII governs the operational and eligibility requirements, pricing and transparency criteria that have to be upheld when operating in the OTC market. In this instruction, the OTC market users must prevent or curb modes of fraud or manipulation that seek to create artificial demand, as well as disclose material facts of the contracts to the CVM (CVM, 2007).

Pursuant to CVM Instruction No.467, the forms of derivatives contracts admitted for trade in the organised trading venue have to be approved by the CVM prior to the

negotiation of such contracts. However, approval is not required for derivatives contracts that are not traded on an organised market. If such a contract exists, approval is obtained from the relevant entity under which registration of the contract falls. The registering entities must, at the discretion of the CVM, make available any supporting documents to the contract, as well as publicly disclose the decisive factors for approval of said contract (CVM, 2008). Registration and approval of trades enables a census of derivative trading in Brazil to be made and ultimately aids the siphoning of illegal or potentially detrimental trades before they take place.

Prior to the financial crisis, OTC derivatives contracts were mandatorily recorded at an institution that managed this market. Recording of OTC derivatives operations at recording systems approved by the CVM or the Central Bank has been mandatory since 1994, based on the CMN Resolution N. 2.042⁴. Law 6.385/76 was amended in 2011, so that the recording of derivatives operations is a condition for the very validity of the contracts. The recording of OTC operations makes it possible for Brazilian regulators to have the information necessary for passing of new laws or amendments. In 2008, CVM Deliberation 550 and Resolution 475 were implemented in order to deal with the disclosure of information of transactions pertaining to OTC derivatives. Companies that trade in derivatives were expected to disclose their exposure to such securities in explanatory notes. Information that is disclosed pertains to the size, type, nature and purposes of the transactions (i.e. speculative or hedging). Individual entities are also subjected to the disclosure requirement as they are obliged to reveal their trades, sizes and the settlement preference to the CVM if requested (Coelho, 2014).

3.1.5 India

According to Mihaljek (2010), the Indian derivative market is relatively small at only 5% of GDP; this has aided the regulatory authorities in preserving systemic stability without the need for heavily prudential regulation. The Reserve Bank of India (RBI) is responsible for the regulation of all interest rate, credit and forex derivatives, including OTC derivatives. RBI's authority vests from various statutes, including the Reserve Bank of India Act of 1934, the Banking Regulation Act of 1949, the Foreign Exchange

⁴ This law has since been revoked. Currently valid is CMN Resolution No. 3.505 of 2007

Management Act of 1999 and the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act of 2002. Of significant importance is the RBI Amendment Act of 2006 which lays down the regulatory framework for OTC derivatives. In terms of the RBI Act (2006 s.45V), an OTC derivative transaction is legally valid only if at least one of the parties to the transaction is a RBI regulated entity. A regulated entity can either be the RBI, a scheduled bank or any such agency that is regulated by the RBI. This requirement ensures that the entire OTC derivatives market is within regulatory oversight and makes systemic monitoring possible. Financial entities are permitted to transact in derivatives, essentially to hedge risk, and derivative structured products are permitted provided they are a combination of two or more generic instruments permitted by the RBI and do not contain any derivative as underlying (Gopinath, 2010);⁵ prohibiting the use of complex derivatives clearly minimises risk.

Section 45X of the RBI Act (2006) states that regulated entities within the derivative market are subject to a reporting obligation. In order to provide the RBI with meaningful risk assessment tools, aggregate data on trades, including prices, volumes and outstanding exposures are to be reported accurately and in a timely manner to the trade repositories. In addition, market regulators, the central bank and regulation authorities are granted effective and practical access to data collected by the trade repositories and which is necessary for carrying out their regulatory duties.

The Payment and Settlement Systems Act (2008) provides the RBI with legislative oversight for regulating and supervising the payment and settlement systems in the country. RBI therefore promotes the clearing of OTC derivatives with the Clearing Corporation of India Ltd (CCIL), helping to reduce the risk of financial losses through counterparty default, and also provides for capital relief. Trading of OTC derivatives on a regulated exchange is still under consideration; presently, trading is not mandated to be done on an exchange. The Gandhi Committee⁶ has, however, recommended the introduction of an electronic swap execution facility; the proposed regulation is still under review by market consultants.

⁵ Structured products are a combination of cash and generic (plain vanilla) derivative instruments.

⁶ The Gandhi Committee is a working group comprising market representatives set up to examine and suggest ways for enhancing liquidity and safety within the derivatives market.

3.1.6 Turkey

The main regulator of the derivatives market in Turkey is the Capital Markets Board (CMB). Derivatives are defined as securities under Article 3(u) of Capital Markets Law (CML) (CMB, 2012) and are thus regulated by this law. In order to trade in these instruments, a licensing requirement has to be met. Article 40 of the CML (2012) states that an operating licence showing the investment services and activities to be carried out shall be granted to those permitted by the CMB to carry out such activities; the legality of OTC transactions carried out rests upon this specific rule.

In pursuit of financial stability, Turkish regulation was amended in order to safeguard the economy. An amendment to the CML indirectly converted OTC derivatives markets to a regulated platform under the CMB rule Communiqué III-37.1 (CMB, 2013). Central clearing of OTC contracts is now enabled by this communiqué, reducing the risk of default. The Istanbul Stock Exchange Settlement and Custody Bank Inc (Takasbank) acts as the central clearing counterparty and guarantees the settlement of derivatives contracts. Rulemaking on the nature of the guarantee fund and collateral requirements lies with the central bank which utilises the Central Bank of the Republic of Turkey Law No 6111. Where trading is done OTC, the counterparties have to disclose such contracts to the relevant exchange which deals with the specified underlying instruments (CBRT, 2011). Information pertaining to the type of contract, specification, size, settlement date and the deliverable is required. At present, the Turkish Derivative Exchange-TurkDex is mandated to handle this requirement. This allows for the surveillance of not only the size and volume of transactions but also the possibility of risks within the market.

The execution of derivatives contracts between real / legal persons is subject to the regulations under the communiqué. The mandatory licencing of financial institutions based overseas is also exempted from the regulation provided they do not market their services in Turkey. However, where Turkish residents enter into a derivative transaction at their own initiative, such a contract is not under the scope of the communiqué. Foreign regulation in the jurisdiction of the counterparty will apply to these contracts.

3.2 Developed vs. Emerging Market Regulation

As regulatory reforms seek to harmonise the OTC derivative markets, similarities of core values can be deduced from reforms in both the developed markets and emerging markets. Differences do, however, exist amongst countries regarding how these regulations are used and to whom they apply within various jurisdictions (Chance, 2010). In line with the G20 agreement, all the members of the group have agreed to and are taking steps towards converting OTC transactions to exchange trading platforms. Country specifics of how this rule is enacted can be noted. For instance, the US and Europe (EU) have deep markets and a broad range of financial products, unlike their emerging markets counterparts; consequently, exchange trading of OTC contracts is less pronounced in the former because the very nature of some products dictates that they be traded bilaterally. For example, the use of foreign exchange contracts is difficult to standardise and place on exchanges due to their varying underlying and sizes. This possibly explains US and EU regulators' accommodative approach when it comes to the types of contracts that can be exempted. On the contrary, emerging markets have stricter controls on exchange trade; regulation is in place to safeguard their growing markets. India is an exception, where an exchange trading obligation is still a work in progress with no explicit rule set forth in this regard (Gopinath, 2010).

Both US and EU approaches include registration of derivative dealers and adherence to a code of business conduct / rules. The US extends these rules to major swap participants, while in the EU limited rules (inclusive of capital and margin requirements) are imposed on non-financial counterparties which are subject to clearing obligations. Similarly, in the emerging markets, registration of dealers is mandatory; where registration is not emphasised, the dealers are only allowed to trade with an entity that falls under the regulatory purview of the regulatory authority, as in India.

From the commercial banks' point of view, the EU and emerging markets approach does not introduce any rule equivalent to the DFA's "push out" rule which restricts the derivatives trading activities of banks; correspondingly, there is no equivalent to the Volcker rule. As opposed to the US, there is no provision that allows regulators to restrict

banks from owning central clearing counterparty facilities in the EU or emerging markets. Though the American regulation imposes strict rules on banking firms, it allows for exemption when proprietary trading obligations are for US agencies such as Ginnie Mae, Fannie Mae, Freddie and Farmer Mac and municipal obligations. Other exceptions include hedging or similar risk mitigation activities that are designed to reduce specific risks arising from banks holding derivative instruments in their books (DFA, 2010). US regulation is heavily vested in restricting banking activities to traditional banking business, whereas other countries' specifications are open and lenient to banks' role in the derivatives market; The EU and South Africa are exceptions - Basel III regulations are adhered to insofar as restricting the involvement of banks in the derivatives markets by limiting position sizes.

An important institutional difference between the regulatory approaches is indicated by the fact that, in the US, the DFA requires that transactions subject to clearing requirements be subject to a mandatory exchange trading requirement. In the EU, clearing obligations use the bottom-up / top-down approach which requires that the clearing agent applies for permission to clear the derivative transaction from the regulatory authorities. In the emerging markets, clearing of OTC derivatives is applied on all transactions and, where this requirement is not met, counterparties to such trades are required to furnish details on how this obligation is met. This exemption thus allows for some derivatives to be settled bilaterally between counterparties.

Clearing obligations are more lax on end-users in the EU and US than those in emerging markets. As mentioned earlier on, EU regulations mandate clearing for FC's who deal with other FC's, while NFC's only have to clear if their positions (excluding hedging) are higher than some threshold (EMIR, 2012). The US mandates clearing and margin requirements for any eligible contract, except for those of end-users that are categorised as risk hedgers under the DFA. Likewise, EU regulation is less restrictive on end-users regarding the collateralisation of uncleared contracts. FC's and NFC's who are subject to the clearing obligation have to either maintain a segregated exchange of collateral or an appropriate holding of capital for uncleared transactions. In emerging markets, collateral is required when trades are not cleared; while this is not explicitly required by regulation

in countries such as India and Brazil, it is common practice in their markets. Emerging markets do not have end-user exemptions in their regulation; all-encompassing rules are enforced on contracts regardless of the counterparties involved.

Both developing and emerging markets' regulation allows for cross-border clearing of derivatives, as they include the recognition of non-domestic central clearing counterparties. With respect to trade repositories, the US requires repositories to fully comply with US requirements and EU requires the repository to register with ESMA if it meets European regulatory standards. In emerging markets, regulation of repositories varies; all of the countries discussed above have foreign central clearing counterparties operating within their jurisdictions, so this is not localised by mandate.

An interesting difference amongst these two broad market categories is that of regulation enactment. In the US and EU, the relevant Acts are already legally binding. An FSB (2014) report showed, however, that some countries have yet to develop explicit Acts dealing with OTC derivative regulation; market participants are currently discussing bills that will deal with this. For example, South Africa uses the FMA Act as a guide on securities markets and proposed rules for OTC trade; the Financial Markets Act regulations are under review. Brazil has promulgated Communiqués which deals with the OTC market rather than distinct Acts, as has been the case in the developed markets.

3.3 Conclusion

The analysis of the regulatory reforms in this chapter indicates that the countries reviewed have taken, or are in the process of taking, steps towards meeting the G-20 agreement. The US and EU regulatory landscape is advanced in scope compared with that of the emerging markets. In terms of the regulatory frameworks, all countries have formal regulatory agencies that oversee compliance with OTC derivative regulations within their jurisdictions. While the rules promulgated in each of the countries are broadly in line with the Pittsburgh agreement, variations in their extent and nature can be noted. The developed nations' regulatory approach is more restrictive than that in the emerging

markets; the reason(s) may possibly be related to (i) the classes of OTC derivatives available and (ii) the market structure in each country.

It has been shown that the countries covered by this study have made, or are making, progress in terms of regulatory transformation. This process of change leads naturally to the question of how regulations, enacted or proposed, differ between the emerging countries. In order to explore the possible reasons for any regulatory differences across the selected countries, the following chapter presents an analysis of regulatory trends in relation to differences in the institutional and macroeconomic underpinnings of these countries.

CHAPTER FOUR

A COMPARISON OF REGULATIONS IN SOUTH AFRICA, BRAZIL, INDIA AND TURKEY

The emerging market economies covered by this study have made progress with the implementation of OTC derivative market regulation. Key regulatory standards have been established, and most have either completed the required reforms or are developing supporting rules where necessary. This chapter provides an analysis of the differences in the regulation implemented and any institutional or macroeconomic differences that may explain these; this is important, as it may shed light on how discrepancies in institutions and macroeconomic fundamentals have an effect on the type of reforms instituted. Analysing these differences will also help to deduce conclusions and recommendations for other emerging countries outside the scope of the G20 that want to align their derivatives market standards with the industry norms.

4.1 Registration of Market Participants

Dealing in derivatives requires both expert knowledge of the financial markets and skilled personnel. The authority to deal in these is obtained by way of registration and training within the field. In South Africa, the Financial Markets Act (2012 s.5) stipulates that derivative providers have to be registered as recognised persons. Similarly, in Turkey article 40 of the Capital Markets Law dictates that traders have to possess a valid operating licence in order to deal (CMB, 2012). Brazil follows a similar path with its Law 6.385/76 which regulates all dealers and trades. All the rules of registration specify core principles that have to be met in order to have dealer registration approved. These principles include, *inter alia*, competency requirements that consist of qualifications and experience, honesty, integrity and solvency requirements (FSB, 2012).

India adopted a different approach to registration; it enforces the regulation of dealers as well as the trading of derivatives to be carried out with a counterparty that is a registered regulated entity (RBI, 2006 s.45). In effect, registered traders can only deal with banks or the Reserve Bank of India, as they are the only types of regulated entities permitted to

register as such. In the Indian context, the reason for restricting trade access in such a manner may be due to its nascent market which remains limited and has largely *vanilla* product offerings. This calls for a proactive legislation allowing for effective risk minimisation and monitoring as well as market deepening and trade in a wider range products; restrictions on traders hinders market participation.

4.2 Exchange Trading Platforms

In South Africa, the exchange trading requirement is not explicitly stated, as market regulation is still evolving. Presently, because the National Treasury (2014) notes the need for phased implementation of G20 regulations, OTC trades are not *obliged* to move to exchange trading. The aim of the Treasury is to increase trade transparency before restructuring the institutional frameworks and the way trades are carried out. Risk averting traders are, however, voluntarily opting for dealing on exchange in a bid to minimise downside risk. This is evidenced by the growth of exchange-related trades compared to those on the OTC market, which have declined post-2008 (BIS, 2013). On a similar note, the Indian market is still considering a regulated exchange for OTC derivatives. Gopinath (2010) explains that, although there is presently no exclusive exchange trading platform available for OTC products in India, electronic platforms are available for transactions involving foreign exchange swaps and forward rate agreements. The Gandhi Committee is reviewing the regulation in India in order to accommodate the creation of electronic swap execution facilities.

Unlike in South Africa and India or, for that matter, the rest of the world, Brazil's derivatives regulation is dominated by strict controls on trading procedure. There is much to be lauded about its regulatory framework: According to the BIS Triennial Report (2013), eighty per cent of its derivatives have already been moved on to exchange i.e. BM&FBovespa. This major shift is made possible by the CVM Instruction 467 that allows for trades to move onto the exchange, subject to prior approval by the CVM (CVM, 2008). The request for prior approval is unique, as it reduces unsupervised growth of complex and toxic derivatives that are potentially harmful in the financial system. Instruction 461 governs OTC markets and exchanges that deal in derivatives subject to

organisational and operational requirements. Turkey follows a broadly similar approach in that it allows for the conversion of OTC derivatives onto an exchange by using 'Communiqué III-37.1 (CMB, 2013). OTC derivatives can be exchange-traded if they are standardised and where eligible counterparties agree to such a form of trade. In contrast to Brazil, prior approval of the regulatory authority is not required in order to validate the transaction. Brazilian and Turkish rules do not obligate OTC trades to be dealt strictly on exchange. Trades can be carried out OTC, but however higher capital requirements are imposed⁷.

4.3 Centralised Clearing / Central Clearing Party

A clearing house offsets counterparty risk in a derivative contract by transposing itself between a buyer and seller, thus becoming liable to both (Hull, 2010). Current derivative regulation, as recommended by the G20, advocates for the increased use of such risk management practices. The Financial Markets Act (2012) provides regulation on the licensing, rules and functions of a clearing house in Chapter IV and V, and both local and global CCPs permitted to trade on the South African market. These CCPs have to be licensed by the Financial Services Board, should maintain sufficient resources and assets to carry out their mandate and perform functions of licensed CCPs in terms of the Act (FMA, 2012 s.107(1), 48). The use of CCPs is, however, not mandatory. A carrot and stick approach of incentivising clearing is adopted; since clearing of trades is voluntary, regulatory authorities provide netting benefits for parties who utilise clearing houses in their transactions. The registrar can mandate the clearing of a contract by a CCP when it is deemed necessary. For example, where transactions sizes are large enough so that defaults could result in a liquidity crunch and price volatility, and ultimately destabilise not only the market but the economy, the registrar will require that such transaction is cleared (FSB, 2012).

Safe trading is thus enabled without blocking risk-taking traders from entering the market. The reason for such an accommodative approach to clearing lies, at least partly, in the need for authorities to gain a better understanding of the market before institutional

⁷ Discussed further in Section 4.6

frameworks are changed. Further, South Africa does not presently have an onshore clearing house; the fact that foreign CCPs are used could be another factor influencing the accommodative clearing stance. The provision for the registration of an independent domestic CCP is included in the Act, but the size of the derivative market does not warrant the establishment of a clearing house. Havemann (2014) argues that by so doing, the benefits of risk reduction would be negated by increased costs for global participants entering the local market, resulting in investors avoiding the use of South African derivatives products. Consultation on this aspect is still underway.

Brazil follows a similar approach in that clearing is not mandatory; however, as mentioned in Section 4.3, Brazil's derivative market is concentrated on the exchange market. OTC cleared derivatives account for only 20% of derivatives trades in the country (Coehlo, 2014). Established centres for trade and clearing are BMF&FBOVESPA and CETIP (OTC Clearing house). Under current regulation, incentivised clearing of OTC contracts is provided for through Law No.10214 which allows for multilateral netting benefits when clearing derivatives.⁸ This law dictates that clearing houses should act as central counterparties in OTC derivatives contracts and must implement systems that safeguard and ensure settlement (CVM, 2008). It is important to note that no obligation is placed upon individual traders who choose to trade bilaterally without involving the CCP. The only requirement that they need to meet is that of CVM Instruction No.467 which requires counterparties to a trade to get approval from the regulatory entity which registers their transactions. Where trades are carried out with the involvement of a CCP, benefits such as lower collateral and increased exposure to the market (particularly for banks) are gained.

Like most OTC derivative markets, there are no direct regulatory obligations concerning the use of collateral and / or clearing in OTC derivatives trading in India. The Clearing Corporation of India Ltd (CCIL) was established in 2001 with the objective of improving the transaction settlement process; OTC derivative transactions *may* be cleared through the CCIL or other international clearing houses. India follows the approach of providing incentives for trades that are cleared by the CCIL. The Reserve Bank of India,

⁸ Multilateral netting is an agreement amongst multiple parties to have transactions summed up instead of having them settled individually. This is enabled by utilising a clearing house or an exchange.

acknowledging that centrally-cleared trades carry less risk than those that are bilaterally settled, provides for lower capital requirements on CCP guaranteed trades (RBI, 2009).

Turkey requires no regulatory oversight in the clearing of OTC derivatives; the Turkish authorities do, however, provide collateral relief to those parties that include a CCP in their trades. Turdex is the exchange that oversees clearing obligations in the Turkish market. Regulation on the establishment and working principles of off-exchange organised securities markets is set out in Article 35 of the Capital Markets Law. Clearing may be handled either within the market or by a clearing and settlement institution that is based overseas and is authorised by the Capital Markets Board to carry out this mandate (CMB, 2012). Unlike Turkey, Brazil and South Africa do not require foreign CCPs to be authorised by a local regulatory authority as long as the CCPs meet IOSCO standards.

Table 4.1: Major International CCPs

	Country	Contract Type				
		Interest rate	Credit	Foreign Exchange	Equities	Other*
LCH Clearnet Ltd	U.K	✓		✓		✓
ICE Clear Europe	U.K		✓	✓		✓
ICE Clear Credit	U.S		✓			
CME Group	U.S	✓	✓	✓	✓	
CME Clearing Europe	U.K	✓				✓
Eurex Clearing AG	Germany	✓	✓		✓	
LCH Clearnet SA	France		✓			
CDCC	Canada				✓	
NASDAQ OMX Stockholm	Sweden	✓				✓
SGX Asiaticlear	Singapore	✓		✓		✓
Japan Securities Clearing	Japan	✓	✓			
BM&F Bovespa	Brazil	✓		✓	✓	✓

Source: DB Research

* Includes agricultural, commodity and energy derivatives.

A common thread is that clearing regulations are not yet mandatory as envisaged by the G20 recommendations. Emphasis is instead placed on incentives in an attempt to increase

clearing of trades. Taking a look at the major CCPs in the world, Table 4.1 reveals that the countries considered here, with the exception of Brazil, do not have the necessary institutions to foster clearing activities. India does have a clearing house, although it is indirectly limited by other legislation. Turkey and South Africa do not have any locally based CCPs and therefore utilise foreign CCPs. The unavailability of local infrastructure explains why their clearing regulation is accommodative of foreign CCP players. Inclusive regulation enables safety of the derivatives market to be facilitated by those agents who are established and well vested in the business.

4.4 Trade Reporting and Trade Repositories (TRs)

Hull (2010) defines a trade repository as an entity that has a centralised data collection and record maintenance system for OTC derivative transactions. Utilisation of trade repositories improves operational efficiencies in post-trade processing, such as payment and settlement by entities that use the data. Data collected by a trade repository can be used for electronic trade matching, confirmation and collateral management, and in so doing reducing risk (Ledrut and Upper, 2007). Trade repositories serve the important role of improving the transparency of information to market participants and the relevant authorities; this can be used to detect market abuse, the build-up of systemic risk and enable market efficiency. Recognising the benefits TRs offer to the derivatives market, G20 member states have taken an active approach to incorporate these facilities into their markets.

The regulation of TRs in South Africa falls under the Financial Market Act of 2012, in terms of which more than one TR can operate in a jurisdiction if legally registered by the relevant authority. Sections 54 - 58 lay out the registration requirements, duties and reporting obligations. Importantly, the intention of having all transactions in the derivatives market reported to the TR is clear; prior to 2008, South Africa had lax reporting requirements but this is being reversed. The registrar can now prescribe reporting obligations on transactions or positions in unlisted securities which must be reported to a trade repository (FMA, 2012 s.58). These requirements vary by the type of security to be reported, the entities to whom the obligation applies and the manner or

frequency the reporting should take place. Secondary enabling / supportive legislative rules for the reporting obligation are yet to be tabled as further market consultation is necessary. Discussions are focused on how the confidentiality clauses in some contracts can be put aside in order to bring about transparency and inclusivity of all contracts.

Turkey's Law No 6111 also mandates traders to report their deals to either Turdex or Istanbul Exchange (CBRT, 2011). This requirement pertains to all derivatives trade regardless of their nature, underlying and size. Therefore no trades are permitted to fall through the net as regulation is all encompassing. Local trade repositories are allowed to share gathered information with local market participants and the regulatory authorities. Sharing of information with foreign entities requires the approval of the Capital Markets Board. With regards to confidentiality clauses within Turkish Markets, no derivative contract is allowed to remain unreported as long as it occurs within Turkish soil. As previously noted in section 3.2.6, only trades that are registered overseas can escape local regulation thus they will be subject to reporting requirements of the country they are entered in.

Unlike other emerging countries, the Brazilian derivatives market has comprehensive and strict regulation regarding reporting of trades. Under the CVM Instruction 550 and Law no 12 543, both exchange and OTC trades must be reported to CETIP or BM&FBovespa in order for them to be legally binding. This rule differs with other countries in that the enforceability of derivatives contracts can only occur when a contract is properly reported. Companies that deal in derivatives market are also obligated to disclose their positions and contracts to the relevant authority. Businesses, taken individually, have an incentive to hoard relevant information or to selectively report data. Therefore market surveillance is promoted by the inclusion of major market participants in the reporting requirements. Data that has to be reported is similar to that of South Africa (i.e. type, manner of settlement, quantity). Proper records have to be maintained for 5 years or more by the TR so that they can be readily available for perusal by regulatory authorities and the public if need be. However, privacy regulation does not allow foreign entities to have access to the data thereby limiting Brazilian market transparency to the rest of the world.

The Reserve Bank of India has already put in place a reporting arrangement for its derivatives market. Under Section 45X of the RBI Act (2006), all regulated entities in the Indian market are subject to the reporting obligation. Current trade reporting arrangement covers foreign exchange forwards, currency foreign exchange and swaps, interest rate, forward rate contracts and credit derivatives. Trading volumes in foreign currency interest rates are negligible hence this instrument will be subject to the reporting obligation later as a review of the applicability of the law is scheduled for March 2015 (RBI, 2014). In comparison to Brazil and Turkey, India's regulation differs both in that it does not require reporting for contracts to be enforceable and exempts other derivative contracts from the reporting obligation.

Table 4.2: Major Trade Repositories

	Country	Repository Instruments				
		Interest Rate	Credit	Foreign Exchange	Equities	Other
Bank of Korea	Korea	✓	✓	✓	✓	✓
BM&F Bovespa	Brazil	✓		✓	✓	✓
CETIP	Brazil	✓		✓	✓	✓
Clearing Corp of India	India	✓	✓	✓		
CME Group	U.S	✓	✓			✓
DTCC-DDR	U.S	✓	✓	✓	✓	✓
DTCC-DDRL	U.K	✓	✓		✓	
DTCC-Data Repository	Japan	✓	✓	✓	✓	
REGIS-TR	Luxembourg	✓		✓	✓	✓
ICE Trade Vault	U.S		✓			✓

Source (FSB, 2013)

*Includes agricultural, commodity and energy derivatives.

Differences in reporting regulation can be aligned with varying country-specific institutions available. For instance, South Africa and Turkey do not have local trade repositories (see Table 4.2), hence the proviso for data capturing with foreign entities. At present South Africa and Turkey, because of their reliance on foreign repositories, are discussing how to deal with confidentiality clauses. These foreign domiciled repositories are subject to their host nation's regulation, resulting in a potential conflict of interests.

This has attracted attention in the countries being analysed, as they are waiting on the extra territorial effects of the U.S and U.K. regulation to be dealt with before changing their own standards (FSB, 2014).

As shown in Figure 4.2, India and Brazil have domestic repositories, and can therefore restrict data sharing because local institutions are used when reporting trade data. Another interesting issue pertaining to Brazil is that its trade repository does not keep records of credit derivatives. Trading in credit derivatives is permitted but, as the market is yet to fully develop, there is presently no surveillance (Dodd, 2007). Brazil's reporting is also unique in that the enforceability of contracts rests on the reporting rule; this differs from other emerging countries where enforceability makes use of the contract terms only.

Brazil, with its local CCP, is susceptible to risk from leveraged contracts involving offshore participants, creating a need to monitor both the size and nature of contracts that are facilitated through the CCP. Should the CCP collapse due to an unsustainable concentration of clearing obligations, Brazil would face systemic risk; this makes the adoption of stringent and robust risk management practices reporting and clearing extremely important.

4.5 Capital Requirements

The Global Financial Crisis highlighted how inadequately capitalised financial institutions can crumble when a credit crunch occurs; to this end, capital adequacy rules were promulgated to safeguard the financial sector. Under Basel III regulations, three pillars exist for the reduction of counterparty credit risk, over-exposure of banks and increased market discipline. The Pillars are as follows:

- Minimum Capital Requirements
- Supervisory review
- Market discipline

These Pillars provide a framework for the implementation of capital buffers for banks in times of crisis, as well as limits on bank leverage, securitisations, and exposures to CCPs (BIS, 2013). While Basel regulations do not relate directly to the derivatives market, they

do affect bank holdings in OTC derivatives⁹. Basel reforms include: increasing Tier 1 capital from 4 to 6 per cent; increasing the minimum common equity requirement from 1 per cent to 4.5 per cent; a capital conservation buffer of 2.5 per cent and an additional counter cyclical buffer ranging between 0 and 2.5 per cent of risk-weighted assets (BIS, 2010). Essentially, these regulations mean that banks must hold substantially more capital, keep trade derivatives on-balance-sheet and use CCPs. Capital requirements reduce the funds available to banks for derivative trading, limiting exposures to the volatile OTC market. The Financial Stability Board Report (2013) shows that capital requirements are fully operational (as set out by Basel III) in Brazil, India and South Africa; Turkey is yet to adopt the capital adequacy rules. Although South Africa has implemented the capital requirements for banks, legislation does not affect non-banks. According to FSB (2013), South Africa already had effective working rules in its market which surpassed those envisaged by Basel III; changing this pre-existing legislation would be counter intuitive.

4.6 Margin Requirements

The FSB (2014) notes that, since a significant number of OTC derivatives are not standardised, and as such they cannot be centrally cleared. Non-standardised products will be subject to bilateral counterparty risk management and capital requirements as set forth by Basel III. The objectives of margin requirements are to reduce systemic risk and spill-over effects by ensuring the availability of collateral to offset losses as well as to promote central clearing. Pertinent to the G20 agreement to impose margin requirements on non-centrally cleared derivatives, the Basel Committee and IOSCO proposed key principles that should be followed by member states. These principles address seven main elements which include, *inter alia*:

⁹ A thorough explanation on Basel III is beyond the scope of this research. However, for further clarification visit <http://www.bis.org/publ/bcbs128.htm>

- Appropriate margining practices must be in place with respect to derivatives contracts that are not cleared by CCPs;
- Covered entities which engage in non-CCP cleared derivatives must exchange both initial and difference margin proportionate to the risks caused by these transactions;
- The methodologies for calculating margins should be consistent across entities covered by the requirements and must ensure that all exposures are fully covered with a high degree of confidence;
- When counterparty default occurs, all assets collected as collateral and margin must be liquidated within a reasonable time and the proceeds should be sufficient to cover entities from losses. For that reason, assets have to be highly liquid and still hold their value in times of financial stress (BIS, 2013).

The framework for margin requirements was recently brought forward (September 2013) and, to this end, there have not as yet been any legislative or regulatory steps put in place towards carrying out these requirements. Brazil, India and Turkey envisage that rules will be issued in 2015, although not necessarily within the BCBS-IOSCO framework. South Africa, on the other hand, is following this framework and its implementation timetable (FSB, 2013).

4.7 Possible explanations for regulatory disparities

Consistent regulatory implementation across and within jurisdictions, promotion of greater use of standardised OTC derivatives, minimising the build-up of both systemic risk and regulatory arbitrage is desirable, there are, however, several country specific issues which impact both the pace and direction of the reform initiatives. These include the complexity of products on offer, market depth and size, the type of market participants and the motivation behind the trading impact of the regulatory reforms proposed.

The OTC derivatives market is concentrated in the developed as opposed to emerging markets. BIS statistics reveal that the notional amounts outstanding in 2013 totalled \$693

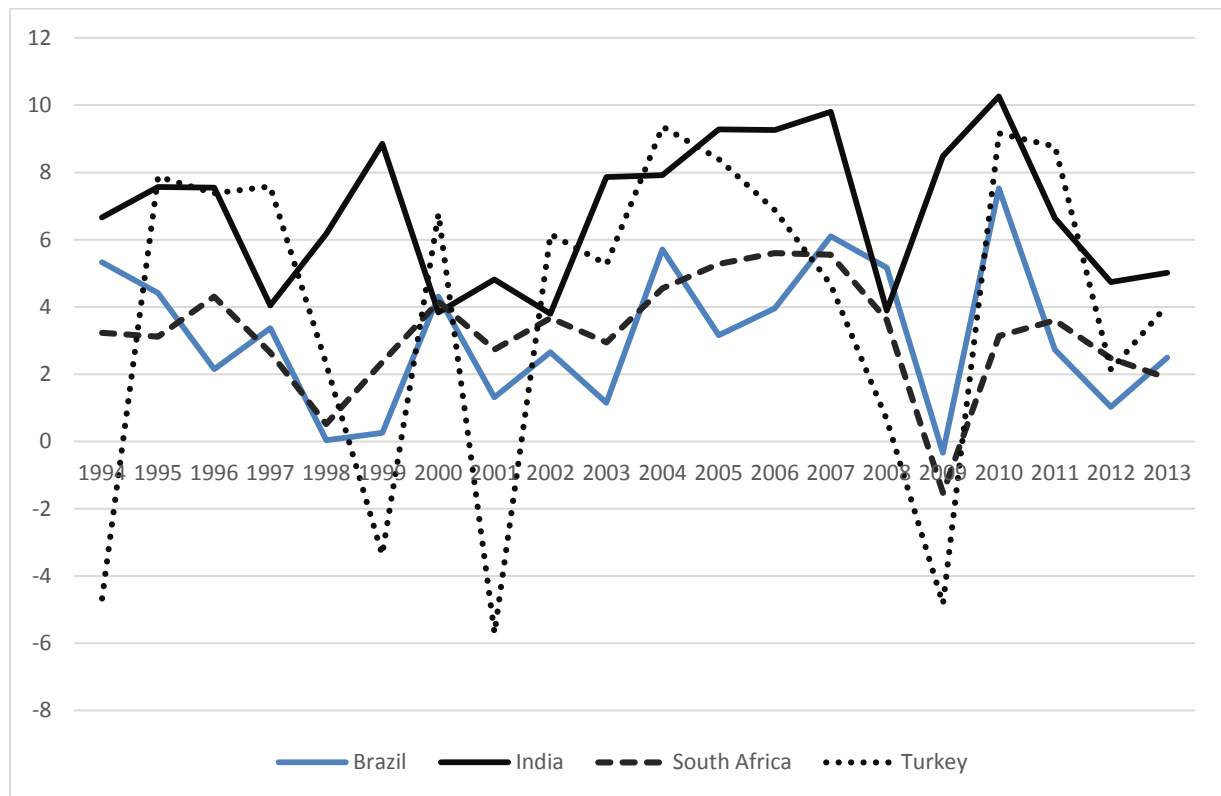
trillion, with the majority being accounted for by developed country trades (\$668 trillion) and \$25 trillion by emerging markets (BIS, 2013); the size of the derivatives market in emerging markets is relatively small and, as a result, regulatory reforms take their cue from the US and Europe. The internationalisation of currencies, and the involvement of emerging markets in interest rate and foreign exchange (forex) derivative contracts which are traded offshore, necessitate the incorporation of foreign regulation in market legislation. This, as the FSB (2014) note in a progress report, is responsible for a slower response in implementing G20 reforms; implementation is primarily guided by advanced countries, with emerging countries adopting a wait-and-see approach as cautionary steps are taken towards market overhaul. This is illustrated by South Africa's choice of a phasing-in of regulation of a market that was previously unregulated. Turkey and India have also chosen to promulgate regulation involving wide consultations with market participants; consultations and amendment of regulation are presently on-going. Brazil opted for varying its regulation through the use of CVM Instructions and Deliberations instead of implementing a one-size-fits-all approach; rules are, however, guided by the developing world as it takes the extra territorial effects of the DFA and EMIR into consideration when passing law (ICSA, 2012).

Reliance on US and European facilities, such as clearing and trade repositories, forces emerging market participants to uphold foreign regulatory standards because regulation has an indirect effect on how products are traded; for example the pricing and legality of trades. Leyshon and Tickell (1994) argue that cross-border interconnectivity between market participants makes it more difficult for emerging markets to avoid the overarching regulation adopted by dominant market players. This has proven to be the case with the current state of derivatives regulation in emerging markets. In a bid to avoid / minimise regulatory arbitrage, South Africa, India, Turkey and Brazil are taking G20 recommendations as their guiding principles in establishing new regulation. Having consistent regulation amongst member countries, helps reduce toxic and financially detrimental instruments from flooding markets and creating systemic risk; the desire for uniform and integrated regulation is the driving force for these countries who aim to align derivatives regulation to that of the US and Europe.

Turkish regulation has interesting extra-territorial effects which differ from those of its peers. Communiqué III-37.1 stipulates that foreign-based financial institutions are subject to the Capital Markets Law when they (i) establish a business in Turkey (ii) run a website in Turkish language or (iii) directly or indirectly market their business services in Turkey (CMB 2013). It follows that, unlike other emerging markets that are primarily seeking to follow the developing markets' regulatory cues through adhering to US and European laws insofar as cross border trades amongst financial institutions are concerned, Turkey aims to enforce its own regulation where Turkish participants are involved. This stance stems from past such as the Decree No. 32 on the Protection of Value of Turkish Currency which required the sale and purchase of any derivative contracts to be carried out by an institution authorised by the CMB; in a bid to retain control of derivatives trading in Turkey, authorities are reluctant to use, or rely solely on, foreign country regulation.

As mentioned earlier, Brazil has strict reporting regulation in place. Corporations that hold derivative instruments are mandated to disclose this in their financial statements, and financial institutions to disclose this information in special reports to the BCB, notwithstanding the requirements of Basel regulation (CVM, 2008). Coehlo (2014) maintains that the reason for this is that, as a result of the elaborate transparency rules that are a pre-requisite for minimising concentration and systemic risk, the Brazilian market is quite liquid and sophisticated. Brazilian clearing institutions require rigorous monitoring in order to safeguard the economy from potentially hazardous financial instruments, justifying the stringent regulation.

Figure 4.1: GDP Growth (Annual %)



Source: Thompson Datastream (2014)

Differentials in derivatives regulation are related to differing economic fundamentals; even though other variables are responsible for the economic performance of a country, Ledrut and Upper (2013) consider derivatives (and the extent of their regulation) to be arguably part of the equation during the crisis period. The financial crisis, and its effects on confidence, lending and investment, led to the recession. While countries like South Africa and India had insulating regulations in place and minimal exposure to OTC derivatives products that enabled them to better manage the *financial crisis*, they could not escape the effects of the ensuing worldwide *recession* through the effects on exports to the rest of the world. This is illustrated in figure 4.1, with all of the selected economies showing a fall in GDP growth rates soon after the onset of the crisis. The use of derivative products can bolster economic growth by, *inter alia*, enabling the more efficient sharing of risk; at the same time, however, economic growth and stability are prime reasons behind the need of regulation that protects a country from the perils of unregulated or under-regulated OTC markets.

Levels of, and reliance on, foreign direct investment (FDI) in a country can alter or have an effect on the nature and type of regulation promulgated in a country; emerging economies rely heavily on FDI to fund investment projects and expand economic activity. Foreign Institutional Investors¹⁰ (FII) also play a pivotal role through trading in financial securities and exerting a strong impact on the total financial flows in an economy. The National Stock Exchange of India (2014) notes that OTC derivatives are used by FIIs as hedging instruments to eliminate currency risk. The attractiveness of a country to foreign investors rests heavily on the regulation employed in that country. In order to attract much needed investment, regulation has to be accommodative, consistent and inclusive so as to cater for foreign investors (Tickell, 2000).

Disparities are present in the regulation adopted by the countries being considered. Indian, South African and Turkish derivative regulations aim, *inter alia*, to attract foreign investment. There are no restrictions or taxes on either of exchange-traded or OTC derivatives contracts entered into by foreign entities. In South Africa, foreign companies are allowed to trade as long as their derivatives regulatory standards are on par with local standards. In India, the RBI supports FIIs, but with the disclosure requirement as the main surveillance tool used to safeguard its markets (ICSA, 2012). Brazil, on the other hand, is tough on FDI - Brazilian authorities believe that the Real's appreciation was brought about by capital inflows, reducing its international competitiveness in the global commodity markets (Dodd, 2007). As a result, capital controls and taxes on foreign companies' investments in the local assets and derivatives markets were instituted. These restrictions safeguard the Brazilian derivatives market from "hot money" which causes currency overvaluation as speculative capital flows into portfolio investments. It is evident that dependence on foreign capital inflows affect the type of regulation adopted, with laxer rules in place where economies rely on the FDI, and stricter rules where countries can afford to restrict inflows.

The BIS Triennial Survey (2013) found derivatives trading in emerging economies to be driven by both hedging and speculation. Currency volatility is a common characteristic of

¹⁰ FII are investors who invest in assets which belong to countries other than that where the company is based. Typical examples are mutual funds, investment banks hedge funds and insurance companies.

emerging economies which, drives traders to hedge their interests against currency movements. The abundance of commodity-based trades also promotes speculation in derivatives as price changes enable investors to profit from these movements (Hull, 2008). Regulation affects the types of derivatives contracts that can be used in a country. Brazil, India, South Africa and Turkey face speculative pressure in derivative markets stemming from interest rates, commodity-indexed investments and currency derivatives. Currently, Brazil, India and Turkey have supportive legislation which places position limits on the number of trades investors can be exposed to in the OTC market. This helps to limit volatility because the concentration of positions can be effectively monitored in order to avoid market collapse in the event that price movements dip / rise to unanticipated levels (FSB, 2013). South Africa acknowledges the importance of such limits but is yet to put them in place; the South African Treasury's proposed Financial Markets Act regulation intends to place limits on both individual and commercial investors in a bid to curb excessive speculation. Limit sizes vary amongst countries because of differentials within the markets. Market depth, product lines availability, the number of market participants and the type of derivative contracts traded cause the risk profile of each country's OTC market to vary and the limits imposed take these factors into consideration.

Regulation in India does not allow for trading in complicated derivatives, such as indexed derivatives that have a derivative as an underlying. This can be explained by the nature of the derivatives market that is small and still expanding; the primary focus is on commodity, interest rate and forex derivatives. The lack of regulation facilitating sophisticated derivatives stems from the need to keep the market simple in order to avoid contagion risk in the event of one derivative class crashing. Bearing in mind that Indian regulation dictates dealing through the RBI, the regulatory authorities can control the market and, given the simple form of derivatives available, risk can thus be contained. It is possible that the small and simplistic product offering in its OTC market is what helped them weather the GFC storm. Unlike India, the other countries have no limitation on product offerings; South Africa and Brazil in particular offer many product lines, ranging from simple commodity, interest rate and forex derivatives, swaptions, contracts for difference and warrants. Regulation with regards to "piggy backing" of derivatives is

accordingly non-existent. The market depth and the extent to which foreign players are involved provide a rationale for this lax stance. For instance, Brazil is connected to overseas market players through its exchange, thus its regulation has to be accommodative of varying product types so as to remain viable and relevant within the ever changing derivative landscape.

4.8 Conclusion

This chapter explored some differences in emerging market regulation. The varying regulatory standards in place within individual jurisdictions was argued to stem from available infrastructural facilities, growth rates, the extent to which foreign direct investment is promoted in a country and previous legislation. Brazil has accommodative regulation which promotes derivative trading in its markets, although strict reporting standards are imposed. Indian and Turkish regulation is restrictive, probably a result of the infancy of its markets, as it moves to ensure transparency and accountability in order to avoid disasters such as that of 2009. South African regulation is not yet fully developed, but its approach is accommodative. Regulation in the four countries seems to serve a common purpose of risk management, with distinctions between the market participants targeted and the protocols followed. The next chapter concludes and provides recommendations for further research.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

The core purpose of the study was to conduct a comparative analysis of OTC derivatives regulatory reforms in four of the *Fragile Five* countries - South Africa, Brazil, India and Turkey. The study was motivated by the acceptance by G20 member states to implement risk management and reporting rules as encompassed by the 2009 Pittsburgh Agreement. Given the different levels of economic growth, institutional infrastructure and market participants, a comparative study of this nature can help shed light on the various approaches adopted by these countries, and factors which influence the regulatory forms implemented. In this chapter, the major findings, conclusions and recommendations are discussed.

5.1 Major Findings

South Africa, Brazil, India and Turkey have made progress towards the implementation and incorporation of the G20 OTC reforms. In preparation for regulatory implementation, all the countries had consultations with stakeholders and public opinion is sought on any proposed regulatory amendments. Appropriate regulatory reforms were instituted to facilitate the incorporation of G20 recommendations into the regulatory systems of these countries. India and Turkey made significant amendments to the Reserve Bank of India Act and Capital Markets Law respectively. South Africa amended its Financial Markets Act and is yet to implement enabling rules in the form of the Financial Markets Act Regulation. Although no Acts were amended, Brazil issued directives in the form of CVM Instructions in order to help derivatives traders implement reporting and clearing rules. Turkey also issued Communiqués as a way of including previously unregulated areas into regulation under the Capital Markets Law. To facilitate the implementation of these regulations, all four countries delegated the regulatory and supervisory authority to varying bodies for implementation. In South Africa, the FSB, National Treasury and various Working Groups were tasked with facilitating these reforms. In Brazil, *Banco Central do Brasil* and Brazilian Securities Exchange Commission coordinate the

implementation process. Turkish regulation is overseen by the Capital Markets Board and the Reserve Bank of India is in charge of the Indian regulatory landscape.

Based on observations of the regulatory reforms instituted, it may be concluded that the Global Financial Crisis of 2008-09 triggered the nature of reforms that have been adopted or are planned. Much of the reforms implemented in OTC derivatives markets can be attributed to the regulatory loopholes that were exposed when the crisis commenced. Prior to the crisis, default risk and contagion risk were observable and considered non-threatening. In the wake of the crisis, however, it was shown that if the OTC market was left unregulated, as was the case, global economic disaster could ensue.

Regulatory changes were developed and instituted in the developed and emerging markets with the latter, having smaller derivatives markets, taking regulatory cues from the major market participants (i.e. US and Europe). South Africa, Brazil and Turkey require that derivative traders be registered. India covers this by requiring registration as a prerequisite to trade, as well as having a registered entity as a party to any contract. This rule seems to be applied consistently, ensuring the safety and status of the market by having authorised people as dealing in the market.

The exchange-trading requirement is not explicitly stated in South African and Indian Law, but in Brazil and Turkey exchange trading is promoted by the law. Brazilian OTC derivative trades are mostly done on exchange, mainly because of the availability of localised exchanges and the promotion of safe trading through the BMF&Bovespa. Even though Brazil and Turkey have exchange trading rules, clearing of trades remains unregulated. The countries examined do not mandate the clearing of derivative trades, but an incentivising approach to clearing is adopted, with netting benefits awarded to those trades cleared through a CCP. In line with the G20 recommendations, all have reporting rules in place. All trades carried out OTC or on exchange have to be reported to the relevant authorities, with details of the report including contract size, type, manner of settlement and quantity. Though reporting is enforced in all the countries, Brazil has stricter standards; the enforceability of a derivative contract is possible only if the contract is reported.

In terms of capital requirements, all are governed by Basel III regulations. Capital adequacy rules are in place, save for Turkey that is yet to adopt them. As a result of the derivatives contracts not being standardised and thus not capable of being centrally cleared, no regulation is in place relating to margin requirements. All the countries do, however, follow BCBS-IOSCO guidelines in this regard.

The rules implemented are similar in character but have varying guiding principles in terms of implementation; varying economic and institutional factors have shaped regulation. Levels of economic wellbeing, reliance on foreign indirect investments and the available infrastructure influence the derivative regulation adopted. A generally accommodative approach to regulation was noted because of dependence on facilities that are domiciled in foreign markets. It is both this dependence on foreign institutions, as well as a need to promote individual derivative markets internationally, that drives accommodative regulation. Reporting of trades is rather strictly monitored through regulation, as the countries are cautious of the problems lax surveillance can have on the market. Brazil is one country that requires reporting of contracts to be done properly in order for the contract to be valid. Because of having accommodative laws, active steps towards safeguarding their markets by imposing strict risk management practices are being taken.

Given their status as emerging market countries, South Africa, Brazil, India and Turkey have applied the G20 recommendations consistently and in line with international standards. The consistent application of rules is necessary because of their vulnerability as “hot” markets when traders are hedging risk from developed market business. Consistent rules shield emerging markets from regulatory arbitrage and provide a buffer against international financial disturbances. In conclusion, current regulation can be viewed as being accommodative overall, but is supported by stringent regulation in terms of monitoring for inherent business risks. Regulatory differences amongst countries are supported by the macroeconomic factors and institutional facilities in each country.

5.2 Recommendations and Areas of Further Study

The overall theme that emerged here may provide some direction to emerging economies that do not form a part of the G20 group but have active derivative markets. Accommodative regulation that is similar to that discussed would be necessary within an overall vision for the market. For instance, where a country needs to promote its derivative market but does not have the necessary clearing, reporting and exchange facilities, it can adopt policies that are accommodative to foreign players but enforce strict macro-managing rules as done in South Africa and India. The key element of promulgating regulation is to take note of a country's institutional facilities and markets. When a market is self-sustaining, strict rules can be applied. When utilising foreign facilities, however, extra-territorial effects of foreign regulation and local laws need to be assessed so as to come up with business enabling laws.

New and pre-existing regulation to deduce trends in regulation within the countries studied was employed here. However, emerging themes in regulation need to be studied further. It is suggested that further studies be conducted to examine the extra-territorial effects of US regulation on emerging markets. Such an analysis will help to determine whether an overlap with American regulation (if any) influences regulation in emerging markets and, if so, how can emerging market regulation be adapted.

Infrastructure such as clearing houses and data repositories are limited in emerging economies; it is relevant to consider whether the establishment of local CCPs and data repositories would have regulatory and cost advantages. This arises from the fact that, emerging markets are heavily reliant on foreign facilities; they are subject to foreign laws. Further, the use / establishment of local CCPs is argued to be an expensive way of luring international players into emerging markets. Such a study could shed light on the advantages and disadvantages of having local facilities or not.

REFERENCES

- ACHARYA, V.V. (2013) Understanding Financial Crises: Theory and Evidence from the Crisis of 2007-08. *National Bureau of Economic Research*. Working paper 17000.
- ACHARYA, V.V. and JOHNSON, T.C. (2007). Insider trading in credit derivatives. *Journal of Financial Economics*, 77: 110-141.
- ALLEN, F. and GALE, D. (2001). *Comparing Financial Systems*. MIT Press: Cambridge.
- ALLEN, F., MORRIS, S. and POSTLEWAITE, A. (1993) Finite bubbles with short sale constraints and asymmetric information. *Journal of Economic Theory*, 61: 206-229.
- ALNASSAR, W.B., AL-SHAKRCHYB, E. and ALMSAFIRA, M.K. (2014). Credit Derivatives: Did they exacerbate the 2007 Global Financial Crisis: AIG Case Study. *Procedia - Social and Behavioral Sciences* 109: 1026-1034.
- ANDERSON, S. (2000). A history of the past 40 years in financial crises. *International Financing Review* 2000 issue supplement, 5-9.
- BANK FOR INTERNATIONAL SETTLEMENTS. (2009). Regular OTC derivatives statistics. [Online]. Available: http://www.bis.org/publ/otc_hy0911.htm Accessed 20 June 2014.
- BANK FOR INTERNATIONAL SETTLEMENTS. (2009). OTC derivatives market activity in the second half of 2008. Monetary and Economic Department. [Online]. Available: http://www.bis.org/publ/otc_hy0905.pdf Accessed 9 October 2014.
- BANK FOR INTERNATIONAL SETTLEMENTS. (2010). Basel III: A global regulatory framework for more resilient banks and banking systems. December 2010 (rev June 2011) Available: <http://www.bis.org/publ/bcbs189.htm> Accessed 10 October 2014.
- BANK FOR INTERNATIONAL SETTLEMENTS. (2013). Triennial Central Bank Survey. [Online]. Available: http://www.bis.org/publ/otc_hy1311/triensurvstatannex.pdf Accessed 3 September 2014.
- BANK FOR INTERNATIONAL SETTLEMENTS. (2013). Margin requirements for non-centrally cleared derivatives - final document. [Online]. Available: <http://www.bis.org/publ/bcbs261.htm> Accessed 10 October 2014.
- BAROFSKY, N. (2012). *Bailout: An inside account of how Washington abandoned Main Street while rescuing Wall Street*. Free Press: New York.

- BERKSHIRE HATHAWAY INC. (2002). Annual Report. [Online]. Available: <http://www.berkshirehathaway.com/2002ar/2002ar.pdf> Accessed: 25 February 2014.
- BORDO, M., EICHENGREEN, B., KLINGEBIEL, D. and MARTINEZ-PERIA, M. (2001). Is the Crisis problem growing more severe? *Economic Policy*, April 2001: 53-82.
- BOORMAN, J. (2009). *The impact of the financial crisis on emerging market economies: The transmission mechanism, policy response and lessons*. Emerging Market Forum, India.
- BRUNNERMEIER, M. (2009). Deciphering the Liquidity and Credit Crunch 2007-08. *Journal of Economic Perspectives*, 23, 77-100.
- BUDAK, A. and DEGERTEKEIN, E.A. (2012). The Handbook of Turkish Capital Markets. *The Association of Capital Market Intermediary Institutions of Turkey Publication*, 61: 1-78.
- CAPELLE-BLANCHARD, G. (2010). Are Derivatives Dangerous? A Literature Survey. *International Economics*, 123: 67-90.
- CAPITAL MARKETS BOARD. (2013). Communiqué III-37.1. Turkey: Capital Markets Board.
- CAPITAL MARKETS BOARD. (2012). Capital Markets Law, Article 3(u); 40. Turkey: Capital Markets Board.
- CENTRAL BANK OF THE REPUBLIC OF TURKEY. (2011). Law number 6111. Turkey.
- CHACKO, G., SJOMAN, A., MOTOHASHI, H. and DESSAIN, V. (2006). *Credit Derivatives*, Philadelphia, Wharton School.
- CHANCE, C. (2010). *Regulation of OTC Derivatives Markets. A comparison of EU and US initiatives*. [Online]. Available: http://www.cliffordchance.com/briefings/2012/09/regulation_of_otcderivativesmarkets-.html Accessed: 4 August 2014.
- CHANCELLOR (1999). *Devil take the hindmost: A history of financial speculation*. Penguin: New York.
- CLAESSENS, S., KOSE, M.A., and TERRONES, M.E. (2010). The global financial crisis: How similar? How different? How costly? *Journal of Asian Economics*, 21: 247-264.

- COEHLO, A.R. (2014). *Dodd Frank Act and the Brazilian Capital Market- Extraterritorial Effects of Regulation of the Over-the-Counter Derivatives Market*. Sao Paulo Law School Legal Studies Paper, 96.
- COMISSAO DE VALORES. (1976). Law 6.385/76.
- COMISSAO DE VALORES. (2008). CVM Instruction No. 467.
- COMISSAO DE VALORES. (2008). Deliberation 550, Resolution 475.
- COMMODITY EXCHANGE ACT. (2009). US Code Annotated 7:5-9, 27. Annotated 11: 781-784, Annotated 15, 77-78. United States of America.
- COMMODITY FUTURES TRADING COMMISSION. (1989). Policy Statement concerning Swap transactions. *Federal Register*, 54(139): 30694-30697.
- COMMODITY FUTURES TRADING COMMISSION. (1998). Over-The-Counter Derivatives. *Federal Register*. 63(91): 26114-26127.
- COMMODITY FUTURES TRADING COMMISSION. (2009). Exemption of Swap Agreements. *Code of Federal Regulations*, 17: sec 35.2.
- COMMODITY FUTURES TRADING COMMISSION. (2010). Position Limits for Swaps and Futures. *Federal Register*. 76(223): 71685-71699.
- COMMODITY MARKETS OVERSIGHT COALITION. (2010). *An alliance of derivatives end-users and reform advocates*. [Online]. Available: http://www.iatp.org/files/451_2_107464.pdf Accessed: 6 August 2014.
- CORSETTI, G., PESENTI, P. and ROUBINI, N. (1999). What caused the Asian Currency and Financial Crisis? Part 1: A Macroeconomic Overview. *National Bureau of Economic Research*. Working Paper, 6833.
- CONSELHO MONETARIO NACIONAL. (1994). CMN Resolution No. 2.042. Brazil.
- COUNTERPARTY RISK MANAGEMENT POLICY GROUP. (1999). *Improving Counterparty Risk Management Practices*. [Online]. Available: <http://www.isda.org/educat/pdf/CRMPG-Report6-99.pdf> Accessed: 21 July 2014.
- CROTTY, J. (2008). Structural causes of the global financial crisis: a critical assessment of the 'new financial architecture'. *Cambridge Journal of Economics*, 33: 563-580.
- CROTTY, J. and EPSTEIN, G. (2009). Avoiding another meltdown. *Challenge*, 52, (1): 5-26.
- DOBSON, W. (2009). *The financial crisis and rescue: What went wrong? Why? What lessons can be learned?* University of Toronto Press: Toronto.

- DODD FRANK ACT (2010) sec 733; 723:3H; 7233H(b); 729; 729 3B(c); 727; 763(i); 716; 716(b), 619; 721:13,21; 731; 764; 737. United States of America: Commodity Futures Trading Commission.
- DODD, R. (2003). *Consequences of liberalising Derivatives Markets*. Financial Policy Forum Derivatives Study centre, Washington.
- DUPONT, J.C. (2009) Second chance at legal certainty: AIG collapse provides impetus to regulate credit default swaps. *Administrative Law Review*, 61(4): 843-869.
- DUTCH BORSE GROUP (2009). *The Global Derivatives Market. A Blueprint for Market Safety and Integrity*. Dutch Borse Group Publications: Germany.
- EUROPEAN MARKET INFRASTRUCTURE REGULATION. (2012). Article 2(8); 2(9); 4; 4(5); 10; 11; 11(3); 9; 9(4). Europe: Financial Conduct Authority.
- FABER, D. (2009). *And then caved in: How Wall Street's Greed and Stupidity Brought Capitalism to its Knees*. John Wiley & Sons: New Jersey.
- FINANCIAL MARKETS ACT. (2012). Section 5(1)(b); 75; 54; 57 (1)(i); 56; 50(3); 51(1-2); 5(1)(c); 107(1); 48. South Africa: Juta Law.
- FINANCIAL SERVICES BOARD (2012). Reducing the risk of over-the-counter derivatives in South Africa. [Online]. Available at: <http://www.treasury.gov.za/legislation/bills/2012/FMB/Annexure%20B%20Reducing%20the%20Risks%20of%20OTC%20Derivatives.pdf> Accessed: 20 February 2014.
- FINANCIAL STABILITY BOARD. (2012). Jurisdictions' declared approaches to central clearing of OTC derivatives. [Online]. Available: http://www.financialstabilityboard.org/wp-content/uploads/r_121105a.pdf?page_moved=1 Accessed 5 September 2014.
- FINANCIAL STABILITY BOARD. (2013). *Peer Review of South Africa*. FSB Review Report.
- FINANCIAL STABILITY BOARD. (2014). *OTC Derivatives Market Reforms*. Seventh Progress Report on Implementation.
- GARNAUT, R. (2009). *The Crash of 2008*. Melbourne University Press: Melbourne.
- GEITHNER, T. (2008). *The Current Financial Challenges: Policy and Regulatory Implications*. Remarks at the Council on Foreign Relations Corporate Conference: New York.
- GOPINATH, S. (2010). Over-the-counter derivative markets in India- issues and perspectives. *Bank for International Settlements Review* 102/2010.

- GREENBERGER, M. (2011). Overwhelming a Financial Regulatory Black Hole with Legislative Sunlight: Dodd-Frank's Attack on Systemic Economic Destabilization Caused by an Unregulated Multi-Trillion Dollar Derivatives Market. *Journal of Business and Technology Law*, 6(1):126-167.
- GREENMAN, P.S., OSBORN, J.W. and MECHCAITE, A. (2012). *Regulation of Over the Counter Derivatives under the Dodd Frank Wall Street reform and Consumer Protection Act*. [Online]. Available: http://www.skadden.com/newsletters/FSR_A_Regulation_of_Over-the-Counter_Derivatives.pdf Accessed: 6 August 2014.
- G-20. (2009). *Leaders' Statement: The Pittsburgh Summit*. [Online]. Available: https://www.g20.org/sites/default/files/g20_resources/library/Pittsburgh_Declaration.pdf Accessed: 4 August 2014.
- HAVEMANN, R. (2014). *The Regulation of OTC Derivatives: Minimising Systemic Risk*. National Treasury Presentation on OTC regulation. Pretoria: South Africa.
- HULL, J.C. (2008). *Options, Futures and Other Derivatives* (7e). Pearson Prentice Hall: India.
- HULL, J. (2010). OTC Derivatives and Central Clearing: Can All Transactions Be Cleared? *Financial Stability Review*, 14: 74-95.
- INTERNATIONAL COUNCIL OF SECURITIES ASSOCIATIONS. (2012). *Derivatives Markets in Emerging Countries*. ICSA Emerging Markets Committee Report.
- JACKSON, J.K. and MILLER, R.S. (2013). Comparing G-20 Reform of the Over-the-Counter Derivatives Markets. [Online]. Available: <https://www.fas.org/sgp/crs/misc/R42961.pdf> Accessed: 5 February 2014.
- JANDA, K. and RAUSSER, G. (2011). American and European Regulation of Over-the-Counter Derivative Securities. *Munich Personal RePEc Archive*: Paper no. 35036.
- JARROW, R. and TURNBULL, S. (1999). *Derivatives Securities* (2e). South-Western College Publishing: Cincinnati.
- JOHANSEN, A. and SORNETTE, D. (2010). Shocks, Crashes and Bubbles in Financial Markets. *Brussels Economic Review (Cahiers économiques de Bruxelles)*. 53(2): 201-253.
- JOHNSON, P.M. and HAZEN, T.L. (2004). *Derivatives Regulation*. Aspen: New York.
- KOLB, R.W. (1997). *Understanding Futures Markets* (5e). Blackwell Publishers: Malden.
- LEDROUT, E and UPPER, C. (2007). Changing post-trade arrangements for OTC derivatives. *Bank for International Settlements Quarterly Review*, 83-95.

- LEYSHON, A. and TICKELL, A. (1994). Money order? The discursive constitution of Bretton Woods, the making and breaking of the regulatory space. *Environment and Planning A*, 26, 1861-1890.
- MACKAY, C. (1996). *Extra ordinary popular delusions and Madness of crowds*. John Wiley & Sons: New York.
- MARKETS IN FINANCIAL INSTRUMENTS REGULATION. (2012). Article 28;
- MISHKIN (1999). Lessons from the Tequila Crisis. *Journal of Banking and Finance*, 23: 1521-1533.
- MORRIS, C.R. (2009). *The Two Trillion Dollar Meltdown*. Black Inc: Melbourne.
- MORGAN STANLEY. (2013). How Fragile are the “Fragile Five”? [Online]. Available: http://www.morganstanley.com/public/Tales_from_the_Emerging_World_Fragile_Five.pdf Accessed 5 November 2014.
- NATIONAL STOCK EXCHANGE OF INDIA. (2014). Derivatives. [Online]. Available: <http://www.nseindia.com/content/press/faqfo.pdf> Accessed 3 November 2014.
- NYSTEDT, J. (2004). Derivative market competition: OTC markets versus organised derivatives exchanges. *International Monetary Fund*. Working Paper, WP/04/61.
- PARTONY, F. and SKEEL, D.A. (2007). The Promise and Perils of Credit Derivatives. *University of Cincinnati Law Review*, 75: 1019-1051.
- PRESIDENT’S WORKING GROUP ON FINANCIAL MARKETS. (1999a). *Over-the – counter derivatives market and the Commodities Exchange Act*. Department of Treasury: Washington DC.
- PRESIDENT’S WORKING GROUP ON FINANCIAL MARKETS. (1999b). *Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management*. Department of Treasury: Washington DC.
- PUBLIC POLICY INSTITUTE OF CALIFORNIA. (1998). *When Government Fails: The Orange County Bankruptcy: A policy Summary*. The Second Annual California Issues Forum in Sacramento 18 March 1998.
- QUAGLIA, L. (2013). Financial regulation and supervision in the European Union after the crisis. *Journal of Economic Policy Reform*, 16: 17-30.
- REINHART, C. and ROGOFF, K. (2008). This time is different: A panoramic view of eight centuries of financial crises. *National Bureau of Economic Research*. Working Paper, 13882.

- RESERVE BANK OF INDIA. (2006). RBI Amendment Act. Mumbai: Reserve Bank of India
- RESERVE BANK OF INDIA. (2009). Development and Regulation of Financial Markets. [Online]. Available: <http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/5DEARE240810.pdf> Accessed: 25 October 2014.
- RESERVE BANK OF INDIA. (2014). *Regulation on the establishment and Working Principles of off-exchange organised securities markets*. Implementation Group on OTC Derivatives Market Reforms. Central Office: Mumbai.
- ROOSEVELT, F.D. (1938). Public papers and addresses of Franklin D. Roosevelt, 3 Public Papers 81.
- ROUBINI, N. (2008). How will financial institutions make money now that the securitization food chain is broken? [Online]. Available: <http://www.rgemonitor.com/b;og/roubini/> Accessed: 17 July 2014.
- SEMMLER, W. and YOUNG, B. (2010). Lost in temptation of risk: Financial market liberalization, financial market meltdown and regulatory reforms. *Comparative European Politics* 8: 327-353.
- SISKOS, D.V. (2013). Lehman Brothers case: Failure, Prevention and Recommendations. [Online]. Available: <http://dx.doi.org/10.2139/ssrn.2358373> Accessed: 5 February 2014.
- SOUTH AFRICA NATIONAL TREASURY (2011). Reviewing the regulation of the financial markets in South Africa. [Online]. Available: <http://www.treasury.gov.za/public%20comments/FMB/FMB%20policy%20document.pdf> Accessed: 5 March 2014.
- SOUTH AFRICA NATIONAL TREASURY (2012). Financial Markets Bill. [Online]. Available: <http://www.treasury.gov.za/legislation/bills/2012/FMB/> Accessed: 4 March 2014.
- SOUTH AFRICA NATIONAL TREASURY. (2014). *Regulating OTC Derivatives Markets South Africa. Policy document regarding the regulations issued under Financial Markets Act, No 19 of 2012*. [Online]. Available: <http://www.treasury.gov.za/public%20comments/OTC/Policy%20Statement%204%20July%202014.pdf> Accessed: 25 August 2014.
- STIGLITZ, J. (2008). *How to prevent the next Wall Street Crisis*. [Online]. Available: <http://www.cnn.com/2008/POLITICS/09/17/stiglitz.crisis> Accessed: 25 July 2014.
- STULZ, R.M. (2010). Credit Default Swaps and the Credit Crisis. *Journal of Economic Perspectives*, 24(1): 73-92.

- THE PAYMENT AND SETTLEMENT SYSTEM ACT. (2008). India reserve bank. [Online]. Available: <http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/86706.pdf> Accessed 5 November 2014.
- TICKELL, A. (1996). Making a melodrama out of a crisis: reinterpreting the collapse of Barings Bank. *Environment and Planning D: Society and Space*, 14(1), 5-33.
- TICKELL, A. (2000). Dangerous derivatives: controlling and creating risks in international money. *Geoforum*, 31: 87-99.
- VAN WYK, K. (2012). The Financial Markets Bill. *Financial Markets Journal* 15.
- YANG, X and ZHOU, Y. (2010). The effect of Credit Derivatives CDO to Financial Market Stability. *Journal of Business Economics*, 2: 67-75.
- YOUNG, M. D. (2010). Swaps or Futures Under Dodd-Frank? [Online]. Available: <https://www.skadden.com/insights/swaps-or-futures-under-dodd-frank> Accessed 5 November 2014.