

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES,
DEHRADUN**



Dissertation

**“STUDY OF REGULATORY RISK IN THE COMMODITY
DERIVATIVE MARKETS”**

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Student Declaration

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

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Acknowledgment

The success of any research project fundamentally depends upon the guidelines and encouragement of all parties involved directly or indirectly in the study, apart from the efforts of the individual carrying out the study. I would like to use this opportunity to express my sincere gratitude to the people who have been influential in the fruitful completion of this research project.

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I take this opportunity to express my gratefulness to my family for their blessings in the successful completion in this endeavour

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Certificate

This is to certify that the dissertation report entitled “Study of Regulatory Risk in The Commodity Derivative Markets”, submitted by Manideep Kallepalli to UPES for partial fulfillment of requirements for Masters of Business Administration (Energy Trading) is a bonafide record of the dissertation work carried out by her under my supervision and guidance. The content of the report, in full or parts have not been submitted to any other Institute or University for the award of any other degree.

(_____)

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Abstract

The year 2008 was a major setback for the major economies of the world due to the financial crisis that shook the entire world as well. Trading of derivatives prior to that was taking place by two ways. One was through exchanges that had certain standards to be followed laid down by various regulatory authorities. The other one was Over The Counter (OTC) which was more of unregulated. The volume of trade taking place through OTC was much more as compared to the exchange traded volume. This was solely due to the option of being able to customize the contract in OTC trading as compared to the exchange traded trading which had to be in accordance to the standards laid down by the exchanges. It is claimed by many that the financial crisis took place due to the volume of unregulated trading taking place in the OTC trade. Investors were more comfortable trading through OTC rather than exchanges.

Since then there have been many regulations that have been passed in the United States (US) and European Union (EU) to regulate the so-called OTC markets. These are the Dodd Frank Act in the US, European Market Infrastructure Regulation (EMIR), Regulation on Wholesale Energy Markets Integrity and Transparency (REMIT) in EU, Basel I, Basel II, Basel III, Basel IV, Markets for Financial Instruments Regulation (MiFIR) etc. Dodd Frank Act and EMIR are said to be the toughest regulations ever written till now. This report takes a step to view the market pre-and post implementation of the regulations, their impact on the market and stakeholders perspectives. I have tried to cover most of the aspects of all the regulations in a nut shell. At the end of the report it focusses on the ETRM software that are used for Energy markets as well as other commodity markets.

Table of Content

Student Declaration	2
Acknowledgment.....	3
Certificate	4
Abstract.....	5
1. Introduction.....	9
2. Introduction to Regulatory Risk	10
2.1 WHAT IS 'REGULATORY RISK'?	10
2.2 BREAKING DOWN 'REGULATORY RISK':	10
3. Introduction of Derivative Market.....	13
3.1 CLASSIFICATION OF DERIVATIVES BASED ON UNDERLYING ASSET	14
3.2 CLASSIFICATION BASED ON PRODUCTS	14
3.3 CLASSIFICATION BASED ON TRADING	15
3.4 OTC HEDGING INSTRUMENTS IN CRUDE OIL INDUSTRY	16
4. Regulatory Risk Management	18
5. Major Regulations in derivative markets.....	20
5.1 Dodd Frank Act - US	20
5.2 EU regulations	20
5.3 Basel Accords	25
5.4 Comparison between EMIR and REMIT	25
5.5 Short summary of the regulations	26
6. Regulation and deregulation of commodity derivative markets	27
6.1 Reform discussions and commitments at the G20.....	27
6.2 Regulations and discussions in the United States	29
7. Regulatory Area and Potential Benefits	37
8. Risk Involved in Commodity Derivatives.....	39
8.1 Basis Risk:	39
8.2 Flat Risk:.....	39
8.3 Spread Risk:	39
8.4 Margins and Volume Risk:	39
8.5 Operational Risk:	39
8.6 Contract Performance Risk:	39
8.7 Market Liquidity Risk:.....	39
8.8 Political Risk:.....	39

Study of Regulatory Risk in The Commodity Derivative Markets

8.9 Legal / Reputational Risk:	40
8.10 Market Risk.....	40
8.11 Counterparty Risk:	40
8.12 Liquidity Risk:	40
8.13 Interconnection Risk:	40
9. Impact of Regulations on the derivative markets	41
10. Impact of Regulations on the derivative markets – An Indian perspective	44
11. Conclusion	45

Objective:-

- 1) To understand **Regulatory Risks** involved in Derivative market as well as detailed analysis of **Commodity & Regulatory Structure**.
- 2) Classifying the Derivative market based on **Underlying Asset, Products being Traded and Contracts involved Trading**.
- 3) To analyze **International Regulations, Types of Risk and Regulatory Risk Management** associated with derivatives trading.
- 4) Conclude and suggest the **potential benefits of managing Regulatory Risk** in commodity market.

Research Methodology

Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research. The entire study will be an exploratory research and qualitative type which might include expert surveys if needed.

The following steps will be followed in conducting the research.

- 1) Selection of a research topic
- 2) Definition of a research problem
- 3) Literature Survey and reference collection
- 4) Assessment of current status of the topic chosen
- 5) Research Design
- 6) Actual Investigation
- 7) Data Analysis (if any)
- 8) Interpretation of result
- 9) Report

1. Introduction

Regulatory risk is the risk that a change in laws and regulations will materially impact a security, business, sector or market. A change in laws or regulations made by the government or a regulatory body can increase the costs of operating a business, reduce the attractiveness of investment and/or change the competitive landscape.

The derivatives market is a place where financial instruments which are derived from other assets like future contracts or options are traded. It is also termed as the financial market for derivatives. These are traded through two modes. One is exchange traded derivatives which are standardized and the other is OTC derivatives which are unregulated. Greater volume of trade is conducted through OTC mode only since contracts can be customized according to the requirements of the two parties involved in it and there were no regulations to keep a vigil on them. It is claimed by many that the financial crisis of 2008 occurred due to the huge volume of unregulated trade being conducted through the OTC derivative mode. Experts have a doubt that whether implementing more of regulations will bring the situation under control in future. There were many regulations passed in the 20th and 21st century for the financial markets but still financial crisis has not been prevented. On the contrary, their occurrence seems to have only accelerated. This doesn't mean that regulations promote crisis but it grows with other market components.

Many of the regulations passed are still in implementation phase only. Dodd Frank Act has been completely implemented. REMIT and EMIR will be implemented only by 2016 and 2017 respectively according to the timeline given by European Union. Many white papers have been published by many organizations stating the impact of these regulations on the working of the derivative markets in the OTC market. Still many aspects remain uncovered which will be tried to be touched upon in this study. Impact of the various regulations with a special focus on the REMIT and EMIR will be carried out in this study. I will also try to understand the shortcomings of the regulations already passed from the stakeholder's point of view. The ETRM software packages might also have been affected by the various regulations passed in the different parts of the world for derivative markets. This effect will also be accounted for in this report.

2. Introduction to Regulatory Risk

2.1 What is 'Regulatory Risk'?

Regulatory risk is the risk that a change in laws and regulations will materially impact a security, business, sector or market. A change in laws or regulations made by the government or a regulatory body can increase the costs of operating a business, reduce the attractiveness of investment and/or change the competitive landscape.

2.2 BREAKING DOWN 'Regulatory Risk':

For example, utilities face a significant amount of regulation in the way they operate, including the quality of infrastructure and the amount that can be charged to customers. For this reason, these companies face regulatory risk that can arise from events - such as a change in the fees they can charge - that may make operating the business more difficult.

Another type of regulatory risk would be a change by the government in the amount of margin that investment accounts are able to have. While this is an unlikely change, if it were to be changed, the impact on the stock market would be material as this would force investors to either meet the new margin requirements or sell off their margined positions.

2.3 Regulatory Risk Management

As a fully integrated risk practice, we have the size and capability to address all risk issues and deliver end-to-end solutions

Regulatory Risk is generally defined as the risk of having the 'license to operate' withdrawn by a regulator, or having conditions applied (retrospectively or prospectively) that adversely impact the economic value of an enterprise.

2.4 Regulatory Risk Management: Value

- Ensure that our clients adopt sound corporate governance structure and practices that align with industry good practice and enable it to achieve their strategy.
- Greater clarity and confidence around the regulatory risk framework and the organization's ability to manage regulatory change.
- Understanding of both regulator expectations and business processes and challenges.
- Identification of process improvement opportunities to ensure the effective and consistent management of compliance and regulatory obligations.



2.5 Enhanced Risk Strategies – Frameworks

Create the right risk strategies to achieve the enterprises strategic aims and implements the optimum frameworks to ensure risk is appropriately managed.

Work Undertaken

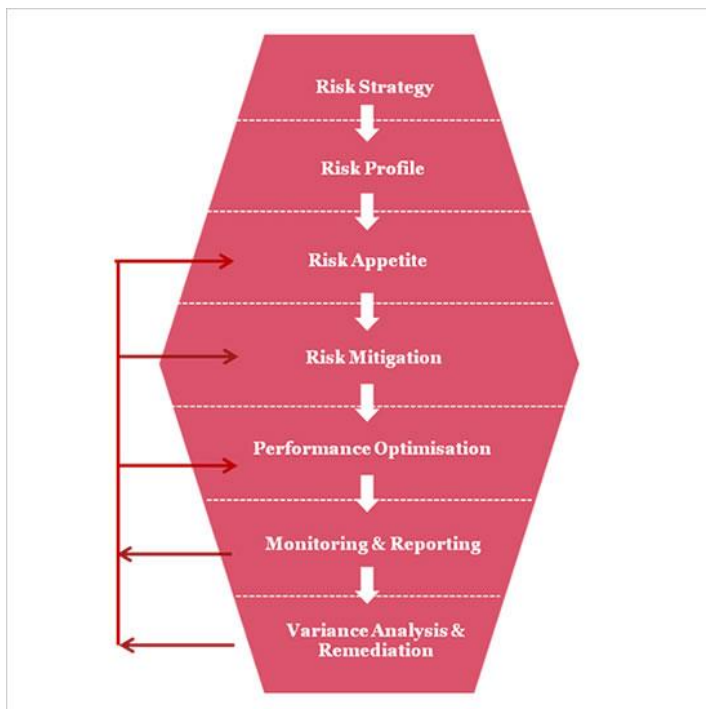
Development of Operational Risk Strategies

Assessment, design and implementation of Regulatory Risk Strategies

Assessment, design and implementation of Regulatory Risk Frameworks

Assessment, design and implementation of Regulatory Risk Appetites Statements

Assessment, design and implementation of monitoring and reporting processes.



Study of Regulatory Risk in The Commodity Derivative Markets

Create the optimum organizational solutions and equips the enterprise with the right skills and capabilities to manage risk to achieve strategic aims.

Work Undertaken

Assessment, design and implementation of Regulatory Risk Functions

Interim management solutions: Risk (and Compliance) Officers and other professionals

Regulatory Risk training.



3. Introduction of Derivative Market

A subordinate is a money related instrument which gets its incentive from a fundamental resource that has no free estimation of its own. A stock, financing cost, file, ware cost and so forth anybody of these could be the fundamental resource. The fundamental sorts of subsidiaries are advances, fates, choices and swaps. These have numerous variations inside themselves. Subordinate exchanging is done keeping in mind the end goal to support the danger of holding a stock or a monetary exchange over a predetermined timeframe. Different sorts of market members are arbitrageurs, examiners and hedgers.

The subsidiary exchanging items history goes back to a great many years in 1750 BC where earth tablets from Mesopotamia have subordinate contract composed on them. The primary prospects exchanging a composed way was for cotton in India path back in the year 1875 by Bombay Cotton Exchange Affiliation. By the year 1939, more than around 300 item trades of India were putting forth subsidiary contracts on different wares. Forward Contracts (Direction) Act, 1952 was planned by the Government of India (GoI) and set up the Forward Market Commission to go about as the controller. There are three multi-item national level trades working in India.

1. National Multi-Commodity Exchange of India Limited (NMCE)
2. National Commodity and Derivatives Exchange Limited (NCDEX)
3. Multi Commodity Exchange of India Limited (MCX)

NCME started in 2002, NCDEX and MCX started in 2003 and Indian Commodity Exchange Limited started in 2009. The following figure shows the structure of Indian Commodity derivatives market.

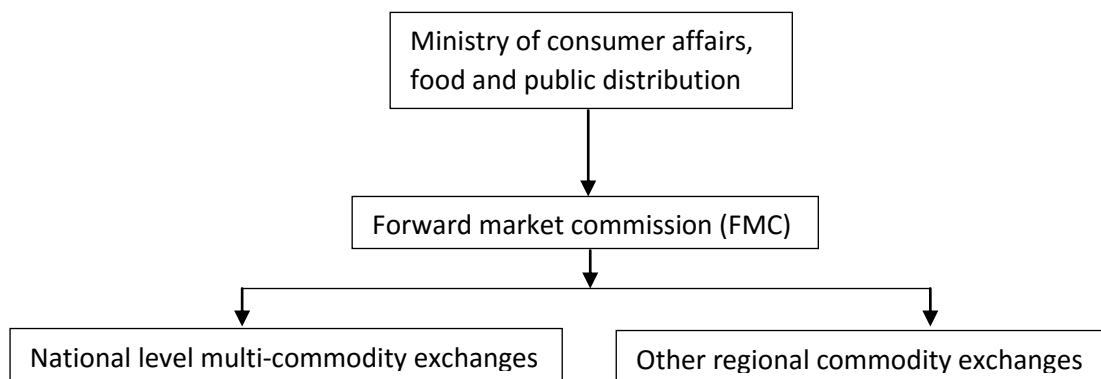


Figure 3.1: Structure of Indian Commodity derivatives market

Derivative contracts on electricity is offered by two exchanges viz. Indian Energy Exchange (IEX) Limited and Power Exchange India Limited (PXIL). The body which act as a regulator for these exchanges is Central Electricity Regulatory Commission (CERC).

Major Commodity indexes that are based on futures trading are as follows:

- 1) S & P Goldman Sachs Commodity Index (S&P GSCI™)
- 2) Dow Jones UBS Commodity Index (DJ-UBS)
- 3) Deutsche Bank Liquid Commodity Index (DBCLI)
- 4) Rogers International Commodity Index (RICI®)
- 5) Reuters CRB Commodity Index
- 6) MCX Comdex

7) NCDEX Dhannya

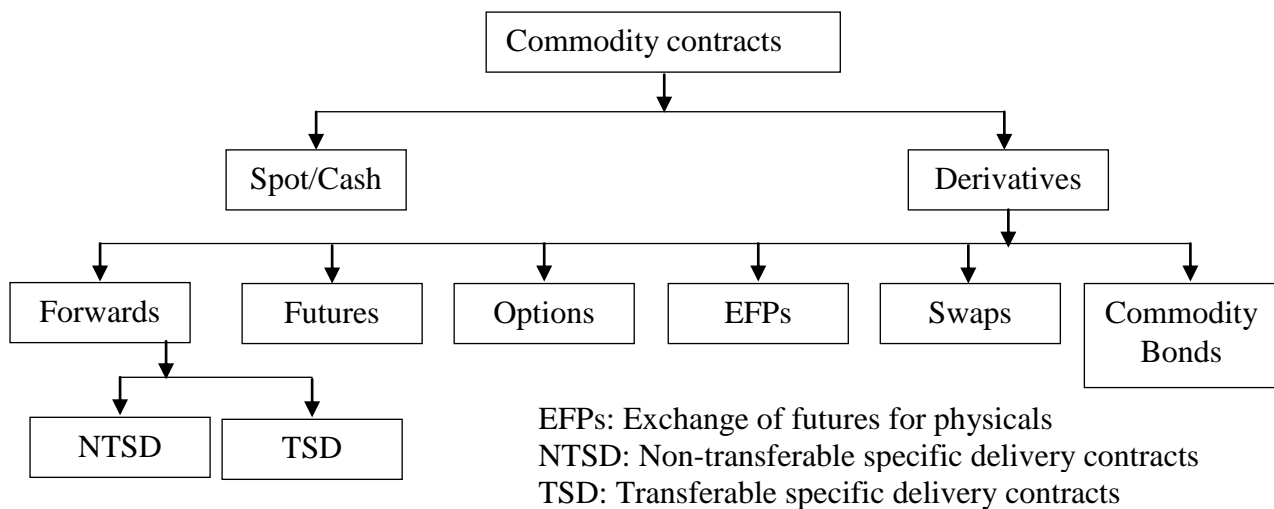


Figure 3.2: Distinct types of commodity contracts^[1]

3.1 Classification of derivatives based on underlying asset

- | | | |
|------------------|---------------|-------------------|
| 1) Commodities | 2) Currencies | 3) Interest Rates |
| 4) Equity Shares | 5) Indices | 6) Credit, |
| | | 7) Weather |

3.2 Classification based on products

1) Forwards – In this type of contract a buyer and a seller enter into an agreement to exchange the underlying asset and its price at a future date but for a price fixed in advance. The buyer and seller are called the long and short position holders respectively. The terms and conditions of the agreement are decided upon by the two parties involved and is customized. The parties involved in such contracts are exposed to default risk i.e. the party incurring a loss in such agreement can default as there is no guarantee against loss. Such contracts are hence unregulated and are generally carried out in OTC markets.^[2]

2) Futures – A futures contract is same as the forwards contract in all the aspects the only difference being that while forwards are traded in OTC markets, futures are traded on exchanges. There is hence no counterparty or default risk in futures. The exchange acts as a guarantor for both the parties.

3) Options – It is contract between a buyer and a seller wherein the buyer gets the right but not the obligation to buy or sell the underlying asset at a certain price on or before the maturity date. The following terms are relevant to this contract.

- | | |
|----------------------------|--------------------------|
| a) Seller | – Option writer |
| b) Buyer | – Option holder |
| c) Right to buy an option | – Call option |
| d) Price paid by the buyer | - Option price / Premium |

¹ Prabina Rajib, Commodity Derivatives and Risk Management, PHI Learning Private Limited, pg – 2,5-8,23,54

² Rajiv Srivastava, Derivatives and Risk Management, Oxford University Press, pg – 9-13

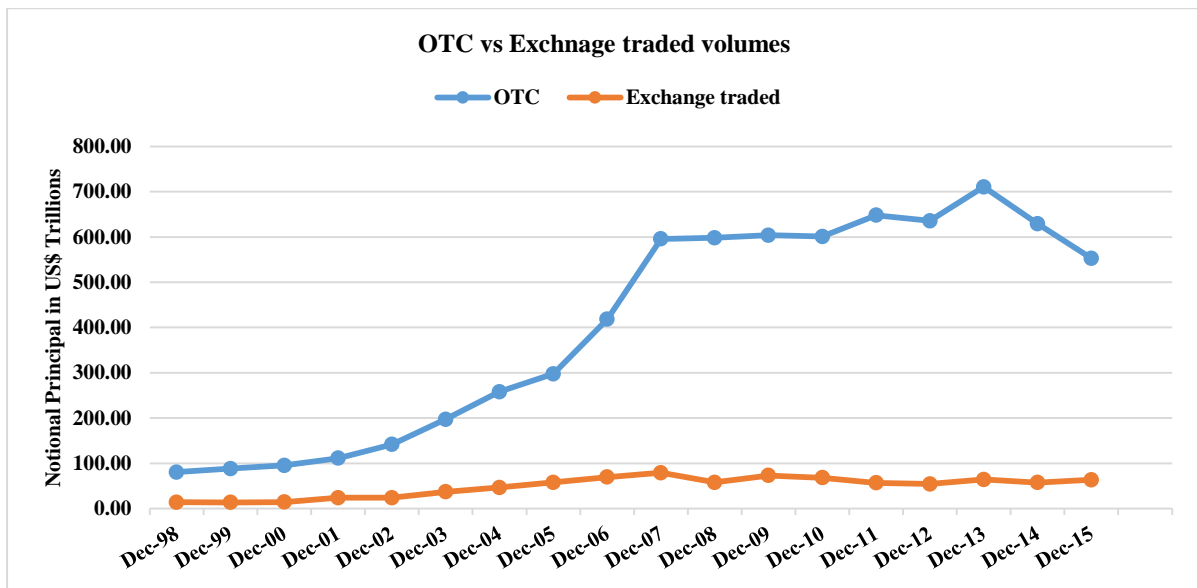
e) Price at which the option is exercised - Strike price / Exercise price ^[Error! Bookmark not defined.]

4) Swaps – They are agreements between two parties to exchange a series of cash flows over a specified period of time.

3.3 Classification based on trading

1) OTC contracts – These contracts are entered into by two parties who know each other directly and have matching needs. They are not traded in the market. The agreements are customizable according to the needs of the two parties involved. All the details and clauses of the agreements are decided upon mutually by the two parties including the price. It (price) remains confidential. Forward contracts and swaps are traded in OTC markets. Since this market is not regulated hence there is always a counterparty or default risk in these contracts.

2) Exchange traded contracts – These contracts, futures and options, are traded on a standard exchange wherein the two parties in a contract need not know each other. The exchange acts as a counterparty to the seller as well as the buyer. The terms and conditions of the contracts are as laid down by the standards in the exchange and depending upon the underlying asset. ^[2]



Source: BIS Quarterly review, March 2016, www.bis.org

Figure 3.3: Total notional amounts outstanding of underlying assets in OTC and exchange traded markets from December 1998 to December 2015

The graph indicates the total volume of forwards, swaps and options traded for the OTC line and total volume of futures and options in case of exchange traded derivatives. As per the graph obtained it can be clearly understood that the volume and the number of contracts traded in an OTC market worldwide is near about 10 times that traded on exchange. This can be attributed to the reasons that there were less regulations in OTC markets, flexibility, zero regulatory costs, low operating costs, and due to very high volatility of the underlying assets prices. The volume of derivatives traded in OTC market is constantly only a rise. Since the volume traded in the OTC market is much higher than in the exchange traded market the

scale of the graph had to be taken by a bigger margin which hence doesn't show much variation in each of the trends.

3.4 OTC hedging instruments in crude oil industry

Volatility in the price of crude oil and their refined products have increased over the years. This has necessitated many companies that are involved on crude oil production and refining to hedge their risks by using a varied basket of financial derivative contracts. Many Indian companies like Essar Oil, BPCL, IOCL and RIL etc. invest in contracts like futures, swaps, options and forwards to mitigate the price risk associated with refined products and crude oil. Some features of crude oil contracts are as follows:

1) Fixed Price Contracts

- Buyers and sellers of natural gas/refined products/crude oil enter into agreements.
- Buyer has to pay a fixed amount for a given quantity of natural gas/refined products/crude oil over a certain period of time.
- Not suitable when there is substantial fluctuation in the prices of the underlying asset.
- These agreements have reset clauses.
- A reset clause states that the price mentioned in the agreement to be paid will change only when the benchmark price which has been considered in the agreement fluctuates over some range. In case the price changes within this range the reset clause will not be invoked.

2) Swaps

- A series of cash flows take place between two parties based on a notional quantity of crude oil.
- Buyer pays a fixed price whereas the seller pays a floating price.
- In case floating price > fixed price, seller has to pay the difference to the buyer.
- Floating price is decided on a benchmark mutually agreed upon by the two parties.

3) Participating swaps

- Downside price risk of the natural gas/crude oil producer is protected.
- It participates in an upside price rise.
- The crude oil producer pays a floating price on a notional quantity of oil till the floating price remains less than the fixed price that has been agreed upon. On the other hand, it receives fixed price.
- In the other case when the floating price is above the fixed price the producer has to pay the difference only on a percentage of the notional quantity.

4) Collars

- Producers of crude oil take a long as well as a short position simultaneously at a strike price (S1) and a higher strike price (S2) respectively.
- The producer will exercise put option when the oil price goes below S1 and sell at S1.
- If the oil price > S2 then he has to sell the oil at S2 price.^[3]

The emergence and growth in India of derivatives market is a very recent phenomenon. The derivative market has shown an exponential growth from its beginning in June 2000 in terms of the number of contracts as well as the volume traded. Market turnover has grown from Rs. 2365 Cr. in 2000-11 to Rs. 26444804.86 cr. in 2013-14 according to the report published by Ms. Shalini H S and Dr. Raveendra P V on Study of derivatives market in India. India is turning out to be one of the most successful developing country for exchange traded derivatives. It also states that as per the statistics 99% of the derivatives trading in India is

³ Prabina Rajib, Commodity Derivatives and Risk Management, PHI Learning Private Limited, pg – 188-193

accounted by only National Stock Exchange (NSE) as compared to Bombay Stock Exchange (BSE).^[4]

⁴ S, Shalini H; V, Dr. Ravindra P; A Study of Derivatives Market in India and its Current Position in Global Financial Derivatives Markets, (IOSR-JEF), 2014, pg – 25-42

4. Regulatory Risk Management

Regulatory risk management, always a critical challenge for financial services firms, has assumed heightened importance in the aftermath of the recent banking crisis.

- While credit and market risk have always featured on senior management's agenda, external regulatory developments focused on greater capital adequacy, liquidity, transparency and consumer protection are placing greater emphasis on effective risk-management frameworks.
- The banking crisis exposed glaring deficiencies in bank strategies and risk management. A consequence is the changing focus of the basic business model, which is less driven by product profitability and more around customer needs. Financial stability is the new watchword, and gaps identified in regulatory oversight and management are being plugged through enhanced frameworks and guidelines.
- Financial services firms are under mounting pressure to manage regulatory compliance and associated risk more effectively. Much greater attention needs to be given to risk appetite and mitigation both at enterprise and service-line levels, the fundamental data underlying record-keeping and the risk associated with their retention.
- Experience shows that the quality and integrity of data can by no means be taken for granted, and getting it wrong could prove costly. The cost of poor compliance is usually both financial and reputational as evinced by the recent record fines and strictures imposed on major banking institutions primarily by US regulators.
- With the new Basel III capital adequacy and liquidity framework on course for implementation in the next few years, as well as evolving restrictions being laid down by western national politicians and regulators (for example, the Financial Industry Regulatory Authority and Dodd-Frank Wall Street Reform and Consumer Protection Act in the US), the process of correctly capturing as well as utilizing the "right data" for controlling risks has become a critical one.
- Information technology and data analytics have a big part to play in highlighting risk concentrations and exposures for management and regulatory action.
- Although banks in the UAE were largely unaffected by the global banking crisis, the property market downturn of 2009 exposed the need for local banks to have better data on industry related concentrations so that the capacity of the institution to absorb shocks and the adequacy of financial buffers are capable of more accurate assessment under various scenarios.
- To comply with regulatory requirements today, firms need to increase their governance in ways which conform to the new compliance requirements, improve the quality of data and optimize accumulation of new risk data.
- Assessments of risk depend fundamentally on data, including data on counterparties, markets and internal operations. Thus far, data quality issues have been low on senior management's priorities. The new emphasis on regulatory risk management means

Study of Regulatory Risk in The Commodity Derivative Markets

that the governance of reference data utilized for holistic risk calculations has become a critical issue.

- The challenge today is ever more acute. The volume of relevant data is soaring exponentially and much of this is unstructured and unmanaged. At the same time, retention requirements associated with regulation and litigation are compounding the problem. The potential business benefit from better data governance and management is clear. Firms can achieve improved risk management and reduced data storage costs, as well as a substantial increase in regulatory compliance, with more effective data retention and quality assurance strategies.

5. Major Regulations in derivative markets

5.1 Dodd Frank Act – US

This act is applicable in US commodity market. It was passed in the US market in July 2010 after a very hard fought process. It set forth various rules and regulations on all the parties' functioning in an OTC trade as well as the rules on clearing, settlement, protection of investors and consumer etc. In July 2012, 2 years after it was passed CFTC gave consent to an exemption of clearing and trading requirement of non-financial end users. Even after 3 years after passing the act it was not implemented completely. Two-thirds of the deadlines set for implementing various provisions of the act were missed till June 2013 according to the report by OFSE.⁵ It looks to mitigate much of the risks posed by all the activities that lie outside the supervision. This act provides Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) new and extensive authorities to regulate the OTC markets, the products and the market participants involved in the trades. Both the regulatory agencies have been given different set of portfolios and market participants to deal with and to regulate them. There may however arise conflict between the rules laid down by CFTC and SEC.⁶

5.2 EU Regulations

Table 5.1 EU regulatory initiatives on commodity derivative markets

Existing Regulation				
Markets for Financial Instruments Directive (MiFID)		Market Abuse Directive (MAD)		
Reformed	New	Replaced by		New
MiFID II	Markets for Financial Instruments Regulation (MiFIR)	Directive on Criminal Sanctions for Market Abuse	Market Abuse Regulation	European Market Infrastructure Regulation (EMIR)
Adoption due March/April 2014	Adoption due March/April 2014	Trilogue negotiations are expected to start in 2013	Agreement reached in Sept. 2013; final adoption and entering into force aligned to MiFID timetable	Adopted in August 2012; technical standards in March 2013

Sources: Henn (2011); WDM (n.d.); EC(2013a)⁵

The year 2013 saw a number of regulations coming into effect which will affect the energy traders to a great extent. EMIR is basically focused on banks but REMIT and MiFID II will

⁵ Staritz, Cornelia; Kublbock, Karin; Re-regulation of commodity derivatives markets - Critical assessment of current reform proposals in the EU and the US, OFSE, 2013, pg- 8-9

⁶ KPMG, Regulation of the Over-The-Counter Derivatives market: An overview of the key provisions, KPMG LLP, 2010

hit the energy traders badly. The IT and business initiatives needed to comply with all these regulations could be significant enough.

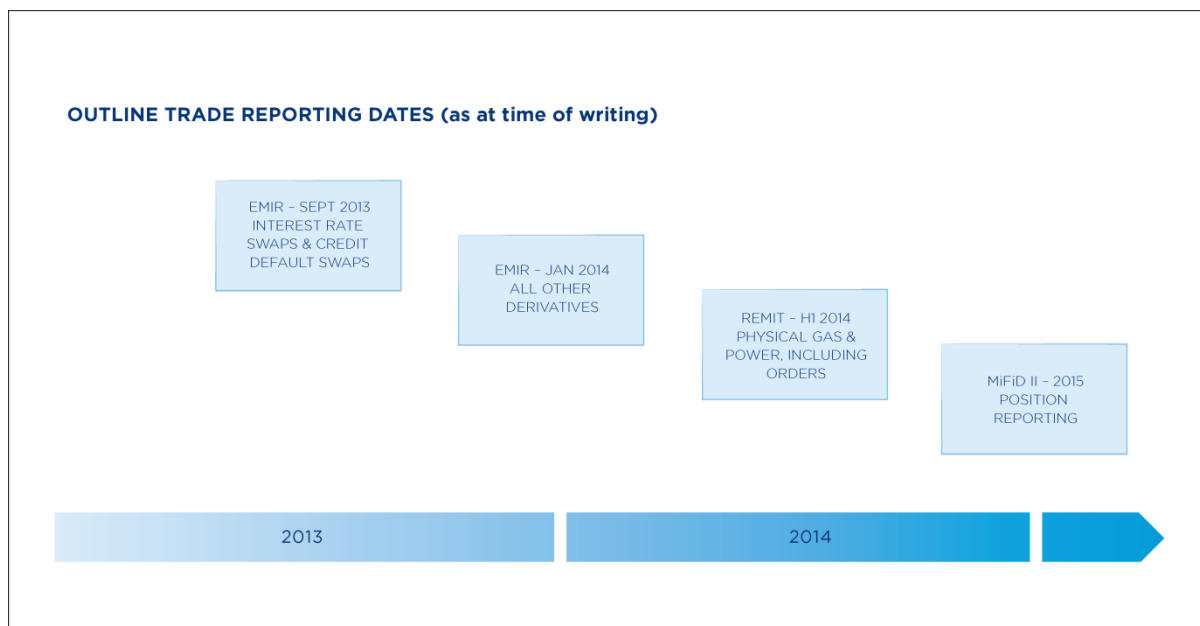


Figure 5.1: Trade reporting dates of EU regulations⁷

5.2.1 European Market Infrastructure Regulation (EMIR)

It is the regulatory reform for EU. It lays down almost the same rules and regulations as laid down by DFA. It was passed in July 2012 and came into effect by August 2012. Many important technical standards that were proposed by ESMA were implemented only by March 2013. It is yet to be implemented completely as of March 2016. It specifies in-depth reporting and clearing obligations for the standard derivatives and for non-cleared transactions, collateral, valuations, dispute resolution and price reconciliation. It will generally affect both the buy and the sell side firms involved in the OTC derivatives. The scope of the regulation is on any entity that is established in the EU and is trading in derivatives but it also applies to parties outside EU who trade with EU parties. The various rules of EMIR can be stated as below:

1. Derivatives Identification

The trading firms must go through the portfolio of trading document types and segregate them into three categories as follows:

- a. OTCs to be centrally cleared
- b. Ones listed on an exchange
- c. OTCs to be traded bilaterally

All those derivatives that were approved by European Markets and Securities Authority (ESMA) as "Clearing Eligible" had to be centrally cleared by Central Counterparties (CCP) in 2014. Less complex derivatives were initially focused to be cleared centrally before moving on to the more complex ones. But even if you try the most there always will remain some portion of the derivatives market which will remain non-clearable.

⁷ Smith, Dan; Griffith, Tania; Rennison, Paul; EMIR, REMIT, MiFiD and more – Getting ready quickly while planning for the future, Trayport, 2013

2. Derivatives Confirmation: Timing

These regulations were put into place to mitigate the risk generated in the market by the OTC derivatives. So, in order to reduce that risk it was required that all the uncleared OTC trades should be confirmed within a span of maximum T+7 (trade day + 7 days) depending on the derivative type and the counterparty.

3. Reporting to Trade Repositories

Under this regulation, it was required by both the OTC traded and exchange traded derivatives to be reported to trade repositories. The data so obtained was then analyzed by the regulators for potential risk and steps were taken to mitigate the same. The information that was to be reported by the counterparties to the trade repositories included the following:

- a. Type of contract
- b. Parties to the contract
- c. Notional values
- d. Maturity
- e. Settlement date
- f. Price

4. Daily valuation

With this regulation, it is required that the financial and non-financial counterparties (with nominal exposures above various thresholds) carry out valuation on a daily basis while the non-vanilla derivatives are exempted from central clearing.

5. Clearing

It is required that the standard derivatives have to be cleared through the central by the financial and counterparties non-financial counterparties (with nominal exposures above various thresholds).

6. Collaterals

For those contracts that are not cleared by central counterparties this regulation imposes bilateral collateral standards and margin.

7. Reporting Disputes

It is required by all the derivatives counterparties as per the regulation to agree on the various procedures laid down to identify, monitor and resolve disputes related to the OTC contract's valuation in a timely manner.

8. Portfolio reconciliation

It is required that the financial and non-financial counterparties must have formalized, robust auditable processes to reconcile portfolios.^[8]

EMIR requires the reporting of both the exchange traded and the OTC traded derivatives. Under this regulation, it is mandatory for the counterparties in EU to report the trade of Exchange traded as well as the OTC traded by the end of T+1 day to the trade repository which is registered with ESMA or recognized by ESMA.

⁸ SunGuard, Making Sense of derivatives regulation: EMIR and beyond, SunGuard, 2013

5.2.2 MiFID / MiFIR

MiFID applies to all trading that takes place through exchanges and does not fall in the ambit of EMIR (OTC trading). The European Commission (EC) gave proposals for MiFID II and for a new regulation, Markets in Financial Instruments Regulation (MiFIR) in October 2011. This regulation required creation of Organized Trading Platforms (OTFs), reporting of all trading on a real time basis. Many discussions were carried out on the EP on the various rules and regulations laid down in the reform. The final text with all the recommendations was due to be adopted in spring 2014. After it is finally adopted it will at least take 18 months by ESMA for the development and implementing legislation and technical standards. This is a very complex legal instrument. It has many challenges in its implementation. It will require a strong change in the IT structure used by the organization. There are few cases in which MiFID related systems use the output of others for their own work. The final date as per the latest reports of application of this regulation is 3rd January 2017. The four main areas where this regulation might be delayed for implementation include reference data, transparency parameters and publication, transaction reporting and position reporting.

- a. Reference data – It is one of the cornerstones of the MiFID data system and needs to be collected and published by ESMA on a daily basis. Many other systems point or refer to this data and is considered to be the census.
- b. Transaction Reporting – Information contained in the transaction data submitted to the competent authorities is used to as a market surveillance tool to identify market abuse. For financial instruments the data submitted is checked with the standards laid down by the regulations for completeness.
- c. Transparency parameters and publication – It encompasses a good number of instruments under pre and post trade transparency obligations.
- d. Position Reporting - The position reporting system should enable trading venues to publish weekly commitment of trader reports and, more importantly, enable the competent authorities to supervise and enforce the position limits regime.⁹

5.2.3 Regulation on Wholesale Energy Market Integrity and Transparency (REMIT)

This regulation mainly applies to the power and gas transactions in EU. It was actually passed in order to eliminate abuses of market manipulation and insider trading in wholesale energy markets. This regulation will require the following points to be taken care of:

- a. It is mandatory under this regulation for all the traders to publish all information related to energy to Agency for the cooperation of Energy Regulators (ACER)
- b. It requires that the European authority who regulates energy market should keep a vigil on the wholesale energy markets.
- c. All the parties involved in the trading of energy derivatives have to register with the regulators and also have to report all their transactions.

It is a focused legislation on energy itself and was implemented in the year December 2011. As per the definition given in REMIT, “Inside information” is generally considered to be any

⁹ ESMA, Note on MiFID/MiFIR implementation: Delays in the go-live date of certain MiFID provisions, ESMA, 2015

private information that, if made public, might affect the price of a wholesale energy product. REMIT lays down that the information reported must contain the following:

- a. Specifics of the wholesale energy products that are bought and sold.
- b. Price as well as the quantity agreed to be exchanged.
- c. Different times and dates of execution
- d. Various parties to the transaction involved
- e. Beneficiaries to the transaction
- f. Other relevant information¹⁰

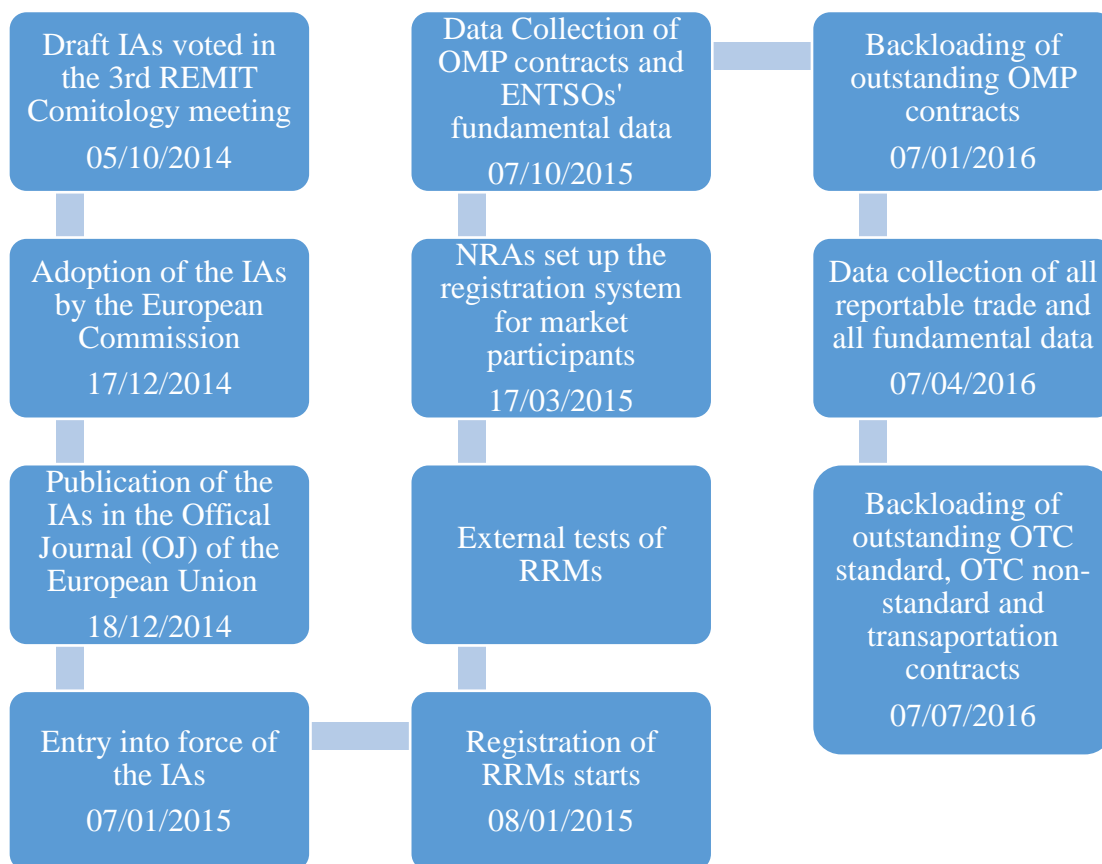


Figure 5.2: REMIT implementation timeline

The exact details of all the information that has to be reported by the market participants is yet to be decided. This regulation is applicable to all the contracts that are related to the supply as well as transportation of natural gas and electricity in the European Union. The data collection, obligations and monitoring as laid down in REMIT is actually applicable to all types of wholesale energy products. In case of reporting requirements there could be a duplication in comparison to EMIR and MiFIR since they also apply to the European Union. The commission understands this and allows exemption to report to ACER in case the trade has already been reported to the trade repositories or competent authority. Only in case

¹⁰ Allegro, EMIR and REMIT: Wholesale Energy Trading on the Docket, Allegro, 2013

reports have not been submitted by the traders under EMIR of MiFIR does it require to be reported to ACER.¹¹

All the member states have national authorities and it is their obligation to carry out investigation to identify any market manipulation and impose penalties to stop the same. This is a very crucial work and matter as they involve complex traded products and markets. Also the investigation has to be done in a very vigilant manner in order to not to hamper the smooth functioning of the energy markets.

5.3 Basel Accords

These accords are generally issued by a committee called Basel Committee on Banking Supervision (BCBS) which was formed by BIS. Many up gradations of the Basel accords were implemented from time to time to mitigate the risks taken by banks.

5.3.1 Basel I

It all started in the year 1988 when Basel I was released by banking systems in order to mitigate credit risk. It was very simple in its implementation and that is the reason accorded to its failure.

5.3.2 Basel II

In the year 1996, the committee felt that there should be standards for market risk as well. This created the base for the creation of Basel II in the year 1998. It covered market risk along with the credit risk covered by Basel I and was completely implemented only by the year 2004. It was still felt that there are many gaps or shortcomings wherein all the aspects were not covered.

5.3.3 Basel III

The earlier accord of Basel i.e. Basel II was only applicable to G10 countries. Hence the next accord of Basel was introduced to overcome this shortcoming and tackle financial crisis as well. This accord helped the banks in increasing the loss absorbing capacity.

5.3.4 Basel IV

This version of Basel is still in the making and will be implemented by most of the countries in the coming time. This lays out more stringent rules to mitigate the risks of the banks.

5.4 Comparison between EMIR and REMIT

EMIR	REMIT
European Market Infrastructure Regulation	Regulation on Wholesale Energy Market Integrity and Transparency
Intent is to reduce systemic risk	Intent is to prevent market abuse and manipulation and the use of insider information

¹¹ <http://www.lseg.com/markets-products-and-services/post-trade-services/unavista/regulation/remit-regulation-wholesale-energy-markets-integrity-and-transparency>

Study of Regulatory Risk in The Commodity Derivative Markets

Standard OTC derivatives should be settled and cleared only through a Central Counterparty	It is mandatory under this regulation for all the traders to publish all information related to energy to Agency for the cooperation of Energy Regulators (ACER)
The requirement of reporting will be a burden for the energy traders calling for increase in costs and administrative burden.	All data pre-and post transaction have to be reported to ACER to detect potentially abusive behavior by market participants
ESMA decides a certain threshold limit only beyond which the non-financial parties have to report their trade to the trade repositories.	All contracts pertaining to electricity, gas, derivatives, transportation and commodity are bounded by these rules.
Counterparties have to pay into a default fund which is managed by CCP	All the parties involved in the trading of energy derivatives have to register with the regulators and al so have to report all their transactions.
Collateralization of positions and daily margining is done	All the details that affect price are disclosed by the utilities companies.

5.5 Short summary of the regulations

Table 5.2 Summary of Regulations

Regulation	Location	Scope	Effect from
Basel III	Worldwide	Bank Companies	Full effect: 2018 Transition: 2013
Dodd Frank Act	US	Swap Dealers	July 2010
EMIR	EU	All derivative trading	2013
MiFID II	EU	Systemic financial institutions	2014/15 earliest
Volcker Rule	US	Banks, Financial Institutions	July 2010 Implementation from: Q4/2012

6. Regulation and deregulation of commodity derivative markets

6.1 Reform discussions and commitments at the G20

The G20 is as of now the most dynamic place for dialogs on the direction of ware subordinate markets at the worldwide level, likewise given that the G20 nations together host about the greater part of the major worldwide ware prospects markets (with the US, Europe, India, China, Brazil and South Africa being the biggest) (Clapp/Martin 2011). This is risky as the G20 is not agent and specifically many creating nations that are emphatically affected by ware costs are excluded. A more illustrative intergovernmental association, for example, the UN would be more satisfactory for universal administrative exchanges.

As reflected in the plans of the last G20 gatherings, a moderately expansive accord has created to control "inordinate speculation" on product subordinate markets, specifically identified with horticulture items. Notwithstanding essential force, G20 examinations and proposition have however moved far from more extensive monetary strategy changes to address product value instability toward a restricted concentrate on market straightforwardness (Clapp 2012a, 2012b). This approach was clarified with the G20's "Activity Plan on Food Price Volatility and Agriculture" received by the gathering's farming priests in June 2011 where essential arrangement issues, including theory, were just insignificantly tended to (Clapp 2012a). With respect to theory, the G20 just perceived the requirement for "properly controlled and straightforward horticulture money related markets" (G20 2011: para 52).

Regardless of confinements in the G20's general approach, a few duties were as yet concurred concerning ware subordinate market direction. As the G20 has no implementation limits, it for the most part concedes to responsibilities that should be executed through enactment by part nations (or that part nations have as of now or are wanting to actualize given the trade-off nature of duties). Three strategy goals have been at the focal point of item subordinate market change since the principal G20 summit in Washington D.C. in November 2008 – (i) enhancing straightforwardness, (ii) moderating danger identified with over the counter (OTC) exchanging, and (iii) securing against market manhandle (Jackson/Miller 2013). The accompanying outcomes at the resulting G20 gatherings are imperative (G20 2009, 2010, 2011, 2012; Jackson/Miller 2013; Clapp 2012a, 2012b; Henn 2012a; SOMO/WEED 2011):

- At the Pittsburgh summit in September 2009, critical responsibilities were concurred on more grounded direction of the generally unregulated OTC trade. It was concurred that "all institutionalized OTC subordinate contracts ought to be exchanged on trades or electronic exchanging stages, where fitting, and cleared through focal counterparties (CCPs) by end 2012 at the most recent" and that "OTC subsidiary contracts ought to be accounted for to exchange storehouses and non-midway cleared contracts ought to be liable to higher capital prerequisites" (G20 2009). Clearing implies that exchanges occur through an outsider, a CCP, that gathers a guarantee to secure the exchange and thus decreases counterparty chance.
- In October 2010, the Financial Stability Board (FSB) distributed a report containing 21 suggestions to help the G20 individuals in executing these duties, with a last refresh in October 2012. This report points of interest

Study of Regulatory Risk in The Commodity Derivative Markets

nation duties in six particular regions: (i) institutionalization of OTC subordinate's contracts; (ii) focal clearing of OTC subsidiaries contracts; (iii) trade or electronic stage exchanging; (iv) straightforwardness and exchanging; (v) answering to exchange vaults; and (vi) utilization of focal clearing prerequisites (Jackson/Miller 2013).

- The French President Sarkozy made the subject one of the six center needs for the French G20 administration. In February 2011, the G20 required a few reviews on the impact of hypothesis with veering results and suggestions. Specifically, the G20 authorized the International Organization of Securities Commissions (IOSCO) to give direction on all around blended money related controls (SOMO/WEED 2011). The G20 supported the standards in the IOSCO report that market controllers ought to be allowed viable intercession to influence to address untidy markets and anticipate showcase mishandle, e.g. through the burden of (ex-risk) position limits (G20 2009; Clapp 2012b). The G20 serves likewise called for "improved straightforwardness in both money and subordinates markets" (SOMO 2011). At the summit in Cannes in November 2011, it was likewise consented to include edge necessities (notwithstanding capital prerequisites) on noncentrally cleared subsidiaries to their commitments.
- Also, the Mexican G20 administration took the theme on the motivation as specifically nourishment security was made one of the five key need ranges. At the G20 summit in Los Cabos in June 2012, the "considerable advance" made in OTC derivate changes was perceived and the duties of the Pittsburgh summit concerning OTC exchange were repeated. The last announcement expresses that "purviews ought to quickly conclude their basic leadership and set up the required enactment to meet the G20 duty for focal clearing" and empowers "universal standard setters to finish the proposed worldwide edge models before the current year's over, to coordinate the execution due date for other OTC subsidiaries changes" (G20 2012).

The G20 responsibilities cover some essential ranges, specifically the direction of OTC exchange, expanded straightforwardness prerequisites, and the burden of (more stringent) position limits. A principle question is, be that as it may, to which degree part nations have actualized these duties. The Money related Steadiness Board (FSB) screens usage of G20 duties on OTC subsidiaries change. In its 6th evaluation in September 2013, it reaches the general conclusion that advance to actualize the duties stays uneven (FSB 2013): "at present over portion of FSB part purviews have administrative systems set up to empower all change responsibilities to be executed, however the present calendars for further changes in authoritative and administrative structures are uneven crosswise over wards and duty ranges. Advance is most quick in the usage of prerequisites to report exchanges to exchange vaults; there has been less administrative advance in purviews' execution of focal clearing, exchange execution and edge necessities" (FSB 2013, 1-2). Concerning the US and the EU, both have made strides towards satisfying the G20 duties, specifically executing enactment requiring focal clearing, exchanging on trades or electronic exchanging stages, revealing prerequisites, and edge rules for non-cleared subsidiary exchanges. Be that as it may, essential parts of enactment have not yet been caught up with specialized execution controls and have, consequently, not been actualized (see below).

6.2 Regulations and discussions in the United States

An extensive share of product subordinate exchanging still happens in the US which has a long history in ware subsidiary markets. It has the most imperative rural fates markets, most strikingly the Chicago Trade Exchange (CME). The Product Commodity Futures Exchanging Commission (CFTC) manages overseeing and directing item subordinate markets in the US. Generally, US farming prospects markets were firmly controlled. Since the Grain Prospects Demonstration of 1922, fates exchanging could just happen on endorsed trades which were required to criminal control or cornering of the market and since 1923 vast merchants needed to report their market positions every day (Clapp/Helleiner 2012). The Keeping money Demonstration of 1933 (the purported "Glass-Steagall Act") obliged banks to stop down or turn their business and venture operations, and in this manner isolated retail saving money from speculation managing an account, which likewise kept retail banks from participating in item subordinate exchanging (Uchitelle 2010). The Commodity Exchange Act (CEA) of 1936 engaged the CFTC to set up position constrains on all non-business brokers to avoid advertise control and mutilations and in addition over the top hypothesis that causes "sudden or preposterous vacillations or outlandish changes" (CFTC n.d. b) in ware prices (Experts/White 2008; Clapp/Helleiner 2012).

These position points of confinement were, in any case, continuously raised, bypassed or disposed of. The primary imperative deregulatory activity was identified with banks that sold OTC swaps to customers who were looking for presentation to ware value developments and "supported" their budgetary introduction on fates markets. In 1991, the CFTC began to give exceptions from position points of confinement to such swap merchants (in light of an underlying solicitation from Goldman Sachs) with the end goal of "supporting" their OTC swaps. This made the "swap merchant proviso" giving swap merchants (i.e. to a great extent substantial banks) that "fence" their money related positions for all intents and purposes the same boundless access to prospects advertises as physical hedgers. This additionally implied examiners could evade position confines by entering swaps with banks that could then "fence" their introduction on fates markets. For such purposes, single item list swaps were made. In 1998, the CFTC systematized the act of permitting item trades in vast and fluid wares prospects markets to supplant position limits with position responsibility limits. Those breaking points suggest that in the wake of passing a specific limit, the trade should watch the theorist's position with more prominent detail to avert control (Aces/White 2008; Clapp/Helleiner 2012).

In 1999, the nullification of the Glass-Steagall Act permitted retail banks to seek after speculation operations, including ware subsidiaries advertise ventures which expanded the contribution of banks on item subsidiary markets. Activities to amplify CFTC's direction from prospects markets to OTC derivates markets were opposed by the money related division and free market-situated arrangement creators. Significantly for the deregulation of item subsidiary exchanging was the Commodity Futures Modernization Act (CFMA) in 2000 that was firmly pushed by the back anteroom, drove by intense associations like the International Swaps and Subordinates Affiliation (ISDA), and even unequivocally kept the CFTC from directing OTC markets. In 2005, position breaking points were additionally raised which made the interest of benefits and other venture supports on a substantial scale

conceivable. One result of these administrative exclusions was the expanded strength of substantial players on futures markets – for example in 2009 only six brokers – all swap merchants – held 60 % of the long open premium positions in wheat futures contracts exchanged at the Chicago Leading Board of Trade (CBOT) (Clapp/Helleiner 2012).

With regards to the budgetary emergency of 2008 and expansive value variances, there was huge energy to fix money related market control and approach creators and the CFTC began to turn around a portion of the deregulatory activities of the pre-emergency time. In June 2008, the CFTC reported to pull back proposition to build position limits, and in August 2009 it denied – surprisingly – two exceptions for position limits identified with soybeans, corn and wheat that it had yielded to Deutsche Bank and Gresham in 2006 (Clapp/Helleiner 2012). In July 2010, the most vital activity, the "Dodd-Candid Money Road Change and Shopper Security Act" was affirmed by the US Congress after a long and hard-battled handle. The Demonstration comprises of sixteen segments ("titles") setting up new administrative bodies and confining the activities of banks and other money related firms. It goes for (i) change of the institutional control and oversight system; (ii) directions of banks and other monetary foundations; (iii) rules for speculator assurance; and (iv) rules for buyer security (Kern 2010). The accompanying controls straightforwardly influence product subsidiary markets:

6.2.1 OTC trade:

Taking after the G20 duties, the Demonstration incorporates arrangements to bring the generally unregulated OTC subsidiary markets under more grounded control. This incorporates, in particular, (i) that dealers will be required to utilize focal clearing through CCPs that go about as delegates amongst merchants and purchasers of agreements when going into institutionalized subsidiary exchanges (clearing necessity); (ii) more noteworthy straightforwardness through exchanging of all cleared OTC subsidiaries on enrolled exchanging stages, for example, trades or trade like offices (exchanging prerequisite); and (iii) announcing all OTC subordinate exchanges to exchange stores (detailing prerequisite) (Jackson/Mill operator 2013). In July 2012, CFTC endorsed an exclusion for the clearing and exchanging necessity for non-budgetary end clients (i.e. business traders)¹⁷, that are utilizing subordinates to support or moderate business hazard (DerivAlert 2012). Consequently, just monetary substances will be required to utilize clearinghouses and exchanging stages when going into institutionalized subsidiary exchanges with other money related elements. A further arrangement requests that (iv) all non-cleared subsidiary exchanges need to apply edge rules (edge rules prerequisite), again with a conceivable exclusion for nonfinancial elements supporting business hazard.

6.2.2 Swap dealers:

Swap merchants and significant swap participants¹⁸ are controlled through the above arrangements on OTC exchanging as swaps are exchanged on OTC markets. Also, the "swaps pushout run" (the purported "Lincoln Manage") denies any government help from being given to "swap substances". It along these lines obliges banks to turn off their swap exercises to independently promoted subsidiaries that are not supported by government store protection or have admittance to the US Central bank markdown window. In any case, in a break last administer in June 2013, the Central bank yielded far reaching exclusions to this

Study of Regulatory Risk in The Commodity Derivative Markets

run the show. It permits safeguarded store organizations to participate in swaps used to support or relieve hazard and approves the US managing an account office, subsequent to counseling with the CFTC and the Securities and Exchange Commission (SEC), to give a move time of up to three years for non-exempted swap exercises. In June 2013, a deferral of two years was conceded to seven of the biggest US banks (e.g. Bank of America, City Gathering, JP Morgan) which won't need to agree to the run until July 2015 (Nasdaq 2013). Moreover, there is a grandfathering arrangement implying that the administer will just apply to swaps went into after the finish of the move time frame (Polk 2013). Assist, business direct benchmarks for swap merchants and significant swap members were built up. These benchmarks ought to influence the way how showcase members settle subordinates' exchanges to lower hazard, advance market honesty and secure against misrepresentation, control and different misuse (Kern 2010; Gensler 2011). Controllers were likewise given the specialist to force capital and edge prerequisites on swap merchants, significant swap members and merchants exchanging counterparty credit hazard.

Transparency: The Act includes reporting requirements through (i) an obligation for real-time reporting of all cleared derivatives transactions (post trade transparency). For swaps, (ii) all swaps – both traded on exchanges and off – have to be reported to data repositories so that regulators can get an overview of the risks in the system and can control the markets for fraud, manipulation and other abuses. Information in swap data repositories should be also available to foreign regulators. The Act further requires that (iii) all swaps transactions are publicly reported post-trade (Gensler 2011).

Position limits: The Act requires regulators (i.e. the CFTC) to put in place (more stringent) position limits to ensure that markets do not become too concentrated and the diversity of actors is maintained. The Act also enables the authority to include the setting of aggregate position limits across all markets and trading platforms, including OTC, on all derivatives that perform or affect a significant price discovery function with respect to regulated markets that the CFTC oversees (Clapp/Helleiner 2012). The exception for swap dealers was removed, hence closing the “swap dealer loophole”.

Proprietary trading: Section 619 of the Dodd-Frank act (the so-called “Volcker Rule”) prohibits depository institutions, bank holding companies, and their subsidiaries or affiliates (banking entities) from engaging in short-term proprietary trading¹⁹ of any security derivative and certain other financial instruments for the banking entity's own account. It also prohibits owning, sponsoring, or having certain relationships with a hedge fund or private equity fund (CFTC n.d.; Uchitelle 2010). Proprietary trading by financial institutions is generally prohibited or limited because of problems related to insider information and conflicts of interest. The US Bank Holding Company Act (BHCA) generally prohibits entities subject to the BHCA from engaging in proprietary trading and investing in, sponsoring, or controlling hedge funds and private equity funds. The Dodd-Frank Act extends these restrictions to all entities covered by the Act (ISDA 2012). Around three years after the Dodd-Frank Act was passed, many provisions are still in the process of implementation. CFTC and SEC are working on implementation rules that are subject to public consultation which will strongly influence how the Act will operate in practice. The CFTC envisioned finalizing rules between spring 2011 and fall 2012. However, also due to intense lobby efforts

from the financial sector, implementation is substantially delayed – almost two thirds of the deadlines have been missed until June 2013²⁰ – and are also under threat related to legal challenges. ISDA and the Securities Industry and Financial Markets Association (SIFMA), both financial lobbies representing a number of financial institutions such as JP Morgan, Goldman Sachs and Morgan Stanley filed a case against the implementation of stricter position limits arguing that the CFTC failed to determine whether those limits were either “necessary” or “appropriate” (US District Court for the District of Columbia 2012). The US district court for the District of Columbia ruled in favor in this case in September 2012 – just weeks before the position limits rule was due to be implemented in October 2012 (NYT 2012). The CFTC decided to appeal the court rule in November 2012. The outcome of the appeal is still pending (as of September 2013). The US court ruling on position limits will have important effects not just for US regulation but potentially also for the EU. If the ability of the CFTC to impose position limits is constrained by a requirement to prove their need, the EU may feel pressure to weaken its rules as well. If the CFTC wins its appeal, the EU may be more willing to adopt tighter regulations (Clapp 2012d).²² As in all financial regulation, interests of the financial sector strongly influence debates and legislation – formally and informally and also directly in the regulatory process through the participation of banks, financial institutions and investors in various committees (Weber 2006). Banks have had many meetings with the CFTC to discuss Dodd-Frank rule making since mid-2010, with Goldman Sachs topping the list with 52 meetings and position limits being the most-discussed issues in 2011 (FT Alphaville 2011). Out of the 393 comments filed for the Volcker Rule, 70 % came from the financial sector and only around 1 % from NGOs.²³ The influence of financial actors is facilitated by the complexity of the issues with representatives of the financial sector being often used as “experts” to assess developments and develop regulatory proposals. But also, real economy interests of commercial commodity producers, consumers and traders are represented in policy debates (Clapp/Helleiner 2012). Agricultural interests allied with energy related businesses representing industries, end user and consumers in lobbying for tighter regulation, forming the Commodity Markets Oversight Coalition (CMOC) (Clapp/Helleiner 2012). Commercial traders in agricultural commodities have in particular had influence as the CFTC reports to the agriculture committees of Congress rather than the financial services committees. Another example is the non-partisan organization Public Citizen, which represent consumers’ interests in the Energy & Environmental Markets Advisory Committee to the CFTC and has stood up for position limits and against hedge exemptions (CFTC Testimony 2009).

6.3 Regulations and discussions in the European Union

In Europe, most legislation in the area of financial services is initiated at the EU level. As in the majority of EU legislative procedures, the “right of initiative” lies with the European Commission (EC). The decision process begins with a public consultation of the EC where both individuals and organizations can participate. After the consultation, the EC submits a legislative proposal (directive or regulation²⁴) to the European Parliament (EP) and the Council. This proposal is discussed and either adopted or suggestions for change are made in the EP (more precisely, the Committee on Economic and Monetary Affairs, ECON) and at the Council of Ministers (the Council of Economic and Finance Ministers, ECOFIN). The following discussions between the ECOFIN, the EP and the EC are called trilogue

Study of Regulatory Risk in The Commodity Derivative Markets

negotiations. Once a legislative proposal has been adopted jointly by the EP and the ECOFIN, the so-called “Level 1” text is ready which sets out the basic framework of the legislation. It also indicates where technical proposals are required for which the help of the European Supervisory Authorities (ESAs) such as the European Securities and Markets Authority (ESMA)²⁵ in drafting so-called “Level 2 implementing measures” is used. Through this procedure, the decision process can take quite long as is also the case with current reforms concerning commodity derivative markets. In the EU, commodity derivatives markets have grown in importance for price discovery and risk management, particularly since the deregulation of agricultural policy, but they are still smaller in size and play a less important role than in the US²⁶. EU legislation on financial markets, including commodity derivatives, is characterized by a highly-fragmented set of directives and regulations. Up to the financial crisis in 2008, EU legislation mainly focused on deregulatory measures with the objective to create a single European financial market. Especially, the Markets in Financial Instruments Directive (MiFID) that came into force in 2007 was a key element of EU financial market integration that focused largely on deregulation (Küblböck 2010). The dynamics changed however in the aftermaths of the financial crisis and in the context of large commodity price fluctuations. Since 2009 existing legislative instruments, particularly for commodity derivative markets, have been revised and new regulations have been introduced with the aim to strengthen oversight and regulation, also related to the G20 commitments. Table 1 gives an overview of the most important regulatory initiatives concerning commodity derivative market reform. The European Market Infrastructure Regulation (EMIR) was adopted in August 2012 and technical standards entered into force in March 2013; member countries will have to apply most of the reforms until mid-2014 at the latest (ESMA 2013) MiFID and the related Markets for Financial Instruments Regulation (MiFIR) are still in the process of negotiation. There exist proposals by the EC, the EP and the Council that are the basis of trilogue negotiations that started in September 2013. A first compromise might be reached in fall 2013; implementation legislation and technical standards will however take some time with MiFID II/MiFIR entering force probably at the earliest in spring 2015. Hence, the discussion of MiFID/MiFIR below is based on the three separate proposals and not a final proposal.

EXISTING REGULATION				
Markets for Financial Instruments Directive (MiFID)		Market Abuse Directive (MAD)		
reformed	new	replaced by		new
MiFID II	Markets for Financial Instruments Regulation (MiFIR)	Directive on Criminal Sanctions for Market Abuse	Market Abuse Regulation	European Market Infrastructure Regulation (EMIR)
Adoption due March/April 2014	Adoption due March/April 2014	Trilogue negotiations are expected to start in 2013	Agreement reached in Sept. 2013; final adoption and entering into force aligned to MIFID timetable	Adopted in August 2012; technical standards in March 2013

EMIR

The first relevant reform is the new European Market Infrastructure Regulation (EMIR). It is the main legislative instrument to reform OTC derivative markets in the EU. In September 2010, the EC submitted a proposal based on the G20 commitments and the approach taken by the US. The most important regulations include: (i) information reported on all OTC derivative transactions to trade depositories (reporting requirement); (ii) clearing of eligible (i.e. standardized) OTC derivatives through CCPs (clearing requirement); (iii) improved risk assessments (including margin rules) for non-standardized and non-cleared OTC derivatives if they exceed the clearing threshold (margin rule requirement); and (iv) common rules for CCPs and for trade repositories, including the duty to make certain data available to relevant authorities and the public (Henn 2012b, 2012c). The central clearing requirement is generally applicable for financial counterparties. For non-financial counterparties, there is an exception for activities that reduce commercial risk and that serve treasury financing, and a threshold for all other activities. The hedging exemption is also applicable if only one side of the transaction is a non-financial counterparty.

The proposal was discussed controversially in the EP, and 125 amendments were put forward in the ECON meeting in February 2011. Afterwards negotiations between the Council of Ministers (ECOFIN), the EP and the EC took place. In October 2011, the Council of Ministers agreed on a compromise with the EP. The law was finalized in July 2012 and entered into force in August 2012; important technical standards proposed largely by ESMA were adopted in March 2013 (Henn 2013). ESMA had an important role in drafting technical standards being for example responsible for defining which derivatives are sufficiently standardized and thus should be cleared (Pieg 2012).

MiFID and MiFIR:

The second relevant initiative is the reform of MiFID. The directive aims at regulating investment firms and trading venues, covering regulated markets (e.g. commodity exchanges) and other trading facilities, and applies to all financial instruments that are traded on exchanges and other platforms and do not fall under EMIR (OTC trading), including, for example, shares, bonds, structured products and exchange traded derivatives, as well as commodity derivatives. MiFID is a key element of EU financial market integration and its original version liberalized financial market trading in the EU allowing trading venues and investment firms to operate freely across the EU, creating so called multilateral trading facilities (MTFs), and enhancing competition between exchanges and MTFs.

After a long period of internal discussions, the EC released proposals for MiFID II and for a new regulation on the same issue, the Markets in Financial Instruments Regulation (MiFIR), in October 2011. The proposals include in particular the following regulations: (i) creation of new trading platforms, so-called organized trading facilities (OTFs); (ii) shifting standardized OTC derivative trading to more regulated trading places, including regulated markets, MTFs or OTFs related to the clearing requirements of EMIR (trading requirement); (iii) real-time reporting by traders to trading platforms of all derivatives that are eligible for clearing or required to be reported to trade repositories and weekly public reports by trading platforms on positions of classes of traders (reporting requirement); and (iv) position limits or alternative measures with equivalent effect on regulated markets, MTFs and OTFs with the exception of positions held for hedging purposes (Henn 2012b, 2012c). With regard to the

trading requirement of standardized OTC derivatives, ESMA still has to define a list of derivatives subjects to the clearing obligation that are also subject to the trading obligation (Article 26/27 of MiFIR).

The Rapporteur of the EP, Markus Ferber (CSU), released its draft report with proposed changes to the EC proposal in March 2012 and received comments by the EP until May 2012 to develop a common position by the EP. The draft includes several changes that strengthen regulation, in particular concerning the authority of ESMA to impose position limits at the European level, the deletion of the addition “alternative measures”, and the direct and stronger regulation of high frequency trading (HFT). The EP draft also suggests reducing the exemption from the general MiFID rules for commercial traders that pursue hedging activities, and strengthening some provisions on transparency (Henn 2012 b, 2012c). The ECON vote in September 2012 included a last-minute change clarifying that position limits should not be reduced to the expiry month but only apply to net positions. Concerning HFT regulations, the ECON vote pushed for an ambitious set of measures, including a minimum holding period of 500 milliseconds for any position on regulated exchanges, higher fees for subsequently cancelled orders and for a high ratio of cancelled orders, and prohibition of direct electronic access to trading venues by investment firms (Henn 2012b). The EP decided on its position in October 2012 where largely the proposal of the ECON was confirmed.

The Council of Ministers agreed to a position in June 2013 after 20 months of internal negotiations. The proposal of the Council weakens position limits regulation by giving member countries discretion on how to implement position limits which is in contrast to the EP proposal on common European position limits managed by ESMA. A positive aspect of the Council proposal is that competent authorities themselves should establish and apply limits and not only oversee limit setting by trading places. Further, in contrast to the EC and EP proposals that restrict position limits to regulated markets, MTFs and OTFs, the Council proposal does not restrict limits to exchange-traded contracts speaking of derivatives which may include OTC trade. With regard to OTFs, the EP agreed on their creation but insisted that they can be only used for large, non-equity trades for which no liquid market is available. Hence, trading of shares and bonds should be excluded from OTFs in the EP proposal. In contrast, the Council proposal also allows trading of highly standardized products such as shares on these platforms which could encourage a further shift of trade flows to less regulated trading platforms (Giegold 2013). The Council proposal further states that limits should not apply to treasury financing activity of non-commercial entities or of a person who acts in behalf that non-financial entity (van Schaik 2013).

With the EP and the Council having agreed on their proposals, trilogue negotiations started in September 2013. The main open issues include (i) whether the legislation will require real time reporting; (ii) how strong the trading obligation will be; (iii) whether OTC trade will be subject to position limits which is potentially included in the Council proposal; and (iv) whether the EC and ESMA will set the position limits as in the EP proposal to be applied by trading platforms, or only set some criteria based on which national authorities will decide. It looks unlikely that the EU legislation will include aggregate position limits in addition to individual limits (correspondence with Vander Stichele 2013). The EP will consider the Council position at its December 2013 plenary session (TAG Archives 2013).

The agreed text should be due for adoption in spring 2014 (Friends of the Earth 2013). After the final text is adopted, it is expected that the development of implementing legislation and technical standards by ESMA will take around 18 months (EC 2013b). This means that MiFID II/MiFIR will enter into force at the earliest in spring 2015. The final agreement and the implementation rules will strongly influence the impact of the regulations as the scope of several measures is still open to be defined by these rules (e.g. the list of derivatives subjects to the trading obligation).

Other regulations:

Other rules that still in part seek advice from commodity by-product buying and selling are the substitute of the marketplace Abuse Directive (MAD) (that was initially carried out in 2005) by using a Directive on crook Sanctions for market Abuse (MAD II) and a market Abuse regulation (MAR). They check with marketplace abuse, which include proprietary and insider trading and market manipulation wherein law is extended from regulated exchanges to MTFs and OTFs as well as to spot contracts. As positive transactions in derivative markets can also manage the fee in spot markets and vice versa, the definition of market manipulation is extended to additionally capture such cross-marketplace manipulation. as an example, abusive squeezes which are the practice of accumulating bodily assets to create scarcity and then moving into spinoff contracts and requiring bodily shipping should be prohibited underneath MAR (SOMO/WEED 2012).

Also at the EU level, pastimes of the monetary area strongly influence debates and regulation on monetary marketplace law. for example, ISDA is one of the monetary area foyer groups carefully following the decision-making procedure and heavily lobbying through producing papers about their positions and commenting on draft texts with the aid of the Council (Henn 2012a). pressure is likewise exerted by commodity producers on EU markets but much less so than in the US. as an instance, in July 2010 16 cocoa processing and buying and selling firms signed a letter to the London futures trade threatening to move their hedging enterprise to New York if US style position limits had been now not added to cope with marketplace manipulation (Farcy 2010, stated in Clapp/Helleiner 2012; Vander Stichele 2012).

7. Regulatory Area and Potential Benefits

A successful data life cycle governance program can help organizations contain costs, retain the right data and address regulatory compliance requirements. Equally important, it can increase the business value of data by providing a sounder platform for decision-making.

When aggregated across hundreds or thousands of systems, applications and databases, individually small benefits can create significant benefits overall. The main areas of potential benefit include:

- 1) **Eliminating redundancy:** very commonly, multiple copies of reference data are held at different points in the organization and copies of transaction data are duplicated in different environments. Unrestricted end-user rights result in both duplication and inconsistency. Rationalization of data and applications within an overall data strategy can yield substantial savings. KPMG analysis suggests typical benefits of US\$500 to \$1,000 per application server, and up to \$10,000 per database.
- 2) **Minimizing over-retention:** typically, organizations hold on to data for too long as a result of retention limits not being enforced, overprotective interpretation of legal requirements and over-engineered business assurance systems. Streamlined dispositions frameworks, workflow processes and assurance strategies can cut the cost of over-retention dramatically. Analysis by KPMG suggests potential savings in the range of 30 to 50 per cent of storage costs. Collateral business benefits include reduced expenditure in the context of legal action, document discovery and assurance.
- 3) **Examining the existing legal, regulatory and business requirements for data alongside the people, process and technology controls in place** will allow gaps to be identified in the performance of different functions within the organization. There is a competitive advantage to be enjoyed by those institutions that have this agenda embedded as a business priority. Alas, in the UAE, this has so far not been a high priority for senior management or regulatory oversight.
- 4) **In conclusion, it can be said that regulatory risk management depends critically on the value of the data underlying produced records, its analysis and evaluation. Where data quality is inadequate, risk and compliance management lacks a strong foundation. Responsible oversight by senior management and boards requires that these issues are given appropriate attention.**

Study of Regulatory Risk in The Commodity Derivative Markets

Benefits:-

- 1) Respond quickly to regulatory changes.: - Easily adapt to changing regulatory requirements, and accommodate varying interpretations of Basel II and Basel III guidelines across multiple jurisdictions. Our flexible solution allows for easy system evolution, so you can stay up-to-date.
- 2) Easily integrate complementary solutions: - Seamlessly integrate your credit scoring/internal rating system with your credit portfolio risk assessment processes. And easily incorporate third-party or user-defined pricing and valuation models.
- 3) Get up and running faster, with minimal project risk: - Predefined regulatory environments, sample reports and a banking-specific data model enable you to get up and running quickly for faster regulatory compliance.
- 4) Ensure audit and system transparency: - There are no hidden system files or black-box models, which ensures transparency throughout your processes. You can archive all the data and intermediate calculation steps, then access, audit and validate them as needed for supervisory and internal review requirements.

8. Risk Involved in Commodity Derivatives

Various types of risks that are involved in commodity derivatives are as follows:

8.1 Basis Risk:

This is the risk associated with trading when hedging strategy may or may not work. It depends on 3 factors:

- Quality Risk
- Time Risk
- Location Risk

Basically, when the strategy we have taken assuming some variables does not work, our hedging strategy can fail which leads to Basis Risk.

8.2 Flat Risk:

Flat price is the absolute price level of the commodity. When the absolute price of the commodity fluctuates, this is the risk associated with it from the buyer or seller's perspective. It is called Flat Price Risk.

8.3 Spread Risk:

From time to time, commodity trading firms engage in "spread" transactions in which the same commodity is bought and sold simultaneously. It often leads to mismatch timing in that gives rise to spread risk. It is also called as Calendar Spread or Time Spread.

8.4 Margins and Volume Risk:

When volumes are high, margins tend to be high. This means that variations in the quantity of commodity shipments, as opposed to variations in commodity flat prices are better measures of riskiness of traditional commodity merchandising firms.

8.5 Operational Risk:

There are some operational risks (resulting from the failure of operational process) rather than the price risk.

For example: Breakdown of a ship during shipment.

Natural calamities / seasonal variation that delays shipment (leading to financial penalties.)

8.6 Contract Performance Risk:

A firm that enters contracts to purchase or sell a commodity is at risk to the failure of its counterparty to perform.

8.7 Market Liquidity Risk:

Liquidity varies across commodities. Oil derivative markets are substantially more liquid than coal or power derivatives market. So, CTF are highly sensitive to variations in market liquidity. More liquidity offers more chance to make margins. So, firms that engage in dynamic trading strategies are vulnerable to decline in market liquidity.

8.8 Political Risk:

Commodity trading firms often operate in territories with weak rule of law, exposing them to various risks. This includes the risk of expropriation of assets (act of taking

privately owned property by a government to be used for the benefit of public), risk of arbitrary changes in contract terms outright ban on exports etc.

8.9 Legal / Reputational Risk:

Many commodities are potential environmental hazards, and firms are subject to legal sanctions (including criminal ones) if their mishandling of commodities leads to environmental damage.

8.10 Market Risk

Market risk refers to the general risk in any investment. Investors make decisions and take positions based on assumptions, technical analysis or other factors that lead them to certain conclusions about how an investment is likely to perform. An important part of investment analysis is determining the probability of an investment being profitable and assessing the risk/reward ratio of potential losses against potential gains.

8.11 Counterparty Risk:

Counterparty risk, or counterparty credit risk, arises if one of the parties involved in a derivatives trade, such as the buyer, seller or dealer, defaults on the contract. This risk is higher in over-the-counter, or OTC, markets, which are much less regulated than ordinary trading exchanges. A regular trading exchange helps facilitate contract performance by requiring margin deposits that are adjusted daily through the mark-to-market process. The mark-to-market process makes pricing derivatives more likely to accurately reflect current value. Traders can manage counterparty risk by only using dealers they know and consider trustworthy.

8.12 Liquidity Risk:

Liquidity risk applies to investors who plan to close out a derivative trade prior to maturity. Such investors need to consider if it is difficult to close out the trade or if existing bid-ask spreads are so large as to represent a significant cost.

8.13 Interconnection Risk:

Interconnection risk refers to how the interconnections between various derivative instruments and dealers might affect an investor's particular derivative trade. Some analysts express concern over the possibility that problems with just one party in the derivatives market, such as a major bank that acts as a dealer, might lead to a chain reaction or snowball effect that threatens the stability of financial markets overall.

9. Impact of Regulations on the derivative markets

Portfolio division has expanded the heap on the exchanging firms since now they need to work isolate work streams for the exchanges cleared halfway by CCP and the non-midway cleared exchanges i.e. by ISDA. The controllers have set least edge exchange add up to zero which will expand the volume of insurance trades and in addition the recurrence of guarantee calls in this manner corrupting the nature of the security. Exchanging firms must streamline their security administration. If they do as such for the midway and non-halfway cleared exchanges they will have favorable position contrasted with their rivals. [6] Every single cleared subordinate exchange should be currently written about a constant premise. Swaps which are likewise exchanged OTC markets will likewise must be accounted for to the information stores. This will give the controllers a chance to review the dangers required in the framework and can control any evil impacts that can influence the smooth working of the framework.

Different rules are applicable to different types of market participants like commercial end-user, major swap participant and swap dealer according to DFA. Many major trading hubs that lie outside the G20 have also shown interest to align their policies in line with the Dodd Frank Act, EMIR, MiFID II etc. This will ensure that there is no regulatory arbitrage in the trading that takes place between countries of G20 and others. New regulations will lead to lower liquidity in the market and fewer counterparties in select derivative markets.

One of the requirements after the implementation of the regulations in the OTS market is the frequent and transparent valuations of the complex derivatives which is a challenge for the buy side firms.

It has been observed that the commodity trading community has responded to the regulations in a very disparate and segregated manner. Their responses clearly indicate a lack of cohesiveness and separation. This might be due to cultural reasons. Since there is not established representative body, the market leaders have not given a unified response to the various regulatory bodies. It is believed that for the commodity traders to accept and function smoothly in this era of regulations they can follow the four steps given below:

1. They should prepare themselves in such a way that they are able to absorb the impact of regulations on the global commodity markets smoothly – This can be achieved by conducting a proper analysis of the various regulatory rules laid down and how they will be affecting various financial institutions etc. The capital investment in trading should be optimized to the maximum possible extent. The analysts can take a microscopic view and break down their books into trading strategies to squeeze out the extra money and save it.
2. Top management should focus more on cost management – Regulations are set to increase the transaction costs across the board. Since now all the trading has to be reported to trade repositories, more scrutiny will be required for all the transactions and for this the mid and the back-end services will have to be upgraded. This will call for additional costs which must be perfectly managed in order to stay within the budget.

Study of Regulatory Risk in The Commodity Derivative Markets

3. Balance sheet to be restructured and new sources of capital to be identified – those trading groups which have bigger investors will somehow manage to maintain their balance sheets. The individual traders will however find it harder to sustain.
4. They should develop strategies to diversify their investments in the downstream and upstream assets in core and new geographical areas.

The trading companies that manage the assets of large producers/consumers will be finding it difficult in attracting sufficient capital from their parent companies. The smaller traders will surely find it difficult to adapt their business model to this changing environment and meet the capital needs.

The implementation of EMIR has a deep impact on the counterparty risk mitigation and derivatives position transparency. Since the regulation requires that the valuation of the derivative contract have to be done on a daily basis hence it is necessary that the valuation process must be robust enough. Also, it now necessitates that in case the valuation process followed by two parties are significantly different then it (EMIR) lays down a procedure which has to be followed and differences cleared between the counterparties within five days.

The requirement of reporting to ESMA according to the regulation of EMIR and using the global data repository is helpful to many participants in many ways:

Regulatory Bodies are benefitted as follows:

1. It will give data regarding the various transactions taking place in its domestic market as well as the world market of OTC.
2. They can have instant access to all the data in case of a crisis.
3. It will lessen their burden to compile and aggregate their data only during requirements.
4. It will help to have a deep analysis of the market scenario.

Market participants are benefitted as follows:

1. This will facilitate them to have a single point contact and to adhere to one single regulation encompassing almost all the standards.
2. Leverages the service to achieve additional operational efficiencies.

Public are benefitted as follows:

1. Public get a sense of surety and confidence in the markets since they know that it is being regulated by the regulators.
2. All the data is centralized.

As per the report published by J.P.Morgan in the year 2011 on Regulatory Reform and Collateral management: The Impact on major participants in the OTC derivatives markets the impact of EMIR is as shown in the figure below.

Three Key Implications of Reform

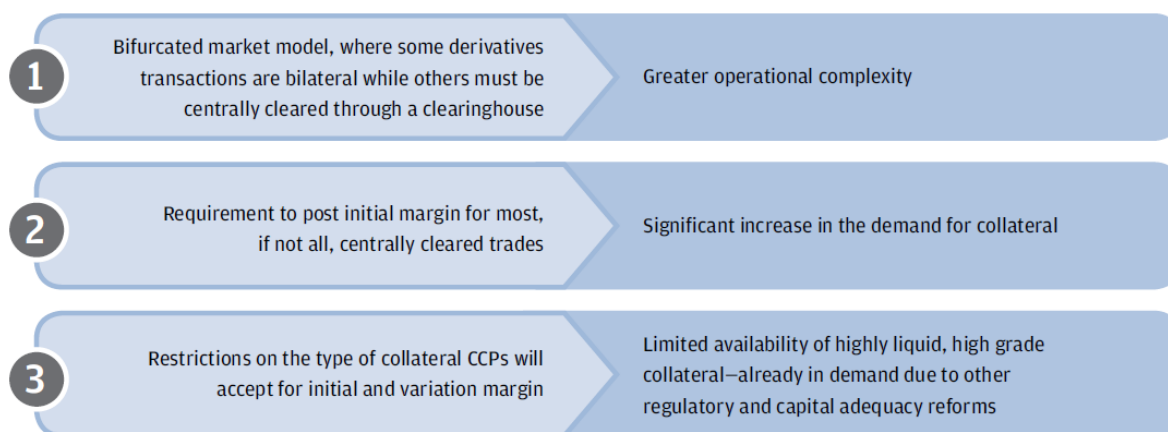


Figure 9.1: Implications of EMIR

It was observed that the incentive to the institutions from the trades that are centrally cleared were less or not so obvious since they could get their trade cleared only through a clearing member which calls for additional costs. The incentives for different types of end user will differ based on the business model they have and the various portfolios they manage. Since according to the portfolios the costs involved differ and this affects the incentives they receive. ^[12]

The following figure shows the impact of DFA on the various market participants and the level of complexity. This was a study carried out by Wipro in-house along with discussions with their client organization.

¹² Deloitte, OTC derivatives The new cost of trading, Deloitte LLP, 2014

10. Impact of Regulations on the derivative markets – An Indian perspective

In comparison to the regulations implemented in US and EU to regulate the OTC derivative markets it can be seen that the regulations prevalent in India are strong enough to completely regulate by minimizing the systemic risk involved in all types of derivative trading prevalent in India. The only need of the hour from Indian perspective is to introduce more and more CCPs under the RBI purview so that all the reporting is not concentrated at CCIL itself and its burden is not increased. This is recommended since the OTC derivative market is growing exponentially over the globe and in India as well. So, in order to smoothen the reporting, clearing and settlement processes number of CCPs will be required for the same to handle the traffic.

The overall share of the OTC derivative market of Asia is only 8% of the global market. However, impact of OTC derivatives regulations will have significant effect on the market since the Asian markets are too much fragmented with multiple jurisdictions and also because of many Asian banks dealing with EU and US counterparties will definitely have to comply with DFA and EMIR. The basic difference between EU and Asian regulations are in case of a pan European bank it has to follow only two regulations whereas an Asian bank having a presence in 10 Asian countries will have to follow 10 different regulations.¹³

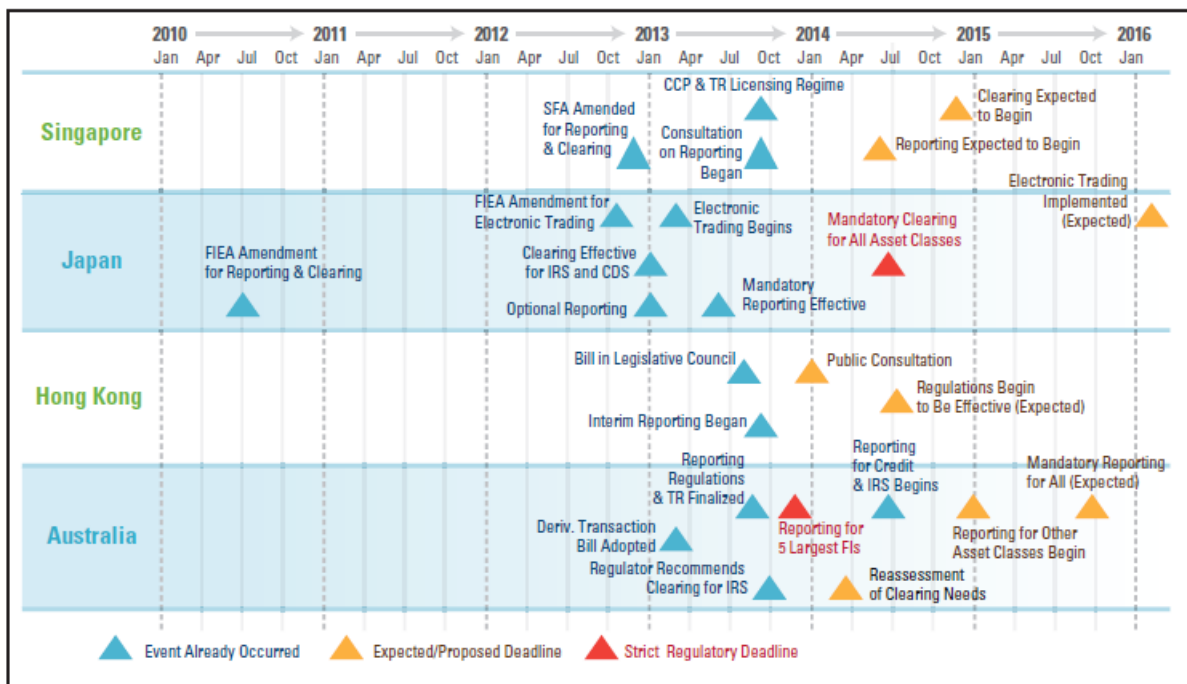


Figure 10.1: Regulatory Timeline: Important events related to Asian OTC Regulations

¹³ Lele, Bhushan; Singh, Ras Bihari; Over-the-Counter (OTC) Derivatives in Asia: The impact of regulations, Cognizant, 2014

11. Conclusion

After detailed analysis of the Commodity market, Regulatory market, Types of risk involved in different kind of derivative trading, the findings of research are as follows:-

- 1) Regulations prevailing in different markets are different. So, before going to trade in a particular market, it is suggested to analyze all parameters, regulatory norms, implications as well as exchange related standards in a detailed manner.
- 2) Underlying asset involved in trading varies with the type of trading involved. Stock derivatives like Stock options and futures have standardized terms as compared to OTC contracts where a trader can customize the terms with mutual agreement of counter party.
- 3) Research has suggested that potential benefits of mitigating regulatory risk includes:-
 - ✓ **Elimination of Redundancy in trading derivatives.**
 - ✓ **Quick response to regulatory changes.**
 - ✓ **Easily integrate the complementary solutions.**
 - ✓ **Enhanced transparency and audit systems.**
 - ✓ **Assurance of minimal project risk.**
- 4) Framework for Regulatory Risk Management has been defined clearly which covers the following points:-
 - a) **Enterprise-wide risk mitigation techniques.**
 - b) **Step wise procedure of risk strategy formation.**
 - c) **Risk performance, functions and risk measures.**
 - d) **Risk bearing capabilities.**

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Study of Regulatory Risk in The Commodity Derivative Markets