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Derivatives Exchange in Morocco: Dream or Reality? - Market demand and lessons from other exchanges.

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Abstract

Morocco is currently experiencing a liberalisation process involving major industries within its growing economy. This growth involves unique and country-specific risks. Thus, investors require complex financial instruments to hedge these risks, known as Derivatives. Ideally, the trade of Derivatives should take place in an organised Exchange, which does not yet exist in Morocco. The success of a Derivatives Exchange is conditioned by the financial landscape of the country, the financial markets regulations, and the Exchange's microstructure. This research study explores some of the key elements required to establish such an Exchange while using two methods. Firstly, a comparative analysis is developed whereby Morocco is benchmarked with countries of similar economical and strategic conditions that already have established Exchanges. The results provide lessons for the development of a Derivatives Exchange. Secondly, a survey among major financial institutions and industrial companies is carried out indicating the need of flexible regulations and desired design of financial Derivatives. Our conclusions compare the results from the two methods and provide recommendations for the market-demand and appropriate microstructure of a Derivatives Exchange in Morocco.

Keywords: *Morocco, Derivatives Exchange, Derivatives Products, Emerging Market Economies, Market Demand, Futures, Forwards, Swaps, Options, Risk, Trade, OTC Derivatives Market, Microstructure.*

Table of Contents

LIST OF FIGURES

LIST OF TABLES

1. Introduction

In this chapter the problem areas, purpose, perspective and disposition of the study will be discussed. The main purpose of this chapter is to introduce the chosen topic and to give a picture of how this academic study will be structured.

1.1. Background

This thesis is a research study of the Moroccan financial market as it will focus on the feasibility aspect of the introduction of an organised Derivatives Exchange in Morocco. The authors are studying the International Master Programme in Industrial and Financial Economics within the Graduate Business School of the School of Business, Economics and Law at Gothenburg University, Sweden. They were interested in writing their thesis with a special attention to Derivatives instruments. As a matter of fact, the set up of a Derivatives Exchange within the Moroccan financial market is attracting more than one's attention. It is connected with all the financial intermediaries and major institutions that have access to different forms of Exchanges. Moreover, the authors would like to review the resources and measures, if any, that need to be undertaken in Morocco in order to allow the establishment of these new business practices.

1.2. Research Questions

This section summarises the research questions that will drive the investigation. The following problematic questions are addressed within the different chapters of this paper, whereas the answers are summarised in the concluding chapter. This research intends to answer the following:

- What are the lessons from similar countries that can contribute to an adequate implementation of a Derivatives Exchange in Morocco?
- What is the market demand for Derivatives instruments among major industries in Morocco?
- What types of Derivatives instruments could be more attractive for Moroccan investors?
- Are the participants within the Moroccan financial market willing to include Derivatives instruments in their investment strategies?

1.3. Purpose

This research paper consists of two major guidelines, a benchmark analysis and a survey analysis. The purpose of the former is aimed at providing the reader with the results of the benchmark analysis carried out on similar markets to Morocco that have recently introduced a Derivatives Exchange. The authors will on the *Romanian*[1] case and the *Portuguese*[2] one. They will assess the financial development of these benchmarks with respect to their Derivatives Exchanges. The objective is to define the risks and challenges involved in the establishment of such a market.

The benchmark analysis allows for a better understanding of the benefits of a Derivatives Exchange in addition to the lessons that need to be taken into consideration while setting up a Moroccan Derivatives Exchange. Furthermore, based on the securities already traded in the spot market and on the instruments of the obligations market that will be introduced in January 2007 in Morocco, this research studies the main aspects necessary to develop a Moroccan Derivatives Exchange and meet the corresponding trading practices; advantages and risks involved, and investigate the new possibilities of investment strategies according to the current characteristics of the Moroccan financial market.

The second guideline on the other hand, consists on a survey investigating the market demand of Derivatives instruments among financial intermediaries and industrial companies that require the services of an Exchange. This survey would be a support for the benchmark analysis. It is expected to either confirm its results in terms of market demand and/or to provide new information about the risk exposures in Morocco. The survey is conducted among financial professionals with managerial responsibilities in the Moroccan market, who are dealing with Derivatives Products on a regular basis as part of their business strategies.

1.4. Perspective

The perspective of this study considers only the authors point of view. It is oriented to investment banks, financial intermediaries and any form of institutions that need the services of a Derivatives Exchange in order to hedge/increase risk exposures. This paper is also addressed to the regulatory authorities of the financial markets in Morocco. The opening of a Derivatives Market in Morocco is not a confirmed fact, but it has been suggested to the authors that the introduction of the Obligations market in 2007 has triggered the interest for such an Exchange among major financial players in the country. It is therefore to the interest of the authors to study such a possibility and examine a possible path that a Derivatives Exchange could take according to the market demand and the current reality of the country.

[1] [2]Later on this paper will be provided arguments for the choice of the benchmarks.

1.5. Outline

Chapter 1: Introduction

The first chapter is an introduction to this research study. The background of the topic, the research questions, the purpose, and the perspective of this study are presented and described. Furthermore, the outline of the thesis is developed.

Chapter 2: Methodology, Research Model and Need of Information

The second chapter presents the methodology, the research model, the literature review, the description of the sources of information, the data collection and the delimitations of the study. This chapter also describes the methods of investigation to deal with the research questions.

Chapter 3: Theoretical framework

The third chapter covers the theoretical framework regarding the microstructure of Derivatives Exchanges in general. This chapter intends to give an overview of the concepts that will be discussed later on through the benchmark analysis. A discussion of the relevance of the Derivatives Exchange and the elements of its architecture are also developed in this chapter.

Chapter 4: Benchmark to similar markets and Results

The fourth chapter studies the development of Derivatives Exchanges in similar markets to the Moroccan in terms of economic size and geographic positioning. A preliminary analysis is conducted in order to select the most appropriate benchmark countries. The chapter presents a study of the two selected benchmark countries and lessons for the Moroccan case.

Chapter 5: Survey Analysis and Results

In the fifth chapter, the establishment of the survey, the analysis and the results are presented. This section covers a research among the participants in the Moroccan financial market. It presents the current market demand for Derivatives products, information about the risks related to the Moroccan reality and it also provides a support to the results from the benchmark analysis.

Chapter 6: Conclusions and Recommendations

The last chapter of this study provides conclusions of the results. An analysis of these results will be made, as well as a comparison of the conclusions described in chapters 4 and 5.

2. Methodology, Research Model and Need of Information

In this chapter the research model, need of information, research design, research method and the data collection method chosen in this study will be described. Further, an evaluation of the study and the results will be made with respect to validity, reliability and errors.

2.1. Development of the Research Model

The study of the Derivatives Exchange is complex and broad. Therefore, in order to facilitate the study, a research model that tackles all the problematic questions is developed. The research model intends to bring guidance throughout the investigation process. This paper consists of two different research methods, namely: a survey that will involve the financial intermediaries and industrial companies in the local market, and case studies of similar markets to the Moroccan about their processes while introducing their respective Derivatives Exchanges. The diagram in Figure 1 highlights the research model with its different components.

The research model has been developed to illustrate the methods through which the research questions are answered, to identify the information that is needed for such purpose and the possible sources. The research design involves the two mentioned methods, Benchmark and survey analysis. In order to clarify the structure of Figure 1, the boxes to the left show the research questions that are answered with the respective method, while the boxes to the right indicate the information needed and the type of data collected. The choice of data-collection method used in the different problem areas are described afterwards.

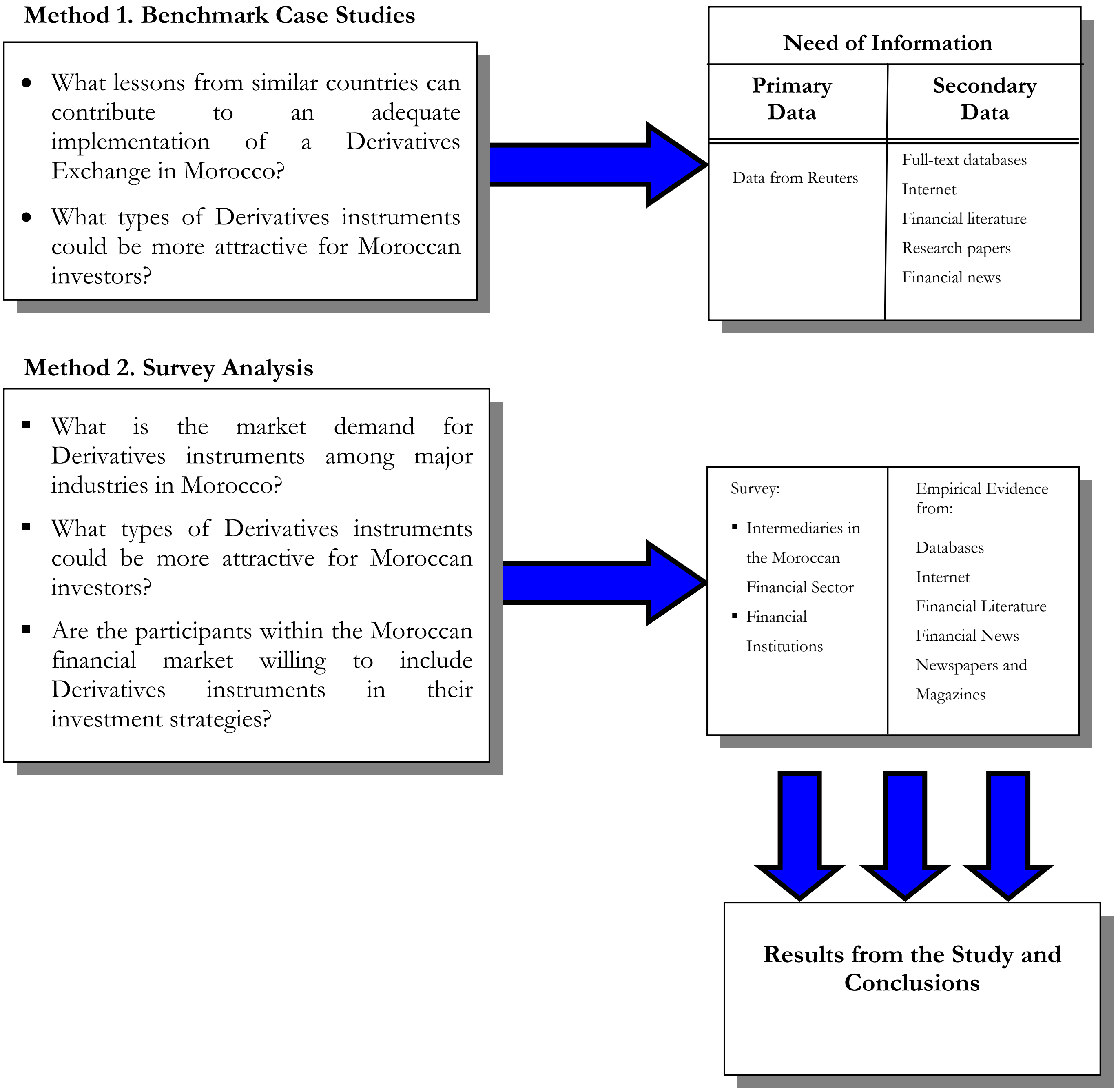
2.2. Data Description and Choice of Collection Method

There are two main sources of data. Firstly, a benchmark analysis is performed using secondary data that is collected from research papers, financial literature, financial news and other information extracted from full text databases such as Business Source Premier, JSTOR, Science Direct, Ecowin, among others; in addition to primary data which is retrieved from Reuters. Secondly, a Survey is conducted among companies that belong to the main sectors in the financial Moroccan market: Building and construction, Investment companies, Insurance and Agricultural. The survey collects primary data from finance professionals and industrial professionals.

2.3. Scope and Delimitation of the Study

This research study focuses on the elements involved in structuring a Derivatives Exchange according to the Moroccan context. The study also investigates the potential risks and challenges affiliated to the market and some suggestions to manage them. The research does not involve a detailed study of Derivatives instruments that may develop during the possible introduction of the Exchange. Instead, it focuses on the possible instruments that better fit the current economical situation of the country according to the industries studied. The study of the structure of a Derivatives Exchange is a very extensive subject; therefore the authors focus on the market demand and on the more general lessons to be considered in developing such an Exchange.

Figure 1. Research Model



Source: Own, 2006

3. Theoretical Framework

The third chapter covers the theoretical framework. The first part of this chapter emphasises the importance of a Derivatives Exchange for an economy. The second part gives an overview of the components of the microstructure of Derivatives Exchanges. In addition, special attention is given to the case of Emerging Market Economies like Morocco.

3.1. The relevance of Derivatives Exchanges

Derivatives Exchanges provide important benefits to the economy. These types of Exchanges offer easy ways of transferring financial risks, enhance public information to a greater extent, provide lower transaction costs, protect price volatility, facilitate price discovery, augment credit of anonymous counterparts and allow for effective mechanisms to improve liquidity.

Developing economies face financial risks and Derivatives products help financial institutions to protect themselves from these risks. The role of a Derivatives Exchange in developing markets is a way to improve profits and to transfer risks. In the particular case of Emerging Economies[3], the importance of a Derivatives Exchange relies on the benefits mentioned above, but also because of the special market conditions (risks and stability) that these economies present to help developing their economies.

Emerging Market Economies are considered to be fast-growing and have, in recent decades, liberalised their financial markets. These economies have undertaken reforms and economic development programmes. Accordingly, these economies "emerge" into the global scene, attracting foreign capital investment and improving economical performance. It is for the same reasons, that these economies face several risks that need to be covered with more sophisticated financial tools. Even though there are available Derivatives Exchanges in other Developed Markets, their roles in an Emerging Economy are numerous and provide local investors with multiple benefits. Firstly, they offer investors with financial products to cover their financial risks in a cheap and easy way, they provide international investors with financial instruments to hedge risks that are unique to the emerging country, and moreover they provide access and encourage trade of national commodities which could be of interest to foreign investors. Thus, in most cases, a Derivatives Exchange in an Emerging Economy offers financial tools to control risks that are unique to the economy and that do not exist in other developed markets or that require a

[3] The terms Emerging Market, Emerging Economy, Emerging Country and Emerging Market Economy are used indistinctively in this paper.

different risk management approach. Risks such as volatility, risk management and country-risk are specialities of Derivatives Exchanges.

Given that emerging markets are characterised for their illiquidity, politically unstability, with a lack of historical databases and financial regulations, Al Janabi (2006a) identifies certain prerequisites for the introduction of a Derivatives Exchange within such economies:

- It is necessary that the cash market is liquid enough and consists of financially and credit solid institutions. There is also a need for a significant number of arbitrageurs, speculators and hedgers.
- A legal environment structure that includes a system of property rights and enforceable trading contracts is indispensable.
- It is essential to have sufficient financial resources to help the development of a successful Clearing corporation with the support of the local authorities and policy makers.
- Absence of similar competing Derivatives Products in other established Derivatives Exchanges, which involves the creation of products to hedge risks unique to the country.

In summary, Derivatives Exchanges offer companies and individual investors with financial products that provide a variety of benefits. In general, a Derivatives Exchange:

- Allows investors to hedge risks such as volatility of the currency, interest rates and price of assets.
- Allows organisations to realise a better assessment of results given that Derivatives instruments make available a better information of market variables that are unknown before the existence of the Derivatives Exchange. For example, in emerging markets the future price of an asset is difficult to determine, whereas through an active Derivatives Exchange, it is easier to establish prices, thanks to the transparent flow of information of Future prices.
- Allows organisations to make decisions of productions and trading levels since the prices in Derivatives Exchanges reflect an estimate of the supply and demand in the market.
- Offers lower operation costs of hedging than traditional ways of coverage.

- Allows for higher earning opportunities when the expectations of the market are met, otherwise losses may occur.
- Allows reallocation of risks among investors, which helps the economy to carry on projects that would not be possible otherwise due to the risk level for an individual investor.
- Offers a cheap way for investment strategies, especially to speculators.
- Allows for lower borrowing costs by offering products such as Interest Rate Swap contracts.
- Offers a link between national and international investors, hedgers, speculators, arbitrageurs, and central and cash markets.

Thus, a Derivatives Exchange offers important benefits to the economy, in particular for Emerging Markets. However, many challenges still lay ahead the introduction of such an Exchange. The following section provides an overview of the different types of architecture structures of a Derivative Exchange.

3.2. Microstructure of a Derivatives Exchange

The first part of this section explains the importance of the **Architecture** of a Derivatives Exchange, while the second part provides the different elements of the **Microstructure** of a Derivatives Exchange.

3.2.1. Importance of the Exchange Architecture

For an emerging economy, such as Morocco, it is important to set an appropriate architecture to develop a Derivatives Exchange. These foundations must be solid and allow for effective development and reliability of the market.

As mentioned before, the role of Derivatives Instruments is to transfer the risk inherited from a volatile asset from a risk-averse investor to another investor who is more likely to bear this risk. It may happen that these types of investors, willing to bear extra risks, are either speculators or risk-takers as Al Janabi (2006a) reports on his paper. Thus, Derivatives do not reduce anyhow the risks involved in volatile assets; rather they are tools to transfer and redistribute these risks. In every Derivatives Exchange, it is important to have a balance between risk-averse investors and risk takers.

Despite the fact that Derivatives Exchanges perform similar functions and offer similar products, the structure of the Exchanges around the world is not always the same. Even when an emerging economy establishes an Exchange by imitating other bigger and more experienced markets, they quickly realise that reforms need to be undertaken to offer more appropriate services and to attain better financial controls[4]. Exchanges set their conditions according to the local regulation, accounting procedures and the organisation of their internal procedures such as clearing and netting. One of the biggest challenges to study the structure of a Derivatives Exchange is that the innovation in technology and communications develop nowadays at a faster pace than 50 years ago, as Chapman (1994) describes. Other challenges are the lack of appropriate local regulations, low investment in the economy and shortages of professionals with the right academic and experience backgrounds, among others.

According to Tsetsekos and Varangis (1997), the relevance of the architecture of the Derivatives Exchange relies on the following points:

- The knowledge of the architecture provides insights into the workings of Derivatives market through the examination of features of the Exchange, including the market-making mechanism, the composition of the Exchange's ownership, and the linkages among the multiple functions of the Exchange that allow a disciplined order flow and execution of transactions.
- The structure of the Exchange is important because it allows for an effective transfer of risk among the economic agents.
- The architecture of the Exchange plays an important role for a good communication of public information. It is also a key aspect to the production of the information and its flow among the different agents within the Exchange.
- A well designed structure of the Exchange is important for the market liquidity since it will avoid problems resulting from high or low transaction volumes.
- Market arrangements have relevance for the long term properties of Derivatives contracts and the underlying asset returns for investors who have horizons beyond the trading

session. Both, trading activity and price determination are sensitive to institutional arrangements. The architecture of the market seeks to illuminate this connection and provides a scientific basis for preferring one form of market design over another.

- Aspects of the architecture may indicate the importance of private versus public information in determining investors' demands for un-bundling, separation, and transfer of different types of risk to the public/governmental sector via the Exchange.

3.2.2.Elements of the Microstructure of a Derivatives Exchange

Tsetsekos and Varangis (1997, 2000) describe the microstructure of a Derivative Exchange according to the following elements:

A) Trading Mechanisms

Exchanges have different trading systems depending on their level of technological sophistication. There exist two types of technologies, the Open Outcry Floor Trading and the Electronic Trading.

The traditional way of trading is the Open Outcry (or Floor Trading) mechanism. This type of trading system consists on trades that can be executed in the trading floor where traders meet face to face. It is often used when there is a Counterparty risk, which mostly happens in OTC Derivatives markets. There is also the case where many investors prefer to trade through a dealer or a trader.

The Electronic Trading, on the other hand, provides a variety of services, such as: delivery of orders from users to the execution system, the transformation of orders into trades, information of the bid/offer quotes as well as transaction price and volume data. One consequence of this type of trading is that by using the computer technology, there is the possibility of a loss of relationships among traders and between the traders and their customers. On the other hand, this type of trading allows for cost savings while trading (albeit the entry cost or cost of development of the system is high), more efficiency and improved risk management. In addition, it allows for cross-border trading and cross-border alliances. As Domowitz (1995) explains, mergers in trading

[4] This is the case of the Romanian Commodities Exchange that is studied in Chapter 4.

have occurred among Exchanges and there is a standardisation trend, but it does not necessarily mean that Electronic Trading will overtake Floor Trading.

As reported in the results of Tsetsekos and Varangis (2000), most Exchanges use the Open Outcry system; however the use of the Electronic Trading is increasing. They have found out that recently established Exchanges are more likely to use electronic-based systems for trading under the reasoning that it reduces trading costs, attracts foreign investors and gives reliability to the new Exchange. In addition, the Bank of International Settlement (BIS) (2001) has conducted a study indicating that the Electronic Trading is preferred in foreign Exchange markets and that it has been used for transactions in liquid and homogeneous instruments.

B) Clearing Arrangements and Netting

A Clearinghouse is by definition a corporation that is responsible for settling trading accounts, clearing trades, collecting and maintaining margin taxes, regulating delivery and reporting trading data. With these functions, the Clearinghouse guarantees the performance of the parties to each transaction. Clearinghouses act as third parties to all Futures and Options contracts. This means that they act as a buyer to every clearing member seller, and a seller to every clearing member buyer. It is important also to point out that only members of the Clearinghouse are allowed to interact with it. The Clearinghouse makes sure that all obligations are met and keeps the counterparty risk low by requiring the member firms to deposit sufficient funds (known as clearing margin) to ensure that the members and their customers will meet their obligations at the end of the trading day. The function of the Clearinghouse is then to simplify transactions of the Exchange at the end of the trading session.

The ownership of the Clearinghouse services is therefore a critical parameter. There are four different forms of ownership: government ownership, single-sector ownership, multi-sector ownership and Exchange ownership (Tsetsekos and Varangis, 1997). Sector ownership means that financial institutions and/or firms from other sectors of the economy take part in the ownership of the Clearinghouse.

According to the results of Tsetsekos and Varangis (2000), two-thirds of the Exchanges in 2000, owned their Clearinghouse, while the remaining third Clearinghouse facilities were owned by banks, other financial institutions or even other Exchanges.

C) Netting Procedures

As mentioned before, the counterparty risk is present during the settlement of transactions every trading day. Therefore, many Exchanges make use of the clause known as Netting. This clause involves a procedure to simplify multiple obligations of a firm with several counterparties to fewer or even to a single obligation. The advantages of this procedure make settlement more effective, increase the volume of transactions, minimise credit risk substantially and further it has even been successfully used in different jurisdictions.

There are different forms of netting (Tsetsekos and Varangis, 1997):

1. **Bilateral Netting.** It is an agreement between the parties that consist in netting their payment obligations.
2. **Position Netting.** It is similar to Bilateral Netting with the difference that netting is done for different contracts, but each of them is kept independent.
3. **Netting by Novation.** This netting clause implicates that all the traded contracts should be combined into a lone net position so that in the end one party pays to the other.
4. **Multilateral Netting.** This accord consists in the replacement of the transactions of a participant with other participants. By doing this, the short positions are net out with the long positions. The peculiarity of this method is that each participant deals directly with the clearinghouse.
5. **Trade-for-Trade Netting.** This is a particular case of the Multilateral Netting and it requires of matching transaction by transaction.
6. **Continuous Net Settlement.** Under this procedure, all the transactions of a participant on a given security are combined and netted to determine a long or short position, resulting in one single obligation to deliver or to obtain securities from the clearinghouse.

D) Exchange Regulation

The financial authorities of countries where a Derivatives Exchange starts operations have faced regulatory challenges. As Al Janabi (2000a) points out, the implementation of the regulations of Derivatives Exchanges in emerging economies is one of the most challenging aspects. This could be explained by the fact that in emerging countries, the financial activities are concentrated in few numbers of firms which dominate the industry, resulting in moral hazard problems. Accordingly, larger institutions end up with high political influence. Another reason is that the government structure and regulations to ensure the stability of the financial system are less developed. To illustrate, some countries Central Banks interventions are common to stabilize the impact of short-term events. Furthermore, besides the lack of regulations, there is a challenge of regional standard regulations such as the application of the International Financial Reporting Standards (IFRS) and the Basle II processes.

One of the main objectives of the government is to monitor the activity of the Exchange and to set operations parameters. The regulation for trading Derivatives is an important element of the microstructure and includes several factors such as accounting, risk management, legal environment, pricing, valuation and reporting procedures. Minimum standards of regulation should be considered, especially in the contract design, market surveillance, record keeping, market transparency and the guarantee of funds and assets of customers. The respective authorities must even take into consideration the Operational Risk to be able to protect the consumers from fraud and trading abuses (Tsetsekos and Varangis (2000), and Al Janabi (2000a)).

E) Exchange Monitoring, Self-Regulation and Ownership Issues

The objective of the Exchange participants is to execute profitable transactions by "trading risks". This profitability levels are not bounded. It is therefore important that the Exchange carries on monitoring activities, controls trading activities and ensures that the participants have similar standards. The difficulty of implementing monitoring controls is that an excess of self-regulation may limit the participants, while little regulation opens the door to trading abuses.

In cases where the shareholders of the Exchange represent a large part of the trading activity, this results to the separation of managerial activities and members. In addition, this phenomenon creates an agency problem and conflict of interest. In this sense, Tsetsekos and Varangis (1997) suggest three mechanisms to reduce the agency-costs losses; costs may be reduced when:

(1) the participants are the owners of the Exchange;

(2) the members have the capacity to monitor the activities of the appointed managers, and

(3) the Exchange operates in a competitive global environment.

Thus, monitoring activities are relevant for the microstructure of the Exchange where there is a need of objectivity and independency between managers and participants. Consequently, this will reduce agency costs and provide a competitive and fair market to all investors.

F) Choice of Derivatives Products to be traded

The success of the Derivatives Exchange will depend significantly on the choice of Derivatives products to be traded. The choice of the products must depend on the demand from local investors. In the case of emerging markets, it is important that the products offered do not face competition with those already existing in other markets. Otherwise, the risks and benefits should be attractive to local and foreign investors. In these competitive cases, the Exchange that offers first the financial products will get the larger share of the demand.

Tsetsekos and Varangis (2000) suggest a set of characteristics that must be fulfilled by the chosen products to be introduced: (1) These products should have a sufficiently high level of price volatility to attract hedgers and speculators, (2) there should be a high number of domestic market participants who demand the product, (3) there should be a large number of producers and financial institutions interested in using Derivatives products to increase the liquidity of the market and finally, (4) there should be a weak correlation among the price of the asset and the price of the underlying Derivative, so that the product offered is attractive to the participants.

It appears relevant to consider the chronology of Derivatives products that have been introduced in order to provide guidance in the chosen contracts. Many sources of financial literature point out that the first Derivative contract introduced was an Agricultural product within the Chicago Board of Trade in 1859, indicating the relevance and the demand of the sector at the time. Twenty years later, Derivatives for non-precious metals were introduced in London. Years after, in 1960, Currency contracts were developed due to the globalisation of transactions. During the last decades, the development of the economy, the globalisation and the mobility of capital required the introduction of Interest Rate contracts and contracts based on Stocks and Indices. Nowadays, weather Derivatives and other exotic Derivatives products are in developing processes because of the changing climatic conditions and other new risks that economies are facing. Due to the globalisation and the liberalisation of economies, financial instruments are more demanded because they are more country-specific. This is the case of bonds, stocks and currency contracts. That is the reason why it is common that these products appear first in local markets. In addition, financial Derivatives attract higher levels of liquidity than commodity Derivatives do, according to the experience of new emerging Derivatives Exchanges.

Tsetsekos and Varangis (2000) as well as Al Janabi (2006a), point out that even though agricultural products have been first introduced in Derivatives Exchanges, it is not the case of newly established Derivatives markets. According to their results and observations, emerging markets tend to first introduce Interest Rate products followed by Index-based and Equity Derivatives. Other products that have been introduced first are Foreign Exchange Forward contracts as a response to the market demand and to the globalisation, as mentioned earlier.

The survey results of Tsetsekos and Varangis (2000) show that in emerging economies the introduction of stock market index products has been executed in shorter time than it was in developed markets. Al Janabi (2006a) suggests that although it takes more time to introduce a Derivative product in an emerging economy, it may be a good strategy for these type of markets to initiate products related to equities, in addition to Foreign Exchange Forward contracts.

In the following sections, a benchmark study takes place. From the countries selected, a study is conducted on the presented elements of the microstructure of the Derivatives Exchange and additional elements that may influence, or that should be considered in the launching of a Derivatives Exchange in Morocco. Further, the results of the survey will provide information of the Moroccan market demand for Derivative products.

4. Benchmark Analysis

The following chapter comprises a selection of countries that have already introduced a Derivatives Exchange. The first part of the chapter describes potential benchmark countries and an analysis is conducted to select the appropriate benchmark. The second part studies the development of the Derivatives Exchanges of the selected benchmark countries and provides individual lessons from each market. The final part of the chapter presents the current financial reality of Morocco and a comparative analysis is carried on. Lessons for Morocco are discussed at the end of the section.

4.1. Selection of the Benchmark countries

This section provides an overview of the pre-selected countries for the benchmark analysis. The countries that have been pre-selected are Portugal, Egypt, Mexico, Romania and India. These countries have recently introduced a Derivatives Exchange and have similarities with Morocco either in regional and/or economical conditions. In addition, these countries have experienced a set of economical reforms and liberalisation processes. By examining the development of these countries and the introduction processes of their Derivatives markets, it may be possible to come up with lessons to be learnt in structuring a Derivatives Exchange in Morocco. These countries have been chosen by the authors as a result of research and advice from Moroccan professionals in the banking and finance sector.

Following is a description of these countries with regards to the aspects mentioned above. Thereafter, a set of variables are used to decide on the country that best suits the Moroccan reality and finally, the benchmark analysis is performed with the selected countries. The conclusions are provided at the end of this section.

4.1.1. Cross-section Analysis between benchmark countries

In order to find out about the countries that will provide optimal lessons for the development of a Derivatives Exchange in Morocco, the **economical** and **capital** market **conditions** are studied for each country. According to Tsetsekos and Varangis (2000), by selecting proxies of these conditions, it is possible to explain the development and differences in Derivatives Exchanges. In fact, the activities of every Derivatives Exchange in the world, either within an Emerging Economy or a developing country, are highly influenced by the local capital and economical market conditions. In addition, it is important to mention that these indicators have also been selected according to the data availability to the authors.

The proxies that are used to measure the similarities in Capital Market conditions are: ***the number of listed companies, the market capitalisation, the traded volume and the stock market turnover ratio.***

On the other hand, as proxies for the economical conditions, the factors that are examined are: ***the Gross Development Product (GDP), the change in the Consumer Price Index (CPI), the exchange rates, inflation rates, GDP per capita, the Foreign Direct Investment (FDI) and the Gross Net Income (GNI) per capita.***

The data has been extracted from the International Monetary Fund database, the International Financial Statistics database, The World Development Indicators database 2006 of the World Bank, and the Standard & Poor's Global Stock Market Fact book 2005.

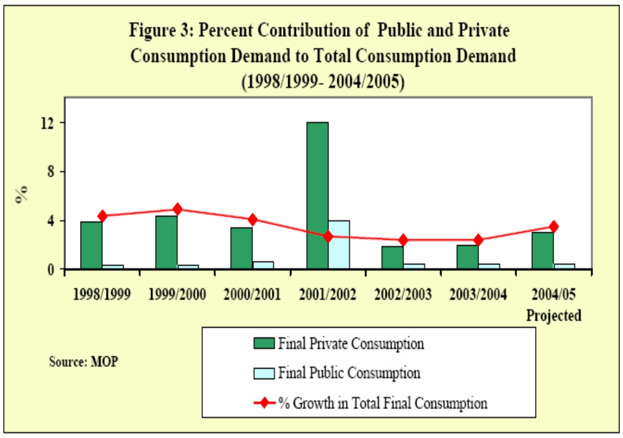
A correlation analysis is performed to identify which of the countries better match the economical conditions and the capital market ones of Morocco. The results of this analysis are included in Appendix A.

4.1.2. Description of the Benchmark Countries

Egypt

Egypt is undergoing several reforms in order to boost the economy of the country which experienced a slowdown during the last 15 years. Regarding the economic development, the country has grown at an average rate of 3.2% between 2000 and 2003. This growth is due to several factors, among which: the September 11 crisis, the oil price shocks, the spectacular increase of the equity price bubble, and the political problems that hold in the region. However, after the year 2003, the Egyptian economy has seen a better development due to several reforms that the government has undertaken in terms of customs (lower tariffs) and fiscal issues. For instance, the Egyptian State has lowered the corporate and personal taxes by 50%, a factor that helps entrepreneurs develop their activities in a better business environment. In addition, this is a good advantage to attract foreign investors considering that the Egyptian economy is mainly driven by private consumption. Figure 2 below highlights the percent contribution of public versus private consumption demand to total consumption.

Figure 2. % Contribution of Public and Private Consumption to Total Consumption Demand in Egypt.

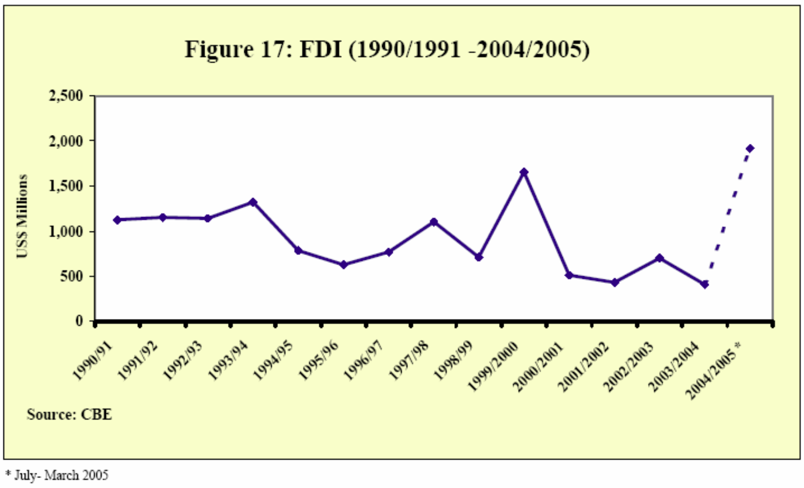


Source: Selected Economy and Financial Indicators (June 2000 – 2005)

Furthermore, Egypt has established a formal interbank market which contributes driving for a stable foreign Exchange market. Consequently, the latter has experienced some very liquid trends which in turn attracted foreign inflows to the country. In fact, the devaluation of the Egyptian pound in the year 2003 has helped exports to grow and become more competitive in the international markets.

The conjuncture of Egypt combined with the performance of the stock market led to a sustained economic expansion which helped keeping a slow cost of capital and encouraged entrepreneurs for further investments. Concerning the financial sector, the Egyptian government has adopted several reforms regarding taxes, trade and privatisation. These factors are considered crucial to attracting Foreign Direct Investments. The industry of banking was also concerned with new policies and business practices taking place after the adoption of the reforms. The Figure below displays the trends of the foreign direct investments in Egypt following the trade and taxes reforms which have boosted this form of investment.

Figure 3. Foreign Direct Investments in Egypt



Source: Selected Economy and Financial Indicators (June 2000 – 2005)

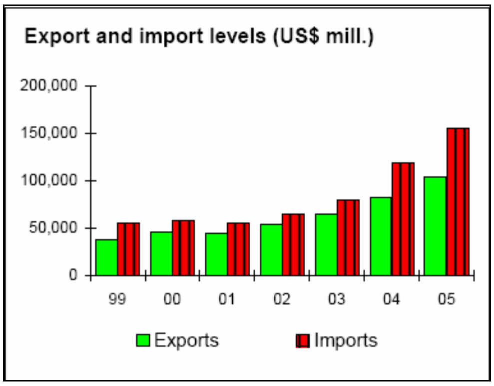
India

India is a growing emerging economy whose financial markets have evolved rapidly within the last years. This development is mainly due to the efforts of the Government and the regulatory bodies to undertake reforms to enhance the economic activities of the service industry. It is after these reforms that India has been able to increase the activity of its Stock Markets. On the other hand, following the World Bank Country Profile, India had a Market Capitalisation of 70.4% equivalent to US$ 553 billions.

According to the World Bank, in terms of GDP growth, the economy of India has focused its attention on the Service industry and has reduced the development of the Agricultural sector. This is mainly due to an over 50% increase in private consumption in the country within the last five years. As of 2005, the GDP of India was US$ 785.5 billions with an annual growth of 8.5%. Also, India has reached a GNI per capita of US$ 720 that is above the South Asia average. In terms of trading, it is doubtless that manufacturing is the strength of Indian's exports. However, it strongly depends on imports of fuel, energy, and capital goods[5]. This is reflected in the following Figures.

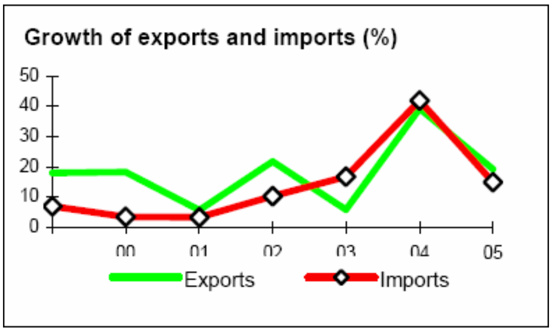
[5] Raw materials used to produce finished products.

Figure 4. Export and Import levels in India (US$ million)



Source: The World Bank Group, India at a Glance, September 2006

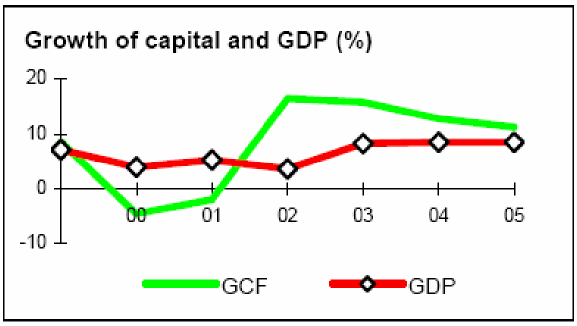
Figure 5. Growth of exports and imports in India (%)



Source: The World Bank Group, India at a Glance, September 2006

The development of India can be explained in terms of its GDP, which has doubled during the last ten years. Despite the large Indian population, the GDP per capita has grown steadily at a 7% rate between 2004 and 2005 as shown in the following Figure.

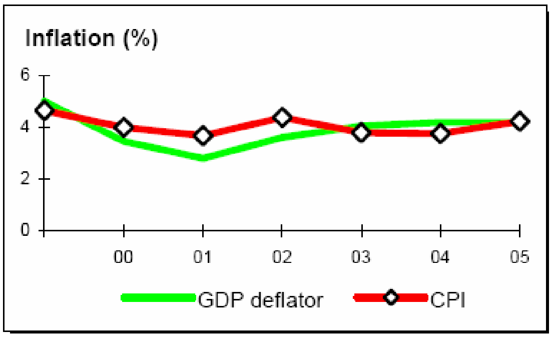
Figure 6. Growth of Capital and GDP in India



Source: The World Bank Group, India at a Glance, September 2006

Also, the World Bank data indicates that the inflation in India has slightly increased during the last five years from 3.5% in 2000 to 4.2% in 2005.

Figure 7. Inflation in India (%)



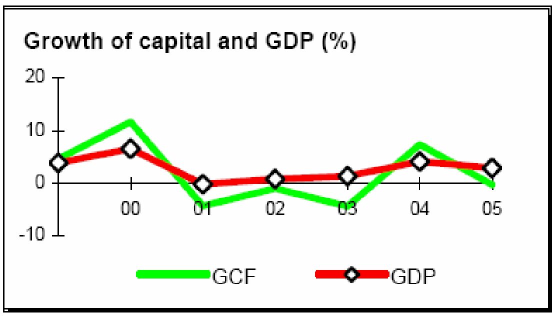
Source: The World Bank Group, India at a Glance, September 2006

In terms of risks, there are political concerns in the collaboration between Pakistan and India in the fight against terrorism concerning the borders. Whereas, from the economical point of view, there are deficit concerns mostly caused due to rising interest rates and higher oil and food prices.

Mexico

Mexico has the largest per capita income in Latin America with a GNI per capita of US$7,310 as of 2005, but it has major challenges among which large gaps between the rich and the poor. In terms of GDP, Mexico has grown steadily at a rate of 3.4% during the last 10 years. The GDP has a large share in the service industry, which has been growing every year. The tourism industry is the second largest income for Mexico. The following Figure shows the development of the GDP in Mexico.

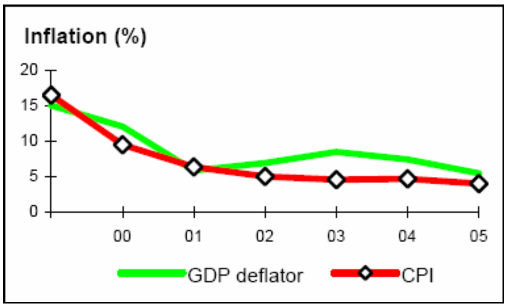
Figure 8. Growth of Capital and GDP in Mexico (%)



Source: The World Bank Group, Mexico at a Glance, August 2006

The control of inflation has been one of the main goals for the government during the last 20 years and the CPI has been reduced thanks to implemented economic reforms. In 1995, the inflation was 35%. As of 2005, the inflation was reduced to 4%. This is reflected in the following Figure.

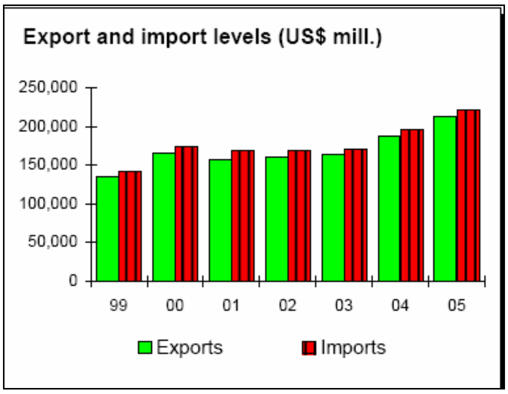
Figure 9. Inflation in Mexico (%)



Source: The World Bank Group, Mexico at a Glance, August 2006

In terms of trade, Mexico exports mainly manufactures and oil where its largest partner is the USA. The total amount of exports reached US$ 213 billions in 2005. On the other hand, the largest import comes from capital goods. The total amount of imports in 2005 accounted for US$ 221 billions. The major trade agreement that links Mexico to other countries is the NAFTA[6], but it has not been as successful as it was initially expected due to the lack of infrastructures, technology, adequate institutions and investments in Research & Development.

Figure 10. Export and import levels in Mexico (US$ Million)



Source: The World Bank Group, Mexico at a Glance, August 2006

During 2005, the foreign investments added up to US$18 billions. Mexico is the main receptor of Foreign Direct investment in Latin America. For the year 2006, the minister of finance estimated FDIs to be US$ 20 billions. After the financial crisis in 1994, Mexico has had an impressive recuperation bringing down inflation, reducing poverty and promoting new reforms to keep the economy stable. However, challenges lay ahead. After the presidential elections, the country has been divided politically and socially, but it is expected that the business environment will keep attracting investors in the long run. There is also the challenge that the south of Mexico is less developed than the industrialised north.

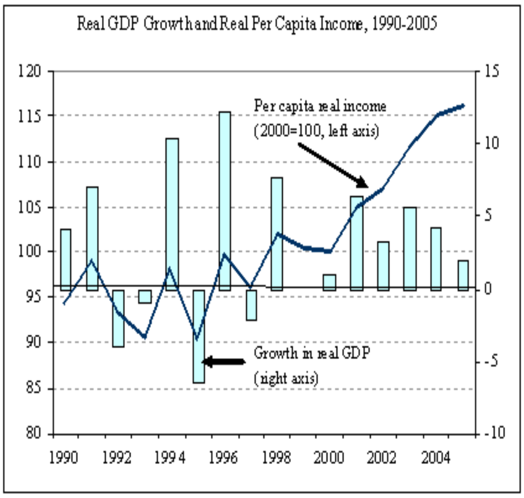
[6] North America Free Trade Agreement

Morocco

The geographical position of Morocco in the north west of Africa allows it to enjoy a great openness to Western European countries, as well as to attract a large number of foreign investors from the European continent. Historically, the country has been a big trading point between Africa and Europe through the Gibraltar Strait. Undoubtedly, this is a major advantage for the Moroccan economy to flourish and become more competitive in the region. This process has been accompanied lately by the adoption of some financial reforms that the Moroccan government has initiated. Back to 1993, the Government started liberalisation programmes that concerned some of the major industries of the economy, such as: banking and financial services, telecommunications and transportation, among others.

Concerning the financial sector, the reforms undertaken in this field have helped to insure the long-run macroeconomic stability of the country. The IMF reports that the growth-rate of Morocco in 2005 was approximately 5%. Regardless of agricultural GDP, the rate of inflation has been kept low, and the external position with the Moroccan trading partner has improved. The Gross Domestic Product has grown 4.5% annually for the last three years. The Figure below displays the Real GDP growth for the period between 1990 and 2004.

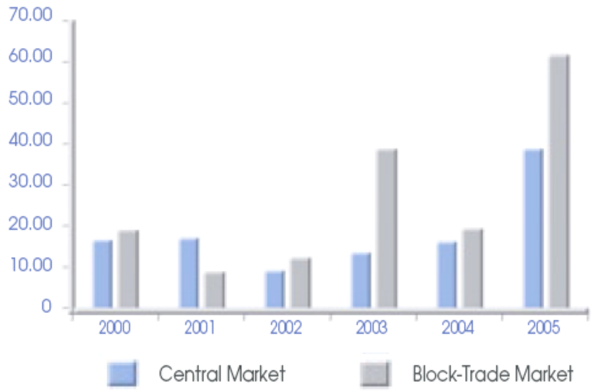
Figure 11. Real GDP Growth and Real per Capita Income for Morocco between 1990 and 2005



Source: Morocco –Concluding Statement of the Article IV Consultation Mission, IMF

Moreover, one of the major financial platforms in Morocco gave birth to the Casablanca Stock Exchange (CSE) which was introduced the year 1929. The market capitalisation of this Exchange was MAD 148.5 billion in 2005 against MAD 71.7 billion one year earlier. Thus, the market capitalisation of the CSE has improved 106% during this period. The Figure below displays the daily trade volume in both the central and the block-trade markets (a discussion of the Central and the Block-trade markets will follow later).

Figure 12. Daily traded volume in the Central Market and the Block-Trade Market in Morocco



Source: Casablanca Stock Exchange, Fact Book 2005

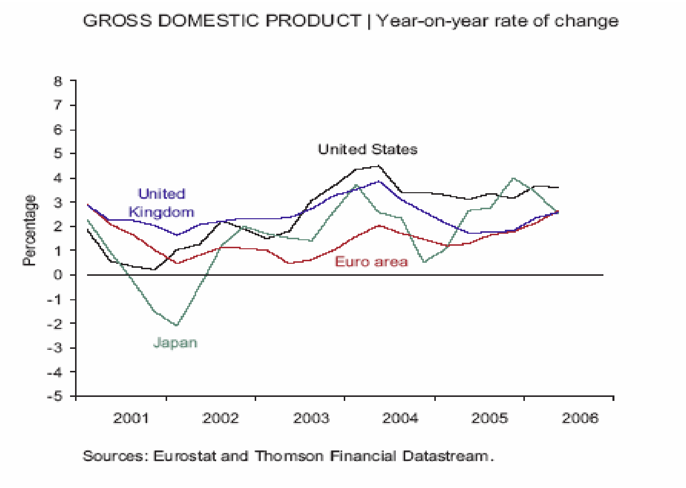
The Moroccan economy is also profiting from the Free Trade Agreements that the Government has contracted with the European Union, the Unites States, Turkey, Tunisia, Jordan, Egypt and Mexico considering the liberalisation programmes that in turn are meant to attract foreign companies to invest in Morocco.

Portugal

Portugal is located in the southwest part of Europe. It is a relatively small European country totalling 1.4% of Europe's GDP. After joining the European Union, Portugal nowadays follows the regulations and reforms adopted at the European level. Consequently, since most of the analyses and papers available to the authors concern the development of the Euro zone in general, it is therefore hard to assess the reforms and processes that the Portuguese government, in particular, has undertaken to stimulate its economy.

The following Figure displays the evolution of the Gross Domestic Product of the European zone compared to the United Kingdom, the United States and Japan. However in Portugal, GDP grew 0.9% y-o-y during the first quarter of 2006.

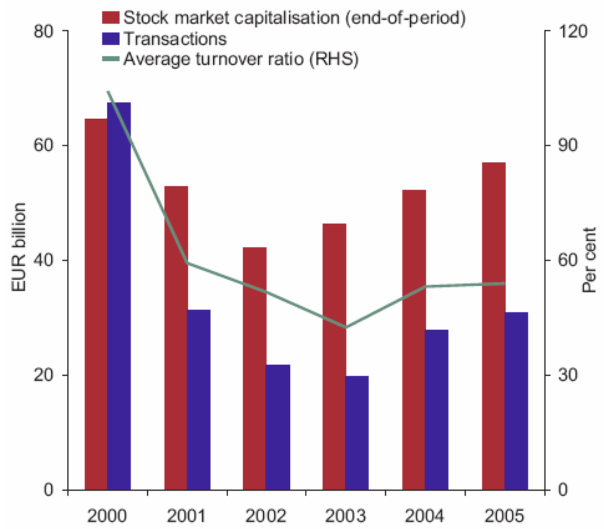
Figure 13. Gross Domestic Product – European Zone



Source: Eurostat and Thomas Financial Datastream

The economy of Portugal is mainly developing thanks to the exports activities which have improved 7.6% in the first quarter and 8.5% in the second one y-o-y, respectively. It is important to mention that 75% of the Portuguese GDP is based on imports and exports, where most of the trade is handled within the countries of the EU. As of today, the Lisbon and the Oporto Stock Exchanges are under the management of Euronext Lisbon, a member of the Euronext group (which also combines Euronext Paris, Euronext Amsterdam, and Euronext Brussels), as a result of a merger in 2002. This merger took place after a period of problems faced by Portuguese listed companies while raising funds in international capital markets. The Figure below highlights the stock market capitalisation and the transactions that took place in the Portuguese stock market for the last 5 years, which shows a growing development after joining Euronext in 2002.

Figure 14. Stock Market Capitalisation and transaction in Portugal, 2000 – 2005



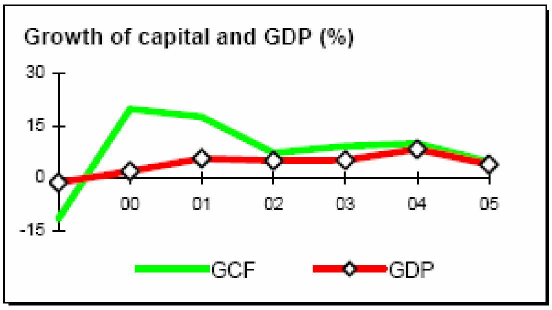
Source: Banco de Portugal, Annual Report 2005.

In terms of production, agriculture is still occupying a major part of the country's income. In addition, the construction industry is also heavily participating in the blooming of the economy. FDIs on the other hand are oriented towards the service industries such as the telecommunications and the financial services.

Romania

As the second largest country in the Central and Eastern European region, Romania is an important emerging economy that has had a relevant economical development towards joining the European Union in 2007. These efforts are focused on improving living standards and reducing the poverty. According to the World Bank, Romania is a middle income country with a GNI per capita of US$ 3,830. Romania has had an average growth of 2.1% of GDP between 1995 and 2005, but it did have a growth of 8.4% in 2004 and it is estimated by the World Bank that the economy will have an average annual growth of 4.9% between 2005 and 2009. As of 2005, the industry of services accounts for 55% of the GDP, while the agricultural sector remains at 10%. Romania is actually putting efforts to develop rural areas, which in consequence will help in reducing poverty since almost half of Romanians live in rural areas and two thirds live under poverty conditions.

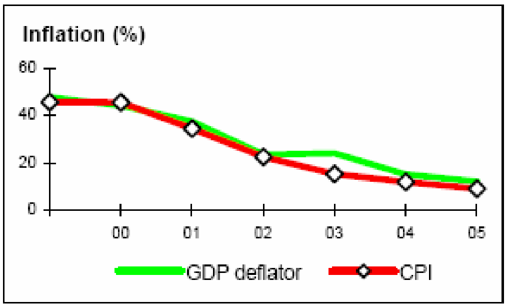
Figure 15. Growth of Capital and GDP in Romania (%)



Source: The World Bank Group, Romania at a Glance, August 2006

The Romanian Government has implemented policies in order to stimulate the growth of the country. Thanks to the fiscal and monetary policies, improvements have taken place in terms of growth, interest rates and inflation. The inflation rate was reduced from 42% in 1995 to 9% in 2005, as reflected in the following Figure.

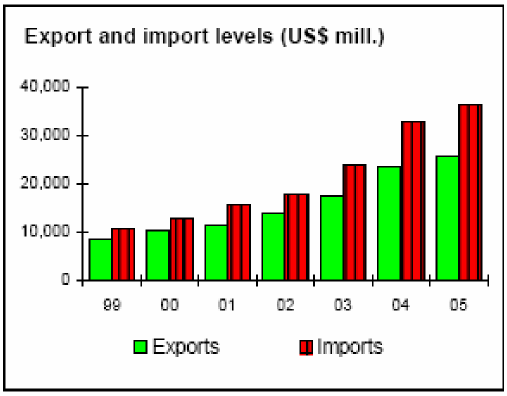
Figure 16. Inflation of Romania (%)



Source: The World Bank Group, Romania at a Glance, August 2006

Regarding trading, Romania has had an important growth from US$ 7,910 millions in 1995 to US$ 25,746 in 2005. This has been mainly due to the exports of manufacturing. On the other hand, Romania has also increased its imports from US$10,278 million in 1995 to US$ 36,336 million in 2005. A third of the imports represent capital goods. The following Figure presents the development of trading in Romania.

Figure 17. Export and import levels in Romania (US$ Million)



Source: The World Bank Group, Romania at a Glance, August 2006

As of October 2006, besides all the challenges that Romania is facing to fulfil its EU integration commitments, the economy is also facing interest rates risk[7]. Even though inflation has dropped down, the levels of inflation are not low enough and the fact that the Consumer Price Index in Central Europe is rising gradually, the central banks of the region are increasing their interest rates, which affects the progress in Romania.

[7] As it is mentioned in the following section, Romania launched Interest Rate Derivatives in 2000 due to domestic market demand.

4.1.3. Selection and conclusion of the benchmark countries

The twelve different variables were compared with regards to the correlation with the Moroccan data (see results in the appendix A). According to this analysis, Romania has the highest correlation in nine out of the twelve proxy variables with respect to the other pre-selected countries. In addition to these correlation results, Romania is currently adjusting its economic situation and capital conditions to the European standards, with the objective to join the European Union by the year 2007. Moreover, like Morocco in North Africa, Romania in Eastern Europe is trying to prove its economical power in the region as a major financial market. Moreover, the agricultural situation of Morocco and Romania are alike in terms of size in GDP and amount of working labour in this industry. It is therefore concluded that the benchmark country that most appeals to the conditions of Morocco is **Romania**.

Similarly, the correlation analysis from the appendix A shows that **Portugal** is the second best alternative for Morocco to benchmark according to the capital and economical conditions. The study of this market will definitely help understand the practices of European countries in terms of Derivatives trading, considering that Portugal is a current member of the European Union and that Morocco's main trading partner is the European Union. It is also important to mention that Morocco's business rules, regulations, and procedures are very pegged to those in France which is a major member of the European Union[8].

4.2. Benchmark analysis

The following section studies separately the development of the Derivatives market in Romania and in Portugal. At the end of each study, lessons to be learnt for Morocco are outlined. The conclusions of this Chapter comprise the experience of both countries and their relevance to Morocco.

4.2.1. Experience of Romania

The Romanian Commodities Exchange (RCE) is organised as a private owned company that functions as a joint stock company. The RCE was officially established in 1992. Since then, the RCE has been in a constant process of development. The RCE develops cash markets for grains, metal, gas and oil and oil derivative products among others. It has also developed a Derivatives market for trading Currency and Interest Rates. As of 2006, the RCE has undertaken a number

[8] As it is pointed out later in this chapter, the Derivatives Exchanges of France and Portugal are managed by the same institution.

of reforms to ensure access to European structures as Romania will officially become a member of the European Union in 2007.

The RCE organisation follows the structure of the world's largest Exchanges. It has a General Assembly of Shareholders who acts as the main management body. The Board of Trustees, of whom the President is the CEO of the Exchange, performs management activities such as establishing general policy, income and expenses budget and internal regulation. Finally, the Committee of Executive Directors is in charge of the operational competencies.

The ownership of the Exchange consists of 120 shareholders as of 2005. Among the shareholders, there are banks, financial investment companies, large industrial producers and companies within the gas and electricity industry. In order to attract new investors to the Exchange, the RCE grants important benefits to its shareholders, such as granting shares of the fees collected in auctions in which the successful bidder is brought by the shareholder, granting of price discounts in training courses to employees of shareholders, free access to the RCE's database and free of charge information on the local and international commodities market. However, this developing process has not been an easy path. As described in the 2004 RCE's Annual report, the RCE has had difficulties in holding a solid base of shareholders as this structure has presented changes where new companies entered as shareholders while others have dropped out. The figure below shows general information of the RCE structure.

Figure 18. Descriptive information of the Romanian Commodity Exchange

GENERAL DATA (valid as of December 31, 2005)

Share Capital	RON 3,795,000
Number of Shares	3,795
Face value of one share	RON 1000
Number of shareholders	120
Number of employees	80
Number of representative offices in the territory	14

Source: Romanian Commodities Exchange, Annual Report 2005.

With regards to the clearing system, the RCE owns its own Clearinghouse. This means that all the rights, obligations and/or liabilities of the Clearinghouse are the ones of the RCE. In terms of technology, in September 2000, the Exchange passed from the traditional open-outcry system to the electronic trading. Moreover, the introduced electronic platform has been upgraded, and in 2004 the RCE has successfully tested its new trading platform Midas v 2.1. As Tsetsekos and Varangis al. (2000) mention, it is likely that recently established Exchanges use electronic-base systems for trading, anticipating lower costs. Also, they are meant to be more attractive to potential investors as well as to expand the commercial market. It is a surprise, as Burghardt (2004) explains, that well established Exchanges, like the ones in the U.S., have been the slowest to make the shift from open outcry trading on physical trading pits to trading on electronic platforms. This shift is therefore an important improvement for the RCE towards efficiency that makes it attractive to local and foreign investors[9].

Two years after its establishment, in 1994, the RCE launched spot contracts on foreign currency. The year after, in 1995, the first Forward contract on Currency was launched. Officially, the Derivatives market started operations in 1998. That year two Future contracts on exchange rate were launched: the Dollar RCE and the Deutsche Mark RCE. The latter has evidently disappeared after the introduction of the Euro.

Since then, the RCE has developed Derivative products on Currency, Interest Rate and Futures on commodities like gas, agricultural products and energy. It has also introduced Options on Futures. The development strategy of the RCE has been elaborated through the confrontation of traditional Futures and commodities Exchanges in the world and the needs of the Romanian market.

The efforts of the RCE are focused on the organisation of a market for grains, petroleum products, gas and electric power as the basis for commodities Futures market and for developing Options on Future contracts. Table 1 shows the Derivatives Products that the RCE has developed along the years. The chronology of the development of Derivatives products in Romania is relevant in that it may provide a reference to the development of Derivatives instruments in Morocco.

[9] A detailed explanation of the difference between different types of trading is provided in Chapter 3.

Table 1. Chronology of Derivative Instruments launched by the Romanian Commodity Exchange10

Year of Launch	Derivative Name	Contracts specifications
1995	Forward Contracts	Forward contracts in foreign currency and in ROL. *There is not available information on contract specifications.*
1998	Contract "Dollar RCE"	Trading Unit: USD 1,000 Tick Size: 1 **ROL/USD** Contract Months: each month of the year; trading life of 6 months. Last trading day: third Tuesday of the contract month Delivery: Cash settlement
1998	Contract "Mark RCE"	Trading Unit: DEM 1,000 Tick Size: 1 **ROL/DEM** Contract Months: each month of the year; trading life of 6 months. Last trading day: third Tuesday of the contract month Delivery: Cash settlement
1999	Contract "Euro RCE"	Trading Unit: EURO 1,000 Tick Size: 1 **ROL/EURO** Contract Months: each month of the year; trading life of 6 months. Last trading day: third Tuesday of the contract month Delivery: Cash settlement
1999	Contract "EURO-USD RCE"	Trading Unit: **EUR** 1,000 *25,000 **ROL/USD** Tick Size: 0.0001 USD Contract Months: each month of the year; trading life of 6 months. Last trading day: third Tuesday of the contract month Delivery: Cash settlement
2000	Contract "BUBOR 3RCE"	Underlying Asset: the **Interest Rate** in percentage per year, for the deposits in ROL offered on the monetary interbanking market for 3 months Contract Value: ROL 10,000,000 * Futures price Tick Size: 0.01 per cent (1000/ 4 ROL per contract) Contract Months: each month of the year; trading life of 3 months. Last trading day: third Tuesday of the contract month Delivery: Cash settlement
2001	Kwh BRM and Natural Gas BRM	First transactions with **Options** take place. Launch of two new **Future** Contracts: Kwh BRM and Natural Gas BRM. *Not available information on the contract specifications.*
2006		Opening of the Romanian forex Derivatives market to foreign investors.

Source: Information from Veselinovic D (2000). Modified.

The opening of the forex market to foreign investors will benefit the Derivatives market to increase trading volumes and volatility. According to the Federation of Euro-Asian Stock Exchanges, the volumes in the Romanian market are still limited; the total volumes of equities traded in the Bucharest Stock Exchange in the second quarter of 2006 were USD 508 million, which does not compare favourably with several other markets in the Middle East.

[10] ROL stands for Romanian New Leu, also known as RON.

Based on the new legislation, the strategy of the RCE is to develop specialised markets in agricultural commodities, energy and oil. Just like the case of the Currency products, in developing a Derivative product the first step for the RCE is to establish a regional spot market. This way of developing products may be a lesson for the Moroccan case. As of 2005, the main focus of the RCE is to develop financial products for oil, oil products (oil, gasoline, fuel oil, heavy fuel oil) and agricultural products, as shown in the following table.

Table 2. Development of Agricultural and Oil products by the Romanian Commodity Exchange

<table>
<tr><th colspan="2">Agricultural products</th><th colspan="2">Oil products</th></tr>
<tr><td colspan="2">RCE begins to act for organizing a continuous trading process for some agricultural products, as: wheat, corn, rye.</td><td colspan="2">The first step foresees the establishing of a regional spot market for oil and for oil products.</td></tr>
<tr><td>Corn</td><td rowspan="3">Spot, Forward and call Option.</td><td>OIL</td><td rowspan="4">Spot</td></tr>
<tr><td>Wheat</td><td>GASOLINE</td></tr>
<tr><td rowspan="2">Rye</td><td>FUEL OIL</td></tr>
<tr><td></td><td>HEAVY FUEL OIL</td></tr>
<tr><td colspan="2">This first step will be followed by Futures contracts and Options on Futures.</td><td colspan="2">The following step for the Romanian Commodities Exchange is to develop the Derivatives market by introducing Futures contracts and Options on oil products.</td></tr>
</table>

Source: Extracted from the United Nations Conference on trade and development. December 2006

The RCE has conducted projects to satisfy the economic demands of the Romanian market. Under this perspective and following the classification of Exchange markets in the new legislation framework, the RCE conducts an ongoing development process of the establishment of trading floors for Oil products, Grains and the trading and clearing of Commercial Receivables.

The establishment of a trading floor for oil products is a strategic objective. The reason behind is that the Romanian market is perceived as a developed oil market with domestic and international oil fields, several oil refineries and a structured transportation system. Another fact is that the industry became more competitive after the liberalisation process adopted in 1998. Nowadays, the Romanian Oil market is a local leader due to its oil deposits and refining capacities that exceed the local demand for refined products. The initial step in developing such a trading floor consists on creating a domestic product market. After this, the next step consists on the creation of a market with external operators. This experience may be important for the Moroccan mining industry. Morocco is the world's largest exporter of phosphate, for example.

Agriculture in Morocco is one of the pioneering economical sectors. Moreover, Stoppa and Hess (2003) point out that around 70% of the cultivated land in Morocco is used for cereals, particularly wheat. Also, just like in Romania, approximately 50% of the population lives in rural areas. These facts are very similar to the Romanian experience and the project on Grains that the RCE is conducting may provide important lessons to Morocco.

The Grains trading Floor project follows after interest in trading cereals at the RCE in previous years. It is also a response to the economic environment. It is important to say that over 10% of the Romanian GDP comes from the agricultural sector. This project has not been totally carried out due to legal issues. However, the RCE has been working in developing the structure for the trading and has taken logistics measures in locating potential investors. Further, the RCE has updated its legal framework and has been developing a database with information from researches and surveys. Even though the trading volume has not been high as of 2005, the RCE has a relevant role in ensuring the transparency of operations, facilitating trade and keeping prices real and stable.

In terms of cooperation, from the beginning the RCE has been aware about the importance of creating an international network in order to be able to develop itself. So, in 1998, when the RCE launched its first Future contracts and the opening of the Derivatives Market took place, the RCE acted as a founding member of the Association of Futures Markets (AFM). The international cooperation has been an important milestone for the Romanian market because it has received benefits from it in the form of education, networking, support and knowledge on the organisation of a Derivatives Exchange. The AFM is in fact an association that is aiming to become a global organisation for Derivatives Exchanges in emerging markets. Also, in 2005, the RCE became full member of the Association of European Commodities Exchange. With this experience, the RCE has the objective to search for cooperation with other Derivatives Exchanges in Central and Easter Europe to establish a common platform and to become a benchmark for the region and a reliable partner. The importance of this to Morocco is that the North African area has had a poor development of Derivatives Exchanges[11]. It is therefore the opportunity for Morocco to become a major partner for the region.

[11] From the five North African countries (Morocco, Algeria, Tunisia, Libia and Egypt), only Egypt has developed a Derivatives Exchange and Tunisia has recently signed a Master Derivatives Agreement with the World Bank.

In relation with the regulation structure, the RCE has faced challenges, first in settling appropriate rules for trading, secondly to make necessary reforms due to previous gaps and to obtain a legal framework and lastly, necessary reforms to fulfil the European Union standards. This experience shows that, eight years after its establishment, the RCE was able to develop a legal framework in the commodity field. After this, it was until 2002, ten years after its foundation, that the RCE was formally recognised as a Commodity Exchange. For reference, a summary of these reforms is shown in the Appendix B.

Another important aspect is the strategy of the RCE concerning the expansion of its activities to the entire country. This project was initiated during the year 2000 and consists of the establishment of RCE terminals across the Romanian territory. The advantage of having several trading points in the country opens access to potential investors for trading commodities without incurring any additional costs while keeping similar quality as if they were trading in the Bucharest trading floor. However, these offices are managed by legal entities, other than the RCE, which have the appropriate human resources expertise and logistics to perform the trading activity with quality. The trading activity of these terminals has been growing and as of 2005 it accounted for around 10% of the total value of the transactions conducted by the RCE, equivalent to USD 75 millions.

A relevant pillar for the development of the Derivatives Exchange in Romania has been the educational activity. The RCE has organised training courses with the objective to create financial culture and practices in the Romanian market. In order to do so, the RCE has created in 2001 an educational division named the BRM Business Consulting Group which is in charge of providing courses and training in financial topics and risk management. These courses are supplied according to the demand of the market. According to the 2005 RCE's Annual Report, between the period of 1992 and 2005, more than 850 people have attended courses organised by the RCE. The most important event organised by the BRM is the Risk Management forum where 350 participants in addition to a number of institutions in the field took part to of share opinions, perspectives and present case studies. Every year, around 20 types of courses take place, there are 12 trainers, small and large events and around 2,100 people attend these courses and events.

It is also important to mention that the RCE considers that one of the competitive advantages in their Derivatives Exchange is the large number of highly qualified specialists trained within the oldest Commodities Exchanges in the world, as stated in the 2004 Annual report. Specialists from the RCE with a good knowledge of the Romanian market are invited to share their experiences in national and international events in the financial field.

In terms of economical risks, Romania has suffered during this year some corruption scandals in the public administration. According to the World Bank, corruption is a problem that affects the economic growth and operations of the Romanian businesses. In spite of this, the FDIs have been increasing, which indicates that investors trust in the measures taken against corruption and improvements in place towards the accession to the EU. On the other hand, another economical risk is that inflation levels have been increasing in the region, causing increased rates by central banks. Even though the ROL has strengthened vis-à-vis other currencies, the effect has not been enough to contain the inflation.

Lastly, the lack of development of the agricultural sector continues to be an economical risk. With the help of the *World Bank rural development fund*, the Romanian authorities have put in place an action plan to promote employment and the agricultural administration system is nearly complete. However, in terms of land reforms and tenure procedures, the sector is still behind the European standards.

Lessons to be considered from the development of the Derivatives Exchange in Romania:

1) **Ownership**: The ownership of the Exchange has faced the challenge of structuring a solid base of shareholders because some members have had internal problems such as bankruptcy. Given these situations, the RCE has offered a number of benefits to shareholders in order to attract important companies and to preserve the current base of shareholders. Also, as stated in the 2004 annual report, the RCE is focusing its attention on banking institutions and financial services investments firms considering that they have a wide expertise in the financial environment and that they are financially strong to become clearing members. It is then a lesson for Morocco to create and maintain a solid shareholder base in order to provide stability and liquidity to the participants of the Exchange.
2) **Clearinghouse and clearing system**: the clearinghouse is owned by the RCE. As many other Exchanges in the world, the Clearinghouse has experienced technological changes and it is now using an electronic system. Electronic trading seems to be the choice among the

new Exchanges, according to the results of Tsetsekos and Varangis (2000) due to the lower costs as a key benefit and it seems to be the case for Romania.

3) **Development of Derivatives Products**: In the case of Romania, the very first products of the RCE were Currency Forward contracts. Later on, the Derivatives Exchange developed Futures contracts on Currency; two years later a Futures contract on Interest Rates was introduced, and the year after, transactions with Options and Futures on gas and energy were launched. Currently, the RCE is developing an Oil floor, a Grain floor and a Receivables floor. After these projects take place, the RCE plans to develop the correspondent Options and Futures contracts. This developing process has taken this path in response to the demands of the Romanian Market. It is to notice that even though the Bucharest Stock Exchange has three different indices, the Derivatives Exchange has not yet created any Index-based instrument. As Tsetsekos and Varangis (2000) explain, there are more chances of success if Index-based Derivatives are introduced because they take less time to be set up in the case of emerging markets.

4) **Liquidity**: Even though the Romanian market is not as liquid as other Exchanges in the Middle East (Egypt has presented over 16 times more volume than Romania in the second quarter of 2006), it is still one of the most important markets in Eastern Europe. It still has some way to go, but with the introduction into the EU and the liberalisation processes in place, it is expected to increase the trading volume of the financial market in the following years. Liquidity, as it is discussed later on, is one of the key elements for trading. In the last section of this Chapter, it is shown that Morocco has in fact similar levels of liquidity to the Romanian market.

5) **Legislation framework**: It was after ten years of operation that the RCE was approved by the National Securities of Romania to operate as a Commodity Exchange; and it was fourteen years later that the RCE issued a law to provide recognition to its system. This was probably to clear uncertainty about its procedures. The legal framework is indispensable for the development of the Derivatives Exchange. The RCE has also faced challenges in closing existent gaps from previous regulations. Nowadays, the RCE has as one of its main objectives to reach the standards of the EU.

6) **International Cooperation**: The same year that the RCE established the Derivatives Exchange, it joined the AFM. This has been a milestone for the RCE. By increasing its network, the Exchange has benefited from knowledge, networking, cooperation with other Exchanges and from international recognition.

7) **Educational Activity**: Professional and educational training has been important for the RCE and for its clients. Al Janabi (2006a) explains that emerging markets are characterised by low investment in information technology systems and lack of qualified personnel with good technical qualifications. In the case of Romania, enormous effort has been done to provide education to investors and financial officers. The RCE has its own Educational department and provides courses within the financial field every year. This allows the agents of the Exchange to keep up to date in order to develop new products, keep their recognition and reliability in the market.

8) **Expansion**: In order to attract more investors, the RCE has opened branches of the Exchange across Romania. This development process has been slow but steady and more transactions are taking place every year in the regional offices.

4.2.2. Experience of Portugal

The following section reviews the history of the Portuguese Derivatives trading as it will help to understand the development of this market. Secondly, some of the strategies that the Euronext Group uses to control the risks it is facing in the different markets in general, and in Portugal in particular, are covered. In fact, the Portuguese experience in this field is aimed at giving Morocco a good picture for the development of Derivatives trading in the long run, since this market has been in place for a long period. In addition, the experience of Euronext Lisbon is a benchmark for Morocco in the long term since it is a good financial institution to establish partnerships with. Moreover, some characteristics of the development of the Portuguese Derivatives market are considered as lessons for the introduction of a Moroccan Derivatives Exchange. As will be explained later on in this section, the success of Euronext is partly due to its cross border relationships.

The Development of the Derivatives Exchange in Portugal

The Portuguese Derivatives Exchange was initially introduced in 1996 under the name: "Porto Derivatives Exchange". The first instruments traded in this market were primarily Futures contracts. In early 1999, following the adoption of the Euro by the European countries as a common currency, all the quotations were switched to Euros (€) in this market. Later on the same year, the first Options contract was initiated following a remarkable demand by Portuguese investors. Thereafter, the Lisbon Stock Exchange and the Porto Derivatives Exchange merged together and gave birth to the BVLP (Bolsa de Valores de Lisboa e Porto) – Sociedade Gestora de Mercados Regulamentados, S.A. This latter was then integrated to a public Exchange of deeds and hence, took in charge the management of all the cash markets in Portugal as well as the Derivatives Exchange market activities. In addition, the BVLP was assigned the responsibilty of the Repo[12] market and the Securities lending[13] operations.

After the year 2000, the Portuguese government adopted several reforms initiating new trading rules which influenced the regulations of the cash markets. The same year, the BVLP started trading covered Warrants as a response to a growing demand of the market. Today, the financial trading activities in Portugal are no longer under the supervision and responsibility of the BVLP after its merger with Euronext in 2001. Actually, the BVLP has changed its name to Euronext Lisbon. As a matter of fact, Euronext is a European trading platform and is managing different trading activities in many European countries (France, Belgium, the United Kingdom, Portugal and the Netherlands). This international cooperation with other Exchanges took place some years after the introduction of the Derivatives Exchange in Portugal. For Morocco, this means that in order to reach this sort of international agreements, the Exchange must first run succesfully for a period of time and demonstrate a good performance to potential partners.

In 2002, Euronext Lisbon expanded its activities to a new market segment and introduced certificates trading. After all, Euronext Lisbon is responsible for the management of both the Equity market and the Derivatives one in Portugal, but is also in charge of other Securities markets and Securities settlement systems. It provides services concerning the issue and trade of Securities that are not considered as intermediary activities and in the end supports market members with the necessary services to allow them participate in the international markets managed by congener[14] entities with which they have signed agreements.

The Derivatives trading in Euronext Lisbon is continuous and under the management and responsibility of Euronext which also comprises the Derivatives trading activities of Amsterdam, Brussels, Paris and London. All the products available within this financial entity are available over a single electronic trading platform. Currently, Interest Rate, Equity, Index, Commodity, and Currency Derivatives instruments are all traded by Euronext over 31 countries while meeting the needs of its customers at the international level. In Portugal for instance, this trading platform

[12] Repo instruments are defined as sale and repurchase agreements. It is usually banks and other financial institutions that offer such instruments. The Repo short selling instruments could be in the form of treasury bills, bonds, etc. This type of market allows for a better control of the amount of liquidity and also maintains the level of interest rates.
[13] Securities lending operations are about the short selling activities of brokers by lending Securities of their clients.

allows international customers to get easy access to the Portuguese market and it gives the opportunity to Portuguese investors to easily access Derivatives products in other markets as well. These achievements allow the Portuguese market to profit from better liquidity and new business opportunities by accessing a wider range of products in Paris, Brussels, Amsterdam and London. In this context, the Portuguese experience shows the aspects that can be done in Morocco just after ten years of introduction. It should be considered even though the success and growth of the Derivatives trading activities in Portugal are mainly due to the consolidation and harmonisation effects of several European capital markets and other international markets with which they have established partnership agreements.

Strategies and Factors of success for the Portuguese Derivatives Exchange

This section, mainly focuses on some risk factors, economic factors, regulatory factors, stock market factors and organisational factors of the Derivatives market that have an impact on the demand of financial Derivatives instruments in Portugal. The following sections will further develop the Portuguese experience in managing and controlling each one of these factors as well as their influence on the Portuguese financial markets. It is important to mention that some strategies and actions of this market are actually based on the common decisions of Euronext.

A. Risk Factors

An investor trading in the Euronext market is exposed to several forms of risks. In Portugal for instance, exposures to Strategic Risks will arise from the Portuguese national growth rate, political stability, and economic forecasts. However, since Euronext consists of both Securities and Derivatives Exchanges, it is able to allow the investors in this market to control these risk factors through offering different types of contracts. Another form of risk that one might face while trading the Portuguese Derivatives instruments would be the Business Operations Risks related to the electronic trading platforms set up and available to the members of Euronext. In order to better control this form of risk, Euronext has outsourced this activity to an external company specialised in IT technology which handles the IT infrastructure of all the different markets of Euronext. Accordingly, one might consider the Information Technology Risk since all trading is nowadays made electronically. This is an important issue to the market demand since the IT systems involve the information and communication about the products traded. Moreover, IT risk is also important with regard to the ability of processing the flow of transactions taking place in the different markets.

[14] Congener entities are similar financial institutions to Euronext.

As mentioned earlier, the growing economy of Portugal exposes the investors in the country to different forms of risks which need to be controlled for. Thus, the capital holders refer to the services provided by the capital markets, which in turn provide the appropriate instruments in order to manage and hedge these risks. In fact, the liquidity of the Portuguese capital markets represented in the Euronext markets enhances trading volumes of Derivatives instruments and thus, attracts extra investors in these markets that are based on flexible trading rules. Liquidity risks would arise upon the existence of a gap between the financial assets and financial liabilities of the Derivatives Exchange. Therefore since the Exchange is managed as a private company, the actions undertaken then, materialise by investing cash, cash equivalents and short term financial investments into non-speculative financial instruments that can be easily converted into cash. The idea behind the use of these short term instruments is to repay the liabilities at all maturities without relying on the cash flows generated by the operating activities.

In terms of Interest Rate, all the instruments – assets and liabilities – are based on a floating rate or on a fixed rate with less than one year of interest term. This measure allows the Exchange to reduce the price risk which affects fixed-rate financial assets and liabilities.

B. Economic Factors

The trading of Derivatives in Portugal constantly takes advantage from the cross-border network activities of Euronext. Therefore, it profits from lower transaction and trading costs. Primarily, the single trading platform outsourced to Atos Euronext Market Solutions benefits all the five Derivatives Exchanges and four Securities Exchanges to align their costs and expenses. LIFFE CONNECT also allows Portuguese investors in Derivatives instruments to enjoy the centralised and simplified trading activities of this market. It also offers them flexibility and a good speed of execution. The participants of this market enjoy the economies of scale while the market offers them a value with a maximum price efficiency and efficiency of the operations. This leads to attracting more international investors and hence increases the liquidity of the markets.

Undoubtedly, competition is also affecting the pricing policies of the Derivatives Exchange leading to the development of more products. The sector is experiencing tough competition globally due to the consolidation and globalisation of the financial markets. Thus, the development of a Derivatives Exchange in Morocco is advised to consider this competition aspect. Indeed, price wise, the more competition in Derivatives listings, the better would be the attractiveness of the market to investors. Major steps have been undertaken in Portugal helping

Small and Medium-sized Enterprises (SME) with the appropriate means to raise their capitals and to finance their businesses. With this regard, Euronext has set up Alternext, a platform completely designated to this SME business segment. Alternext's strategy is to further attract international small and medium sized investors. As a matter of fact, by the year end of 2005, this business had highly contributed to stimulating trading volumes in this market. Similarly in Morocco the establishment of a Derivatives Exchange should take into consideration this business segment which has a high participation in the Moroccan economy where about 90% of the Moroccan companies are SMEs. Therefore, the participation of this segment in Derivatives trading would stimulate the volume of the exchange.

In line with the Derivatives trading activities, the clearing activities in Portugal are handled within Euronext. In Portugal, Clearing 21[15] helps the clearing and netting of the Portuguese transactions to be handled in real time through LCH.Clearnet. This clearing platform is common to all Euronext Derivatives products and particularly helps Portuguese clearing members to reduce their back office departments. The settlement and depository activities of Euronext have been sold to Euroclear which is an independent bank providing clearing services to Euronext. The latter has initiated a project to attract international listings both on Eurolist and on Alternext. The attractiveness of the European market has increased for international issuers, where Euronext can offer the access to the largest Pool of Liquidity in the Eurozone.

In terms of Derivatives, Euronext has initiated services in Equity Derivatives that allow their users to profit from the products offered and better manage their risks with OTC trading. The level of concentration in the Exchange's customers' industry (i.e. banks) can also impact its performance. A high concentration can negatively influence trading volumes and can lead to decreases in average prices due to the "Cash Trading fee structure"[16].

All in all, the trading of Derivatives in Portugal is heavily focusing in harmonising its information technology and functional infrastructures with the other participants of Euronext. Consequently, this would lead to offering and meeting the needs of the customers and adapting appropriate contracts to be traded. In addition, the customers of this market profit from the partnerships and MoU[17] signed between the different markets of Euronext and their partners (Borsa Italia,

[15] Clearing 21 is techmology developed by the Chicago Mercantile Exchange (CME) and the New York Mercantile Exchange (NYSE) and used by Euronext to handle the clearing of its Derivatives products.
[16] A fee structure that stimulates trading volumes
[17] MoU: Memorandum of Understanding

Singapore, to name just a few). This shows the importance of the international cooperation and cross-border relationships in Derivatives trading in the long run.

C. Regulatory Factors

As far as the regulations of the Derivatives trading in Portugal are concerned, they are highly linked to the regulations applied in Euronext together with some particular rules specific to the country. This Derivatives market is subject to very high regulations which can influence the prosperity of the market. Although, trading in financial Derivatives products is subject to compliance costs[18]. The harmonisation of the activities of this market allows for the achievement and compliance with flexible trading costs and trading rules. Trading fees, for instance, have been halved after the consolidation and the centralisation of the different markets that constitute Euronext. However in terms of trading rules, they must be agreed upon by the different parties that constitute Euronext together with the local regulatory bodies in each country according to the MoU signed between them. In fact, according to the annual report 2005 of Euronext, these regulatory procedures may affect the integration and development processes either in case these rules were not approved by one of the parties, or may take an extended amount of time before they are approved. After all, Euronext has managed to adapt to flexible trading rules allowing for more participation of its members into the market and even further attract more members. The procedures of membership are becoming softer for a member within a national market in order to take part of the activities of the other markets of Euronext through a simple application form.

Moreover, since the trading of Derivatives in Portugal is concerned with European regulations (Financial Services Action Plan), they tend to implement their activities commonly instead of doing it independently (CESR framework). This leads to a standardisation of the procedures and a practical implementation of Exchange policies. For example, the interest rate policies of central banks, ECB[19] in particular, have a major impact on the activities of Euronext, especially its Interest Rate Derivative contracts. Such policies directly influence the volatility of the Interest Rates products. Recently, Euronext has further developed its policies to comply with the evolving environment of financial trading. Accordingly, it has adopted the initiative of allowing its members to trade financial products listed in other Exchanges within Euronext through the agreements with the Swiss Exchange (SWX) for example, or the Luxembourg Exchange (BdL).

[18] Compliance costs can be seen as the costs of maintaining market monitoring and surveillance systems in order to meet regulatory requirements.
[19] European Central Bank

This also implies that members of these Exchanges are allowed to trade within the Lisbon platforms. Secondly, along with the flexible regulatory policies, Euronext has negotiated to place trading systems in foreign markets to make international trade even easier for the distribution of their Derivatives products. Under this policy, it is allowed to trade from the US on Derivatives instruments listed within Euronext's markets under the jurisdiction of the CFTC[20].

D. Organisational/Practical Factors

It goes hand in hand for a successful Derivatives market to introduce a wider range of instruments in order to meet the demand of its customers. It is to notice that since the absorption of Euronext by LIFFE CONNECT, the former has further developed more simple and standard products in order to provide its customers with greater opportunities to control for the risks they are exposed to. Concerning the Derivatives wholesale sector, Euronext purchased the company CScreen to expand its activities in the wholesale Equity Derivatives. This acquisition allowed Euronext to offer better wholesale services aiming at attracting a bigger business in this area which is actually taking place over the counter. Euronext's network in the wholesale activities include three members (Afirm, Bclear, and CScree) offering services from price discovery (pre-trade) to booking and administration (post-trade). They switched the OTC transactions from manual to automated processes which allow the customers for a flexible, secure and cheaper process to handling wholesale Equity Derivatives transactions. This was a very successful offer to the customers where they could record OTC transactions as Exchanges ones.

In addition, since Portugal has decided to combine its financial trading activities within those of Euronext's, the Portuguese financial participants have the possibility to introduce and trade broader contracts according to their market demand. For instance, LIFFE CONNECT is currently offering seven Portuguese Stock Futures through which they cover the majority of the market capitalisation of the PSI 20 Index. It is important to mention that the common trading facilities within Euronext make it easier for the members and brokers to handle their trades with a maximum price certainty and execution. Most importantly, Euronext has extended its Euribor[21] Futures trading hours in order to meet the demand of its customers who require trading in other similar markets overseas. Accordingly, there was an extension of three hours trades in this segment to meet the American market trading in these products and attract more customers.

[20] CFTC: The US regulator "Commodity Futures Trading Commission"
[21] Euribor: Euro Interbank Offered Rate

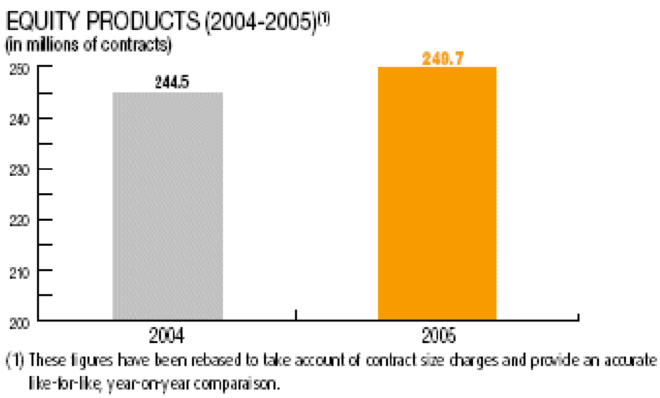
Actually, Euronext is considering the option to extend trading hours in other markets upon a request of its customers.

E. Derivatives Trading within Euronext

The Derivatives trading market of Euronext is in charge of the following Derivatives segments: Equity products, Commodity products, and Interest Rate products. In this following sub-section, the key aspects that influence the success and prosperity of these products are explained. Also, an assessment of their growth over the last years is discussed. Following are some facts and figures reflecting these factors.

In terms of equity trading, Euronext has traded more than 400 European Equity Options which also take into consideration those traded outside the platforms of Euronext. These types of products allow Euronext's customers to control the risks that evolve within other European stock markets through the FTSEurofirst[22] Index. The Index contracts are of importance to Derivatives Exchanges as they cover different types of financial instruments such as Stocks, Bonds, Commodities and Currencies.

Figure 19. Number of Equity products traded by Euronext during 2004 and 2005



Source: Euronext, Annual Report 2005

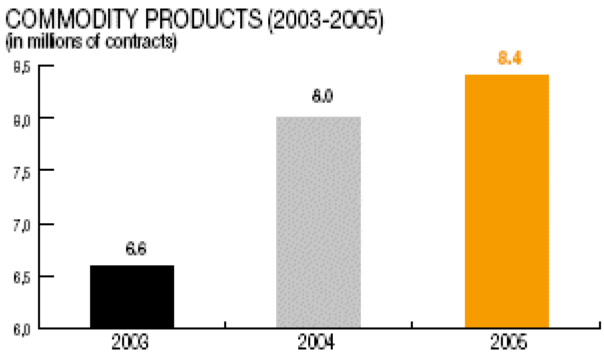
The growth of equity products between 2004 and 2005 was mainly due to a volatility factor that renewed during that period after many years of a steady market. Moreover, this growth was reflected by a 6% increase in Futures contracts versus a 1% drop in Options contracts. In order

[22] FTSEurofirst is a combination of products available within FTSE group and Euronext. FTSEurofirst 80 and FTSEurofirst 100 are the major indices of this segment. They allow European investors to profit from a wide range of features.

to stimulate these activities, Euronext has set up wholesale services in order to attract more customers regardless of the future market behaviour.

In terms of commodity trading, agricultural Commodity Derivatives are amongst the most popular products within Euronext according to the annual report 2005 of Euronext. The figure below displays the evolution of this segment for the last 3 years. In addition, soft commodity products[23] also represent a good market for Euronext. Their major advantage is the ability to offer these products electronically which facilitate their trade internationally. Also, recent trends of commodity trading worldwide, which more customers include in their portfolios for diversification purposes, have led more investors to refer to Euronext's products. This confirms the results of this market which grew at about 5% during 2005. The following figure reflects the discussion above.

Figure 20. Number of Commodity Products traded by Euronext between 2003 and 2005



Source: Euronext, Annual Report 2005

When it comes to Interest Rate Derivatives products, Euronext's offers short-term contracts. These products allow their users to control for the risks with interest rate movements in major currencies worldwide. The maturities of these products range between 3 months to 5 years ahead in the future. In fact, since the Euro is worldwide positioned as an important currency, the trading volume of Euronext's products have sharply grown. In 2005 for instance, a 10,8% increase in Interest Rate products was registered. The short term Interest Rate products are significantly affected by the levels of volatility in the international markets.

[23] Soft commodity products include cocoa, sugar, and coffee. Commodities like cotton, orange juice, and grains are also considered sometimes as soft commodities.

Finally, and in line with a sustainable development of Derivatives trading in Euronext, the launch of "packs" and "bundles"[24] allow market participants to encompass good alternative products for hedging short-term Swaps and bonds. These contracts also benefit from a special fee structure in order to help boost the liquidity in these contracts. Consequently, the volumes traded amongst packs and bundles have proved remarkable results since their introduction.

Lessons to be considered from the development of the Derivatives Exchange in Portugal:

1) **Technology**: Nowadays, Derivatives' trading over Euronext is exclusively relying on electronic transactions. First of all, it stimulates the market demand since it facilitates the transfer of contracts from seller to buyer. In addition, it communicates to the participants of the Exchange accurate information about the products traded in terms of pricing and other characteristics of the contracts. Thus, technology is becoming a major driver for the success of a Derivatives Exchange. It is important to mention that this Exchange is outsourcing its IT structure to a specialised company (Atos Euronext Market Solutions).

   With this regard, Tsetsekos and Varangis claim that emerging countries tend to take advantage from the installed platforms of other Exchanges and accordingly sign partnerships allowing them to trade their contracts within their facilities without setting up an organised Exchange in their nation.

2) **Volatility**: The volatility factor is crucial for Derivatives trading. The higher the price volatility of the product, the more hedgers and speculators are demanding it. The experience of Euronext has shown that the European Central Bank has an influence over the volatility of Interest Rate related products traded in the Exchange. Moreover, low levels of volatility influence very much the amount of trade within the Derivatives Exchange in Portugal. In the year 2005 for example, trading during the first semester was very slow especially regarding Interest Rate products prior to the excitement of the energy prices accompanied with a high rate of inflation. This reflects the action of the ECB to control the interest rate of the Euro zone area.

3) **Trading rules**: in theory, the flexibility of the trading rules imposed by an Exchange to its members undoubtedly impacts on the market demand for the products traded. In Portugal for example, and in order to offer trading conditions that allow the members to benefit from higher trading margins than trading costs, Euronext has implemented regulatory

[24] Packs and bundles are the latest products introduced within Euronext and concern the trade of the Euribor and

procedures that would not affect the development of the trading procedures. Thus, the users can have several advantages such as: an access to the different markets of Euronext, better security of the transactions while trading, and harmonised rules for all Euronext platforms. Moreover, Euronext is extending its trading hours in order to meet the opening of the American markets and allow the investors to meet the demand of both markets in the segment agreed upon (Euribor Futures).

4) **Diversity**: the ability of Euronext markets to offer a wide range of products, from Derivatives to cash market products, allow them to attract more customers. Indeed, the users of Derivatives instruments within Euronext also have the possibility to trade a multitude of other contracts from different countries. In addition, all the products newly listed within this market are meant to be innovative and correspond to the market demand. This is achieved through market forecasts of the demand for Derivatives contracts available at the Exchange.

5) **Trading costs**: The members of Euronext profit from simple procedures accompanied with flexible trading costs according to the volume traded by each member. Accordingly, it would stimulate the market demand for Derivatives instruments and thus attract more members to use the Exchange. The trading costs are also set to satisfy the requirements and needs of the members within the Exchange.

6) **Cross-border partnerships**: In a world of globalisation and consolidation, it is conditional to set up agreements with international institutions and Exchanges for a better attractiveness and growth. Euronext is continuously concluding trading agreements with foreign Exchanges from Asia and America to trade their products within their Derivatives markets. These agreements allow all the participants to use the trading platforms of each market as to market and sell their respective Derivatives products.

7) **Ownership**: Derivatives trading in Portugal is under the management of Euronext which is a joint market among different European countries. The clearing of Derivatives transactions in Portugal is still under control of Euronext authorities which actually sold this trading activity to LCH.Clearnet with regard to the trade of the other countries. Settlement activities however are managed by independent financial entities as to allow for more accurate trading practices. Consequently, Euronext focuses more on its core trading activities of cash and Derivatives instruments.

shot term sterling contracts.

8) **Expansion**: with the objective of meeting the market demand of different segments of participants, Euronext is developing strategies to help small and medium sized enterprises access the Derivatives products. These strategies help SMEs raise their funds in the capital markets where they also have access to instruments to hedge the risks involved in their business activities. Recently in Portugal, a new branch in wholesale equity trading was developed to meet the demand of this segment.

4.3. The Moroccan Financial Market: Readiness for a Derivatives Exchange

The purpose of the following section is to present the development of the Moroccan financial market in order to link the differences and similarities of this market with the benchmark countries (Romania and Portugal) described earlier. Accordingly, this section allows the authors to draw conclusions regarding the readiness of Morocco to establish a Derivatives Exchange[25]. The relevant points considered in this section are summarised after this discussion. Thereafter, suggestions and final conclusions to this benchmark analysis are provided.

The Moroccan financial system is an open, competitive system where the coexistence between direct and intermediary finance is taking place. The economic situation of the Moroccan financial market is experiencing important movements in terms of reforms and deregulation. The financial landscape is evolving at a fast pace through the implementation of new financial platforms such as the Casablanca Stock Exchange that allow capital-owners to participate in the national economy.

The Moroccan State, through the different governmental financial institutions, is adopting large reforms regarding the different sectors of the economy. Back to 1989, the government started opening doors for private investors to participate in the national economy and build key infrastructures for the country. They designed a promising privatisation and economic liberalisation plan. The idea behind such a programme was to create some competitiveness among the industrials in the country as well as to attract foreign investors from different neighbouring countries. These openings concerned major industries that represented an important source of income for the Moroccan State. Among the industries concerned, this was the case for the telecommunications, banking and financial services, transportation, utilities and

[25] This conclusion is of course limited to the context of this research, the market demand and lessons from other markets.

electricity generation and distribution industries. This liberalisation process is a significant step for the development of a Derivatives Exchange.

This paper however, considers three pools of industries, namely: 1) financial services[26], 2) building and construction, and finally 3) Agriculture industries. The study of these industries will allow to determine the demand of Moroccan investors for Derivatives instruments. In fact, these industries are considered among to be the pioneering industries in Morocco with a market capitalisation of about 60% in the MASI (Morocco All Shares Index)[27]. A discussion in the following paragraphs will better explain the importance of these industries and will bring more light to their influence in the CSE. Also, a brief description of the MASI is included.

Ghyles Eric and Cherkaoui Mouna (2003) claim that in terms of the financial sector, the principal reforms concerned: the liberalisation of interest rates, changes in monetary policy, a decrease in the government access to credit, regulatory changes of the banking sector, and finally a fundamental change in the operations of the stock market. Initially these reforms involved the privatisation of more than 75 firms and some State owned hotels, but they took place in 1993. A large part of the amount raised went through the Casablanca Stock Exchange (CSE). This privatisation process is still taking place and the government is expecting to privatise more State-owned companies.

Concerning the financial sector, two major reforms have been introduced. The first one occurred in 1993 and concerned the Stock Exchange, the mutual funds, and the creation of the "*Conseil Déontologique des Valeurs Mobilières*" (CDVM), the regulator of the financial market in Morocco. The objectives of these reforms is to increase the liquidity and transparency of the financial market, protecting the capital owners, improving the quality of the information available to the investors, a better dynamics of the financial market for a better participation in the national economy, the introduction of new financial instruments, and finally the implementation of a convenient fiscal system favouring securities placements. The second reform took place in 1997, where the creation of the Central Depository (Maroclear). In 2000, three years after the reforms of the financial sector took effect, the principal indices of the CSE, MASI and MADEX (Moroccan Most Active Shares Index) appreciated 14.7% and 11% respectively. In order to take

[26] Financial Services Industries include companies such as insurance, banks and investment banks, credit institutions, and financial institutions.
[27] A list of companies within these indutries and their relation to the MASI Index is provided in the Appendix.

effect and allow for a more liquid market, these reforms have to be discussed and approved by other regulatory institutions such as Bank Al Maghrib (the Central Bank of Morocco). This development process indicates how the financial market in Morocco is evolving, creating a favourable environment for a Derivatives Exchange.

In the mean time, the Moroccan government contracted a number of Free Trade Agreements (FTAs), with the European Union, Arab Countries, Turkey, Mexico, and the last one with the United States. Obviously, these FTAs are meant to facilitate trading procedures and eliminate trade barriers for Moroccan industrials and their respective counterparts. The Moroccan government is looking for the development of its private sector by matching foreign investors with national ones. In order to do so, the government must offer an appropriate business environment that must include all the recent trading practices in order to raise funds and facilitate investments. These business conditions should be attractive for foreigners to invest in northern Africa thanks to its geographic location, neighbouring Western European countries and a door to sub-Saharan Africa. The objective of these FTAs is to encourage foreign investments regardless of their origin. These changes arise risks related to trading, such as currency exposure, which may be hedged while using Derivatives products.

The Casablanca Stock Exchange (CSE), which has no restrictions on foreign ownership, free movements of capital or repatriation of income, is a major institution for raising funds in Morocco. Created in 1929, the CSE consists of two markets: the Central Market and the Block Trade Market. The Central Market allows the participants to trade the instruments using the new electronic trading system avoiding the imperfections of the old market structure. It is in the central market that all the securities traded in the CSE are negotiated and have to go through, which gives this market a pioneering position. Thus, the trading system of the CSE is that of a centralised, order-driven market where the brokerage firms are the ones responsible for the market-making of the market. They play a key role in the market where they have monopoly in trading the securities listed in the CSE.

On the other hand, the Block Trade Market concerns large volume orders where the participants in the Central Market are unable to handle due to their limited number in the market place. The trading volumes are set by the Exchange for each security according to its historical volume of transactions and performance.

In addition, trading in the CSE takes place electronically after the market authorities substituted the open outcry system between 1997 and 1998. Brokerage firms are provided trading screens in order to carry out their transactions. The traded securities are quoted according to their liquidity. That is, the less liquid securities are quoted once a day (fixing basis), whereas the more liquid securities are traded on a continuous basis. Moreover, at the CSE there exists a monitoring system which is in charge of supervising the transactions, where it can cancel trading on a security or limit its trading for the interest of the market. This unit within the CSE rules allow for a 6% fluctuation in the price of a security in daily terms. It is relevant to mention that, in 1993, the number of listed companies in the CSE was 69, and the volume of transactions increased from MAD 4.8 billion (4.5 Billion Euros) in 1994 to MAD 71.81 billion (6.8 Billion Euros). Today, a single trading firm could deal more than MAD 100 billion annually (equivalent to approximately 12 billion dollars[28]).

According to Al Janabi (2006a), the volatility and liquidity factors of the equity market in an economy are keys to the establishment of a Derivatives Exchange. The more liquid and volatile the market gets, the more likely the country is ready to establish a Derivatives Exchange. Therefore, when it comes to liquidity, companies would require continuous liquidity in the equity market to invest in Derivatives instruments for risk hedging purposes. In Morocco for instance, the performance of the central market in the CSE is measured according to the evolution of the MASI Index (Moroccan All Shares Index). The MADEX (Moroccan Most Active Shares) is also an Index in the CSE reflecting the performance of the most traded shares in the stock market. These traded shares represented in the MADEX are considered as the most liquid among all the stocks. The following figure displays the monthly evolution of both indices over the year 2005.

Figure 21. Monthly Evolution of the CSE Indices (MASI and MADEX)

Source: Casablanca Stock Exchange, Annual Report 2005

[28] 1 US Dollar is equivalent to 8,47 MAD.

The MASI Index includes all the listed companies in the CSE and is considered as a proxy indicator for the evolution of the CSE. The objective of the MASI is to present the overall evolution of the CSE, and to provide a measure of reference in the long run for a better management of equity portfolio.

Based on the performance of the past 2 years, the volume of transactions was retrieved as well as the market capitalisation of the CSE, with the objective to determine the liquidity of the stock market in Morocco. The data were obtained from the website of the Casablanca Stock Exchange. The liquidity ratio is computed according to the following formula:

$$Liquidity \quad of \quad Stock \quad Market = \frac{Volume \quad of \quad Shares \quad Traded}{Market \quad Capitalisation} \qquad (1)$$

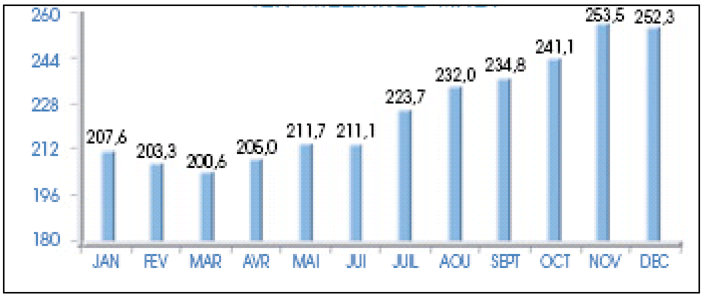
Accordingly, the value of the liquidity of the CSE is 14.87%. This ratio represents the liquidity of CSE for the year 2005.

Another approximation of the liquidity of the stock market could be obtained by dividing the value of the traded transactions in the stock market by the GDP of the country, as follows:

$$Liquidity \quad of \quad Stock \quad Market = \frac{Volume \quad of \quad Shares \quad Traded}{GDP} \qquad (2)$$

Hence, in 2005, the market capitalisation of the CSE reached MAD 253 Billion, representing more than 8% of the Moroccan GDP. This ratio reflects the participation of the stock market in the Moroccan economy. The figure below also shows the evolution of the market capitalisation of the stock market and thus its active participation in the economy.

Figure 22. Monthly Evolution of the Market Capitalisation in Morocco during 2005



Source: Casablanca Stock Exchange, Annual Report 2005

Furthermore, this market capitalisation includes all the listed companies in the stock market from the different industries. In fact, there are seven major industries represented in the CSE.

Together these industries represent more than 90% of the CSE's market capitalisation. With this regards, the telecommunications sector is most represented trough a single company, Maroc Telecom. However, because of a lack of competition in this industry, it is not considered in this analysis for determining the demand of a Morocco Derivatives Exchange.

By contrast, the listed companies from the sectors of financial services, building and construction, and agriculture represent more than 50% of the market capitalisation in the stock as mentioned earlier. This is also a good indicator of the importance of these industries in Morocco. The participants of these industries are facing all different forms of risks and therefore they are considered to be very representative while determining the demand for a Derivatives Exchange in Morocco.

When it comes to the settlement of the transactions, the *Central Depository Maroclear*'s mission is to make sure that simultaneous rolling delivery over payment is respected between all the parties involved in a transaction. Undoubtedly, Maroclear has played a wider role in the control of the market, which will be discussed later in this paper.

In terms of market transparency, the "*Conseil Déontologique des Valeurs Mobilières*" (CDVM) has the mission to regulate the Exchange for a better protection of the capital holders. The decision of this regulatory institution has significant influence on the demand of the financial instruments. It is under the guardianship of the finance ministry and it intends to bring more transparency, integrity and security to the market. Further, the CDVM makes sure that all the companies emitting securities over the market release all the necessary information to the investors in the market. The CDVM has also the mission to control the brokerage firms responsible for handling the trading activities.

The private sector in Morocco is becoming pivot to the country's development. It contributes considerably to the development of the economy by allowing private investors participate into different segments. Basically, the functions of the private sector are very wide. Levine (1997) breaks down the primary functions of the financial sector into 5 basic functions: saving mobilisation, resource allocation, hedging and pooling risks, easing exchange of goods and services, and finally controlling managers and using corporate control. The focus of this paper is mainly oriented towards the hedging and risks pooling within the economy.

In reality, the Moroccan financial market has extensively developed over the years. Different measures helped sustain this process. The liberalisation of the financial sector in Morocco has enhanced economic growth through the stimulation of saving and investment. The Government would then be able to finance its needs, as well as those of the public enterprises, and prior economic sectors through governmental subventions in the form of treasury bills and bonds issued by the banks, according to Achy (2003). These reforms have reduced the role of the Government in the national economy. These developments in Morocco indicate that there is the infrastructure to develop a Derivatives Exchange, but this also depends in many other factors.

General Lessons to Morocco from the benchmark of Romania and Portugal

This section takes into consideration the best practices from the Romanian and the Portuguese market as well as the history and the current development of the financial markets in Morocco. Based on this information, the following are the lessons that the authors have gathered for Morocco in case the launch of the Derivatives Exchange takes place. The lessons are divided in different points according to the microstructure of the Exchange and other commercial and financial aspects.

- **Ownership Issues, Clearinghouse and Trading Procedures**

  The Romanian case shows that major investors within the financial and commercial sector have taken part in the ownership of the Exchange, as well as of the clearinghouse. On the other hand, in Portugal, banks were the major shareholders of the Exchange. The reason for this is that despite being one of the major industries, they also have the knowledge and expertise to make the best use of the Exchange.

  According to the Moroccan experience, even though there are major sectors, such as mining, agriculture and telecommunications, to name a few, it is the financial industry that has the resources and expertise in financial instruments. It is then likely that commercial banks, investment banks, insurance companies and other financial institutions in Morocco may take part in the ownership of the Exchange.

  In addition, both in Romania and Portugal, the clearinghouses are owned by the Exchange (Euronext for Portugal), implying that the obligations and the security of the trading is under the responsibility of the Exchange itself. In the Moroccan case, taking this into consideration, this structure would constitute a more reliable Exchange vis-à-vis attracting extra investors.

As the benchmark analysis shows, the clearing procedures in Romania and Portugal are based on Electronic trading. There are different consequences in the type of trading, as explained in Chapter 3, but the trend is that new Exchanges adopt electronic platforms, and that may be the Moroccan case.

- **Cross-border partnerships**

  Portugal and Romania have put important resources in the establishment of cross-border relationships. Firstly, Romania takes active part in international conferences and networking; and it has greatly benefited from the experience of other major Exchanges. Secondly, Portugal has a different experience in this matter. As part of the Euronext group, the Portuguese Derivatives unit enjoys the benefits of the agreements signed by Euronext with other major Exchanges around the world.

  From both markets, it is undeniable that the international relationships with other Exchanges have been relevant for the development and growth of new Derivatives Exchanges. Thus, it is highly recommended that a Morocco Derivatives Exchange management seeks international expertise and openings from international Exchanges in order to market its products and, at the same time, offer its participants with a variety of Derivatives products and networking.

- **Educational Issues**

  The Romanian experience brings evidence from the beginning of the operations of its Derivatives Exchange, that the management have invested resources on the education of personnel and externals with relation to financial instruments, Derivatives products, risk management, to name a few. This education has been of such relevance to the Exchange that the RCE has even developed its own educational centre which offers professional training every year. This has been a key to the success of the Romanian Exchange.

  As explained earlier, the investment in education is low in emerging economies and there is a lack of professionals to work in the field, such as financial engineers for example. It would be therefore advisable for the Moroccan market to invest part of their resources to the training of the agents in the financial markets to make sure that the services provided have the quality and reliability necessary to satisfy the investors. This, along with international cooperation with more developed markets in the area may provide a higher expertise.

- **Expansion**

  For a sustainable growth of an organised Exchange in Morocco, the combined lessons from Portugal and Romania are to make the Derivatives trading closer to the business holders in other developing cities rather than concentrating the activity in the financial centre of the country. The idea behind is to attract more participants into the market while increasing the liquidity and trading volume.

  In Morocco, the principal financial centre is based in Casablanca where about 90% of the Moroccan business is taking place. Since the majority of the Moroccan companies are considered as Small and Medium sized enterprises, it is highly recommended that the actions of the Derivatives Exchange in the country take into consideration the design and availability of Derivatives products to this growing segment of companies around Morocco. Further, there are other developed cities where there could be a demand for Derivatives products and the establishment of an Exchange may benefit from opening branches in business centres like the ones located in the cities of Marrakech and Tangier, and even the administrative capital, Rabat.

- **Choice of Derivatives Products**

  The experience of Portugal and Romania shows that the first contracts introduced within their respective Derivatives Exchanges were Futures and Forward contracts on Currency. The Portuguese market for instance, after joining Euronext, started trading a variety of products on indices, equities, interest rates, commodities and currencies. However, Romania presents more similar conditions to the Moroccan market concerning the development of Derivatives products. The RCE's experience, just like Tsetsekos and Varangis (2000) describe with regards to Emerging Economies like Romania and Morocco, shows that Currency Derivatives were introduced first, followed by Interest Rates and Commodities according to the market demand and industry importance.

  Casablanca Stock Exchange has already developed a set of indices and major companies stocks's from different industries are trading on its floor. This opens the possibility to the introduction of Index-based Derivatives and Equity-based ones. In addition, the Moroccan currency (Dirham) will be convertible in 2007[29], which will open room, more than never, for Currency products. The experience of Romania also demonstrates that the trading of commodities takes a considerable amount of resources and time. The RCE has taken as a first step the development of a Commodities floor and the launching of spot contracts. The Futures on Agriculture and Oil will be traded later on. Thus, if Morocco wants to develop Futures on commodities, it will most likely require a substantial effort, investments and time. The experience of the benchmark countries indicates then that financial Derivatives would be easier to introduce first in Morocco.

- **Volatility**

Volatility is a crucial element for the evolution of a Derivatives Exchange since it is a vital element for the valuation of Derivatives instruments. Thus, Derivatives products are relevant only in environments of uncertainty. The authors have computed volatility estimates of the market by using the main index of each benchmark country. These indices are the Portugal Stock Index (PSI), the Romanian Traded Index (ROTX) and the Morocco All Shares Index (MASI). The data collected comprises the period between 26 November 2004 and 26 November 2006 (2 years). The following table and graph shows the different volatility estimates computed for all countries.

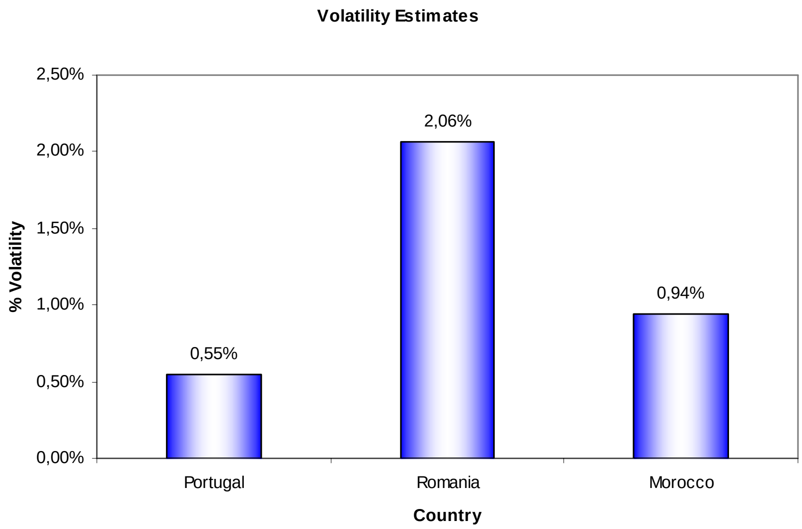
Table 3. Volatility Estimates for Portugal, Romania and Morocco.

Country	Source	Volatility
Portugal	Portugal Stock Index (PSI)	0,55%
Romania	Romanian Traded Index (ROTX)	2,06%
Morocco	Morocco All Shares Index (MASI)	0,94%

Source: Own, Data from Reuters (Nov04-Nov06)

[29] This information is based on the speech of the Moroccan Central Bank's Governor during this year.

Graph 1. Comparison of Volatility Estimates between Portugal, Romania and Morocco.



Source:Own, 2006.

The volatility estimate of Morocco is between the levels of Romania and Portugal. These results show that the volatility of the Moroccan market may be enough to the development of Derivatives products.

- **Liquidity**

An emerging market like Morocco is characterised for being illiquid. Nevertheless, the liquidity of a market is of great importance for the success of the traded Derivatives products. As described previously in Formula (1) and Formula (2), two different liquidity measures were used indicating that Morocco has a similar level of liquidity as Romania, but much lower than Portugal. The following Table and Graph summarise this fact.

Table 4. Liquidity Measures for Portugal, Romania and Morocco.

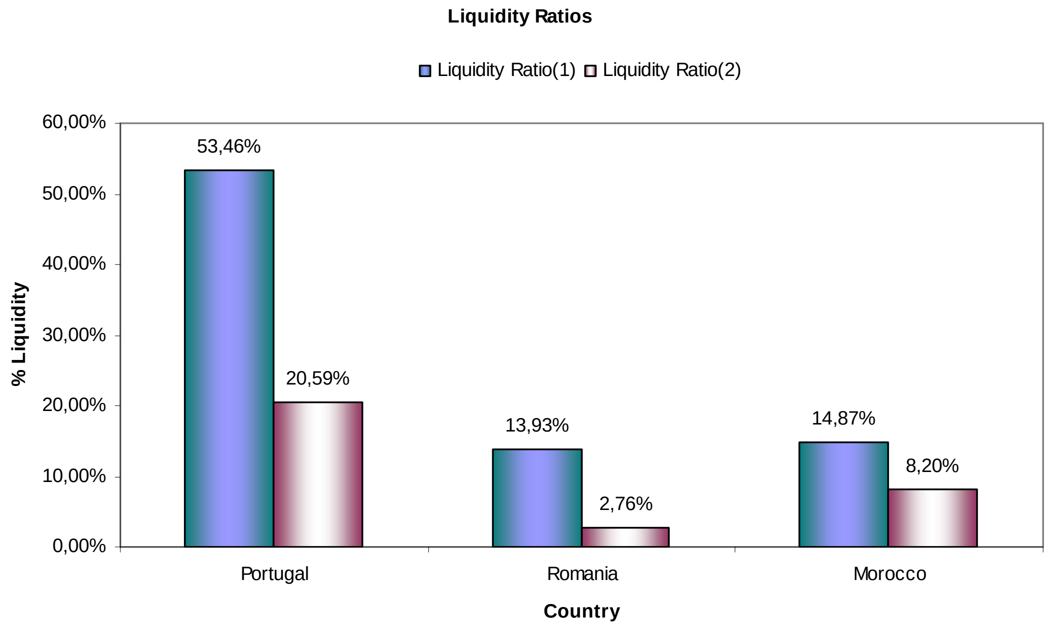
Data for year 2005	Value of Traded Shares (Equities)	Market Capitalisation	GDP *(Millions)*	Liquidity Ratio(1)	Liquidity Ratio(2)
Portugal (€)	30 352 129 715	56 780 052 252	147 395 000	53,46%	20,59%
Romania (RON)	7 809 734 452	56 065 586 985	282 985 000	13,93%	2,76%
Morocco (MAD)	37 517 977 496	252 326 320 000	457 620 000	14,87%	8,20%

(1) Measured as the ratio of the value of traded shares by the Market Capitalisation

(2) Measured as the ratio of the value of traded shares by the GDP

Source: Own, 2006.

Graph 2. Comparison of Liquidity Measures for Portugal, Romania and Morocco.



Source: Own, 2006

The results show that Morocco has an acceptable liquidity level with both liquidity measures. This implies that in terms of liquidity, the Moroccan market is ready to intriduce and trade Derivatives instruments.

- **Regulation**

  In terms of regulation, the experience of Romania shows that it took many years for the RCE to be formally recognised as an Exchange. In the Portuguese case the application of new laws has presented delays in trading and the procedures to develop the law itself takes a considerable amount of time. This is evidence that the support of the regulatory bodies is indispensable for the introduction of an Exchange. The experience of the benchmark countries shows also that many reforms have taken place due to gaps in previous regulations. The regulation of Derivatives trading is for sure one of the biggest challenges when launching a Derivatives Exchange.

- **Trading Costs and Trading Rules**

  It is important for the Moroccan Exchange to offer incentives to the hedgers and speculators in Derivatives products to stimulate the demand. These incentives could be in the form of reduced trading commissions and flexible trading rules. Undoubtedly, these commissions are set by the brokers and financial intermediaries. But, the regulatory authorities should be careful while determining this important aspect of the Derivatives business. In Portugal for instance, these trading commissions are very flexible depending on the volume traded by each investor. In addition, the competition between the financial intermediaries definitely allows the participants in the Derivatives instruments to benefit from low trading costs. Accordingly, the Moroccan demand in Derivatives could increase thanks to the low trading costs. It will be also important to review the trading rules of the members of the Exchange, in terms of the companies' sizes and industry.

5. Survey Analysis and Results

Chapter 5 comprises a survey study among professionals of the financial field across different industries. This chapter is divided into two sections. The first section presents the structure of the survey, whereas the second section presents the results of the investigation.

5.1. Structure of the survey, goals and delimitations

The purpose of the survey is to obtain information of the market demand for a Derivatives Exchange in Morocco. The survey is composed of 17 questions. The content of the questions was divided in six different broad areas: (1) Profile of the respondents, (2) Risk exposure of corporations in Morocco, (3) Investments in OTC markets, (4) Local and international challenges faced by corporations in accessing foreign Exchanges, (5) Contract design and finally, (6) Market demand for Derivatives products in Morocco. The complete questionnaire can be found in Appendix D.

The questionnaire was distributed to professionals in the Moroccan financial sector. The respondents of the survey have managerial positions in different Moroccan institutions. The survey targeted key industries that may play an important role in the introduction of a Derivatives Exchange in Morocco. These industries were chosen because of their importance to the financial markets on one hand, and to the Moroccan economy in general on the other hand. These industries represent approximately 60% of the MASI Index at the Casablanca Stock Exchange. The Appendix C shows the importance of each industry within the MASI Index, which is representative of the performance of the Casablanca Stock Exchange.

There were 24 answers received from a sample of about 50 questionnaires sent out to the targeted participants described below. However, the number of answers collected is small and it is therefore impossible to assure that the responses are representative of the current situation in Morocco. However, these results are included as a complement to the Benchmark study and they can be considered just as a reference point of the demand for a Derivatives Exchange. It is pertinent to point out that two thirds of the survey's answers come from the financial sector. So, while not much is possible to learn from other industries, the survey results have the perspective of the Moroccan financial sector - mainly banks, investment firms and insurance companies.

5.2. Results from the survey

5.2.1. Profile of the respondents

The industries that were targeted for the survey are: building and construction; investment companies, banks and other financial institutions; insurance institutions; companies in the agricultural business and retailers. From all the answers, as mentioned previously, two thirds of the responses come from investment banks and brokerage firms and 21% from insurance firms.

Additionally, the firms were segmented by size according to their revenue in different categories: small and medium size enterprises, big-size enterprises and multinationals. Two thirds of the responses come from big-size enterprises and 21% from multinational companies.

5.2.2. Risk Exposure

The questions about risk exposure have two different objectives. The first one is to find out about the current financial risks that companies face in Morocco. The second one is to find out about those risks which are not properly hedged by using the current financial instruments. The following tables show the results from the survey with regards to the risk exposure.

Table 5. Financial risk exposure of surveyed companies in Morocco

What are the risks that your company is exposed to?	Percentage of Responses
Currency Risk	79%
Interest Rate Risk	**92%**
Credit Risk	58%
Liquidity Risk	79%
Environmental Risk	50%
Price Risk	71%
Other:	13%

Source: Own, 2006

Table 6. Financial risk exposure not properly hedged by available instruments in Morocco

Risk exposure not properly hedged by current financial industries in Morocco.	Percentage of Responses
Currency Risk	38%
Interest Rate Risk	**79%**
Credit Risk	33%
Liquidity Risk	54%
Environmental Risk	58%
Price Risk	67%
Other:	13%

Source: Own, 2006

Table 5 shows that most of the companies that responded to the survey have concerns about interest rate risks, currency risk, price risk and liquidity risk. This perspective goes along with the results of the benchmark in the sense that new Exchanges start using financial Derivatives products since they are faster to develop and also due to the market demand, especially Interest Rate and Currency Derivatives related contracts.

Furthermore, Table 6 shows that interest rate, price, environmental and liquidity risks are not properly hedged at the moment according to the experience of the respondents. This information is very relevant because it shows that if there were to be a Derivatives Exchange in Morocco, it would most likely be successful if it were to introduce Interest Rate Derivatives, Futures on commodities and weather Derivatives.

An interesting result that must be pointed out is the need for derivatives instruments dealing with environmental risk. As mentioned earlier when studying some of the economic facts of Morocco, the agriculture industry represented around 10% of the GDP in 2005. Moreover, about half of the population lives in rural areas (just like Romania). It is therefore understandable that the agricultural sector is economically important in the country. The problem in Morocco is the number of droughts during the last years that have affected the industry and the economy of the country. This issue is well-known by the Moroccan authorities as well as the financial institutions.

Skees, et. al. (2001) conducted a World Bank research project in cooperation with the Moroccan Government entitled "Rainfall-based Index insurance for Morocco" based on cereal[30] arguing

[30] According to Skees, et. al. (2001), cereal production represents about 70% of all agricultural land in Morocco.

that there is a correlation between rainfall and cereal revenues. Additionally, Stoppa and Hess (2003) propose the use of Weather Derivatives based on this index and also propose a model for Morocco. These studies reinforce the possibility to develop this new Derivatives instruments with the goal of protecting investors (and the national economy) from risks unique to the Moroccan market. The answers of this survey support such a need.

5.2.3. Activity of Moroccan Investors in the OTC market and other Exchanges

Nearly 60% of the respondents indicate that their companies include OTC instruments as part of their management strategies. The instruments used are Currency Forwards and other foreign Exchange Derivatives, Swap Options, Futures and finally Options contracts. Mainly, the objective of using OTC instruments is to hedge their risk exposures. The main concern seems to be hedging against currency fluctuations. Some financial institutions take advantage of these financial instruments to provide tailor-made solutions to corporate clients. The users of OTC instruments appreciate the fact that Derivatives products offer lower credit risk and high liquidity as opposed to diversifying their portfolios with equity instruments while hedging their risk exposures. On the other hand, given that the level of liquidity is low and bid-ask spreads are important; the resulting trading costs tend to be high.

The survey shows that investors make use of Derivatives Instruments that can be commonly found in other markets, such as Options, Futures, Forwards and Swaps. The regulation in Morocco has not yet developed ways to open the market to financial institutions in need of trading Derivatives instruments. The introduction of a Derivatives Exchange in Morocco may need to consider the products to offer to the market. In case the products that already exist in other markets are to be offered, they should differentiate from competitors by offering cheaper products with greater liquidity than the OTC. On the other hand, this result also indicates that a Derivatives Exchange should introduce different products to the existing ones.

Furthermore, according to the results of the surveyed institutions, about 50% of these companies trade Derivatives products in other Exchanges. Similarly to OTC products, the most requested instruments are, in order of preference: Options and Futures. The users of instruments abroad trade in major Exchanges, such as the Chicago Board of Trade (CBOT), Euronext, the London Metal Exchanges (LME), the International Currency Exchange (ICE) and the New York Mercantile Exchange (NYMEX).

An important output from this block of questions is that managers from companies that do not trade in foreign Exchanges indicated that there is an interest for trading Non-plain vanilla products and Currency Forwards.

Challenges faced by corporations in accessing foreign Exchanges

Approximately 88% of the questionnaires reflect that the biggest challenge to access foreign Derivatives Exchanges is the Moroccan regulation. After that, only a third indicated that high costs is an issue. Accordingly, the regulatory institution of the financial markets should relax the policies of financial instruments in order to encourage the development of this market. This study however does not tackle the regulatory topics related to Derivatives instruments in Morocco.

When asked about financial instruments offered in foreign Exchanges that are necessary to cover current risk, about 50% of the answers declared that Interest Rate Derivatives are appropriate to the current financial risks that companies suffer. Subsequently, the rest of the answers mentioned Exotic Options, second generation Options and commodities.

5.2.4. Contract Design

There are many issues in the design of Derivatives contracts. This survey has only explored the matter concerning the maturity of instruments. Institutions make use of products with different maturity dates. 38% trade instruments with maturities less than 3 months, 54% of the answers indicate that they use instruments with maturities between 3 and 6 months, and 42% mentioned maturities between 6 and 12 months.

Table 7. Preferred Maturity of Derivatives Instruments

What is the maturity of the instruments you are investing in?	Percentage of Responses
Less than 3 months	38%
3 - 6 months	**54%**
6 - 12 months	42%
1 - 2 years	21%
More than 2 years	33%

Source: Own, 2006

Examining the responses further, those institutions that trade instrumets with maturity between three and six months are currently trading mainly Options and Futures instruments. Moreover, these institutions are facing currency risk and interest rate risk.

5.2.5. Market Demand Issues

88% of the survey respondents answered that they would be interested in investing in Derivatives instruments if there were to be a Derivatives Exchange in Morocco. Among the characteristics that firms search in such a market, 50% of the answers show that they are interested in using these financial tools for risk hedging and arbitrage purposes. A third of them would be interested in low trading costs and a quarter of the answers may be interested in speculation.

Some firms may divert back their investments into a Moroccan Derivatives Exchange if the regulatory bodies provide more flexible rules for investing, if the trading costs are lower and more generally, if the quality of the service is appropriate.

The survey includes a question about the type of financial products that investors would be interested in. Two-thirds of the responses pointed out the need of Interest Rate Derivatives. In addition, there is a need for non-vanilla products and instruments to hedge currency risk. Only one of the questionnaires mentioned Index-based instruments for speculation purposes.

About half of the questionnaires gave feedback on the kind of requirements that should be considered for the introduction of an Exchange market. It was pointed out that there is no regulation related to Derivatives products at the moment and that the legal issue is a matter than needs development. As noted earlier, the regulatory aspects of the Moroccan financial derivatives market are not considered in the framework of this paper. It is also not a surprise that most companies which provided answers would like to see an Exchange that offers cheaper products than foreign Exchanges and with a variety of choices, such as different strike prices and different maturities. Another point was also the need of transparent public information and financial solidity of investors and members within such an Exchange. For instance, listed companies and those that are willing to issue Derivatives instruments in Morocco should comply with internationally accepted reporting standards (IFRS) allowing the buyers of these instruments to profit from transparency of information that concerns the companies. This goes hand in hand with the functions of Derivatives instruments in reflecting prices and information about securities and the role they play in financial markets.

About 70% of the answers signalled that the use of Derivatives products is either Crucial or Important. This reflects the demand and necessity of a Derivatives Exchange for financial and industrial companies.

6. Conclusions and Recommendations

The conclusive Chapter comprises the lessons learnt from the benchmark countries and the results from the survey analysis. The results from both research methods are consolidated to provide elements of market demand and some lessons on the microstructure of the Exchange. This Chapter provides recommendations to be considered in developing a Derivatives Exchange in Morocco in the short and the long terms. In addition, recommendations for further investigation are provided.

6.1. General Conclusions

The Derivatives markets in emerging countries have been growing in recent years. Their role has been to make available to local and international investors sophisticated financial tools for hedging risks and also to provide specialised Derivatives products for hedging those risks that are unique to the country and that do not exist in other markets. In addition, Derivatives Exchanges help to boost the economy and provide a number of benefits that have been detailed in this paper.

Morocco, as an emerging market, has unique risks that investors can not hedge overseas. The most relevant ones are Environmental and Financial risks. As one of the main findings of this research, a Derivatives Exchange in Morocco would provide solutions to investors in developing Weather Derivatives and financial Derivatives on Currency, Interest Rates and Indices. Morocco has a well-established Stock Exchange where major potential Derivatives investors trade. Also, according to the results of this investigation, Morocco has liquidity and volatility levels similar to other Exchanges from countries with organised Derivatives markets. These are key elements for trading Derivatives. These factors have been tested under this investigation showing that Morocco has an acceptable level of liquidity and volatility compared to the experience of other Exchanges, namely Romania and Portugal. Moreover, considering the size of the Moroccan financial market, the launching of a Derivatives Exchange would not probably result in an Exchange as large as those in Europe, but it may be, however, of comparable size to the ones in the North African region and the ones in Eastern Europe. In addition, the liberalisation processes initiated in Morocco and the openings of its financial market provide the infrastructure to the development of a Derivatives Exchange. However, one of the main challenges would be the regulation of such a market and building a solid international cooperation with other Exchanges.

6.2. Answers to the Research Questions

6.2.1. Research Question # One

What are the lessons from similar countries that can contribute to an adequate implementation of a Derivatives Exchange in Morocco?

This study has taken into consideration the experience of Derivatives Exchanges in Portugal and Romania. The analysis provides important lessons to Morocco from the best practices of these countries, which are detailed in this paper.

According to the benchmark analysis, it seems that the main participants of the financial market in Morocco would most likely participate in the ownership of the Derivatives Exchange if it were to be introduced. The same situation would apply for the Clearinghouse.
The experience of Romania as a benchmark country provides Morocco with short term lessons. The reason behind is that Romania is an emerging market whose Derivatives Exchange has developed products to local investors and is on a growing pace. Alternatively, the Portuguese experience provides Morocco with long-term lessons since this market benefits from the experience of Euronext, which has proven a solid performance.

In terms of cross-border relationships, it is important to notice that international cooperation is a key to the success of a Derivatives Exchange. From pure networking to international agreements, the cooperation with other markets opens doors to knowledge and expertise, which is much needed in Morocco.

Another important lesson is related to the trading mechanism. This study shows that the best strategy for Morocco is to adopt electronic trading. This is the most common system in new Exchanges and it has many benefits such as transparency in prices, security, speed of execution, among others.

Education is another lesson that is important to consider in new Derivatives Exchanges. This is an investment that a Moroccan Derivatives Exchange should do in order to develop the personnel with the right competencies and to provide quality services to investors.

This research shows that currently in Morocco, the economic players are facing regulatory challenges to invest in OTC instruments and in other Exchanges. The regulation elements are relevant to the supervision and control of the trading activity, risk management and risk measurement processes. Thus, the Moroccan regulatory authorities should then come up with flexible regulations avoiding the creation of extra regulatory risks which in turn could lead to extra costs.

6.2.2. Research Question # Two

What is the market demand for Derivatives instruments among major industries in Morocco?

The survey results indicate that there is a demand for exotic Derivatives and financial Derivatives on Currency, Interest Rates and on Indices. The results of the Moroccan industries covered throughout the survey of this investigation report the needs of the companies within the financial sector but did not help to conclude concretely about the demand of the Building and Construction, and Agriculture industries. Therefore, there is no evidence showing the needs of these latter industries in terms of structured products.

6.2.3. Research Question # Three

What types of Derivatives instruments could be more attractive for Moroccan investors?

The results of the comparative analysis combined with the results of the survey indicate that Morocco is more likely to introduce Derivatives instruments such as Index-based Derivatives, Interest Rates products, and Currency Derivatives within its Derivatives Exchange. In parallel, this investigation has shown that the demand of Moroccan investors is prevalent for these instruments. In addition, the nature of these products makes them faster to develop and trade. In addition, the authors have identified a need for Weather Derivatives following their understanding of the agriculture sector in Morocco.

6.2.4. Research Question # Four

> Are the participants within the Moroccan financial market willing to include Derivatives instruments in their investment strategies?

The results of the survey have shown that the majority of the respondents are exposed to some risks and thus require to include Derivatives instruments within their investment strategies. In addition, according to exchanged emails with a manager from a major financial institution, it seems that all the clients are looking for Derivatives instruments to include within their portfolios for different purposes. Basically, in Morocco the aims of trading such products are primarily for hedging purposes. A minority of investors would use them for speculation.

6.3. Recommendations

The following section will provide long term recommendations following the introduction of a Derivatives Exchange in Morocco. These recommendations are mainly obtained according to the experience of Portugal since this market has benefited from the expertise of Euronext.

6.3.1. Long-run: Considerations for an active Moroccan Derivatives Exchange

One of the principal lessons that could be addressed to Morocco in this sense concerns the development of international relationships and agreements with foreign Derivatives Exchanges. It would be beneficial that Morocco develops theses partnerships with Exchanges from countries that have already established trading agreements with Morocco. This would facilitate the movement of capital considering the regulatory aspects that may still be a handicap in Morocco. Also, these international agreements in the long run would allow Moroccan products to be listed within the partners' markets and also the Moroccan investors could profit from foreign listings within its Exchange.

6.3.2. Recommendations for further investigation

The introduction of a Derivatives Exchange in Morocco involves a large variety of aspects that contribute to the development of a Derivatives Exchange. During this investigation, the authors have identified further topics for research as follows:

- There is currently a lack of regulations concerning Derivatives instruments in Morocco therefore it would be appropriate to study the regulatory aspects of the Derivatives Exchange in Morocco.

- Would it be more appropriate to expand the activities of the OTC Derivatives market in Morocco rather than to introduce an organised Exchange?
- How realistic is the establishment of a common currency among the North African countries? What are the possibilities to set up a common North African Exchange?
- A study is recommended to assess the contracts design of Derivatives instruments according to the needs of the market and its regulations.

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8. Appendix

Appendix A. Correlation of Economical and Capital Market factors

Following are the tables containing the data used to select the benchmark countries. Only the relevant part of the correlation triangles is shown.

Number of listed companies

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	47	193	5 999	17	158	649
1997	49	198	5 843	76	148	654
1998	53	194	5 860	5 753	135	861
1999	55	188	5 863	5 825	125	1 033
2000	53	179	5 937	5 555	109	1 076
2001	55	168	5 795	5 140	97	1 110
2002	55	166	5 650	4 870	63	1 148
2003	53	159	5 644	4 484	59	967
2004	52	152	4 730	4 030	56	792
2005	56	151	4 763	3 747	52	744

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	- 0,5538
INDIA	- 0,3302
ROMANIA	**0,8300**
PORTUGAL	- 0,6395
EGYPT	**0,6842**

Market Capitalization (in US$)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	8 705	106 540	122 605	57	24 660	14 173
1997	12 177	156 595	128 466	627	38 954	20 830
1998	15 676	91 746	105 188	102	62 954	24 381
1999	13 695	154 044	184 605	873	66 488	32 838
2000	10 899	125 204	148 064	1 069	60 681	28 741
2001	9 087	126 258	110 396	2 124	46 338	24 335
2002	8 591	103 137	131 011	4 561	42 846	26 094
2003	13 152	122 532	279 093	5 584	58 285	27 073
2004	25 064	171 940	387 851	11 786	73 404	38 516
2005	27 220	239 128	553 074	20 588	66 981	79 672

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	0,7983
INDIA	**0,8997**
ROMANIA	**0,8543**
PORTUGAL	0,7163
EGYPT	0,8265

Trading Volume (in US$)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	432	43 040	96 153	6	7 147	2 463
1997	1 048	52 392	158 302	268	20 932	5 859
1998	1 390	34 164	148 240	596	47 577	5 028
1999	2 530	36 042	278 828	317	40 796	9 038
2000	1 094	45 340	509 812	236	54 374	11 120
2001	974	40 043	249 298	256	27 283	3 897
2002	587	27 726	197 118	403	20 334	2 558
2003	694	23 489	284 802	442	21 449	3 278
2004	1 677	42 839	379 085	943	34 552	5 608
2005	4 147	52 736	443 175	1 164	38 883	25 392

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	0,4536
INDIA	0,5194
ROMANIA	**0,7403**
PORTUGAL	0,4778
EGYPT	**0,9073**

Turnover Ratio (%)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	5,90%	42,50%	76,70%	7,20%	33,20%	22,20%
1997	10,20%	39,70%	122,30%	72,70%	65,80%	33,50%
1998	10,10%	28,60%	129,00%	66,60%	93,40%	22,30%
1999	17,60%	29,00%	192,60%	36,20%	63,00%	31,60%
2000	9,20%	32,30%	308,20%	23,10%	85,50%	34,70%
2001	10,00%	31,60%	191,40%	15,70%	51,00%	14,20%
2002	6,70%	23,90%	165,00%	12,20%	45,60%	10,20%
2003	6,50%	20,80%	138,50%	8,80%	42,40%	13,70%
2004	9,10%	29,40%	115,50%	11,60%	55,50%	17,30%
2005	16,40%	25,70%	93,60%	16,90%	55,40%	42,40%

Correlation

	MOROCCO
MOROCCO	1,000
MEXICO	- 0,144
INDIA	0,062
ROMANIA	0,269
PORTUGAL	**0,304**
EGYPT	**0,689**

Appendix

GDP (US$)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	36 639	352 862	397 132	31 179	112 080	67 651
1997	33 415	359 870	420 782	34 843	106 355	75 605
1998	35 546	393 508	430 024	38 158	112 346	82 710
1999	35 277	479 448	445 233	35 177	114 786	89 207
2000	33 345	574 512	456 990	36 719	105 990	98 725
2001	33 901	622 328	478 524	40 165	109 889	98 476
2002	36 093	649 076	508 881	45 825	121 924	87 851
2003	43 813	639 076	600 615	57 330	147 303	82 924
2004	50 031	676 497	691 163	73 167	167 716	78 796

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	0,5141
INDIA	**0,9133**
ROMANIA	**0,9356**
PORTUGAL	**0,9883**
EGYPT	- 0,3293

Change in Consumer Price Index (%)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	3,00%	34,40%	9,00%	38,80%	3,10%	7,20%
1997	0,90%	20,60%	7,20%	154,80%	2,20%	4,60%
1998	2,90%	15,90%	13,20%	59,10%	2,80%	4,20%
1999	0,70%	16,60%	4,70%	45,80%	2,30%	3,10%
2000	1,90%	9,50%	4,00%	45,70%	2,90%	2,70%
2001	0,60%	6,40%	3,70%	34,50%	4,40%	2,30%
2002	2,80%	5,00%	4,40%	22,50%	3,50%	2,70%
2003	1,20%	4,50%	3,80%	15,30%	3,30%	4,50%
2004	1,00%	4,70%	3,80%	11,90%	2,40%	11,30%

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	**0,3696**
INDIA	**0,6089**
ROMANIA	- 0,1573
PORTUGAL	0,0879
EGYPT	- 0,0061

Exchange Rate (per US$ 1 average of period)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996	8,6905	7,5982	35,3656	3 084,2200	0,7987	3,3996
1997	9,5167	7,9179	36,3184	7 167,9400	0,8855	3,3966
1998	9,5989	9,1535	41,2705	8 905,5900	0,8917	3,4122
1999	9,8001	9,5538	43,0605	15 347,0800	0,9400	3,4160
2000	10,6279	9,4557	44,9344	21 686,7600	1,0861	3,5361
2001	11,3044	9,3365	47,1758	29 066,6700	1,1182	4,0500
2002	11,0204	9,6653	48,5741	33 054,2900	1,0603	4,6289
2003	9,5801	10,7904	46,5622	33 179,8800	0,8849	5,8843
2004	8,8726	11,2875	45,2506	32 618,0030	0,8048	6,2031
2005	8,8687	10,8924	44,0627	29 138,0000	0,8051	5,7907

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	- 0,0688
INDIA	**0,5905**
ROMANIA	0,3358
PORTUGAL	**0,9847**
EGYPT	- 0,2770

Fluctuation in Exchange Rate (average of period)

	MOROCCO	MEXICO	INDIA	ROMANIA	PORTUGAL	EGYPT
1996						
1997	9,5069%	4,2076%	2,6941%	132,4069%	10,8677%	-0,0882%
1998	0,8637%	15,6051%	13,6352%	24,2420%	0,7002%	0,4593%
1999	2,0961%	4,3732%	4,3372%	72,3309%	5,4166%	0,1114%
2000	8,4469%	-1,0268%	4,3518%	41,3087%	15,5426%	3,5158%
2001	6,3653%	-1,2606%	4,9882%	34,0296%	2,9555%	14,5330%
2002	-2,5123%	3,5217%	2,9640%	13,7189%	-5,1780%	14,2938%
2003	-13,0694%	11,6406%	-4,1419%	0,3800%	-16,5425%	27,1209%
2004	-7,3851%	4,6069%	-2,8169%	-1,6934%	-9,0519%	5,4178%
2005	-0,0440%	-3,5003%	-2,6252%	-10,6690%	0,0373%	-6,6483%

Correlation

	MOROCCO
MOROCCO	1,0000
MEXICO	- 0,4593
INDIA	0,5343
ROMANIA	**0,6878**
PORTUGAL	**0,9589**
EGYPT	- 0,5498

Inflation, consumer prices (%) Base 2000=100

	MOROCCO	PORTUGAL	MEXICO	ROMANIA	EGYPT	INDIA
1995	91,14%	88,81%	41,69%	8,37%	78,47%	69,49%
1996	93,86%	91,42%	56,02%	11,62%	84,04%	75,61%
1997	94,84%	93,14%	67,58%	29,59%	89,22%	81,21%
1998	97,44%	95,21%	78,34%	47,08%	93,72%	91,96%
1999	98,11%	97,27%	91,33%	68,65%	97,23%	96,24%
2000	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
2001	100,61%	104,41%	106,37%	134,47%	102,43%	103,67%
2002	103,41%	108,25%	111,72%	164,77%	104,92%	108,30%
2003	104,61%	111,78%	116,80%	189,94%	108,28%	112,33%
2004	106,17%	114,58%	122,28%	212,51%	119,44%	116,70%
2005	107,22%	117,02%	127,15%	231,69%	133,01%	121,33%

Correlation

	MOROCCO
MOROCCO	1,0000
PORTUGAL	**0,9862**
MEXICO	**0,9821**
ROMANIA	**0,9818**
EGYPT	**0,9549**
INDIA	**0,9921**

Appendix

GNI per Capita (current US$)

	MOROCCO	PORTUGAL	MEXICO	ROMANIA	EGYPT	INDIA
2 000	1 220	10 940	5 110	1 700	1 460	450
2 001	1 230	10 620	5 580	1 750	1 480	460
2 002	1 220	10 600	6 010	1 930	1 390	470
2 003	1 370	11 870	6 370	2 290	1 310	530
2 004	1 570	14 220	6 930	2 950	1 250	630
2 005	1 730	16 170	7 310	3 830	1 250	720

Correlation

	MOROCCO
MOROCCO	1,0000
PORTUGAL	**0,9950**
MEXICO	**0,9261**
ROMANIA	**0,9895**
EGYPT	- 0,8886
INDIA	**0,9977**

GDP per Capita (current in US$)

	MOROCCO	PORTUGAL	MEXICO	ROMANIA	EGYPT	INDIA
1996	1 363,8640	11 843,8280	3 590,0860	1 565,7260	1 151,0900	408,9470
1997	1 224,7780	11 261,4970	4 267,9240	1 566,9080	1 262,7250	436,9660
1998	1 293,5610	11 884,3050	4 420,1720	1 885,6130	1 382,7830	431,5980
1999	1 255,1200	12 185,1990	4 975,8800	1 608,2090	1 435,8710	452,2180
2000	1 171,0530	11 051,3740	5 928,4960	1 675,6470	1 549,8950	459,4270
2001	1 175,7780	11 250,2280	6 257,5640	1 824,6330	1 460,9780	460,9600
2002	1 236,7000	12 339,4180	6 433,6310	2 088,4150	1 313,3480	471,6050
2003	1 484,1900	14 888,7580	6 244,3950	2 721,4570	1 197,2460	540,7950
2004	1 676,6870	16 922,3300	6 585,5960	3 464,3050	1 136,6170	615,4260
2005	1 712,5060	17 455,8810	7 297,5520	4 539,2010	1 265,2870	705,4610

Correlation

	MOROCCO
MOROCCO	1,0000
PORTUGAL	**0,9727**
MEXICO	0,4710
ROMANIA	**0,9154**
EGYPT	- 0,6835
INDIA	0,8844

Foreign direct investment, net inflows (BoP, current US$ in thousands)

	MOROCCO	PORTUGAL	MEXICO	ROMANIA	EGYPT	INDIA
2000	221 000,0000	6 681 598,4640	17 077 000,1920	1 037 000,0000	1 235 000,0640	3 584 000,0000
2001	144 000,0000	6 242 196,9920	27 687 000,0640	1 156 999,9360	510 000,0000	5 472 000,0000
2002	79 000,0000	1 712 691,4560	15 477 000,1920	1 144 000,0000	647 000,0000	5 625 999,8720
2003	2 312 999,9360	6 609 827,3280	12 279 000,0640	1 844 000,0000	237 000,0000	4 584 999,9360
2004	768 892,0320	824 646,7200	17 377 400,8320	5 440 000,0000	1 253 299,9680	5 335 000,0640

Correlation

	MOROCCO
MOROCCO	1,0000
PORTUGAL	**0,2639**
MEXICO	- 0,5811
ROMANIA	**0,2042**
EGYPT	- 0,4879
INDIA	- 0,1938

Appendix B. Main Regulatory Reforms experienced by the RCE

Table 8. Chronology of relevant regulation reforms affecting the Romanian Commodity Exchange

LAW	DESCRIPTION
Law no. 129/2000	This was the first legal framework on commodity exchange field. This was absolutely necessary for the Commodity Exchange development.
Law no. 212/2002	Modification to the legislative context regarding regulated commodities and derivatives markets
Law no. 512/2002	The RCE is authorised as a Commodity Exchange company by the National Securities Comission of Romania.
Law no. 297/2004	Law regarding the capital market, which regulates the segment of derivatives and securities, eliminating from the regulation the issue of commodities exchanges.
Law no. 357/2005	Due to gaps provided by Law 297/2004, this law offered recognition for the mechanisms used in the last 14 years on the managed markets. It proved to be a technical and practical instrument at the same time for both, those who apply the legislative provisions and the beneficiaries of the services offered on the market. This law regulates the organisation and operation of commodities exchanges under the authority of the Steering Committee of the Chamber of Commerce and Industry of Romania (CCIR). This law grants to the commodities exchanges the fundamental right to manage markets of public interest by self-regulatory measures: the cash market for fungible commodities, the auction market and the commercial receivables market.
Law no. 337/2006	This law regulates the award of the public contracts, public works and services concessions. Furthermore, it introduces as absolute novelties the principles of non-discrimination, mutual recognition, proportionality and liability\'s assuming, as well as the special award modalities of framework agreement, dynamic purchasing system and electronic auction. In addition, this new legislation mentions The National Council of Appeals Solving as an institution precursory to the situations submitted to the justice.

Source: Collected from the RCE Annual Reports 2004 and 2005.

Appendix C. Importance of the Building and Construction, Agriculture, and Financial Services listed companies in the MASI Index.

Table 9. Surveyed industries and their value in the MASI Index.

	Company Name	Market Cap (MAD)	Outstanding Shares	Weight
Building and Construction companies	Ciment Maroc	14 436 004 000	7 218 002	2,2342
	Holcim	8 293 700 000	4 210 000	3,4577
	Lafarge	19 104 863 050	4 764 305	3,9395
	Sonasid	7 468 500 000	3 900 000	2,7463
	Addoha	37 692 000 000	13 500 000	15,6395
	Aluminium	461 760 414	465 954	0,1683
	Mediaco	107 800 000	175 000	0,0278
	Balima	114 926 400	174 400	0,0299
Agricultural Companies	Cosumar	3 981 504 150	4 191 057	1,027
	Lesieur Cristal	1 931 442 549	2 763 151	0,3849
	Centrale Laitière	5 652 000 000	942 000	0,8747
	Unimer	497 750 000	550 000	0,1284
	Cartier	67 860 000	390 000	0,0282
	Dari	131 285 000	298 375	0,0496
	Lgm	252 106 742	549 312	0,0391
Insurance, Banks, and Other Financial Institutions	Attijariwafa Bank	41 494 131 400	19 299 596	11,201
	BMCE	17 303 901 510	15 875 139	7,1743
	BMCI	9 792 162 940	9 945 574	1,531
	BCP	7 713 346 810	5 888 051	1,982
	CDM	6 378 704 640	8 338 176	0,9808
	Wafa Assurance	4 028 500 000	3 500 000	0,65
	Diac Salaf	174 865 064	1 053 404	0,0924
	Eqdom	2 705 805 000	1 670 250	0,5584
	M. Leasing	591 885 945	1 594 950	0,1526
	CIH	13 552 308 423	21 823 363	3,7153
	Marocaine Vie	586 162 500	1 837 500	0,0907
	Maghrebail	553 672 800	1 025 320	0,1143
	Sofac	746 581 928	1 416 664	0,1155
	Taslif	103 886 000	409 000	0,0456
	Agma	633 400 000	200 000	0,2383
	Acred	342 600 000	600 000	0,053
*All the information are based on the MASI			Approximate weight in the MASI	**59,5%**

Source: Own, 2006.

Appendix D. Survey Questions

1. How would you classify the activities of your company?

☐ Building and Construction
☐ Investment Companies and Other Finance
☐ Insurance
☐ Agricultural
☐ Other, please specify:

2. In terms of revenue, to which category does your company belong?

☐ Small and Medium-sized Enterprise
☐ Big-sized Enterprise
☐ Multinational

3. What are the risks that your company is exposed to?

☐ Currency Risk
☐ Interest Rate Risk
☐ Credit Risk
☐ Liquidity Risk
☐ Environmental Risk
☐ Price Risk
☐ Other, please specify:

4. Is there any risk exposure that is not properly hedged under the current available financial instruments in Morocco?

☐ Currency Risk
☐ Interest Rate Risk
☐ Credit Risk
☐ Liquidity Risk
☐ Environmental Risk
☐ Price Risk
☐ Other, please specify:

5. Does your company currently include *Moroccan* Over-the-Counter (OTC) Derivative instruments within your investment/hedging strategies?

☐ Yes ☐ No

If Yes, could you name these instruments?

What is the purpose of using these instruments?

What are the benefits of using these OTC instruments?

What are the costs of trading OTC Derivatives instruments in Morocco?
6. Does your company currently include Derivatives instruments in its investment strategies from *foreign* Exchanges? ☐ Yes ☐ No If Yes, please indicate what types of financial instruments do you make use of? ☐ Options ☐ Futures ☐ Swaps ☐ Forwards ☐ Other, please specify: If No, would you be interested in investing in Derivatives products? ☐ Yes ☐ No Please specify,
7. Please identify the foreign Derivative Exchanges currently used by your company,
8. Are there any difficulties in accessing these foreign Exchanges? ☐ Yes ☐ No ☐ No use of foreign Exchanges If Yes, What are they? ☐ High Costs ☐ Moroccan Regulations ☐ Legal Issues abroad ☐ Other, please specify:
9. What are the financial instruments offered in foreign Exchanges that cover your risks appropriately but do not yet exist in Morocco?
10. What is the maturity of the instruments you are investing in? ☐ Less than 3 months ☐ 3 - 6 months ☐ 6 - 12 months ☐ 1 - 2 years ☐ More than 2 years
11. If there were a Derivatives Exchange in Morocco, Would you be interested in investing in Derivatives Instruments? ☐ Yes ☐ No

If Yes, Why?

- ☐ Low trading costs
- ☐ Risk Hedging
- ☐ Speculation
- ☐ Arbitrage
- ☐ Other, please specify:

12. Please specify under what conditions would your company divert back its foreign Derivative investments?

13. If there were a Derivatives Exchange in Morocco, What instruments would you like this Exchange to offer? Any tailor-made products? Please specify:

14. Do you face any obstacles in accessing foreign Derivatives markets?

- ☐ Regulations in foreign markets
- ☐ Regulations in Morocco
- ☐ Minimum capital investment
- ☐ Maximum capital investment
- ☐ High trading costs
- ☐ Other, please specify:

15. If possible, Could you specify what percentage of annual revenue does your company devote to risk hedging?

16. Do you have any special preferences or requirements related to the design of the Derivatives contracts or to the market demand of such instruments that should be considered with a possible introduction of an organised Derivatives Exchange in Morocco?

17. How important is risk hedging for your company?

- ☐ Crucial
- ☐ Important
- ☐ Moderate
- ☐ Irrelevant/Insignificant