
**MANAGING FINANCIAL RISK BY USING DERIVATIVES:
A Study of United Arab Emirate Listed Companies**

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ABSTRACT

The present paper attempts to identify the ways that the United Arab Emirate listed companies manage their financial risk with the use of derivatives. By examining the companies' annual reports and financial reviews for the year 2015. The studied revealed that low use of the financial derivatives within Investment and the real estate industries. The use of the derivatives was only 25% while is consider to be below due to the high risk associated with the industry. The risk management tools available for hedging real-estate risk within the United Arab Emirate financial market are very much in their infancy and have problems ranging from illiquidity of trading to lack of theoretical development regarding modeling.

Keywords: *Financial risk, derivatives, interest rate risk, foreign exchange risk, United Arab Emirate Listed Companies.*

1. INTRODUCTION

Many of the companies work on reducing risk associated with a business such as interest rates, currency-exchange rates, commodity prices and equity markets. Therefore, many companies are relying heavily on the use of the finance derivatives. The financial derivatives play an important role to support companies to manage and reduce risk by shelter these firms from the volatility of the financial market.

Many of the academics and practitioners have expressed concerns over the use of derivatives. Some of the academic studies, such as Faulkender (2005) and Vickery (2008), show that companies frequently utilize interest rate risk derivatives to time the market. Another study such by Brown, Crabb, and Haushalter (2002) discovered that the use of corporate risk management instrument in the gold mining industry is often affected by attempts to time market prices.

While other studies by Nance, Smith, and Smithson (1993), Mian (1996), and Hentschel and Kothari (2001) demonstrate that the employ of derivatives does not produce meaningful differences in firms' risk.

This paper is organized as follows. Section 2 provides the background of the study. Section 3 review the relevant literature, followed by section 4 that states out the research questions. Section 5 explains the methodology of the present study. Section 6 results, and the last section contains the conclusion.

2. LITERATURE REVIEW

The volatility, the constant changes in the business arena, and deal with the changes in interest rates and exchange rate movements make a company exposed to losses. During 2008, the financial markets expose to the loss which affected enterprises and the overall economy. Therefore, many companies started to explore and implement risk management within the enterprise. Risk management is a practice that identifies possible risks in advance and examines these events and takes the necessary actions to reduce or eliminate these risks.

Financial derivatives considered to be one of the essential tools that can be used to reduce and cost risk. In the 2002 Berkshire Hathaway, annual report, Warren Buffet advised against the utilizing of derivatives, and consider them to be the financial weapons of mass destruction bringing dangers that are potential can lethal for the business and economy. However, Buffet's view on derivatives faces resistance from the standard academics that derivatives are used to reduce risk (Smith and Stulz (1985))

Bartram et.al. (2011) examined the use of financial derivatives to reduce both total risk and systematic risk. While Nguyen and Faff (2010) showed that regardless of the public distress about utilization and implementing financial derivatives would increase firm risk, the evidence demonstrations that in most cases, financial derivatives are used for hedging intentions.

As discussed by Clark and Judge (2008), hedging tools are contingent on the type of exposure and risk. For example, Short-term instruments such as foreign currency forwards and options are used to hedge short-term

exposure against of generated from export actions, while foreign currency debt and foreign currency swaps into foreign currency (but not into domestic currency) are employed to hedge long-term exposure result from assets located in foreign positions.

Papaioannou (2006) showed that the larger companies are, the more likely to utilize financial derivative to try to hedge against the risk associated with the exchange rate. The primary goal of using the derivatives instruments to reduce the losses due to the volatility and instability of the market, for example, foreign exchange derivatives have given companies the stability in the cash flow and earning to give due to the reducing the risk associated with exchange rates).

The companies' choice of foreign exchange derivatives tools is focused on OTC currency forwards (over 50% of all foreign exchange derivatives used), OTC currency options (around 20%), and OTC currency swaps (around 10%). El-Masry (2006) emphasized that the objective of the use of derivative for hedging intentions is controlling the unpredictability and instability in cash flows, and the second reason was the market value of the firm.

Another study by Stulz (2005), reported that 28 percent of firms employ derivatives instruments to reduce earnings volatility. While Adedeji and Baker (2002) stated that the purpose of using interest rate derivatives to hedge against the risk that associated with financial troubles and economies of scale. Yu et.al. (2001) stated that many of the Hong Kong firms had used derivatives instruments for risk management purpose to manage the associated with foreign exchange and interest rate derivatives.

There is various kind of instruments in the derivative markets. Below we describe the major types that are widely used in the market:

- (1) Forward contracts: represent agreements for postponed delivery of financial tools or commodities in which the buyer decides to purchase, and the seller decides to provide, at a specified future date, a specified instrument or commodity at an indicated price or yield. Forward contracts are not traded on organized exchanges, and their contractual terms are not standardized. The reporting exercise also includes deals where only the difference between the contracted forward outright rate and the prevailing spot rate is settled at maturity, such as non-deliverable forwards (i.e., forwards which do not require physical delivery of a non-convertible currency) and other contracts for difference (Michael, 2012).
- (2) Swaps are contracts in which two participants agree to trade payment streams established on a specified notional amount for a period. Forward exchange swap agreements are reported as swaps (Michael, 2012).
- (3) Options: Option contracts grant either the right or the responsibility, depending upon whether the reporting organization is the buyer or the writer, respectively, to buy or sell a financial instrument or commodity at an agreed price up to a required future date (Michael, 2012).
- (4) Forward rate agreement is a forward contract in which the two participants agree to establish interest payments to each other at futures dates. One party makes a payment at a rate decided to in advance. The other party makes a disbursement at a rate to be determined later (Michael, 2012).

3. RESEARCH QUESTION

Managing risk by implementing financial derivatives can be controversial topic due to the events that were associated with last financial crisis. Also, the financial derivatives topic considers being relative new particularly in the Middle East. More theoretical and empirical studies are needed particularly countries generate significant of their income through oil production. In this paper, we are trying to fill this research gap. To assess and explain how publicly traded companies in United Arab Emirate manage their financial risk through the use of the financial derivatives. The following questions are to be addressed in the present study.

1. Do the United Arab Emirate listed companies use derivatives to hedge the risks?
2. What are the risks that the derivatives are hedging?
3. What are the types of derivative instruments that the companies are using?
4. What are the objectives of using such kinds of derivatives?

4. DEFINITION OF VARIABLES AND DATA

The past of 20 years, the financial derivatives have shown growth in the engineering and the use. The increase in the growth of these instruments. Along with this growth, the regulation and disclosure of the utilization of the derivatives have been developed too.

Therefore, companies in different countries are required to report the information about their use of the derivatives in their annual reports. In this study, we gathered and examined company-level data. The data come from United Arab Emirate Financial Market. The first step is collecting the annual reports and financial reviews.

The second phase identified whether the companies employed derivatives to hedge their financial risks. The third phase would be determining the types of derivatives these companies utilized against types of risks.

5. RESULTS

We compare the pattern across sectors, we provide the information of derivatives usage in each sector. Table 1 displays the derivatives usage of United Arab Emirate companies within the energy sector.

Table 1

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|----------|-----------------------------------|---------------------|------------------------|
| Energy | Abu Dhabi National Energy Company | 1 | |
| | Dana Gas Pjsc | | 1 |
| | Total (%) User Compare to Nonuser | 1 (50%) | 1 (50%) |

The second table will represent companies within the investment sector.

Table 2

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|------------|-----------------------------------|---------------------|------------------------|
| Investment | The National Investor company | | 1 |
| | Waha Capital PJSC | 1 | |
| | Oman & Emirates Inv. Holding Co. | | 1 |
| | Sharjah Group Company | | 1 |
| | Total (%) User Compare to Nonuser | 1 (25%) | 3 (75%) |

While the third table show the companies that have used the financial derivatives within the Pharmaceutical industry.

Table 4 revealed companies that have used financial tools within the communication industry.

Table 4

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|-------------------|--|---------------------|------------------------|
| Telecommunication | Sudan Telecommunication Co. Ltd | 1 | |
| | Ooredoo | 1 | |
| | Emirates Telecommunication Group Company | 1 | |
| | Total (%) User Compare to Nonuser | 3 (100%) | 0 (0%) |

Table 5 showed companies within financial industry

Table 3

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|----------------|-----------------------------------|---------------------|------------------------|
| Pharmaceutical | Gulf Pharmaceutical Co. | 1 | |
| | Gulf Medical Projects | 1 | |
| | Total (%) User Compare to Nonuser | 2 (100%) | 0 (0%) |

Table 5

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|----------------------------|-------------------------------|---------------------|------------------------|
| Banks & Financial Services | Abu Dhabi Islamic Bank | 1 | |
| | Abu Dhabi Commercial Bank | 1 | |
| | Bank of Sharjah | 1 | |
| | Commercial Bank International | 1 | |

| | | |
|-----------------------------------|----------|---------|
| First Gulf Bank | 1 | |
| Finance House | | 1 |
| Invest Bank | 1 | |
| National Bank Of Abu Dhabi | | 1 |
| National Bank of Fujairah | | 1 |
| National Bank of Umm Al-Qaiwain | 1 | |
| Sharjah Islamic Bank | | 1 |
| National Bank of Ras Al-Khaimah | 1 | |
| United Arab Bank | 1 | |
| Union National Bank | 1 | |
| Total (%) User Compare to Nonuser | 10 (71%) | 4 (29%) |

Next table 6 showed companies within the real estate industry

Table 6

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|-------------|-----------------------------------|---------------------|------------------------|
| Real Estate | Aldar Properties Pjsc | 1 | |
| | Rak Properties | | 1 |
| | Eshraq Properties Co. | | 1 |
| | Manazel Real Estate | | 1 |
| | Total (%) User Compare to Nonuser | 1 (25%) | 3 (75%) |

The next of tables (7,8,9,10,11) showed the companies use of the financial derivatives to companies that avoid or don't employed financial derivatives.

Table 7

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|-----------------------------------|---------------------------------------|---------------------|------------------------|
| Insurance | Al Ain Al Ahlia Insurance Co. | | 1 |
| | Al Buhaira National Insurance Company | 1 | |
| | Abu Dhabi National Insurance Co. | 1 | |
| | Al Khazna Insurance Co. | 1 | |
| | Al Wathba National Insurance Co. | | 1 |
| | Al Dhafra Insurance Co. | 1 | |
| | Emirates Insurance Co. | 1 | |
| | Ras Al-Khaimah National Insurance | 1 | |
| | Sharjah Insurance Company | | 1 |
| | Ras Al-Khaimah National Insurance | | 1 |
| | Sharjah Insurance Company | | 1 |
| | Abu Dhabi National Takaful Co. Pjsc | | 1 |
| | United Insurance Co. | | 1 |
| | Union Insurance Company | | 1 |
| | Fujairah National Insurance Co. | 1 | |
| | Methaq Takaful Insurance Co. | 1 | |
| | AXA Green Crescent Insurance Company | | 1 |
| | Insurance House | 1 | |
| National Takaful Company | | 1 | |
| Total (%) User Compare to Nonuser | 9 (27%) | 10 (53%) | |

Table 8

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|----------|--------------------------------------|---------------------|------------------------|
| Tourism | Abu Dhabi National Hotels | 1 | |
| | National Corp For Tourism and Hotels | 1 | |
| | Total (%) User Compare to Nonuser | 2 (100%) | 0 (0%) |

Table 9

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|----------|--|---------------------|------------------------|
| Consumer | AGTHIA Group | 1 | |
| | International Fish Farming | | 1 |
| | Emirates Driving Company | | 1 |
| | FOODCO Holding | | 1 |
| | Ras Al Khaimah Poultry and Feeding Co. | | 1 |
| | AL Khaleej Investment | | 1 |
| | Total (%) User Compare to Nonuser | 1 (17%) | 5 (83%) |

Table 10

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|------------|------------------------------------|---------------------|------------------------|
| Industrial | Abu Dhabi Ship Building Co. | 1 | |
| | Abu Dhabi Aviation Co. | | 1 |
| | Abu Dhabi National Co. For B And M | | 1 |
| | National Marine Dredging Co. | 1 | |
| | Total (%) User Compare to Nonuser | 2 (25%) | 2 (25%) |

Table 11

| Industry | Company Name | User of Derivatives | Nonuser of Derivatives |
|-----------------------------------|---|---------------------|------------------------|
| Construction | Fujairah Cement Industries | 1 | |
| | Gulf Cement Co. | 1 | |
| | Umm Al-Qaiwain Cement Industries Co. | | 1 |
| | Ras Al Khaimah Cement Company | | 1 |
| | Ras Al Khaimah Ceramic Co. | 1 | |
| | Ras Al Khaimah White Cement | | 1 |
| | Sharjah Cement and Industrial Development Co. | 1 | |
| | Union Cement Co. | | 1 |
| | Arkan Building Materials Co. | 1 | |
| | Fujairah Building Industries P.S.C. | 1 | |
| Total (%) User Compare to Nonuser | 6 (60%) | 4 (40%) | |

Of all the 70 companies in the United Arab Emirate Financial stock market, 37 of them (or 82.9%) reported that they used at least one derivative to manage the risk of the company's operation. It was interesting that the study has revealed that companies within the Hospitality, Telecommunication, and Pharmaceutical at 100% the companies reported that they used derivatives.

Also, the study showed the companies within the banking and financial services industry only 71% revealed used financial sector. Furthermore, the study revealed that Insurance, Real Estate, Construction, Industrial, and energy industries were 47.1%, 25%, 60%, 50%, and 50% respectively. It is interesting to note that 47.9% of the companies did not use any derivatives. The tourism, telecommunication, and pharmaceutical sectors, the percentage is the highest (100%). Here are some examples.

Gulf Pharmaceutical Co. and Gulf Medical Projects within the pharmaceutical sector has used the financial derivatives as investment tools to support the company's operation costs. Nance, Smith, and Smithson (1993), Geczy, Minton, and Schrand (1995), and Dolde (1995) find that firms with high levels of research and development (R&D) expenses are more likely to use some form of derivatives instrument as an investment tool.

Another example, Abu Dhabi National Hotels and National Corp For Tourism and Hotels sector were using the interest rate swaps hedging. According to Amirik Singh and Arun Upneja (2008) the lodging firms predominantly use interest rate swaps and options to manage interest rate risk due to underinvestment costs, financial distress costs, managerial risk aversion, information asymmetry, cash-flow volatility, proportion of floating-rate debt, foreign sales ratio, and firm size are significant determinants of the decision to hedge.

In the telecommunication sectors, Sudan Telecommunication Co. Ltd, Ooredoo, and Emirates Telecommunication Group Company have used financial derivatives to hedge against foreign currency and interest rate risk. The result consistent with the findings of, Grant and Marshall (1997), Bodnar et al. (1999), Mallin et al. (2001) indicate that in hedging contractual obligations, forwards is the most popular derivative instrument used to hedge currency risk, and swaps the most popular derivative instrument to hedge interest rate risks within the telecommunication sector.

Table 12

Companies Use of Derivatives by Type of Instrument

| Industry | Company Name | Swamps | Forwards | Options | Futures | Islamic Finance Tools |
|---------------------------------|--|---------|----------|---------|---------|-----------------------|
| Energy | Abu Dhabi National Energy Company | 1 | 1 | | | |
| | Dana Gas Pjsc | | | | | 1 |
| | Sub-Total | 1(50%) | 1(50%) | 0(0%) | 0(0%) | 1(50%) |
| Investment | The National Investor company | | | | | |
| | Waha Capital PJSC | 1 | 1 | | 1 | |
| | Oman & Emirates Inv. Holding Co. | | | | | |
| | Sharjah Group Company | | | | | |
| | Sub-Total | 1 (33%) | 1 (33%) | 0(0%) | 1 (33%) | 0(0%) |
| Pharmaceutical | Gulf Pharmaceutical Co. | | | 1 | 1 | |
| | Gulf Medical Projects | | | 1 | 1 | |
| | Sub-Total | 0(0%) | 0(0%) | 2(100%) | 2(100%) | 0(0%) |
| Telecommunication | Sudan Telecommunication Co. Ltd | 1 | | 1 | 1 | |
| | Ooredoo | 1 | 1 | 1 | 1 | |
| | Emirates Telecommunication Group Company | 1 | 1 | | | |
| | Sub-Total | 3(100%) | 1(66%) | 1(66%) | 1(66%) | 0(0%) |
| | | | | | | |
| Banks & Financial Services | Abu Dhabi Islamic Bank | 1 | 1 | 1 | 1 | |
| | AbuDhabi Commercial Bank | 1 | 1 | 1 | 1 | |
| | Bank Of Sharjah | 1 | 1 | 1 | 1 | |
| | Commercial Bank International | 1 | 1 | 1 | 1 | |
| | First Gulf Bank | 1 | 1 | 1 | 1 | |
| | Finance House | | | | | |
| | Invest Bank | 1 | 1 | 1 | 1 | 1 |
| | National Bank Of Abu Dhabi | 1 | 1 | 1 | 1 | 1 |
| | National Bank Of Fujairah | | | | | 1 |
| | National Bank Of Umm Al-Qaiwain | 1 | | | | |
| | Sharjah Islamic Bank | | | | | |
| National Bank Of Ras Al-Khaimah | 1 | 1 | 1 | 1 | 1 | |
| United Arab Bank | 1 | 1 | 1 | 1 | | |

| | | | | | | |
|-------------|---|--|------------------|--------------|--------------|-------------|
| | Union National Bank Sub-Total | 1 12(86%) | 1 10(71%) | 1 10(71%) | 1 10(71%) | 1 5(36%) |
| Real Estate | Aldar Properties Pjsc Rak Properties Eshraq Properties Co. Manazel Real Estate Sub-Total | 1 1(25%) | 1 1(25%) | 0% | 0% | 0% |
| | Al Ain Al Ahlia Insurance Co. Al Buhaira National Insurance Company | 1 | | | | |
| | Abu Dhabi National Insurance Co. Al Khazna Insurance Co. Al Wathba National Insurance Co. Al Dhafra Insurance Co. Emirates Insurance Co. Ras Al-Khaimah National Insurance | 1 1 1 1 1 1 | 1 | | | |
| | Sharjah Insurance Company Ras Al-Khaimah National Insurance Sharjah Insurance Company Abu Dhabi National Takaful Co. Pjsc United Insurance Co. Union Insurance Company Fujairah National Insurance Co. Methaq Takaful Insurance Co. AXA Green Crescent Insurance Company Insurance House National Takaful Company Sub-Total | 1 9(47%) | 1 5(26%) | 1 2(11%) | 1 2(11%) | 1 2(11%) |
| Tourism | Abu Dhabi National Hotels National Corp For Tourism And Hotels Sub-Total | 1 1 2(100%) | 0(0%) | 0(0%) | 0(0%) | 0(0%) |
| | AGTHIA Group International Fish Farming Emirates Driving Company FOODCO Holding Ras Al Khaimah Poultry And Feeding Co. AL Khaleej Investment Sub-Total | 1 1(17%) | 1 1(17%) | 0(0%) | 0(0%) | 0(0%) |
| Industrial | Abu Dhabi Ship Building Co. Abu Dhabi Aviation Co. Abu Dhabi National Co. For B And M National Marine Dredging Co. Sub-Total | 1 1 2(50%) | 1 1 2(50%) | 1 1(25%) | 1 1(25%) | 0(0%) |
| | Construction | Fujairah Cement Industries Gulf Cement Co. Umm Al-Qaiwain Cement Industries Co. | 1 1 | | | |

| | | | | | |
|-------------------------------------|--------|--------|--------|--------|-------|
| Ras Al Khaimah Cement Company | | | | | |
| Ras Al Khaimah Ceramic Co. | | 1 | | | |
| Ras Al Khaimah White Cement | | | | | |
| Sharjah Cement And Industrial | | | | | |
| Development Co. | 1 | | 1 | 1 | |
| Union Cement Co. | | | | | |
| Arkan Building Materials Co. | | | 1 | 1 | |
| Fujairah Building Industries P.S.C. | 1 | | 1 | 1 | |
| Sub-Total | 2(40%) | 1(10%) | 3(30%) | 3(30%) | 0(0%) |
| Grand Total | 50% | 34% | 29% | 30% | 11% |

The studied revealed that low use of the financial derivatives within Investment and the real estate industries. The use of the derivatives was only 25% while is consider to be below due to the high risk associated with the sector which agreed with the finding of the study of Fabozzi, et al. (2009) real estate markets represent a very large proportion of the total wealth in developed countries. The risk management tools available for hedging real-estate risk are very much in their infancy and have problems ranging from illiquidity of trading to lack of theoretical development regarding modeling.

The study has also revealed that only 50% of the companies within the United Arab Emirate financial market has been using the interest rates financial derivatives to reduce the cost of borrowing. Also, table 12 showed that businesses have hedged against exchange rate at only 34%. Furthermore, these companies have used futures and options to hedged against the liabilities and assets 29% and 30% respectively. The other interesting finding that some of the companies started to use Islamic financial derivatives however the rate is still low only 11% of the companies within the United Arab Emirate financial market reported using these tools.

CONCLUSIONS

Our study has provided some preliminary information about the determinations and the use of financial derivatives among the companies in United Arab Emirate financial market. Our research has revealed some interesting patterns that can influence the company financial stability through risk management. In the future, more research should be carried to assess the trend by using different statistics models such as time-series data or propensity score-matching methods.

Also, the comparison can be made between Dubai financial market to other Middle Eastern financial markets and such as Kuwaiti and Saudi Arabi. As well, study the companies that use Islamic financial tools compare to traditional financial derivatives as a tool to manage risks associated with the enterprise's operation. If firm-level data are available, it is desirable to research the financial decisions concerning the use of derivatives and the outcomes of these decisions. As well compare the use the financial derivatives result to other companies that use Islamic financial instruments.

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