

## Usage of Financial Derivatives under IAS No. 39: Evidence from the Emerging Capital Market of Jordan

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**[Abstract]** The main aim of this paper is to examine the corporate usage of derivatives for Jordanian companies. Employing a survey questionnaire, the general findings indicate that 60% of the sample firm use derivatives in their operations to primarily hedge against future transactions. In addition, the study pointed out that large companies tend to use such instruments more than their small counterpart. For time and sourcing issues, the current study investigates the usage of derivatives for both services and manufacturing companies listed in the first market of the Jordanian capital market. Hence, future research needs to re-examine the same issue using different sectors and covering companies listed in the second market.

**[Keywords]** financial derivatives, equity securities, risk management, capital market, Jordan

### Introduction

Lee and Tan (1994) have argued that financial instruments can be both primary instruments (non-derivatives such as receivables, payables, equity securities) and secondary instruments (derivatives such as forward contracts and options). Over the last two decades, many derivative instruments have evolved that are both complex and difficult to categorize (Condon, 2008). The extant literature has highlighted a number of factors that have led to an explosive growth in the usage of these FIs. First, the finance industry has been successful in creating a variety of new over-the-counter (OTC) and exchange-traded products which are designed to suit the specialist needs of certain firms (Froot et al., 1993; Li & Gao, 2007). Second, deregulation of the financial services industry, increased competition among financial institutions, changes in tax laws, and developments in computer technology have also contributed to growth in this usage (Hwang, 2002; Gebhardt et al., 2004). With this widespread and increasing use of derivatives, there has been a considerable rise in the number of reported financial scandals throughout the corporate sector. Indeed, sizeable losses have been attributed to the misuse of derivative products (Drummond, 2002). These scandals and losses have contributed to calls for greater transparency and stronger corporate governance mechanism in the area (Dunne et al., 2003), increased disclosure (Li & Gao, 2007) and tighter regulations (Benston & Hartgraves, 2002).

The primary aim of the current paper is to investigate the corporate of financial derivatives by Jordanian listed firms. The sample of the present study consists of some 82 non-financial firms, which are listed in the Amman Stock Exchange. Using a survey questionnaire for the sample firm, the results of the study indicate that 60% of Jordanian listed companies use such instruments in their operation. The remainder of this paper is organized as follows. Section 2 reviews the literature of derivative instruments. Section 3 discusses the research methodology and the sample of the current study. Section 4 presents the results of the study, while section 5 concludes the paper and highlights the main findings.

### Literature Review

A number of empirical studies have investigated risk management practices in companies by exploring how firms use FIs to manage their risk exposures (e.g., Bodnar et al., 1995; 1996; 1998; Grant & Marshall,

1997). In particular, these studies have focused on firms' usage of FIs (especially derivatives); all of these studies have documented a big increase in the use of derivatives and other FIs over recent years. An analysis of the extant literature on the usage of derivative instruments reveals that: (i) derivative instruments are widely used by companies (both financial and non-financial) in both developed (e.g. the US and the UK) and developing markets (e.g. Brazil, Pakistan, Turkey); (ii) a variety of derivative instruments have been used by companies such as options, forwards, futures, swaps, OTC products, and hybrid debt; (iii) firms tend to use derivative products for different purposes, such as hedging, earnings management and/or speculation; and (iv) market risk is the most common risk to be hedged against, although other types of risk are also hedged (e.g. credit and liquidity risks).

In fact, the corporate usage of derivatives ranged between 35% (Bodnar et al., 1995) and 75% (Naito & Laux, 2011) of US non-financial companies tend to use derivative products; indeed, most of those who use these FIs do so for hedging and/or earnings management purposes. UK firms (financial and non-financial) report some of the highest usage of derivative products with between 60% (Mallin et al., 2001) and 90% (Grant & Marshall, 1997) of respondents to two large postal surveys claim to use these instruments to hedge their risks. However, UK insurance firms are less likely to use these products with only 16% admitting to purchasing derivatives (Shiu, 2007).

Companies in EU countries other than the UK have also used derivatives, such as Belgium (66%), the Netherlands (60%), Sweden (59%), Greece (34%), and Italy (88%). In particular, the literature reveals that enterprises in EU countries use derivatives mainly for hedging purposes. Finally, companies in the developing countries also use such instrument but at different rate; this usage has ranged from 33% (e.g. Peru) to 60% (e.g. Turkey and Pakistan). Indeed, companies in emerging markets have explicitly indicated that they use derivatives to speculate about the direction of the market as well as for risk management purposes (Turkey and Pakistan). In addition, derivative instruments which are used by companies in developing countries have tended to be less complex (e.g. forwards, futures, options, swaps) compared to those employed by their counterparts in developed countries (e.g. OTC derivatives, hybrid debt).

### Methodology

As discussed above, Bodnar et al. (1995) conducted a postal survey of derivatives and risk management practices by US non-financial corporations. In this study, we conduct a similar investigation but based on the Jordanian non-financial listed companies. The survey questionnaire used is broadly similar to the Bodnar et al. (1995) postal survey. The survey was sent initially to a randomly selected pilot sample of 10 companies. Based on 6 replies received from the pilot mailing, minor changes were made to the original survey. It was then decided to send the survey to 82 Jordanian non-financial firms which are listed in the first market of the Amman Stock Exchange. The survey was sent out to the Financial Directors of the sample firms. The key areas being investigated in this study are as follows:

- (i) Whether derivatives are used or not;
- (ii) Which derivatives are used, and which type of exposure they are used for;
- (iii) Reasons for using derivatives;
- (iv) Factors of concern in derivatives usage;

Some 70 replies were received from the sample of 82, a response rate of 85.4%; Non-response bias can often be a problem with questionnaire surveys, and Statistical analysis was carried out using Statistical Package for the Social Sciences (SPSS) to analyze data collected.

### Analysis of Responses

#### *Descriptive Features of Respondents*

Of the 70 respondents, 42 replies (60%) were from the service sector and 28 replies (40%) were from the manufacturing sector. Table 1 provides details about derivatives usage in relation to business sector. Of the 70 respondents, 43 (61.5%) services and manufacturing firms reported using derivative instruments. Specifically, 25 (out of 42) service companies use derivatives, while 18 (out of 28) manufacturing firms do so. Table 2 indicates derivatives usage by companies' size. It reveals that large-size companies tend to

use derivative more than small-size firms; specifically, 25 (58%) companies that enjoy a turnover of between \$241 million to \$1000 million use derivative, while just 11 (25.6%) firms with a turnover less \$240 million use derivatives. This result shows the importance of derivative instruments for large-size firms, as they are more exposed to risks and uncertainty than their small-size counterparts.

*Table 1. Derivatives Usage by Business Sector*

Business sector	Use derivatives		Don't use derivatives		Total
	Number	Rate	Number	Rate	
Services	25	0.60	17	0.40	42
Manufacturing	18	0.64	10	0.36	28
Total	43	1.00	27	1.00	70

*Table 2. Derivatives Usage by Company Size*

Turnover \$M	Use derivatives		Don't use derivatives		Total
<b>0-10</b>	2	0.047	4	0.150	6
<b>11-50</b>	0	0	6	0.222	6
<b>51-90</b>	5	0.116	7	0.259	12
<b>91-240</b>	4	0.093	5	0.185	9
<b>241-1000</b>	25	0.580	3	0.110	28
<b>1000+</b>	7	0.164	2	0.074	9
<b>Total</b>	43	1.00	27	1.00	70

Table 2 details the usage of derivatives by companies' sizes. The general findings of this table indicate that larger firms tend to use such instruments more than their smaller counterparts. Specifically, Table 2 shows that 58% of derivative user had a turnover of between \$ 241 and \$1000 million and 16.4% enjoyed a turnover of over \$1000 million. On the other hand, a total of about 20% of the sample firms that had a turnover of less than \$240 million claimed to use derivatives.

### *Non-use of Derivatives*

Table 3 shows the results of examining why companies did choose to avoid using derivative instruments in their activities. In particular, the table indicates that 45% of companies do not use derivative instruments because of not having significant exposure. Furthermore, the costly derivative program prevents 18% of companies from using such instruments, while 14.8% of firms don't use derivatives because of employing other means to manage exposures. In addition, indicted in Table 3, other companies report various reasons for not employing derivative instruments in their operations, such as lack of knowledge about derivatives.

*Table 3. Importance of Different Factors in Decision not to Use Derivatives*

Factors	Number	Rate
Not significant exposures	12	0.45
Cost of derivatives program	5	0.180
Exposure managed by other means	4	0.148
Lack of knowledge about derivatives	2	0.074
Difficulty pricing and valuing derivatives	1	0.037
Concerns about accounting for derivatives	1	0.037
Concerns about perceptions of derivative use	2	0.074
Total	27	1.00

### *Use of Derivatives in Risk Management*

This section analyses the survey results about the types of derivative instruments used to manage various financial price risks, the significance of particular objectives in managing risk, and key management concerns about using derivatives. Table 4 shows that futures and OTC forwards are the most two common

instrument used by firms to manage foreign exchange risk with 12 and 10 firms, respectively. In addition, the table reveals that the exchange option is the most common way to manage the interest rate risk with 11 firms using it. Finally, the table shows that OTC options are more likely to be used in managing commodity prices risk with 5 firms.

**Table 4. Firms Use of Derivatives by Type of Instrument and Financial Price Risk**

Derivative instruments	Foreign exchange	Interest rate	Commodity	Equity
OTC Forwards	10	5	2	0
Futures	12	4	1	0
OTC options	4	7	5	1
Exchange Options	6	11	1	1
Swaps	2	3	1	1

### **Reasons for Derivatives Use**

Firms use derivative instruments for a wide variety of reasons, and this study attempts to determine the relative importance of commonly stated objectives. The firms were asked to reveal the frequency of usage as “more than 50% of the time,” “less than 50% of the time,” “never” or “don’t know.” Table 5 demonstrates that 35% of firms use derivatives to hedge expected transactions, the majority of them doing so more than half of the time, while only 2.3% of firms use derivatives to reduce funding costs by taking a view. In addition, the table shows that 18.6% of firms use derivatives to hedge against economic/competitive exposure; firms do so less than half of the time. It suggests firms take a more active role in managing short-term contractual commitments exposed to financial risk than the long-term variety. Moreover, the table reveals that there are some instances where companies either never or don’t know the objective of using such derivatives (see Table 5).

**Table 5. Reasons for Use of Derivatives**

Objective	> 50% of time		< 50% of time		Never		Don't know	
Hedge contractual commitments	5	0.116	7	0.162	2	0.046	4	0.093
Hedge expected transactions (<12 mths)	15	0.35	12	0.28	3	0.07	3	0.07
Hedge expected transactions (> 12 mths)	12	0.28	6	0.14	3	0.07	1	0.023
Hedge foreign dividends	2	0.047	0	0	2	0.047	1	0.023
Hedge the balance sheet	4	0.093	6	0.14	1	0.023	2	0.047
Hedge economic/competitive exposure	8	0.186	4	0.093	0	0	4	0.093
Reduce funding costs by arbitraging the markets	0	0	0	0	0	0	0	0
Reduce funding costs by taking a view	1	0.023	1	0.023	0	0	0	0

In the context of business sector and frequency of use of derivatives, we examine the relationship between business sector and frequency of usage of derivatives to hedge expected transactions of 12 months or less. Table 6 reveals that service sector is much more likely to use derivatives to hedge expected transactions of 12 months or less, with nearly 50% of respondent companies from this sector using derivatives for this purpose more than 50% of the time. In addition, the table shows that the manufacturing sector uses such instruments with 33% of respondents indicating that use. Table 7 examines to what extent companies use derivatives to hedge foreign dividends. In particular, Table 7 reveals that nearly 44% of respondents in the service sector pointed out that they use derivatives to hedge expected transactions of 12 months. On the other hand, 39% of the participant in the manufacturing sector

use derivatives for 12 months. One company from each sector indicated they never used such instruments to hedge against foreign dividends.

**Table 6. Business Sector and Frequency of Usage of Derivatives to Hedge Expected Transactions of 12 Months or Less**

Business Sector	> 50% of time		< 50% of time		Never	Don't know		
Services	12	0.48	9	0.36	3	0.12	1	0.04
Manufacturing	6	0.33	10	0.56	2	0.11	0	0

**Table 7. Business Sector and Frequency of Usage of Derivatives to Hedge Foreign Dividends**

Business Sector	> 50% of time		< 50% of time		Never	Don't know		
Services	11	0.44	13	0.52	1	0.04	0	0
Manufacturing	7	0.39	12	0.67	1	0.05	0	0

### Conclusion

The objective of this study is to examine to what extent Jordanian listed firms use derivatives in their operations and for what they are using such instruments. The study distributed a survey questionnaire to companies listed in the first market of the Amman Stock Exchange; specifically, 82 questionnaires were sent, and 70 replies came back, a response rate of over 85%. The results of this survey indicate that the use of derivatives to hedge financial price risk is well established among Jordanian listed firms; indeed, 60% of companies reported using at least one derivative instrument. Based on sectorial analysis, the findings show that 60% of service firms use derivatives, while 64 of manufacturing firms use such derivatives. The size effect reported in other studies is also supported in the survey results with larger companies using derivative more than smaller counterparts. Futures and OTC forwards are the most-used instrument to hedge foreign exchange. In addition, the results of the current study indicate that companies primarily use derivatives to hedge against future transactions. The results of the current study provide a great deal of policy implication for users, preparers, and regulators in Jordan. For example, decision-makers must be careful when considering risks associated with financial derivatives when making investments decision where companies employ such instruments would a great deal of financial risk.

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