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Accounting for Derivative Financial Instruments: An Analysis of Disclosure Determinants

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Abstract

Interpretation of financial statement becomes a challenging one when a firm uses derivative financial instruments because most derivative contracts are off-balance-sheet items, lacking in transparency and inconsistent accounting treatment. International Financial Reporting Standards (IFRS) user countries follow different accounting standards like International Accounting Standards 32 & 39, and IFRS 7 & 13 for reporting and disclosing derivative transactions. But the reporting and disclosure level vary from business to business. The study reveals that the conformity level of disclosure on DFIs is related to the firm's volume and the listing status of the said company. The study has important implications to the management and the stakeholders of corporate firms.

Keywords: Derivative, Accounting Standard, IFRS, Disclosure

JEL Classification: M4

Paper Classification: Research Paper

Introduction

Financial reporting is the medium through which accounting language is divulged. Financial reporting of the business organization plays a significant function in the economic development of a nation. This reporting of financial transactions many a times does not reveal the exact financial scenario that happens. Lack of transparency due to loop holes of accounting guidelines and management's intention mislead the investors' interpretation. Moreover some accounting areas have remained hazy for a long period of time.

Disclosure of Derivative Financial Instrument (DFIs) is one of the most important fields of financial reporting practice. A derivative is simply a contract of a future transaction on an underlying asset at a present time. On the other, an instrument whose value gets changed with the value of other asset is to be considered as a derivative instrument. If the price of an underlying asset changes the value of derivative may also change. That underlying can either be a financial or a non-financial item. On the basis of underlying item the derivative can be termed as commodity derivative or financial derivative instrument. But the type of derivative is not finite; the commonly used derivative instruments are Futures, Options and Swaps.

IFRS adopted companies follow the accounting standards IAS 32, IAS 39, IFRS 7 & IFRS 13 for the purpose of reporting and disclosing the transactions on DFIs. In this regard, this

paper tends to find whether the disclosure level of DFIs is influenced beyond the adoption of accounting standards.

Review of Literature

Derivatives

Derivative is used to manage and effectively transfer the risk arising in business firm. According to Varma (2008), the dependence of the derivative's value on other prices or variables makes it an excellent vehicle for transferring risk. Vashishtha & Kumar (2010) pointed out that "derivatives provide an effective solution to the problem of risk caused by uncertainty and volatility in underlying asset". According to Stulz (2004) and Verma (2008), derivatives allow firms and individuals to hedge risks and to handle risks efficiently. Bhuvaneswari et. al. (2007), Vashishtha & Kumar (2010), Prabhakara (2013) also considered derivative as a very important tool of risk management provided (Selvam and Rita, 2011) the derivative users understand the complexity of financial derivative instrument contracts.

The findings of Hwang (2002), Prabhakara (2013) & Gope (2014) reported that financial derivative instruments as risk management tools have gained an enormous position among all the financial instruments in many cases and use of derivatives to curve financial risks are increasing gradually in India both in terms of volume and number of contracts traded. Greenspan (1997) had reassured that use of financial derivatives was expanding extraordinarily in many countries like India due to innovation and hence it could revolutionize the accounting landscape.

According to Ernst & Young (2006) financial transparency is the most important aspect of the initial stage when an investor considers an investment option. Woods & Marginson (2004) opined that an institution's financial risk exposure is hardly identified to prospective and existing investors due to poor financial reporting practices. Strouhal, Bonaci & Matis (2010) are also in favour of saying that somehow financial reporting practices fail to provide a uniform and high level of information on DFI for all investors. Leuz & Verrecchia (2000) reported that incomplete supply of information causes information asymmetry. Mitra & Gope (2013) also pointed out that management requires to disclose whether the management uses the Derivative financial instruments to tackle the risk arises in the business or not.

Disclosure of Derivative Financial Instruments

Welker (1995) & Leuz and Verrecchia (2000) opined high disclosure level reduces information asymmetry and becomes more cost effective. Levine, Loayza & Beck (2000) stated that the disclosure of accounting information, for instance, helps reduce information asymmetry, sheds light on the volatility of stock returns and can also be an indicator for both domestic and foreign investors in making their choices. Verechia (2001) reported that minimization of information asymmetry between stakeholders and management is the root of comprehensive theory of disclosure.

After adoption of SFAS 119, Edwards Jr. and Eller (1996) had analysed the selected US dealer banks' annual reports and concluded that the depth of both the qualitative and the quantitative disclosures had improved. According to Malaquias, Lemes (2013), due to lack of economic incentives in Brazil for firms to provide more disclosure in financial statements, the low level of disclosure is found in accounting reports.

Disclosure practices on the basis of IFRS 7 is analysed by Bischof (2009) from a sample of 171 banks of 28 different countries of Europe. He found that the level of disclosure has significantly

increased during the year of the standard's first-time adoption. This is due to both a more extensive description of accounting policies and a more elaborate disclosure of information about exposures to significant risks. Chalmers and Godfrey (2000) concluded that to make the accounting information comparable and useful the firms need to disclose a detail report on DFIs where the companies are not in same line in terms of disclosure. According to Strouhal, Bonaci & Matis (2010) the very low disclosure level of accounting information reported on derivatives is a cause of current financial crisis. According to Lopes & Rodrigues (2007), some economic sectors can have greater institutional pressures for disclosure of information than others.

Hunziker (2013) revealed that in Switzerland, significant associations are found between the number/amount of market risk disclosures and company size. Likewise a significant association is found between the number/amount of risk disclosures and the company's risk proxies by the gearing ratio. No association is found between the number/amount of risk disclosures and the company's performance, however. Lopes & Rodrigues (2007) identified four factors namely size of the firm, type of auditor, listing status of stock exchange and financial sector which accelerates the degree of disclosure.

Hypothesis Development

Review of literature reveals asymmetrical views regarding the disclosure practices of DFIs in case of IFRS user companies. Thus the hypotheses are developed as follows:

$H_0$1: Larger listed companies have low level of disclosures on DFIs in comparison to smaller listed companies.

$H_0$2: Information on DFIs disclosure practices is not related to the type of industry the company belongs to.

$H_0$3: Information on DFIs disclosure practices is not related with firm's leverage.

$H_0$4: Disclosure requirements on DFIs are not positively associated with firm's profitability.

$H_0$5: The degree of disclosure on DFIs does not depend on the type of stock exchange where the company is listed.

Research Methodology

Population and Sample Selection

All disclosure data has been retrieved from a group of countries comprising United Kingdom, European Union, Canada, Germany and Switzerland. The population of the study has been taken from the respective stock exchange websites. Annual reports of 2,182 eligible companies are considered. Some companies are eliminated that did not upload latest annual reports or not reported in English language or because of the partial uploading of the annual reports or the companies did not use Derivative financial instruments during the period.

Simple random sampling has been used to select a sample of 75 annual reports of companies.

Data Collection

Data of the study has been sourced from the annual reports of selected companies. With the objective of identifying level of disclosure regarding financial derivative instruments, content analysis technique is used. This is done identifying the existence of disclosures required by IAS 32, IAS 39, IFRS 7 and IFRS 13 for DFIs.

Disclosure Index

According to Htay et al. (2011) disclosure of information in the annual reports is highlighted as one of the important aspects of the good corporate governance. Hassan & Marston (2010) opines that "a disclosure index could include mandatory items of information and/or voluntary items of information. It can cover information reported in one or more disclosure vehicles such as corporate annual reports, interim reports, investor relation etc".

The score of each selected company is calculated following the score index (Table-1) where total score is 19. The score index is formed on the basis of existing accounting literature, and has two important features:

- **Dichotomous:**

  The score measured for each firm as: $\mathrm{Ts} = \sum_{i=1}^{n} \mathrm{di}$

Where for each item the company would be allotted 1 if it is disclosed and 0 otherwise, so it is dichotomous in nature.

- **Unweighted:**

The total score is computed without allotting any over and underweight. Then the disclosure score index is calculated for each company following the mentioned 'financial derivative instruments disclosure score index table' using content analysis technique:

Table 1: Financial Derivative Instruments Disclosure Score Index

Basic information:	
Types of DFI used	1
Purposes of issuing or holding derivatives	1
Categories of DF Asset/Liability	1
Recognised and derecognized information:	
DFI recognised when and only when the entity becomes a party	1
Derecognition (Removal) of DFI when part or all the asset do not qualify	1
Measurement information:	
Initial measurement of DFI	1
Subsequent measurement of DFI	1
Fair value hierarchy and Valuation technique information:	
Fair value hierarchy used	1
Valuation techniques used	1
Hedge accounting information:	
Hedge effectiveness	1
Type of Hedge Accounting adopted	1
Qualitative & quantitative risk information:	
Firm's financial risk management objective & policies	1
Summary of quantitative data at the end of the reporting period	1
Risk information	
Market risk	1
Liquidity risk	1
Credit risk	1
Other Disclosures:	1
Gains of DFI in income statement	1
Gains of DFI in notes	1
DFI in Balance Sheet	
Total Score	19

Statistical Tool

Finally the linear regression model is used to test whether the Disclosure Index is dependent on some other variables. The model is used in which the dependent variable is the disclosure index (Disclosure Index) and the independent variables are Size of the company (Size), type of Industry (Ind), leverage of the company (Leverage), profitability (Profit) and listed stock exchange (Exch). Auditing firm is not considered as another independent variable as almost all the select companies' annual reports are audited by top most world audit firms like Deloitte, PwC, Ernst & Young, KPMG and Grant Thornton.

The regression model is as follows:

Disclosure Index (DI) = $a + b_1$ Size + b_2 Ind + b_3 Lev + b_4 Profit + b_5 Exch.

Where-

Size represents the log value of total assets of each selected company. Ind represents the type of industry in which the company belongs to. This is a dummy variable belonging to financial companies or non-financial companies and allots 1 and 0 respectively. Lev indicates the ratio of total debt to total equity. Profit represents the ratio of net income on capital employed. Stock Exchange is another dummy variable which is used to represent the companies listed in different select stock exchanges; 1 for London Stock Exchange (LSE); 2 for Six Swiss Exchange (Switzerland); 3 for TMX Group (Canada); 4 for Euronext (European Union) and 5 for Frankfurt (Germany).

Data Analysis & Findings

The data is derived from the annual reports of the select companies. Descriptive Statistics (Table-2) shows minimum, maximum and mean score of different variables which might enlighten the nature of the collected data. Disclosure index shows the minimum and maximum scores of 7 and 19 respectively. Most of the companies (81%) of the study are non-financial in nature. The table also shows the number of selected companies belonging to respective stock exchanges.

Table 2: Descriptive statistics

	N	Minimum	Maximum	Mean
Disclosure Index	75	7	19	13.92
Size of the firm (Log value)	75	1.28	5.28	3.2739
Debt equity ratio	75	.00	78.00	4.6809
Earning capacity	75	.00	.89	.1064
Type of Industry	**Frequency**	**Percent**		
Financial	14	18.6		
Non financial	61	81.3		
Total	75	100.0		
Listed in Stock Exchange				
LSE	18	24.0		
SWISS	8	10.7		
TMX	15	20.0		
EURONEXT	23	30.6		
FRANKFURT	11	14.7		
Total	75	100.0		

According to Swain (2008) multiple regression explains variation in one dependent variable in terms of other independent variables. It is inherently a co- relational technique and cannot tell anything about underlying casual relationship. The multiple regression analysis was run to test all the formulated hypotheses simultaneously where all the mentioned independent variables were considered in the model.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.462a	.213	.156	2.299

Table 3 provides *R* value which represents the degree of correlation (0.462). The R_2 value measures the total variation in the dependent variable caused by the independent variables.

Table 4 indicates that the regression model predicts the dependent variable significantly well. Here, p=0.00, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data).

Table-4: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	98.864	5	19.773	3.741	.00
Residual	364.656	69	5.285		
Total	463.520	74			

From the analysis result (Table 5) it is observed that $H_0$1 and $H_0$5 are rejected at 1% and 7% level of significance and the hypotheses $H_0$2, $H_0$3 and $H_0$4 are accepted. Thus the statistical result implies that larger companies (size of the company) will have high levels of disclosures on DFIs in comparison to smaller size of companies.

Table 5: Regression Results

Independent variables	Unstandardized Coefficients (B)	Unstandardized Coefficients (Std. Error)	Standardized Coefficients (Beta)	t	Sig.
(Constant)	8.858	1.375		6.442	.000
Size of the firm	1.212	.356	.409	3.401	.001
Type of Industry	-.270	.738	-.042	-.366	.716
Debt equity ratio	.007	.028	.028	.238	.813
Earning capacity	.136	1.689	.009	.080	.936
Listed in Stock Exchange	.365	.197	.206	1.852	.068

The level of compliance with DFIs disclosure also depends on the type of stock exchanges where the company is listed. On the other the type of industry, firm's leverage and firm's profitability do not have positive association with disclosure level of DFIs in the annual reports of the company.

Conclusion

Although adoption of IFRS for DFIs brings uniformity in case of reporting and disclosing of DFIs among the countries but level of disclosure varies from company to company (Gope & Mitra,

2015). The present study focuses on the variables affecting the degree of compliance with the select IFRSs specified for disclosure of DFIs.

Through content analysis the disclosure index score is measured for the independent variables of regression model - size of the firm, nature of the industry, leverage, earning capacity and listed stock exchange.

The findings of the study suggest that disclosure level on DFIs is related to firm's size and listing status of the said firm. However, the type of industry, leverage of the firm, and profitability don't influence the level of disclosure for DFIs.

However, the study is not free from a few limitations as well. Though the disclosure index score is calculated very carefully but errors might occur in case of construction of Index score card and concerning identification of disclosed information in the annual reports because of different ways of qualitative information disclosure.

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Appendix: Score of Dependent and Independent variables

CO CODE	DINDEX	SIZE	IND	LEV	PROFIT	EXCH
1	10	3.23	0	9.58	0	1
2	14	3.72	0	3.26	0	1
3	11	3.31	0	2.76	0.49	1
4	8	2.66	0	3.11	0.13	1
5	15	2.48	0	3.2	0.22	1
6	15	2.73	0	1.16	0.22	1
7	9	2.95	0	2.68	0.32	1
8	16	3.39	1	0.63	0.06	1
9	10	3.35	0	0.03	0	1
10	13	3.02	0	2.05	0.09	1
11	15	2.63	0	5.26	0	1
12	11	2.42	0	0	0.31	1
13	15	3.36	0	6.09	0.45	1
14	14	2.63	1	2.91	0.17	1
15	10	4.19	0	1.27	0.16	1
16	16	4.46	0	1.54	0.06	1
17	7	3.05	1	0.54	0.23	1
18	13	2.99	1	0.63	0.04	3
19	16	4.92	1	1.43	0.05	3
20	16	3.37	1	1.86	0.22	3
21	15	3.89	0	1.14	0.04	3
22	14	3.06	0	1.67	0.05	3
23	11	3.08	1	1.07	0.03	3
24	15	3	0	2.78	0.06	3
25	11	3.53	0	0.97	0.12	3
26	10	2.4	0	0.25	0.16	3
27	15	3.12	0	1.9	0.01	3
28	15	3.54	0	1.24	0.08	3
29	10	3.05	0	0.85	0.1	3
30	16	2.92	0	0.86	0.09	3
31	17	3.74	0	1.99	0.02	3
32	17	2.95	0	0.9	0.02	3
33	14	2.02	0	0.58	0.58	2
34	12	2.44	1	1.1	0.15	2
35	17	4.55	1	8.72	0.01	2
36	15	4.51	0	0.97	0.05	2
37	15	2.28	0	1.71	0.01	2
38	18	5.1	1	14.03	0	2
39	16	2.38	0	12.52	0	2
40	12	2.34	0	0.48	0.2	2

41	13	3.28	0	1.08	0.07	4
42	14	3.51	0	2.19	0.07	4
43	18	4.45	0	5.95	0	4
44	17	2.77	0	0.8	0.89	4
45	13	3.43	0	0.64	0	4
46	16	3.49	0	1.53	0.09	4
47	12	2.53	0	0	0	4
48	17	4.84	1	31.7	0	4
49	15	5.28	1	78	0	4
50	15	3.51	0	1.73	0.01	4
51	15	3.65	0	1.49	0.03	4
52	16	3.24	0	0.38	0.01	4
53	15	3.34	0	1.04	0.32	4
54	13	3.07	1	0.45	0.07	4
55	19	3.44	0	1.34	0	4
56	14	2.19	0	0.46	0	4
57	16	3.3	0	2.81	0.09	4
58	15	2.55	0	39.74	0.01	4
59	16	4.43	0	1.01	0.05	4
60	14	4.19	1	12.5	0	4
61	12	2.55	0	0.37	0.15	4
62	14	4.23	0	1.37	0	4
63	13	4.92	0	1.59	0.07	4
64	15	3.55	0	1.72	0.01	1
65	10	1.82	0	1.06	0	5
66	15	4.59	0	17.23	0.01	5
67	12	2.61	0	0.28	0	5
68	16	2.95	0	1.28	0.04	5
69	14	2.1	0	2.28	0.04	5
70	13	3	0	0.39	0.22	5
71	9	1.28	0	0.44	0	5
72	13	2.24	0	1.35	0.71	5
73	16	4.48	0	6.55	0.01	5
74	15	2.15	0	6.39	0	5
75	15	3.82	0	18.21	0.01	5

Author's Profile

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