

Off Balance Sheet Disclosures: A Comparison Between Indian And US Companies

* *Varadraj Bapat*
** *Mehul Raithatha*

INTRODUCTION

Off Balance Sheet (OBS) means an asset or debt or financing activity or a financial instrument not on the company's balance sheet. Off balance sheet items do not affect the company's Leverage Ratios or Profitability ratios as the conventional on balance sheet items impact the same. In certain cases, the off balance sheet items give rise to a large contingent and leveraged exposures that need to be studied carefully to understand the underlying risks and variability in profits that might be caused by these items. With the onset of derivatives, calculating fair values for most these complex instruments is no longer an easy task. For e.g., as per US GAAP SFAS (Statement of Financial Accounting Standards), 157 establishes a valuation hierarchy based on the level of independent, objective evidence available regarding the value of the investments. It establishes three classes of investments:

- ✿ **Level 1** consists of securities for which there are quoted prices in active markets for identical securities;
- ✿ **Level 2** consists of securities for which observable inputs other than Level 1 inputs are used, such as prices for similar securities in active markets or for identical securities in less active markets and model-derived valuations for which the variables are derived from, or corroborated by, observable market data; and
- ✿ **Level 3** consists of securities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value.

However, Indian Standards have not yet prescribed a similar classification for measuring Fair Values.

MERITS OF OFF BALANCE SHEET EXPOSURES

- ✿ Effective transfer of risks without impacting the balance sheet e.g. contingent liabilities towards joint venture for specific business projects, foreign currency derivatives for forecast transactions etc.
- ✿ Preventing adverse impact of huge capital expenditures on Balance Sheet through operating lease, sale and lease back transactions.
- ✿ Flexibility for companies to use their own valuation models to arrive at fair value of instruments, and keeping it off balance sheet through adjustments in reserves i.e. Hedge Accounting.

DEMERITS OF OFF BALANCE SHEET EXPOSURES

- ✿ Contingent exposures realized usually during bad economic times turn out to be much bigger than initial assumptions, and this might cause impact on the profitability of companies, and even lead to bankruptcies in cases, e.g. Enron.
- ✿ Companies misuse off balance sheet exposures to take excessive risks and for speculation purposes.

Off-balance-sheet entities are assets or debts that do not appear on a company's balance sheet. For example, oil-drilling companies often establish off-balance-sheet subsidiaries as a way to finance oil exploration projects. In a clean and clear example, a parent company can set up a subsidiary company and spin it off by selling a controlling interest (or the entire company) to investors. Such a sale generates profits for the parent company from the sale, transfers the risk of the new business failing to the investors, and lets the parent company remove the subsidiary from its balance sheet.

* Assistant Professor, S. J. Mehta School of Management, IIT Bombay, Powai, Mumbai - 400076.

E-mail : varadraj.iitb@gmail.com

** Assistant Professor, Smt. M. M. K. College of Commerce and Economics, University of Mumbai, T.P.S. III, 32nd Road, Bandra (W), Mumbai - 400050. E-mail : mehular83@gmail.com

DISCLOSURES FOR OFF BALANCE SHEET ITEMS

1) Leases : Lease accounting is mandated by AS 19 – Accounting for Leases in India and FAS 13 under US GAAP. As per the accounting standard, a lease is classified as a finance lease if it transfers substantially all the risks and rewards incident to ownership. Title may or may not eventually be transferred. A lease is classified as an operating lease if it does not transfer substantially, all the risks and rewards incident to ownership. Whether a lease is a finance lease or an operating lease depends on the substance of the transaction, rather than its form. The parameters determining this usually include lease term compared to the economic life of the asset, ownership of gains/losses resulting from fluctuation of fair value of residual claim, renewal terms and rent, title transfer or purchase options, etc.

✿ **Summary of Disclosures:** These disclosures largely cover from the lessor and lessee's perspective and are minimum guaranteed lease payments for a foreseeable future (5 years or more), renewable terms, restrictions imposed (if any), penalties for cancellation, basis or determining contingent rents, general description of the lease terms, sub-lease payments, accumulated depreciation and gross carrying amount for the lessor and present value of minimum lease payments for Finance leases.

✿ **Key Differences Between US and Indian GAAP w. r. t. Disclosures For Leases:**

✿ For finance leases, the US GAAP, unlike the Indian GAAP does not mandate disclosures for present value of minimum lease payments for Finance Leases.

✿ Indian GAAP demands separate disclosure for unguaranteed residual values for lessor in finance leases, which is not required as per the US GAAP.

✿ Disclosures as per US GAAP mandate disclosure for non cancellable rentals for each of the succeeding five years, whereas, the Indian GAAP requires this to be disclosed as three figures rentals for upto 1 year, later than a year, but not later than five years and later than 5 years.

✿ Under the Indian GAAP, the lessor under operating leases has to separately disclose accumulated depreciation and impairment losses for assets leased out.

2) Joint Ventures : AS 27 (Reporting of financial interests in joint ventures) set out principles and procedures for accounting for interests in joint ventures and reporting of joint venture assets, liabilities, income and expenses in the financial statements of venturers and investors. AS 27 identifies three broad types - jointly controlled operations, jointly controlled assets, and jointly controlled entities. However, two characteristics are common to all joint ventures: **(a)** Two or more venturers are bound by a contractual arrangement; and **(b)** The contractual arrangement establishes a joint control.

✿ **Summary of Disclosures:** These disclosures largely cover the proportion of controlling stake, assets, liabilities, income and expenses of the venture in various joint ventures, its share of capital commitments and contingent liabilities/guarantees.

✿ **Key Differences Between US And Indian GAAP w.r.t. Disclosures For Joint Ventures:**

✿ US GAAP does not require any additional disclosures for joint ventures and associate amounts be reported separately. The equity method is required in the US, whereby, the sum of net earnings from joint ventures and associates (also called equity earnings), and the sum of net investments in joint ventures and associates (also called equity investments), are presented as single line items in the income statement and balance sheet respectively.

✿ Whereas, the Indian GAAP separately requires extensive disclosures for joint ventures. This is a significant difference in accounting practices and clearly, US companies disclose much less information on this front.

3) Derivatives And Hedging : The present accounting treatment in India for foreign exchange differences, including forward contracts is guided by AS 11 (revised 2003) issued by ICAI, and related notifications issued by the Ministry of Corporate Affairs (MCA). These norms are at significant variance with the international accounting practices. To address this, the ICAI has recently issued a new accounting standard, AS 30, which will replace the present guidelines and ensure consistency with the international standards. While AS 30 was to be mandatory from April 1, 2011, the companies have an option for early adoption of the standard, and most of the companies covered under this report have partially adopted the new standard.

✿ **Summary Of Accounting Treatment And Disclosures:** The Tables 1 and 2 summarize the accounting treatment

Table 1 : Derivatives Accounting As Per AS 11 (Revised 2003)

| Transaction Type | Accounting Treatment |
|---|--|
| Unhedged Foreign currency assets / liabilities (e.g. receivables/ payables/ borrowings) | <p>All monetary assets/liabilities are recorded at closing rate in the balance sheet. The exchange differences are adjusted through P&L (Difference between the booking rate and closing rate).</p> <p>AS 11 prescribes this treatment for both- long term as well as short term assets/ liabilities. However, this is not consistent with the requirement of Schedule VI of Companies Act; which prescribes that the exchange difference on long term monetary assets/ liabilities should be capitalized. This inconsistency is now resolved with MCA issuing a notification in March 09, relaxing the provisions of AS -11 to allow the companies to capitalize / defer the exchange difference on long term asset / liabilities - as detailed below:</p> <p>a) In case the long term asset/ liability relates to depreciable asset; exchange difference can be capitalized to cost of fixed asset.</p> <p>b) In case the long term asset/ liability relates to non depreciable asset; exchange difference can be amortized in evenly till FY 11.</p> <p>This notification is applicable till FY 11 and comes as a temporary relief to many Indian companies who are heavily hit by the exchange loss on unhedged foreign currency borrowing for acquisition of long term assets. These companies now have the option to either capitalize/ defer the exchange loss on long term assets, instead of routing through P&L. Reliance communications is one of the company which has benefited by this notification.</p> |
| Hedged Foreign currency asset / liabilities (e.g. receivables/ payables/ borrowings) | <p>The asset/ liability are recorded at contract rate in the balance sheet. Premium/discount on contract is amortized over the life of the contract through P&L i.e. the difference between the contract rate and spot rate is recorded in the P&L over time.</p> <p>While this standard covers accounting treatment for derivatives used to hedge the existing assets / liabilities; it does not address the accounting treatment for derivatives on forecast transactions (e.g. forecast sales/ purchases). Consequently, the companies following AS 11 can escape providing MtM on derivative for forecast sales / receivable. Nevertheless, they are still required to disclose the adverse MtM position in notes to accounts (ICAI notification dated 29th March 2008 and principles of AS 1).</p> |

Table 2 : Derivatives Accounting As Per AS 30

| Transaction Type | Accounting Treatment |
|---|--|
| Unhedged Foreign currency assets / liabilities (e.g. receivables/ payables/ borrowings) | Same treatment as AS 11. |
| Hedged Foreign currency asset / liabilities (e.g. receivables/ payables/ borrowings) | <p>AS 30 is a very comprehensive accounting standard. Accounting treatment depends on several factors like whether the company is following hedge accounting, whether hedge effectiveness is met and whether the hedge is a cash flow hedge or fair value hedge.</p> <p>Unlike AS 11, this standard also addresses the accounting treatment for derivatives used to hedge the forecast transactions. Exchange differences on such derivatives are either adjusted through P&L or reserves, depending on whether hedge accounting is followed or not.</p> |

under two standards: AS 30 (Financial Instruments: Recognition and Measurement) and even the US GAAP FAS 133 (Accounting for derivative instruments) are quite similar and in line with international standard IAS 39. Indian GAAP has two more standards - AS 31 (Financial Instruments: Presentation) and AS 32 (Financial Instruments: Disclosures) that are extensions of AS 30. These disclosures largely cover effectiveness of cash flow hedges if hedge accounting is followed ; loss recognized due to outstanding derivatives in profit and loss account and adjustments made in hedge reserve account, description of the type of instruments held and purpose of holding the instruments, maturity date of the contracts and corresponding probable transaction dates in case of forecast transactions . For Indian GAAP, apart from mandated disclosures, the report also lists and analyzes certain voluntary disclosures made by some of the peer companies in India that help further in increasing the transparency for derivatives reporting.

❖ **Key Differences Between US and Indian GAAP w.r.t. Disclosures For Derivatives And Hedging :**

❖ The key difference between Indian and US GAAP regarding disclosures for derivatives and hedging is related to the Accumulated Comprehensive Income. US GAAP requires a disclosure regarding the beginning and ending

accumulated derivative gain/loss, which is not yet mandated by Indian standards.

✿ **US GAAP** clearly demarcates disclosures for effective and ineffective portions of cash flow and fair value hedges.

✿ **Hedge Accounting** : Companies adopting AS 30 may either follow principles of hedge accounting, or may not follow it. If hedge accounting is not followed, both derivatives and underlying will be reported separately and the exchange difference on both legs will be adjusted through P&L. This may result in significant P&L volatility because the derivatives are accounted on MtM basis, while underlying is recorded on accrual's basis (this is mainly applicable to the derivatives used to hedge forecast transactions). On the other hand, if the company follows hedge accounting, the volatility in P&L is removed either by introducing an opposite effect on the underlying or moving the volatility to equity reserves. However, hedge accounting is fairly complex in application and may require significant investment of time and money. Therefore, every company will have to do a cost-benefit analysis before deciding to follow Hedge Accounting. The accounting treatment will be determined by the following two factors: whether the hedge meets the effectiveness test and whether the hedge is cash flow hedge or fair value hedge. These terms and the accounting treatments are explained below:

✿ **Hedge Effectiveness**: Once the company decides to follow hedge accounting, it will have to demonstrate that the hedge is effective. The actual results of the hedge have to be within a range of 80-125 per cent i.e. $[(\text{change in value (i.e. mark-to-market) of hedging instrument}) / (\text{Change in value of underlying exposure})]$ should be within 0.8 – 1.25. If the analysis shows that the hedge is ineffective, the principles of hedge accounting cannot be followed i.e. exchange difference on both underlying and derivatives will be routed through P&L. On the other hand, if hedge effectiveness is proven, the accounting treatment is determined by whether the hedge is categorized as fair value hedge or cash flow hedge. The company following hedge accounting will have to check the hedge effectiveness periodically (at least at the time of every reporting date).

✿ **Fair Value Hedge** : A fair value hedge is applicable where a market risk impacts the value of an underlying exposure (e.g. existing receivables, payables, borrowings and firm commitments, but forecast transactions cannot be treated as fair value hedges). The gain or loss from remeasurement of the derivative as well as the underlying should be recognized in the statement of profit and loss.

✿ **Cash Flow Hedge** : A cash flow hedge is used to hedge against the variability of cash flows from a recognized asset or liability or a highly probable forecast transaction (e.g. derivatives for forecast sales / purchases, etc). In these cases, the gain/loss on derivative as well as the underlying is adjusted through an appropriate equity account, say, Hedging Reserve Account to the extent the hedge is considered effective and the portion of the gain or loss that is determined to be an ineffective hedge is recognized in the statement of profit and loss. Example - accounting for derivatives to hedge forecast sales / purchase. In this case, the potential fluctuations on the underlying (and not the derivative on the underlying) are not reflected in the entities' accounts till the time cash flow occurs, but the changes in the derivative are recognized in the reserves. Thus, cash flow hedge overcomes P&L volatility by taking the changes in value of the derivative to reserves temporarily, and then reporting them back to P&L in the same period that the underlying occurs i.e. impacts the P&L.

LITERATURE REVIEW

Two approaches are used to capitalize the non-cancellable operating leases. The first method, the capitalization method developed by Imhoff, Lipe and Wright (1991), capitalizes the off-balance sheet commitments in a manner consistent with the current treatment of finance leases. The second method, known as the factor method, is an inaccurate method believed to be frequently used by market participants. The results suggest that the New Zealand capital market does not incorporate non-cancellable operating lease information into its equity risk assessments. No association is found between total equity risk and the non-cancellable operating lease information under the two capitalization approaches. Accordingly, it appears that in a New Zealand environment, and with respect to non-cancellable operating lease information, off-balance sheet disclosure is not an adequate alternative to formal recognition.

Imhoff et al. (1993), Ely (1995), Beattie et al. (2000) found that investors consider operating lease disclosures when assessing equity risk. That is, the market is not deceived by the fact that operating leases are disclosed in the notes rather than recognized in the financial statements and appropriately consider the property rights associated with these

leases.

IMF Working Paper (2000) says simultaneous unwinding of leveraged positions can trigger financial market turbulence. Although balance-sheet measures of leverage are available, it is useful to construct a measure of leverage that incorporates both on- and off-balance-sheet activities. The paper provides measures of leverage implicit in derivative contracts by decomposing the contracts into cash market equivalent components. A leverage ratio can then be calculated for this replicating portfolio, which consists of own funds (equity) and borrowed funds equivalents (debt). Methods for aggregating leverage by institution and by markets are presented. The interaction between leverage and risk is discussed, and a modified capital adequacy ratio is calculated, which captures off-balance-sheet exposure.

Graham et al. (2003) found that fair value disclosures for equity method investments have significant explanatory power. Further, experimental evidence indicates that detailed disclosures about potential loss outcomes heavily influence financial statement users (Koonce et al., 2005). From these results, it seems likely that maximum risk disclosures, even if ancillary to already recognized or disclosed amounts, should provide incremental market valuation.

In a study centering on derivative disclosures and recognition change surrounding SFAS No. 133, Ahmed et al. (2006) found that only recognized derivative information is significantly valued.

The issue of the formal recognition of financial events versus off-balance sheet disclosure has become more prominent in the accounting research literature, ever since the United States Financial Accounting Standards Board's request in 1992 for more research into this matter. The current lease accounting standards adopted in many countries prescribe disclosure requirements that enable the users of financial statements to re-cast financial statements if non-cancellable operating leases had been capitalized at their inception. The main focus of a research by McClean, M. J. (2006) centred on the treatment of these off-balance sheet commitments. The purpose of the study was to contribute to the literature in this area by examining whether the New Zealand capital market efficiently incorporates non-cancellable operating lease information into its equity risk assessments. To examine this issue, ordinary least-squares regression was performed on models relating a market-based measure of total equity risk to accounting measures of asset and financial risk. In recent years, banks have responded to the challenges posed by the new operating environment by developing new products and by creating new forms of intermediation and other fee-based activities. As a result, the traditional business of financing loans by issuing deposits has declined in favour of a significant growth in activities that are not typically captured on banks' balance sheets (Boyd and Gertler, 1994; Siems and Clark, 1997; Rogers and Sinkey, 1999). Recent studies (see for example, Rogers, 1998; Stiroh, 2000; Clark and Siems, 2002) have argued that omitting OBS in the estimation of bank cost and profit efficiency may result in a misspecification of bank output and lead to incorrect conclusions.

Siems and Clark (1997) estimated bank profit efficiency measures that included OBS activities and found that failing to account for OBS activities has important statistical and economic effects on derived efficiency measures, by seriously understating bank output. Rogers (1998) estimated cost, revenue and profit efficiency of US commercial banks by using models with and without OBS items. The author used non-interest income as a proxy for OBS items and employed the distribution-free frontier (DFA) estimation method. He found that the standard models that omit OBS items understate bank efficiency. Similarly, Stiroh (2000) found that the efficiency estimates of bank holding companies over 1991-97 are particularly sensitive to output specification and failure to account for OBS activities leads profit efficiency to be understated. In a recent study, Clark and Siems (2002) tested the impact of OBS activities on the measurement of cost and profit X-efficiency in the US banking industry, and found strong support for including OBS activities in X-efficiency studies, especially on the cost side.

OBJECTIVES OF THE STUDY

- ✿ To study off balance sheet financing and hedging disclosures made by the Indian Companies from various sectors.
- ✿ To measure compliance of medium to large sized Indian corporates with mandatory and select voluntary disclosures with respect to off balance sheet items.
- ✿ To compare the compliance levels with a sample set of large US companies with regards to OBS disclosures by Indian companies.
- ✿ To determine the level of relationship between disclosure levels and financial parameters like market capitalization

and Price-Earnings Ratio.

METHODOLOGY

A checklist was prepared covering disclosure aspects in all the relevant accounting standards by referring to the following standards:

✿ Indian GAAP

1) AS 19 : Accounting for Leases (38 disclosures).

2) AS 27 : Financial Reporting for Joint Ventures (4 disclosures).

3) AS 32 : Financial Instruments: Disclosures (7 mandatory and 4 voluntary disclosures).

AS 30 is presently recommendatory in nature from April 1, 2008 onwards. Companies have an option for early adoption. However, it was made mandatory only from April 1, 2011 onwards. Hence, a lot of Indian companies are following a mix of approaches that include AS 30, AS 11 (revised 2003) and MCA announcement regarding capitalization of derivative losses for purchased fixed assets until April 1, 2011. Hence, some of the companies are more transparent and voluntarily disclosing information for derivatives held.

✿ US GAAP

1) FAS 13 : Accounting for Leases (19 Disclosures).

2) FAS 133 : Accounting for Derivative Instruments and Hedging Activities (12 Disclosures).

US GAAP does not mandate separate disclosures for Joint ventures. Companies follow equity accounting to report their share of assets, liabilities as well as revenues and expenses in associates, subsidiaries and Joint Ventures.

Every disclosure in the checklist has been given equal weightage. Rating for each of the disclosure is given in the Table 3.

| Table 3: Disclosure Ratings | |
|-----------------------------|--|
| Rating | Description |
| -1 | Disclosure Applicable, but not disclosed by the company. |
| 0 | Disclosure not applicable to the company. |
| 1 | Disclosure Applicable and complied. |

Disclosure Ratings are summed up to determine the percentage disclosures made by the companies for each of the sections and at an aggregate level for both voluntary and mandatory disclosures.

SAMPLE SELECTION

A sample of 42 companies was selected, whose annual reports were studied against the above checklist to measure the level of disclosure compliance by the companies. The primary focus of the report is to study disclosures by Indian companies. However, a sample set of US companies too are studied to provide a reference for the level of disclosures (esp. derivatives and hedging) as Indian accounting standards are not yet mandatory in nature (Currently, AS 32 is recommendatory and mandatory only from April 1, 2011 onwards). Split of the companies is as given below:

1) US Companies: Large Cap companies that actively use derivatives from a variety of sectors viz. IT Manufacturing, Power, Telecom, Construction Equipment.

2) Indian Companies: Large Cap companies that use derivatives from the following sectors viz. IT, Pharmaceuticals, Auto and Telecom.

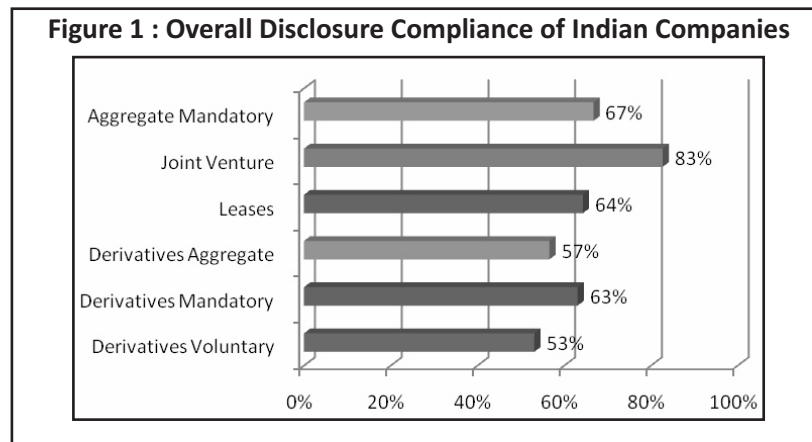
Annual Reports for each of these companies were studied to measure the compliance with the disclosure checklist.

RESULT ANALYSIS

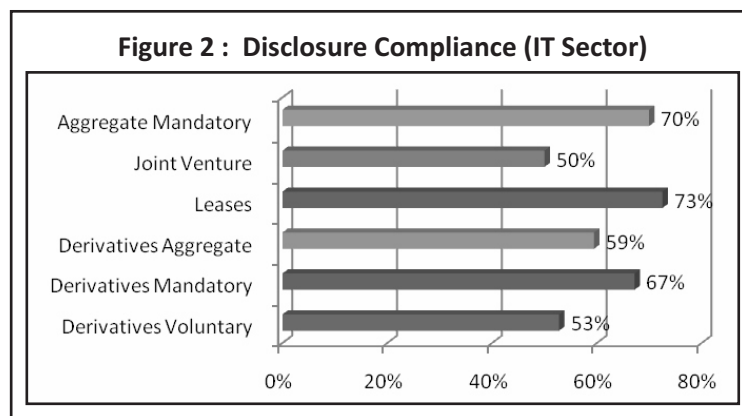
This section presents a detailed analysis of the disclosures made by the Indian and US companies. Analysis of the Indian companies is done sector wise, whereas US companies were analyzed as a single set. Lastly, a comparison is given between the disclosures made by the Indian and US companies. There are a total of 24 Indian companies analyzed for disclosures in this report. These are from the following major sectors:

1) IT ; 2) Pharma ; 3) Auto ; 4) Telecom

The Figure 1 presents the disclosure compliance of the aggregate sample set for the three sections viz. Derivatives, Joint Ventures and Leases.



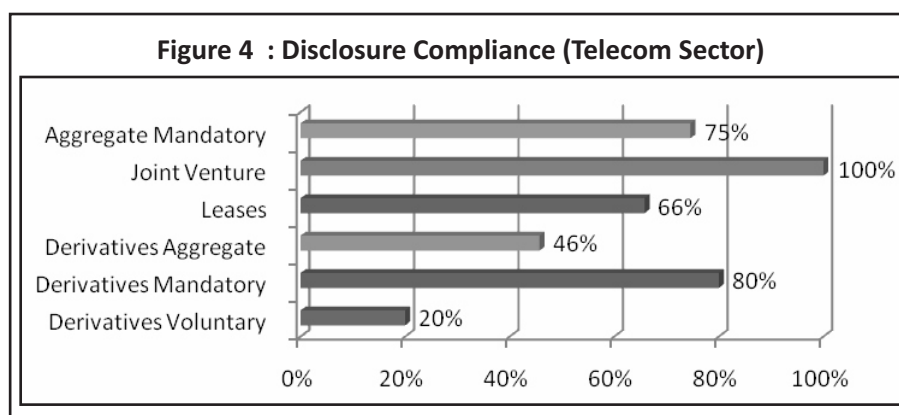
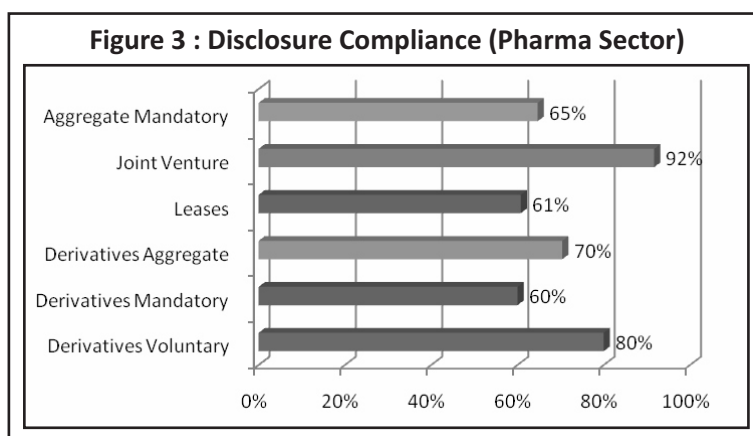
⚙ **Disclosures For The IT Sector – Quantitative Analysis :** The companies analyzed under the IT sector include: Infosys, TCS, Wipro, Tech Mahindra, Nucleus Software Exports, Patni, Mphasis, HCL and Moser Baer. The Figure 2 shows the disclosure compliance of the IT companies from the sample set.



These percentage disclosures were calculated by taking simple average of disclosures by individual companies in each of the sections viz. Derivatives, Joint Ventures and Leases. As shown in the Figure 2, the aggregate level of disclosures by the IT sector is 70%. Out of the total of 9 IT companies studied, only two (Infosys and Moser Baer) have followed AS 11, others have adopted AS 30 to varying degrees. IT companies have been aggressive in the usage of derivatives due to the international nature of the business and hence, it is critical to understand OBS disclosures for IT companies.

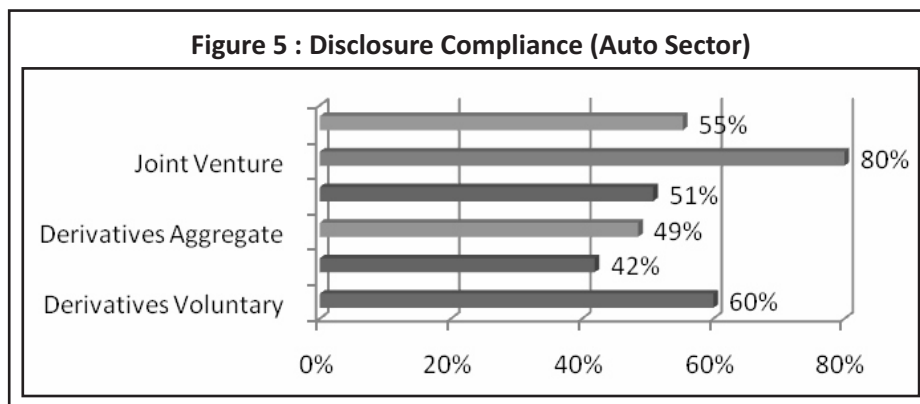
⚙ **Disclosures For The Pharmaceutical Sector : Quantitative Analysis :** The companies analyzed under Pharma sector include: Ranbaxy, Lupin Pharma, Biocon and Dr. Reddy's Laboratories. Figure 3 shows the disclosure compliance of the Pharma companies from the sample set. As shown in the Figure 3, the aggregate disclosures by the Pharma sector is 65%, closer to the 70% of the IT sector. Interestingly, the Pharma sector has fared very well for the voluntary disclosures in the derivatives section. Three out of four companies have moved to AS 30, albeit partially. Again, the international nature of the business has led to extensive usage of the derivatives instruments by the sector.

⚙ **Disclosures For The Telecom Sector – Quantitative Analysis :** The companies analyzed under the Telecom sector include: Bharti Airtel, Idea Cellular and Global Tele. The Figure 4 shows the disclosure compliance of the Telecom companies from the sample set.



Aggregate disclosure compliance by the telecom sector is 75%. However, none of the telecom companies have moved to AS 30. Clearly, their voluntary disclosures for derivatives are dismal. Overall, telecom companies have been conservative on derivative disclosures. However, the companies have fared very well with regards to joint venture disclosures. All of these telecom companies extensively borrow in foreign currencies for importer's credit of telecom equipment.

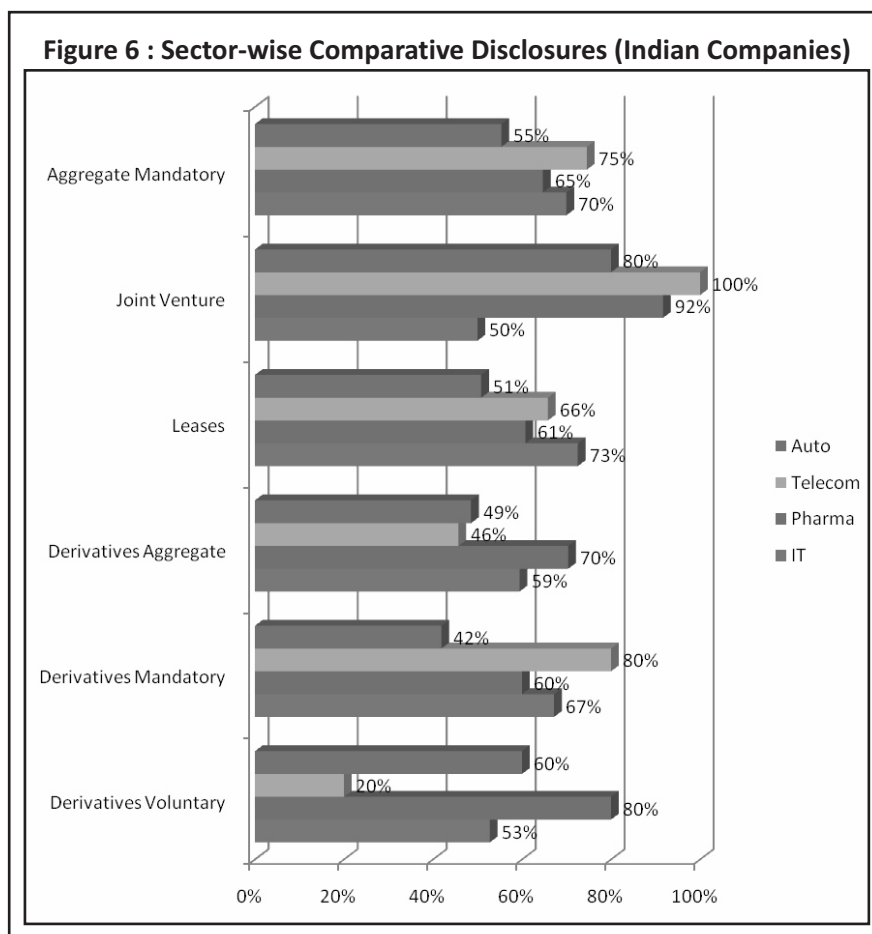
❁ **Disclosures For The Auto Sector – Quantitative Analysis :** The companies analyzed under the Auto sector include: Tata Motors, M&M, Bharat Forge and Amtek Auto. The Figure 5 shows the disclosure compliance of the Auto companies from the sample set.



Aggregate disclosures for the auto sector stand low at 55%, which is lowest in comparison to other sectors. Though the companies have fared very well w.r.t. to disclosures on joint ventures; there is less transparency when we look at leases and mandatory derivative disclosures. Except for Amtek Auto, three out of the four companies have adopted AS 30 to

varying degrees.

✿ **Sector-wise Comparative Disclosures (Indian Companies)** : The Figure 6 below presents a comparative analysis across sectors for the Indian Companies.



KEY OBSERVATIONS

The Pharma sector seems to be most transparent, considering that most of the companies have moved to advanced AS 30.

✿ Whereas, the Auto Sector has performed most poorly in terms of compliance with the said disclosures.

| Table 4: Disclosure by US Companies | | | | | | | | | | |
|-------------------------------------|--------|------|---------|------|-------|-----------|-------------|-------|------|------------|
| | Amazon | 3M | Agilent | ATT | Cisco | Power One | Syntel Inc. | Alcoa | Dell | John Deere |
| Aggregate Disclosures | 80% | 100% | 79% | 91% | 73% | 80% | 80% | 86% | 80% | 76% |
| Derivative Disclosures | NA | 100% | 73% | 88% | 86% | 100% | 86% | 91% | 83% | 83% |
| Lease Disclosures | 80% | 100% | 100% | 100% | 63% | 67% | 67% | 67% | 67% | 69% |

| Table 4 Continued. : Disclosure By US Companies | | | | | | | | | |
|---|----------------|------------|-------------|--------|--------------|-------|-----------|------|-----------------|
| | Analog Devices | Apple Inc. | Baxter Inc. | Biogen | BMC Software | Cigna | Cognizant | CSC | Overall Average |
| Aggregate Disclosures | 80% | 73% | 88% | 79% | 82% | 93% | 83% | 89% | 83% |
| Derivative Disclosures | 83% | 63% | 91% | 70% | 50% | 100% | 78% | 67% | 82% |
| Lease Disclosures | 67% | 100% | 83% | 100% | 100% | 80% | 100% | 100% | 84% |

✿ Interestingly none of the telecom companies have moved to AS 30 (due to high % of foreign borrowing funded fixed assets).

1) Analysis of Disclosures – US Companies

The Table 4 shows the analysis of disclosures made by US companies.

✿ 3M scores the top percentile in complying with the disclosures. Overall, all of the US companies have higher disclosures specifically w.r.t. derivatives section. One stark difference between US and Indian Standards i.e. AS 30 vs FAS 133 is that sensitivity analysis is not mandatory and this is where most of the Indian companies have failed to comply.

✿ Amazon was the only exception that did not use any derivatives whatsoever. It works on natural hedges through its diverse geographical operations and revenues.

✿ US companies have deployed Fair Value Hedges as well as Cash Flow Hedges, whereas, Indian companies have deployed only cash flow hedges for forecast transactions.

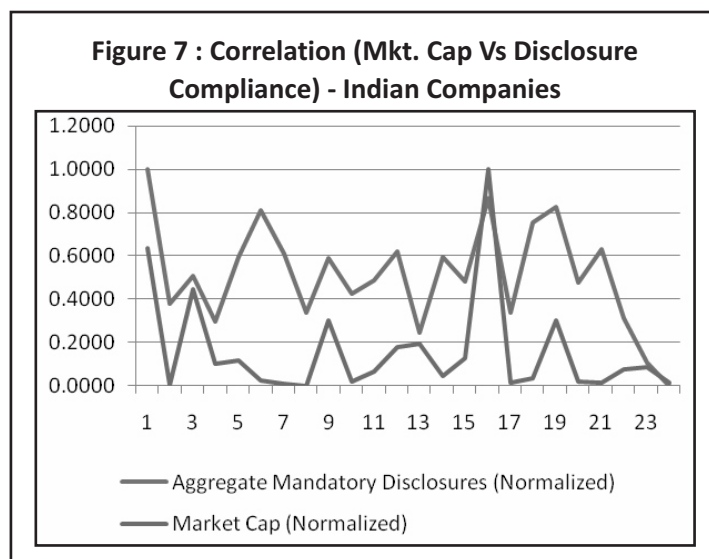
✿ US Accounting standards have an exhaustive list of disclosures about the derivatives exposure through accumulated other comprehensive income. This covers the complete movement in stock holder's equity under different heads for unrealized losses for hedging related instruments.

✿ **Derivatives:** Four out seven companies that held cash flow hedges for forecast transactions failed to disclose details on the maturity date of the contract. Specifically, for fair value hedges, majority of the companies did not comply with

| Table 5: Correlation Between MCap And Disclosure Compliance – Indian Companies | | | | | |
|--|---------------------------------|------------|--|-------------------------|-----------|
| | Aggregate Mandatory Disclosures | Market Cap | Aggregate Mandatory Disclosures (Normalized) | Market Cap (Normalized) | P/E Ratio |
| Infosys | 0.94 | 75847.1 | 1.0000 | 0.6380 | 13.55 |
| Moser Baer | 0.59 | 893.67 | 0.3783 | 0.0061 | NA |
| TCS | 0.67 | 52844.4 | 0.5101 | 0.4441 | 11.86 |
| HCL | 0.55 | 12446.54 | 0.2962 | 0.1035 | 13.56 |
| Mphasis | 0.71 | 14189.24 | 0.5963 | 0.1182 | 12.22 |
| TechM | 0.83 | 3227.67 | 0.8116 | 0.0258 | 3.3 |
| Patni | 0.72 | 1649.93 | 0.6106 | 0.0125 | 4.31 |
| Nucleus SW | 0.57 | 164.55 | 0.3379 | 0.0000 | 6.45 |
| Wipro | 0.71 | 35949.87 | 0.5879 | 0.3017 | 12.51 |
| Biocon | 0.62 | 2890 | 0.4240 | 0.0230 | 28.44 |
| DRL | 0.65 | 8229.84 | 0.4870 | 0.0680 | 15.15 |
| Ranbaxy | 0.73 | 21754.63 | 0.6198 | 0.1820 | 38.05 |
| Sun Pharma | 0.52 | 23038.99 | 0.2449 | 0.1928 | 18.93 |
| Lupin Pharma | 0.71 | 5707.95 | 0.5963 | 0.0467 | 14.29 |
| Idea Cellular | 0.65 | 15547 | 0.4800 | 0.1297 | 15.53 |
| Bharti Airtel | 0.86 | 118791.86 | 0.8686 | 1.0000 | 15.47 |
| GTL | 0.57 | 2260.49 | 0.3379 | 0.0177 | 26.11 |
| Tata Tele | 0.80 | 4325.59 | 0.7513 | 0.0351 | NA |
| RCOM | 0.84 | 36037.79 | 0.8275 | 0.3024 | 7.55 |
| Ashok Leyland | 0.65 | 2407.84 | 0.4747 | 0.0189 | 14.37 |
| Bharat Forge | 0.73 | 2181.97 | 0.6307 | 0.0170 | 21.92 |
| Tata Motors | 0.56 | 9272.65 | 0.3151 | 0.0768 | 9.59 |
| M& M | 0.44 | 10684.38 | 0.1082 | 0.0887 | 12.52 |
| Amtek Auto | 0.38 | 1735.01 | 0.0000 | 0.0132 | 8.6175 |

sharing information on amount of net gain or loss recognized in earnings when a hedged firm commitment no longer qualifies as an effective fair value hedge.

✿ **Leases:** Non compliance in this section was strikingly similar to the Indian companies; most of the US companies too failed to disclose details about the covenants in the lease agreements in terms of renewal/purchase clause or



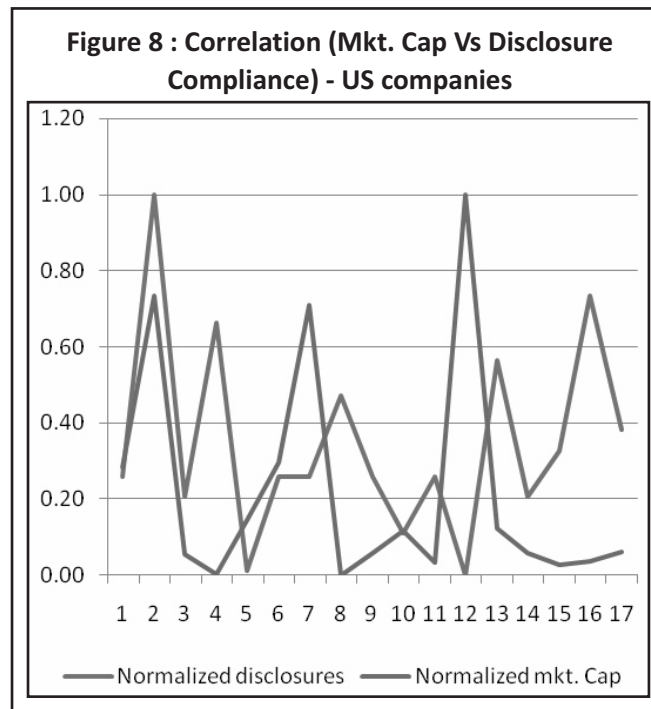
| Table 6 : Correlation Between MCap And Disclosure Compliance – US Companies | | | | | |
|---|-------------|-------------|------------------------|---------------------|-----------|
| | Disclosures | Market Cap | Normalized Disclosures | Normalized Mkt. Cap | P/E Ratio |
| Amazon | 0.80 | 61,275,400 | 0.25 | 0.39 | 46.45 |
| 3M | 1.00 | 157,684,000 | 1.00 | 1.00 | 20.25 |
| Agilent | 0.79 | 12,801,300 | 0.20 | 0.08 | 21.76 |
| ATT | 0.91 | 1,532,100 | 0.66 | 0.00 | 15.51 |
| Cisco | 0.73 | 32,067,500 | 0.00 | 0.20 | 13.43 |
| Power One | 0.80 | 63,937,900 | 0.25 | 0.40 | 16.18 |
| Syntel Inc. | 0.80 | 152,740,000 | 0.25 | 0.97 | 12.2 |
| Alcoa | 0.86 | 777,700 | 0.46 | 0.00 | 48.89 |
| Dell | 0.80 | 13,426,400 | 0.25 | 0.08 | 17.3 |
| John Deere | 0.76 | 26,000,200 | 0.10 | 0.16 | 18.98 |
| Analog Devices | 0.80 | 8,257,900 | 0.26 | 0.03 | 14.01 |
| Apple Inc. | 0.73 | 214,618,100 | 0.00 | 1.00 | 18.03 |
| Baxter Inc. | 0.88 | 27,046,000 | 0.56 | 0.12 | 11.45 |
| Biogen | 0.79 | 13,454,000 | 0.21 | 0.06 | 11.35 |
| BMC Software | 0.82 | 6,431,900 | 0.33 | 0.03 | 14.03 |
| Cigna | 0.93 | 8,631,300 | 0.74 | 0.04 | 7.79 |
| Cognizant | 0.83 | 14,226,500 | 0.38 | 0.06 | 22.42 |
| CSC | 0.89 | 7,616,200 | 0.59 | 0.03 | 9.5 |

restrictions imposed by the lease agreement regarding dividends or taking on additional debt or further leasing.

2) Correlation Between Market Capitalization(MCap) And Disclosure Compliance By Indian Companies :

Correlation Coefficient = 0.525

Clearly, there seems to be a relationship between mkt. cap and disclosure compliance. Correlation between disclosure compliance and P/E ratio is insignificant at -0.04 overall. However, the same figure stands at 85% for the sample of auto companies in the analysis (but the sample size in this case is extremely small to conclude anything). Correlation between disclosure compliance and non-promoter institutional holdings too is insignificant at **0.05** overall.



❖ US Companies : Correlation Coefficient = -0.074

The relationship between mkt. cap and disclosure compliance for US companies is not significant. Additionally, calculation of correlation between disclosures and forward P/E ratio for US companies resulted in a value of **-0.05**, which is insignificant to draw any conclusion.

❖ **Comparative Analysis - Indian Vs US companies For Disclosure (Welch's t-Test) :** Welch's t test is an adaptation of Student's t -test intended for use with two samples having possibly unequal variances. Welch's t -test is insensitive to equality of the variances, regardless of whether the sample sizes are similar.

❖ **Assumption:** The Welch's t -test is used for this case, assuming the data are normal but the variances differ. Welch's t -test defines the statistic t by the following formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$$

Where, \bar{X}_i , s_i^2 and N_i are the i^{th} sample mean, sample variance and sample size, respectively. Unlike in Student's t -test,

$$v = \frac{\left(\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}\right)^2}{\frac{s_1^4}{N_1^2 \cdot v_1} + \frac{s_2^4}{N_2^2 \cdot v_2}} = \frac{\left(\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}\right)^2}{\frac{s_1^4}{N_1^2 \cdot (N_1 - 1)} + \frac{s_2^4}{N_2^2 \cdot (N_2 - 1)}}$$

| Table 7: Output : Welch's t-statistic | | |
|---------------------------------------|-----------------------------|-------------------------|
| | Indian companies (Sample 2) | US Companies (Sample 1) |
| Sample size (N) | 24 | 18 |
| Sample mean (μ) | 0.67 | 0.83 |
| Sample Variance (s) | 0.017789 | 0.004976 |
| Welch's t-statistic | 5.0342 | |
| Degress of Freedom (v) | 36.48879 | |

Now, Calculated t-value = 5.03482

One-sided t-value @ 99%

confidence = 2.021

i.e. 4.215 > 2.021 .Thus, the null hypothesis is rejected at 1% level of significance.

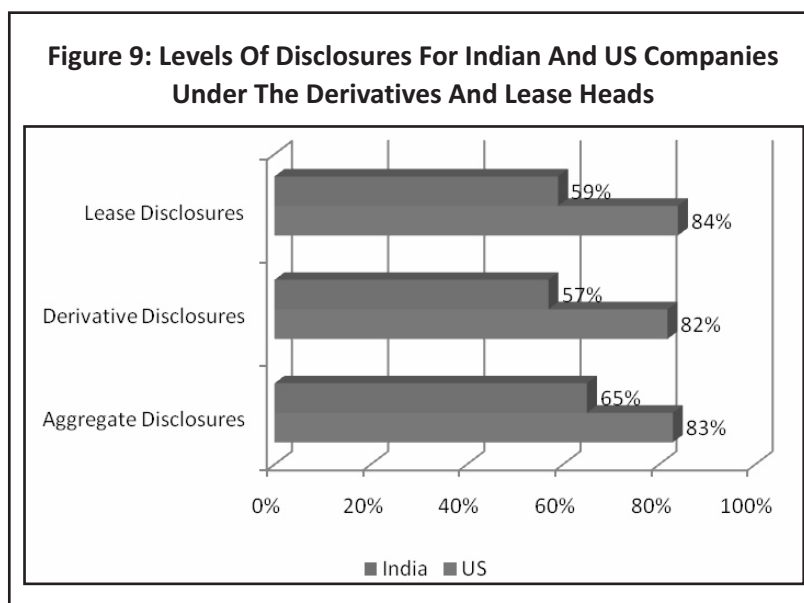
the denominator is not based on a pooled variance estimate. The degrees of freedom v associated with this variance estimate is approximated by:

Here $v_i = N_i - 1$, the degrees of freedom associated with the i^{th} variance estimate.

✿ **Null Hypothesis:** Mean of disclosures of sample US companies (μ_1) is less than or equal to that of sample Indian companies (μ_2).

✿ **Alternative Hypothesis:** Mean of disclosures of sample US companies (μ_1) is not less than or equal to that of the sample Indian companies (μ_2).

As per the result of Welch's t-test, for the given sample, mean of disclosures of sample US companies (μ_1) is not less than or equal to that of the sample Indian companies (μ_2). The Figure 9 shows the mean levels of disclosures for Indian and US companies under the derivatives and lease heads.



CONCLUSION

1) There is a significant relation between market capitalization and disclosure levels of companies only for Indian Companies. This does indicate that disclosure levels do support a company in gaining trust of the investors. However, this does not necessarily hold true for sample US companies. Moreover, there is no correlation between disclosure levels and P/E ratio.

2) As per the results of the Welch's t – test, US companies in the sample have a mean disclosure level that is statistically greater than that of the Indian Companies. Moreover, US companies have a very systematic and standardized way of reporting their unrealized losses under the accumulated other comprehensive income head. Indian Accounting standards do not have a counterpart for this.

3) Indian companies need to substantially enhance their disclosure levels for derivatives accounting in order to match

the international standards. This was expected to happen once AS 30 became mandatory from April 1, 2011. Over the past, Indian companies have suffered significant losses and variability in income due to derivatives, and there is an urgent need to raise the level of disclosures compliance.

4) Indian Pharma sector & IT sector are much more transparent in terms of their disclosures for derivatives as compared to the Auto Sector.

5) Telecom sector companies have not moved to AS 30 and have remained with AS 11, this supports their business case of capitalizing losses on higher percentage of foreign borrowing funded fixed assets.

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