IMPACT OF FAIR VALUE MEASUREMENT ON PROFITABILITY OF NIFTY REFINERY CPSEs DURING 2011-12 TO 2018-19

Dr. K. Savita
Associate Professor, BEL First Grade College
Bangalore, Karnataka, India.
V. Usha Kiran
Department of Commerce, Osmania University
Hyderabad, India.

Abstract: Globalization has brought in changes in reporting of financial statements world-wide. World has become a global village. International Financial Reporting Standards (IFRS) are adopted for better understanding of trade and commerce. To be in tune with the international financial reporting system India has made it mandatory to follow IFRS with effect from accounting year 1st April, 2016. Fair Vale Measurement is applied as IFRS 13/IND AS 113 where in the fair value is considered as which would be received on sale of an asset or transfer of a liability in an orderly transaction at the measurement date . Nifty companies were considered for implementation of IFRS in the first phase by converting their balance sheet as on 1st April, 2011 under Group - A . The present paper is an attempt to study the changes in reporting of financial statements and its impact on profitability of Nifty refinery Central Public Sector Enterprises (CPSEs).
Key Words: IFRS, Nifty, Refinery, CPSEs.

Introduction

India is aiming and progressing towards a higher growth rate. The trade and commerce should also progress and contribute to this higher growth rate requiring higher production, exports and imports along with other trading activities. The term 'Global Village' is aptly used to signify the frequency transactions between countries in the present world. One of the prerequisites to operate a business successfully is to have a good financial reporting system. In this regard it is essential to follow an International Financial Reporting System (IFRS) which has been crafted as a common global language for business affairs across the world.

IFRS/ IND AS

IFRS has been formulated as a common global platform for business affairs so that business accounts are understandable and comparable across international boundaries. In India, through Ministry of Corporate Affairs (MCA) efforts have been made to implement it since 1st April, 2011[1].It has been implemented successfully since 1st April, 2015 in case of

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[1] ibid

companies that are part of Nifty (NSE 50), BSE 30, companies whose shares or securities are listed on a stock exchange outside India and companies having net worth exceeding Rs. 1,000 crores. A survey conducted by Ernst & Young in 2009 revealed that 79% of the Indian corporates were looking forward to the IFRS convergences for its transparency, accountability and global acceptability[2].

Fair Value Measurement (FVM) IFRS/ IND AS

It is one of the most important changes Indian companies are facing. It uses the fair value as a measurement base for valuing many of the assets and liabilities, which brings about a lot of volatility and subjectivity to financial statements. As per Ind AS 113, the definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date[3]. The valuation technique emphasises on maximising the use of observable inputs and valuation assumptions that can be typically used are classified as Level 1: quoted prices in active markets for identical assets or liabilities (the most commonly usable), Level 2: inputs other than quoted prices that are observable either directly or indirectly and Level 3: unobservable inputs (to be used as a last resort). Some of the challenges in fair valuation are:

1. Fair valuation is subjective. It brings out the realistic value of assets and liabilities which enables the stake holders to understand the financial position of the company in a better way.

2. Fair valuation has to be done at each reporting period for various instruments which may increase the cost of compliance.

3. Fair valuation impacts the disclosure of transactions. Level 1 fair valuation requires minimum disclosures.

4. Planning structure of transactions and resource allocation is required for Fair valuation.

IFRS 13 is in compliance with Ind AS 113 which include guidance to assist an entity determine the most appropriate valuation based on exit price. Supporting guidance for the application of IFRS 13[4] for Central Government companies viz. CPSEs is chalked out.

Review of Literature

Ratcliffe (2007) discussed some key accounting & reporting issues relevant while choosing Fair Value option by a reporting entity. The author highlighted the need of

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[2] ibid
[3] "Embedding fair value in financial reporting"- Ernar& Young Associates Ltd. August 2017, pp - 7.
[4] FReM_Exposure_Draft__13_01-__IFRS_13_Fair_Value.pdf, Appendix A, site visited on 13/10/2018.

implementing Fair Value with the objective of improving financial reporting rather than to achieve a particular accounting result.

So & Smith (2009) in their research of listed property companies observed that these companies have shown a significantly higher market reaction and returns association when revised value of investment property as per IAS 40/HKAS 40 is presented in Income Statement.

Trussel & Rose (2009) suggest that a hybrid system be followed for measuring assets and liabilities rather than following only Historical Cost Accounting or Fair Value Accounting. This hybrid system will incorporate both models depending on the nature of the financial instruments.

Cairns et al (2012) through their study in UK & Australia observed that mandatory requirements related to financial instruments (IAS 39) and share based payments (IFRS 2) have increased comparability in policy choices. Increases in comparability for agricultural assets (IAS 41) were not significant. For optional use of Fair Value, comparability increased in relation to property (IAS 16) because some companies discontinued Fair Value Measurement.

Oncioiu (2012) concluded that Fair Value is conceptually strong. He also observed that markets which exist are of imperfect nature and no particular measurement objective should be regarded as having monopoly. There should be more than one measurement systems complementing each other.

Dr.Pawan Jain (2013) concluded that despite all its misgivings the standards setters and practitioners are accepting the concept of fair value measurement. He opined that infrastructure to support understanding, providing oversight, enforcing proper application of concept, providing training and awareness programmes and the like will help the implementation of Fair Value Measurement successfully.

L.Hodder, P. Hopkins and K.Schipper, (2014) in their Monograph stated that the accounting standards have resulted in financial statements becoming significantly more fair-value-oriented during the twenty years subsequent to issuance of Statement of Financial Accounting Standards No. 107, "Disclosure about Fair Value of Financial Instruments".

Surjit Das (2017), in his study analysed the differences between IFRS and Indian GAAP and its impact on Indian IT companies. He concluded that there is absolute difference in the quantitative indicators prepared as per IFRS and Indian GAAP but there is no statistical evidence to prove this difference.

Andrei Filip, Ahmad Hammami and four others (2017) in their paper based on review of academic literature on fair value that relates to the Post Implementation Review – IFRS 13, Fair Value Measurement which includes findings from 55 studies, concluded that the disclosure is beneficial to capital markets' participants such as investors, the fair value over all is value relevant and seems to vary according to several factors including the nature of the underlying assets, the market conditions and institutional environment.

Constancio Zamora-Ramirez and Jose Morales-Diaz (2018) in their paper structured the literature according to different lines of research and found that the fair value is the model which reflects the risks of management activities in a better way. They concluded that there was higher evidence that the information regarding fair value is generally relevant to investors and adoption of IFRS 13 has increased fair value disclosures. Different results show how companies in different sectors are complying with these standards.

Research Gap

The literature review revealed that there is need for a hybrid system in adapting fair value measurement. There is lack of awareness and need for training in implementation. No studies were made reflecting changes in profitability in companies more so Nifty Refinery CPSEs before and after the implementation of FVM (IFRS 13/ Ind As 113) from the accounting year 2015-16. In this paper, an attempt is made to study the changes in Investments, Net Worth, other incomes and profitability in case of Nifty Refinery CPSEs namely Bharath Petroleum Corporation Limited (BPCL), Hindustan Petroleum Corporation Limited (HPCL) and Indian Oil Corporation Limited (IOCL) for the years 2011-12 to 2018-19.

Objectives of the study

1. To identify the changes in Net Profit, Other incomes, Net Sales, Investments and Total Assets of Nifty Refinery CPSEs.

2. To identify the impact of Fair Value Measurement on profitability among Refinery CPSEs across the years 2011-12 to 2018-19.

3. To identify the impact of Fair Value Measurement on Profits and Investments in Non-Current and Current Assets.

Research Methodology

The study is based on secondary data collected from Department of Public Enterprises(DPE) website relating to BPCL, HPCL and IOCL from Public Enterprises Survey Reports 2011-12 to 2018-19. The Nifty (NSE 50) companies had listed 7 Banking, 6 Automobiles, 5 IT, 4 Refinery and 28 other miscellaneous companies numbering less than 3

in one cognate group. In this study, Non-banking companies were focused for FVM and as a study was already undertaken on the IT companies, it was preferred to study refineries. Data about Reliance Refinery, specifically, was not available. Therefore, other refineries were selected for the study, which are under the cognate group of Petroleum (Refinery & Marketing) of DPE being CPSEs. The companies are; BPCL, HPCL and IOCL.

The study is focused on investments, in Non-Current Assets and Current Assets (which are more volatile than other assets and apt to study the impact of FVM), other incomes and profitability across the years 2011-12 to 2018-19 for the three Refinery CPSEs selected as sample.

Quantitative Techniques

Students' t - test was applied to Sample CPSEs for the year 2015-16 to find if there is any significant difference between before and after FVM implementation on Net Profit, Other Incomes, Net Sales, Investments in Non-Current Assets , Investment in Current Assets and Total Assets.

Percentage growths over the previous years in Net Profit, Other Incomes, Net Sales, Investment in Non-Current Assets, Investment in Current Assets and Total Assets for the years 2012-13 to 2018-19 were calculated.

Single Factor Analysis of Variance (ANOVA) is used to find if there is any significant difference between group means across the years in terms of profitability ratios namely Return on Total Assets (ROTA) and Net Profit Percentage (NP) and to find the variance in before and after implementation periods of FVM.

Some important hypotheses framed were:

1) H_0: There is no significant difference between the profitability ratios across various years.

   H_1: There is a significant difference between profitability ratios across various years.

2) H_0 – There is no significant difference in the mean values of variables before and after implementation of FVM.

   H_1 – There is a significant difference in the mean values of variables before and after implementation of FVM.

Post-hoc Turkey HSD (Honestly Significantly Difference) test was conducted to identify which years had significant difference in means in profitability ratios namely, ROTA and NP. Students' t - test was also applied for to Sample CPSEs for the years 2011-12 to 2014-15 considering it as before FVM and for the years 2015-16 and 2018-19 considering it as after

FVM to find if there is any significant difference between before and after FVM on Net Profit, Other Incomes, Investments in Non-Current Assets , Investment in Current Assets.

Results and Analysis

Table 1 shows changes in Net Profit, Other Incomes, Net Sales, Investment in Non-Current Assets, Current Assets and Total Assets before and after implementation of FVM for the year 2015-16. In case of BPCL it can be noted that out of negative change in Net Profit of Rs. – 376 crores, Rs. – 236 crores (- 5% and – 12%) can be attributed to Other Incomes. Likewise, out of change in Total Assets of Rs. - 632 crores Rs. - 244 crores (-3%, - 5%) can be attributable to Investments in Non-current Assets. In case of HPCL it can be noted that out of change in Total Assets of Rs. - 892 crores Rs. - 413 crores (- 4%) can be attributable to Investments in Non-Current Assets and Rs. - 3 crores to Investment in Current Assets (-7%). In case of IOCL, the change in Total Assets to the tune of Rs. – 6,103 cannot be attributed to change in Investments either in Non-Current Assets or Current Assets. Another interesting feature was all the Refinery CPSEs had shown positive change in Net Sales.

Table 1- Changes in Net Profit, Other Incomes, Net Sales, Investment in Non-current and Current Assets and Total Assets before and after implementation of Fair Value Measurement for the year 2015-16.

Rs. In crores

CPSEs	BPCL			HPCL			IOCL		
	Before	After	Change	Before	After	Change	Before	After	Change
Net Profit	7432	7056	-376 (-5)	3863	3726	-137 (-4)	10399	11242	843 (8)
Other Incomes	2012	1776	-236 (-12)	1138	1144	6 (1)	2246	2322	76 (3)
Net Sales	189303	217895	28591 (15)	179571	197744	18173 (10)	350603	406828	56225 (16)
Investment in Non-Current Assets	7876	7632	-244 (-3)	6000	5587	-413 (-7)	16964	30086	13121 (77)
Investment in Current Assets	5098	5179	81 (2)	4995	4991	-3 (0)	7011	7096	85(1)
Total Assets	75989	75357	-632 (-1)	70471	69579	-892 (-1)	226607	220504	-6103 (-3)

Source: Compiled and calculated from Public Enterprises Survey Reports 2015-16 and 2016-17.
Figures in parenthesis show percentage change over before values

It can be concluded that FVM has made an impact on Financial Statement Reports of Refinery CPSEs. IOCL had shown positive change (Except Total Assets) compared to BPCL and HPCL.

Impact of FVM – Before and after Analysis

To evaluate whether there is significant difference in select variables namely, Net Profit, Other Incomes, Net Sales, Investment in Non-Current Asset and Investment in Current Assets

and Total Assets before and after implementation of FVM for the year 2015-16, Students t-test was applied.   The hypothesis being:

Null Hypothesis (H_0) – There is no significant difference in the mean values of variables before and after implementation of FVM.

Alternate Hypothesis (H_1) - There is significant difference in the mean values of variables between before and after implementation of FVM.

Table 2 shows the results of t-test where only in case of Net Sales the null hypothesis is rejected emphasizing there is significant difference between before and after implementation of FVM. In all other cases, the test results show that there is no significant difference in variables between before and after implementation of FVM.

Table:2 t-test results on Net Profit, Other Incomes, Net Sales, Investment in Non-Current Asset and Investment in Current Assets and Total Assets before and after implementation of FVM for the year

2015-16

Variables	Mean		Variance		t- Stat	P-Value	H_0
	Before	After	Before	After			
Net Profit	7231.22	7341.58	1.1E+09	1.42E+09	-0.296	0.398	Accepted
Other Incomes	1798.84	1747.50	3.4E+07	34753762	0.543	0.321	Accepted
Net Sales	239826	274155	9.2E+11	1.33E+12	-3.024	0.047	Rejected
Investment in Non-Current Assets	10279.97	14434.77	3.4E+09	1.85E+10	-0.927	0.226	Accepted
Investment in Current Assets	5701.26	5755.54	1.3E+08	1.36E+08	-1.888	0.100	Accepted
Total Assets	124356	121814	7.8E+11	7.31E+11	1.427	0.145	Accepted

Source: Calculated from Public Enterprises Survey Reports 2015-16 and 2016-17 using Excel 2010.

So, it can be concluded that there is no impact on Net Profit, Other Incomes, Investment in Non-Current Asset and Investment in Current Assets and Total Assets but there is impact on Net Sales due to FVM.

Net Profits, Other Incomes and their Percentage Growth

As the present study focuses on Investments and impact on Net Profit, Other Incomes were considered as the variables as the returns on investments is reported under other incomes along with other miscellaneous incomes in financial statements.

Table 3: Net Profit and Other Incomes and their Percentage Growth over the previous year of Refinery CPSEs

Rs. in crores

Year	Growth in Net Profit				Growth in Other Incomes			
	BPCL	HPCL	IOCL	Total	BPCL	HPCL	IOCL	Total
2011-12	1311	911	3955	10994	1702	1026	3199	7011
2012-13	2643	905	5005	10222	1680	1102	3515	7282
	102	-1	27	-7	-1	7	10	4
2013-14	4061	1734	7019	17869	1469	982	3417	7167
	54	92	40	75	-13	-11	-3	-2
2014-15	5085	2733	5273	15114	2200	1706	4144	9828
	25	58	-25	-15	50	74	21	37
2015-16	7056	3726	11242	25123	1776	1144	2322	6277
	39	36	113	66	-19	-33	-44	-36
2016-17	8039	6209	19106	40129	2601	1515	4209	9158
	14	67	70	60	46	32	81	46
2017-18	7919	6357	21346	40804	3011	1849	3415	8648
	-1	2	12	2	16	22	-19	-6
2018-19	7132	6029	16894	32142	2984	1635	3129	8085
	-10	-5	-21	-21	-1	-12	-8	-7

Source: compiled and calculated from the data available at
https://dpe.gov.in/publication/pe-survey/pe-survey-report.
Figures in parenthesis: as a percentage growth over the previous year.

Table 3 shows the Net Profit, Other Incomes and their Percentage Growth over the previous year of Refinery CPSEs. It was observed that from the year 2012-13 to 2015-16 there was a positive percentage growth in net profit which turned into negative growth during 2018-19. There was a positive percentage growth in other incomes during the years 2014-15 and 2016-17 which turned into negative during 2017-18 and 2018-19, both net profit and other incomes have shown negative and lower percentage growth during 2017-18 and 2018-19 which was positive and higher percentage growth during 2014-15 to 2016-17.

Investment in Non-Current Assets and Current Assets

The present study also focuses on Investment in Non-Current Assets and Investment in Current Assets, they were considered as variables to study the percentage growth as these assets are evaluated more based on FVM than other assets. Table 4 shows the Investment in Non-Current Assets and Current Assets and their Percentage Growth over the previous year of Refinery CPSEs.

Table 4: Investment of Refinery CPSEs in Non-Current Assets and Current Assets and their Percentage Growth over the previous year

Rs. in crores

Year	Investment in non-current assets				Investment in current assets			
	BPCL	HPCL	IOCL	Total	BPCL	HPCL	IOCL	Total
2011-12	4970	7467	4918	21070	5947	2887	13760	22686
2012-13	6942	8266	5033	24117	5161	2361	13639	21224
	40	11	2	14	-13	-18	-1	-6
2013-14	7238	5736	16311	33598	4609	5124	7283	17069
	4	-31	224	39	-11	117	-47	-20
2014-15	7302	5868	16629	35698	5089	5374	7271	17971
	1	2	2	6	10	5	0	5
2015-16	7632	5587	30086	44837	5179	4991	7096	17413
	5	-5	81	26	2	-7	-2	-3
2016-17	9241	5810	40109	56708	5360	5109	7195	17977
	21	4	33	26	3	2	1	3
2017-18	10825	6106	39089	57577	4995	4999	8399	18848
	17	5	-3	2	-7	-2	17	5
2018-19	10916	6735	41340	60727	5076	5084	8416	15182
	1	10	6	5	2	2	0	-19

Source: compiled and calculated from the data available at
https://dpe.gov.in/publication/pe-survey/pe-survey-report.
Figures in parenthesis: as a percentage growth over the previous year.

It was observed that for the years 2014-15 and 2016-17 there was a positive percentage growth in in Investments both for Non-Current and Current Assets. During 2014-15, percentage growth was lower in Investments in Non-Current Assets compared to investments in current assets which changed to higher percentage growth in investments in non-current assets compared to investments in current assets during 2016-17. During 2017-18 the percentage growth in investments in non-current assets was lesser than it was during 2016-17 and during 2018-19 it reduced further where as investment in current assets remained more or less same even during 2018-19 compared to 2016-17.

Impact of FVM on Profitability – ROTA, Net Profit Ratio

To identify the impact of FVM on profitability of Refinery CPSEs across the years 2011-12 to 2018-19, Return on Total Assets ratios and Net Profit ratios were calculated. Table 5 shows the Return on Total Assets and Net Profit ratios of Refinery CPSEs for the years 2011-12 to 2018-19.

**Table 5: Return on Total Assets Ratio and Net Profit Ratio of Refinery CPSEs
for the years 2011-12 to 2016-17.**

Numbers in Ratios

Ratio	CPSE	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Total Assets	BPCL	2.00	3.95	5.63	7.29	9.36	8.74	7.90	6.17
	HPCL	1.28	1.19	2.22	4.05	5.36	7.91	7.32	5.81
	IOC	1.88	2.23	2.79	2.40	5.10	7.37	7.60	5.35
Net Profit	BPCL	0.62	1.10	1.56	2.14	3.24	3.32	2.86	2.11
	HPCL	0.51	0.44	0.78	1.32	1.88	2.90	2.60	2.03
	IOC	0.99	1.12	1.48	1.21	2.76	4.29	4.22	2.79

Source: compiled and calculated from the data available at
https://dpe.gov.in/publication/pe-survey/pe-survey-report.

The ratios have shown an increase in case of all the CPSEs during 2015-16 and 2016-17 i.e., after FVM compared to the years from 2011-12 to 2014-15 i.e., before FVM.

Single Factor ANOVA was applied to identify significant difference between means of Return on Total Assets ratio.

The hypothesis framed was:

H_0: There is no significant difference between the means across various years in terms of Return on Total Assets ratio.

H_1: There is a significant difference between the means across various years in terms of Return on Total Assets ratio.

The result of ANOVA relating to Return on Total Assets ratio is shown in Table 6.

Table 6: ANOVA relating to Return on Total Assets ratio

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	115.6053	7	16.51504	7.312761	0.000508	2.657197
Within Groups	36.13417	16	2.258386			
Total	151.7394	23				

Source: calculated using Excel 2010

As per the ANOVA results shown in Table 6, the null hypothesis is rejected as the p – value corresponding to the F – statistic is lower than 0.05. So, it can be concluded that there is significant difference between the means across various years in terms of ROTA ratio.

The results of Post-hoc Turkey HSD Test showed difference in means of ROTA ratio for the years 2011-12 and 2016-17 to be significant (with p = 0.002 and Q statistic 7.2494, highest among other combinations at 1% significance level). The test also showed difference in means of ROTA ratio for the years 2011-12 and 2018-19 (with p = 0.0038 and Q statistic 6.7882 the second highest among other combinations at 1% significance level) along with the

years 2012-13 and 2016-17 (with p = 0.0064 and Q statistic 6.3999 the third highest among other combinations at 1% significance level) to be significant.

Therefore, it can be concluded that FVM had an impact on the ROTA ratio after its implementation during 2016-17 and 2018-19 compared to the years 2011-12 and 2012-13.

Single Factor ANOVA was applied to identify significant difference between means of Net Profit ratio.

The hypothesis framed was:

H_0: there is no significant difference between the means across various years in terms of Net Profit ratio.

H_1: there is significant difference between the means across various years in terms of Net Profit ratio.

The result of ANOVA relating to Net Profit ratio is shown in Table 7.

Table 7: ANOVA relating to Net Profit ratio

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	23.68799	7	3.383999	10.57841	5.74E-05	2.657197
Within Groups	5.118347	16	0.319897			
Total	28.80634	23				

Source: calculated using Excel 2010

As per the ANOVA results shown in Table 7, the null hypothesis is rejected as the p – value corresponding to the F – statistic is lower than 0.05. So, it can be concluded that there is significant difference between the means across various years in terms of NP ratio.

The results of Post-hoc Turkey HSD Test showed difference in means of NP ratio for the years 2011-12 and 2016-17 to be significant (with p = 0.001 and Q statistic 8.5453, highest among other combinations at 1% significance level). The test also showed difference in means of NP ratio for the years 2012-13 and 2016-17 to be significant (with p = 0.001 and Q statistic 7.995, second highest among other combinations at 1% significance level), the years 2011-12 and 2016-17 (with p = 0.001 and Q statistic 7.6999 the third highest among other combinations at 1% significance level) to be significant, the years2012-13 and 2018-19 (with p = 0.002 and Q statistic 7.1499 the fourth highest among other combinations at 1% significance level) to be significant.

Therefore, it can be concluded that FVM had an impact on the NP ratio after its implementation during 2016-17 to 2018-19 compared to the years 2011-12 to 2012-13.

Sample CPSEs - Net Profit, Other Incomes, Investment in Non-Current Assets and Current Assets

Students' t - test was also applied for to Sample CPSEs for the years 2013-14 and 2014-15 considering it as before FVM and years 2015-16 and 2016 -17 considering it as after FVM to find if there is any significant difference between before and after FVM on Net Profit, Other Incomes, Investments in Non-Current Assets , Investment in Current Assets.

The hypothesis being:

Null Hypothesis (H_0) – There is no significant difference in the mean values of variables of Sample CPSEs before and after implementation of FVM across the years.

Alternate Hypothesis (H_1) - There is significant difference in the mean values of variables of Sample CPSEs between before and after implementation of FVM across the years.

Table 8 shows the results of the t – test.

Table8: t-test results on Net Profit, Other Incomes, Investment in Non-Current Assets and Current Assets

Variable	Opinion about	Mean		Variance		t- Stat	P-Value	H0
		Before	After	Before	After			at 5%
Net Profit	BPCL	327489	753676	2.72E+10	2.65E+09	-5.048	0.007	Rejected
	HPCL	157079	558017	7.52E+09	1.55E+10	-6.953	0.003	Rejected
	IOCL	531298	1714723	1.62E+10	1.88E+11	-7.239	0.003	Rejected
Other Incomes	BPCL	176266	259283	9.61E+08	3.31E+09	-2.756	0.035	Rejected
	HPCL	120395	153588	1.15E+09	8.74E+08	-1.624	0.101	*Accepted*
	IOCL	356880	326847	1.64E+09	6.07E+09	0.751	0.254	*Accepted*
Investment in Non-Current Assets	BPCL	661314	965345	1.22E+10	2.41E+10	-9.163	0.001	Rejected
	HPCL	683421	605939	1.53E+10	2.48E+09	0.946	0.207	*Accepted*
	IOCL	1072268	3765584	4.41E+11	2.63E+11	-9.746	0.001	Rejected
Investment in Current Assets	BPCL	520148	515271	3.07E+09	2.48E+08	0.193	0.430	*Accepted*
	HPCL	393648	504583	2.35E+10	3.50E+07	-1.437	0.123	*Accepted*
	IOCL	1048817	777657	1.38E+11	5.33E+09	1.222	0.154	*Accepted*

Source: Calculated from Public Enterprises Survey Reports 2011-12 to 2018-19 using Excel 2010.

Table 8 shows the results of t-test where only for Net Profit, Other Incomes of BPCL and Investments in Non-Current assets of BPCL and IOCL, the null hypothesis is rejected emphasizing there is significant difference in Net Profit and Other Incomes and Investment in Non-

Current Assets before and after implementation of FVM. In all other cases, the test results show that there is no significant difference between before and after implementation of FVM.

Therefore, it can be concluded in general that there is impact of FVM on Refinery CPSEs as their profits had shown overall increase after FVM.

Conclusions

To be in line with global financial statement reporting practices, efforts are being made to implement IFRS. There are some challenges in implementing FVM. FVM has made an impact on Financial Statement Reports of Refinery CPSEs in terms of Net Profit, Other Incomes, Net Sales, Investment in Non-Current Assets, Investment in Current Assets and Total Assets. IOCL had shown positive change (Except Total Assets) compared to BPCL and HPCL. There is impact on Net Profit and no impact Other Incomes, Investment in Non-Current Asset and Investment in Current Assets and Total Assets and there is impact on Net Sales due to FVM.Net Profit and Other Incomes have shown positive and higher percentage growth during the year 2016-17 and 2017-18.For the years 2014-15 and 2016-17 there was a positive percentage growth in in Investments both for Non-Current and Current Assets. During 2014-15, percentage growth was lower in Investments in Non-Current Assets compared to Investments in Current Assets which changed to higher percentage growth in Investments in Non-Current Assets Compared to Investments in Current Assets during 2016-17. During 2017-18 the percentage growth in investments in non-current assets was lesser than it was during 2016-17 and during 2018-19 it reduced further whereas investment in current assets remained more or less same even during 2018-19 compared to 2016-17. The ROTA and NP ratios have shown an increase in case of all the CPSEs during 2015-16 and 2016-17 i.e., after FVM compared to the years from 2011-12 to 2014-15 i.e., before FVM. There was significant difference between the means across various years in terms of ROTA and NP ratios during 2016-17 as compared to 2011-12.   There was impact of FVM on Net Profit of all Refinery CPSEs, Investment in Non-Current Assets of BPCL and IOCL and Other Incomes of BPCL. To sum it all, it can be concluded that there is significant impact of FVM on financial statement reporting system.

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