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The Supremacy of Inflation Accounting

Sarah Nabeel Polus, Mr. Avinash Bondu
Department of Accounting
Catholic University in Erbil

Abstract- A considerable number of countries in the world are prone to inflation either with a big or small percentage. This has become constant as there are many external and internal factors behind the causation. Economies of the world try various techniques and implement various policies, to restrict inflation. However, the amount of inflation can be decreased but a complete eradication of inflation seemed to be impossible. Since the inflation results in the price and value changes on the assets or products, there has been a need raised to be considered in the accounting era for the reporting of financial statements. Standards by various international and national accounting bodies were issued to deal with the accounting for inflation. The present study analyzes the importance of inflation accounting by evaluating its role and impact of financial statements. Financial statements from a company of hyperinflationary economy (Celulosa Argentina company from Argentina) are considered and forecasted, variations will be determined using MS Excel and statistical techniques are implied and interpretations were drawn. The study concludes that the impact of inflation rate in high on various components of financial statements in hyper inflationary economy and it was less on that of a normal economy.

Keywords- Accounting, Inflation, Management, Economics, Hyperinflation

I. INTRODUCTION

1. Meaning of Inflation Accounting

Inflation accounting is the accounting that takes into consideration the effects of inflation on the reports provided by the companies, it is comprised to restate the financial statements and adjust it according to the inflation or deflation rate to show the real currency purchasing power as inflation distort the reports of the companies.

2. Problem Statement

Most of the corporates follow historical cost while presenting financial reports due to prevent the misrepresentation of false profits and considering the concept of conservatism, which is one of the major principles of accounting GAAP the value of the assets is to be determined as per the historical or book value. However, there are frequent scenarios that observed the under recognition of assets value since the historical value ignores the concept of fair value measurement there has been a prier focus by IASB to reduce the difference between historical and fair value measurement this difference might be caused due to the fluctuations in currency value and exchange rates. IAS 21 and IAS 23 has been stressing on the importance of considering the effects of changes in foreign exchange rate and borrowing cost respectively. The underlined factor behind these issues is inflation according to Aylin Poroy Arsoy and Umit Gucenme, 2009. Consequentially, IFRS 29, The effect of inflation in hyperinflationary economics, has been issued to control the variations that are caused by inflation in financial reporting. This suggests the need and implications of applying inflation rates while calculating financial profit and losses. This study involves in presenting how far inflation accounting has an impact on financial reporting.

Significance of the Study

There are contradictory opinions regarding the consideration of the inflation adjusted accounting. Questions exist if it is only necessary in case of hyper inflationary economies or normal ones as well. This study attempts to find out the actual number of variations in the financial reports if we consider inflation rate. This helps to comprehend the importance of the inflation adjusted accounting in either way. Furthermore, this also allows the readers to understand the changes in profits reported, the net worth of the company, EPS and its position in the market.

Research Questions

- Is there any relation between inflation and financial reporting?
- Will the implementation of inflation accounting lead to better representation of financial statements?
- What variables in financial reporting are affected more due to the non-consideration of inflation accounting?
- What is the need to consider inflation rate in accounting?
- Is it feasible to implement inflation accounting?
- Which kind of corporations does inflation affect more? Is it financial or non-financial?
- What is the significance of inflation accounting in mergers and acquisitions?

Objectives

- To comprehend the relationship between financial reporting and inflation accounting.
- To trace the extent of inflation in either financial corporations or non-financial.
- To emphasize the application of inflation accounting aids better presentation of financial statements.
- To explore the variables with which inflation accounting is associated.
- To understand if there would be any impact of inflation accounting in mergers and acquisitions.

Hypotheses

- **H1:** There is contribution of inflation accounting on financial reporting.
- **H2:** There would be significance of inflation accounting in mergers and acquisitions.
- **H3:** There is a difference in the role of inflation accounting in financial corporations vs. non-financial corporations.
- **H4:** There is relevance between inflation accounting and accumulated depreciation.
- **H5:** There will be effect of inflation accounting on financial ratios.

II. METHODOLOGY

The study uses the secondary data that is collected from the financial reports of the company or websites. The Current purchasing power, GDP deflator and adjusted inflation rate are considered as coefficients to covert the normal amounts recorded in the financial reports to inflation adjusted accounting.

Upon the analysis conducted, and the results obtained, the variables are compared to the original data to identify the amount of variance and then to confirm either of the above mentioned null or alternative hypotheses. This is done by using the numbers obtained from the changes in financial statements in both ways as input to the statistical techniques that describes the amount of variance, significance and the acceptance of either of the hypotheses.

Sample and population

- **Population:** The population in this research refers to the larger group or category of companies, belonging to hyperinflation economies
- **Sample:** The sample is the subset of the population that you will actually study and collect data from. In the present study, one company from a hyperinflation economy is considered.

Limitations

- The current study uses the data collected is from one company belonging to a hyper inflationary economy. Hence, the variances identified may be far greater or lesser when compared to other companies as it depends on the size of the financial structure and production capacity of the firm.

- The obtained results may not be applied same to all other companies or the industry as the inflation rate would be different from country to country.
- The data analysis would be a complicated to understand since the calculations are comprehensive of both long term and short-term variations of the inflation rate depending on the type of components of the financial statements.
- Since the inflation of majority of the countries of the world falls under 5%, it is argued by many experts that the adjusted inflation accounting is not needed to be considered by the normal countries other than in high or hyper inflationary periods.

III. REVIEW OF LITERATURE

Katarina Karmarova in 2021 conducted a study on “The global problem of inflation and need for inflation adjusted – financial reporting”. It concluded that there is huge impact on the data represented in financial statements.

Murad Masuad and Ahmed Yousef in 2021, their study on “The effect of inflation accounting on the quality of information transparency in the financial statements”. as a result, inflation accounting has an impact on the disclosure and transparency of financial statements.

Alexander Corhay and Jincheng Tong in 2021 conducted a study on “Inflation risk and the finance-growth nexus”. Finally, they concluded that an unexpected increase in the inflation rate effects on the financial and non-financial institutions debt.

John Hughes, Jing Liu and Mingshan Zhang in 2004 their study resulted that modifying the financial statements according to the inflation rate is changing the valuation without inflation.

John B. Shoven and Jeremy I. Bulow in 1975 conducted a study on “Inflation accounting and nonfinancial corporate profits: physical assets”. It was stated that the frequent changes in the inflation requires the bonds to be corrected to a nominal market value.

Aydin Karapinar, Figen Zaif and Ridvan Bayirli in 2012, “Impact of inflation accounting application on key financial ratios”. They found that the effect between adjusted and historical based financial statements was on specific ratios such as current and equity ratios.

Odunayo Olarewaju, Mzwandile Mbambo and Brain Ngiba in 2020, “Effects of inflation accounting on organizational decisions and financial performance in South African retail stores”. As a summary the retailers didn’t restate their financial statements according to inflation which is affecting on the quality of date provided.

Jeremy I. Bulow and John B. Shoven in 1982, “Inflation, corporate profits, and the rate of return to capital”. They found that partial adjustment of financial statements is misleading between the nominal and the actual profit in the published reports.

Ebiaghan Orits Frank in 2019, on “A comparative analysis of inflation-adjusted and historical cost accounting information: implications for the value relevance of corporate repots”. As a result, the profit represented by current cost is far less than historical cost based.

Aylin Poroy Arsoy and Umit Gucenme in 2009, “The development of inflation accounting in Turkey”. In conclusion, adjusted financial statements gives more understandable and comparable financial reports.

Gylych Jelilov, Paul Terhemba Lorember, Ojonugwa Usman and Paul M. Yua in 2020, “Testing the nexus between stock market returns and inflation in Nigeria: does the effect of covid-19 pandemic maters?”. They found that a sudden increase in covid-19 has relation with the inflation and the return of stock market.

Sanem Shojaeipour Monfared and Fetullah Akin in 2017, “The relationship between exchange rate and inflation: the case of Iran”. They concluded that there is a positive and direct relationship between exchange rate and inflation.

Okoli Tochukwu, Mbah Stella and Agu Osmond in 2016,” Exchange rate volatility and inflation: The Nigerian experience”. The study resulted that all the variables use in the study have an impact on real exchange except interest rate and money supply.

Ala Fathi, Aliya Isiksal and Abdullah Ismaeel in 2022, “the effect of inflation on financial and accounting data’s ability to reflect profitable gains reported by financial statements”. in conclusion, inflation led to inflation-adjusted pricing and increase in the performance.

Ram B. Misra in the year 1979, “A note on optimal inventory management under inflation”. As result, the optimal order quantity is changed if the analysis that include the inflation rate.

Khakbaz, Mensi, Tirkolaee, Hammoudeh and Simic in 2023, “The combined effects of interest and inflation rates on inventory system: a comparative analysis across countries”. In summary, a new inventory model was developed with linear increasing demand, interest and inflation rate to find the optimal policy in different countries.

John H. Cochrane in 2011, “Inflation and debt”. In conclusion, no need to for a crise and resulting stagflation. That is why all fiscal commissions resulted to one answer. The biggest problem is long-term spending is uncontrolled, that is why there is need for a program to repairs the damages.

Cenap Ilter in 2012, “Exploring the effects of inflation on financial statements through ratio analysis”. In conclusion, it is better to adjust the financial statements even in low inflation rate as it will affect negatively on the statements, so it is better to measure the inflation than never.

Diane A. Riordan and Michel P. Riordan in 2009, on “Inflation and financial statement analysis in the international accounting classroom”. As a result of globalization, there will be more interest about inflation accounting in the future.

IV. ANALYSIS

Table 1: Following is the comparative income statement before and after the inflation adjustment:

Comparative Income statement			
Name of the component	Inflation adjusted	Inflation unadjusted	% change
Sales/Revenue	87,095	61254	70%
Cost of Goods Sold (COGS) incl. D&A	69,514	48889	70%
COGS excluding D&A	62,577	44010	70%
Depreciation & Amortization Expense	6,936	4878	70%
Depreciation	6,933	4876	70%
Amortization of Intangibles	3	2	70%
Gross Income	17,581	12365	70%
SG&A Expense	7,880	5542	70%
Other SG&A	7,880	5542	70%
Other Operating Expense	96	68	70%
EBIT	9,605	6755	70%
Unusual Expense	640	450	70%
Non Operating Income/Expense	6,750	4747	70%
Non-Operating Interest Income	3,122	2196	70%
Interest Expense	5,830	4100	70%
Pretax Income	13,007	9148	70%
Income Tax	4,057	2853	70%
Income Tax - Current Domestic	-2,515		0%
Income Tax - Deferred Domestic	6,572		0%
Net Income	8,953	6295	70%
Net Income After Extraordinaries	8,953	6295	70%
Preferred Dividends	0	0	0%
Net Income Available to Common	8,953	6295	70%
EPS (Basic)	88.69	62	70%
Basic Shares Outstanding	101	101	100%
EBITDA	16,542	11633	70%
EBIT	9,605	6755	70%

Table 2: The following table shows the calculated CPI for the consideration into financial statements.

Type of CPI	CPI
Historical	64
Average	91.33333
Current	114

Table 3: Following is the balance sheet before and after the inflation adjustment: (Assets)

Balance sheet if the inflation rate is considered			
Assets	Inflation adjusted	Inflation unadjusted	% change
Cash & Short Term Investments	4,493	4493	100%
Cash Only	2,906	2906	100%
Total Accounts Receivable	13,750	7719	56%
Accounts Receivables, Net	12,048	6764	56%
Accounts Receivables, Gross	12,187	6842	56%
Bad Debt/Doubtful Accounts	-139	-78	56%
Other Receivables	1,702	956	56%
Inventories	9,134	5128	56%
Finished Goods	2,504	1406	56%
Raw Materials	5,122	2876	56%
Progress Payments & Other	1,508	847	56%
Other Current Assets	483	271	56%
Prepaid Expenses	449	252	56%
Miscellaneous Current Assets	34	19	56%
Total Current Assets	27,860	17611	63%
Net Property, Plant & Equipment	48,255	22649	47%
Property, Plant & Equipment - Gross	50,411	25298	50%
Buildings	4,960	2348	47%
Land & Improvements	4,067	2012	49%
Machinery & Equipment	36,002	17624	49%
Construction in Progress	780	849	109%
Leases	21	21	100%
Transportation Equipment	720	332	46%
Other Property, Plant & Equipment	3,845	2112	55%
Accumulated Depreciation	-2,156	-4876	226%
Other Long-Term Investments	247	139	56%
Long-Term Note Receivable	1,192	669	56%
Intangible Assets	186	104	56%
Net Goodwill	172	97	56%
Net Other Intangibles	14	8	56%
Other Assets	6,588	3699	56%
Total Assets	84,330	44871	53%

Table 4: Following is the balance sheet before and after the inflation adjustment: (Liabilities)

Balance sheet if the inflation rate is considered			
Liabilities & Shareholders' Equity	Inflation adjusted	Inflation unadjusted	% change
ST Debt & Current Portion LT Debt	14,667	8234	56%
Short Term Debt	5,684	3191	56%
Current Portion of Long-Term Debt	8,984	5044	56%
Accounts Payable	11,267	6325	56%
Income Tax Payable	127	89	70%
Other Current Liabilities	11,184	6279	56%
Dividends Payable	0	0	0%
Accrued Payroll	2,322	1304	56%
Miscellaneous Current Liabilities	8,862	4975	56%
Total Current Liabilities	37,245	20928	56%
Long-Term Debt	12,646	7100	56%
Long-Term Debt excl. Capitalized Leases	12,643	7098	56%
Non-Convertible Debt	12,643	7098	56%
Provision for Risks & Charges	91	51	56%
Deferred Taxes	11,640	6535	56%
Deferred Taxes - Credit	11,643	6536	56%
Deferred Taxes - Debit	3	2	56%
Other Liabilities	2,018	1133	56%
Other Liabilities (excl. Deferred Income)	2,018	1133	56%
Total Liabilities	63,643	35746	56%
Common Equity (Total)	20,242	8876	44%
Common Stock Par/Carry Value	101	57	56%
Additional Paid-In Capital/Capital Surplus	18,202	1436	8%
Retained Earnings	-23,242	-6754	29%
Cumulative Translation Adjustment/Unrealized For. Exch. Gain	4,085	2293	56%
Unrealized Gain/Loss Marketable Securities	-	0	0%
Revaluation Reserves	20,011	11234	56%
Other Appropriated Reserves	1,085	609	56%
Accumulated Minority Interest	445	250	56%
Total Equity	20,687	9125	44%
Liabilities & Shareholders' Equity	84,330	44871	53%

Table 5: Restatement factors: Two types of restatement factors can be obtained by using the above calculated consumer price indices.

Item	Restatement factor
Monetary assets	NA
Non-monetary assets	C/H
Liabilities	C/H
Incomes	A/H
Expenses	A/H

Note: Monetary assets need not be adjusted according to the IFRS.

Ratio Analysis

Following are the ratios applied on balance sheet and income statement components:

Table 6: Balance sheet ratios

Balance sheet ratios		
Ratios	Inflation adjusted	Inflation unadjusted
Quick ratio	0.49	0.58
Debts to assets	0.75	0.80
debts to equity	3.076	3.917
working capital (current)	0.75	0.84

Table 7: Income statement ratios

Income statement ratios		
Ratios	Inflation adjusted	Inflation unadjusted
Return on assets	0.11	0.14
Return on equity	0.43	0.69

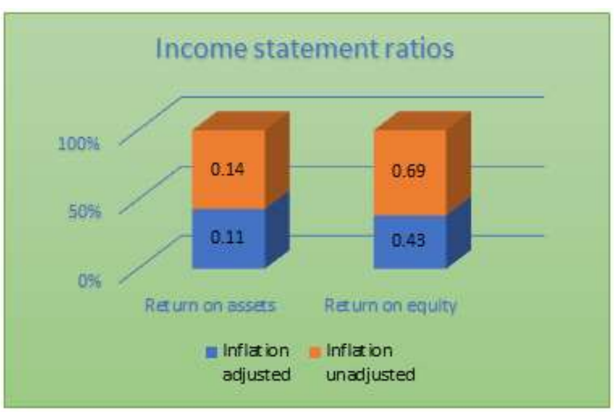

Figure 1: Income statement ratios

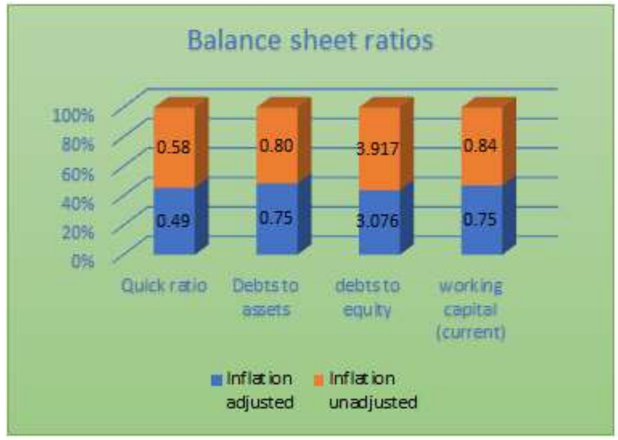

Figure 2: Balance sheet ratios

Interpretations

- Based on the ratio analysis done return on assets will be 0.14 in case of not adjusting the income statement.
- Return on equity is 0.43 in the adjusted financial statement and 0.69 in the non-adjusted one.
- For the balance sheet ratios, quick ratio is 0.58 if the financials are not adjusted and 0.49 in the adjusted once.
- Debt to asset ratio is decreasing from 0.80 to 0.75 after adjusting the financial statements.
- Debts to equity ratio is 3.917 in the non-adjusted balance sheet and 3.076 in the adjusted one.
- Working capital (current ratio) is decreasing from 0.84 in the non-adjusted balance sheet to 0.75 in the adjusted one.

Summary of findings

Study revealed that there is enormous amount of difference in the main aspects of any firm such as profit, tax, current and fixed assets, Liabilities etc. if the inflation accounting is considered and vice versa.

It could be accepted that the study and analysis has supported the alternative hypotheses in the present research project stating the following:

There is huge contribution of inflation accounting on the financial reporting since most of the values in the financial statements does not display same as if the inflation accounting is not considered.

Mergers and acquisitions are related to the company's net worth. So, the role of inflation accounting is even high in this case as it is impacting the net worth of the company.

The monetary assets are deemed to be not converted according the inflation rate, as they are received in times and the value of such assets at each time matches the market value. This is mentioned both the IFRS and GAAP as well in their rules related to inflation accounting. So financial institutions such as banks will also experience an impact of inflation accounting when it comes to the fixed assets and other liabilities and income or expenses, but not as same as the non-financial institutions, because their major business is carried on in monetary assets like cash.

Accumulated depreciation is calculated based on the value of the assets. Since the inflation rate is changing the value of the asset, either directly or indirectly the value of depreciation as well.

All the financial ratios are changed based on the absolute value of the components.

Suggestions

Based on the data analyzed in the previous chapter, it was clearly understood that there is a huge difference in the components of the financial statements of the company. Organizations that govern the companies in reporting financial statements made the rules mandatory for the adjustment of the financial statements according to the changes in inflation. The ignorance of the inflation leads to the false presentation of the company's performance or hide the actual gain or loss that could be discovered by the adjustment of accounts to the corresponding purchasing power value.

The internal users of financial statements such as management and other employees will have a better chance of making decisions for the growth of the company by identifying the actual performance and avoiding any mis interpretations. The stake holders of the company will also have a reliable view about the company as it is implementing inflation adjusted accounting. Furthermore, uncertainty in future can be handled in a proper way if the company has as clear and absolute idea of its position, wealth etc. which can be provided by inflation adjusted accounting.

V. FURTHER SCOPE

The study deals with the analysis of the variations in the financial reports of the company when the inflation rate is considered and if it is not. For this purpose, the major components of the financial statements will be analyzed. So, this gives an idea of how far the inflation rate is influencing the financial statements.

The analysis part of this research allows the further researchers to apply more studies and can further use to additional statistical techniques if required for clearer presentation of the analysis and interpretations of the corresponding study.

VI. CONCLUSION

The study carried out to trace the importance and role of inflation accounting on the financial statements of the company. The data from a company belonging to a hyper inflationary economy is collected and various forecasting measures were applied to text the extent of impact on the change in the purchasing power on the components of the financial reports, by applying the inflation rates. Post analysis, the huge impact of inflation on the company's performance and position is noticed. In the corresponding hyper inflationary economy, the inflation is more than 100% in year itself, while it would be substantially less in normal economies close to 2 or 3 percent. Hence the impact of the inflation on a company belonging to hyper inflationary economy is extremely high when it is compared to those of normal economies. However, IASB and FASB, other accounting bodies require the companies to accommodate the inflation rate if their inflation is high and issued rules regarding this. The outcome of this study is in favor of such rules strengthening the requirements issued by the national and international accounting bodies to consider the inflation rates while preparing its financial statements.

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