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RESEARCH ARTICLE

The Moderating Effect of the Inflation on the Relationship between Asset Revaluation and the Financial Statements of Companies Listed on the Tehran and Bombay Stock Exchanges

Hilda Shamsadini
Department of accounting, Bam Branch, Islamic Azad University, Bam, Iran
Vahid Bekhradi Nasab*
Department of Accounting, Najafabad Branch, Islamic Azad University, Najafabad, Iran
JR Mulla
Department of Accounting, Pune University, India

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Abstract

This study investigates the moderating effect of the inflation rate on the relationship between asset revaluation and the financial statements of companies listed on the Tehran and Bombay stock exchanges. In this study, parameters including financial leverage, liquidity, firm size, fixed assets ratio, and firm growth and the data of 112 companies listed on the Tehran Stock Exchange (TSE) and 563 companies listed on the Bombay Stock Exchange (BSE) during the period 2015-2019 are used. Multiple regression is employed to test the research hypotheses to determine the relationship between the dependent and independent variables. F-statistic, F Limmer, and Husman tests are used to test the significance of regression models. The Generalized Least Squares (GLS) method estimates the research models. The results of testing the research hypotheses demonstrate that in both the Tehran and Bombay stock exchanges, without considering the role of the inflation rate, the revaluation of fixed assets is positively and significantly associated with financial leverage, liquidity, and firm size, fixed assets ratio, and firm growth. Moreover, considering the role of the inflation rate, inflation moderates the relationships between financial leverage, liquidity, firm size, fixed assets ratio, firm growth, and the revaluation of fixed assets.

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*Corresponding Author:
Vahid Bekhradi Nasab
Email: Vahid.bekhradinasab@gmail.com
Tel: 09137880527
ORCID: 0000-0001-7601-7915

1. Introduction

Financial information of firms is produced through the accounting system, and the purpose of financial reporting is to provide accurate and timely information. Economic decision-makers seek up-to-date information and indicate the value of assets as they are because presenting accurate and timely information is an important factor in the decision-making of insider and outsider users of financial statements (Solikhah, Hatuti, and Budiyono, 2020). The increase in the general level of prices, i.e., inflation, which is a serious concern in many countries such as Iran, has led to a gap between assets' market value and book value; that is, assets' book values do not reflect the economic realities (Solikhah, Hatuti, and Budiyono, 2020). Thus, information recorded and reported based on historical costs lacks relevance, which is one of the important qualitative characteristics of financial information, leading to misled economic decision-makers. The suggested solution for addressing or mitigating this problem is to reconsider the cost of assets, referred to as "asset revaluation". If in an economy struggling with inflation, accounting items, following the historical cost principle, are reported based on the original costs and their book values are not adjusted for inflation, an ambiguity arises as to whether the financial statements provided based on the historical cost principle have the required qualitative characteristics to help the shareholders make the right decisions. If accounting information based on historical costs lacks the desirable quality under inflationary conditions, the decisions made based on such information are not of good quality (Javid, Ahmadiloyeh, 2015).

There is limited research on selecting fair value measurement techniques for non-financial assets. As non-financial and financial assets have different characteristics from each other and due to the non-existence of the fair value of assets in active markets, this study examines the effects of leverage, firm size, liquidity, firm growth, and fixed assets ratio and also investigates the relationship between asset revaluation and financial statements in the TSE and BSE considering the role of inflation using appropriate measurement models and then compares them.

2. Theoretical Framework and Hypotheses Development

2.1. Asset revaluation

Asset revaluation is a formal process of updating the book values of assets to their fair values. In recent years, fair value accounting has been extensively used, but U.S. Generally Accepted Accounting Principles (GAAP)and the International Financial Reporting Standards (IFRS) hold differing views on fair values for non-financial assets.

Although both U.S. GAAP and IFRS settings allow the recognition of the reduction in fixed assets' values, only IFRS permits the recognition of their structuring surplus (Choi et al., 2013). Non-current or fixed assets are purchased to be held or used for more than a year and are not for sale in ordinary operations. From the economic perspective, the value of a fixed asset finds a concept when it is close to its market price or replacement cost at the same date. Usually, during the inflationary period, the price of fixed assets increases, while in the accounting system, the cost principle is always applied (HaqiqiTalab and Mousavi, 2015).In accounting, revaluation is a necessary technique for the correct presentation of the value of capital assets of a firm and refers to the revaluation and adjustment of book values to market fair values and maybe upwards or downwards. Haqiqi Talab and Mousavi (2015) suggest different reasons for revaluation, including the tendency to increase the borrowing capacity, issuing bonds, reducing operating cash (Brown, Izan and Loh, 1992; Tay, 2009), improving the prospect of firm growth and liquidity (Lin and Peasnell, 2000).

2.2. The role of inflation in revaluation and the quality of information presented in financial statements

The financial statements of capital-intensive companies indicate that work in progress and fixed

assets often comprise a major portion of the balance sheet; thus, identifying and determining the cost, recording, and controlling assets are of great importance in the statement of financial position and relevance of the values of these items, especially with the current inflation, has always been a challenge facing the accounting profession. Eventually, after two decades of continuing disputes, the Iranian government agreed to allow private-owned enterprises, like state-owned enterprises, to revalue their fixed assets and use revaluation tax exemptions. The executive by-law of revaluation, due to the inflationary conditions of the last two decades, can be a step taken toward the transparency of financial statements (Amani, 2011). Regardless of theoretical issues and problems, implementing the relevant rules and regulations always leads to new questions and arguments, requiring seeking and providing solutions. Widespread inflation in different societies, the increasing complexity of financial analysis methods, and various needs of insider and outsider users, particularly sensitivities of decision-making authorities, have made it necessary to provide realistic information in financial reporting (Haqiqi Talab and Mousavi, 2015). There is a considerable difference between the book values and the current values of firms' assets. Considering that the true value is not indicated in financial statements, asset revaluation can improve the transparency and relevance of financial statements. If revaluation surplus were tax-exempt, firms would be more willing to revalue their assets (Marfoo, Momenzadeh, and Momenzadeh, 2013). In developed countries, firms' financial statements and published information are the most important sources of information about firms' financial position and managers' performance. Therefore, accounting standards and accepted accounting principles as the base for providing this information should have specific characteristics to lead to the presentation of reliable and relevant information. One of the underlying assumptions of financial statements is the monetary unit assumption as the measure of economic events, while in inflationary conditions, this assumption is highly affected, and if the purchasing power of money is assumed unchanged, the provided information does not match economic reality (Shabahang and Setayesh, 2001). Transparent and reliable financial information provides the basis for the users' decision-making. Managers, investors, creditors, and other users need comparable, relevant, and understandable information to reach informed and right decisions. Although financial information can be extracted from different sources, financial statements constitute the primary sources of financial information. Hence, they should have desirable qualities. Financial statements will be of good quality if they are prepared based upon certain criteria, i.e., accounting standards. The increase in the inflation rate, constant changes in prices, and the reduction in the purchasing power of money in different societies have led to a huge gap between the information presented in financial statements and the economic realities. The reduced purchasing power of countries' currencies over time and significant changes in relative prices of goods and services have resulted in the inconsiderable difference between the historical costs at which fixed assets are presented in financial statements and their current values as the indicator of economic realities. Under inflationary conditions, the financial information provided by accountants using traditional methods and without considering the effects of inflation is not relevant and can mislead users of financial statements. Therefore, it is important to discuss inflation and the effects of price changes and how they should be reflected in financial statements by using an effective tool to help users make the right financial and economic decisions (Nekouei, Salehi, and Ekmiabi, 2014).

2.3. Financial leverage and fixed asset revaluation

Firms with high leverage are likely to face problems receiving loans because creditors have concerns about the failure of such firms to pay off their debts. Positive accounting theory suggests that managers' decisions about asset revaluation demonstrate their motivations for reducing the level

of leverage. Asset revaluation leads to increased asset values, improved financial ratios, an enhanced level of creditor confidence, and a larger amount of loans a firm can receive from lenders. In other words, a lower level of leverage leads to a lower level of risk for creditors because it indicates a better position of firm assets (Seng and Su, 2009); Iatridis and Kilirgiotis, 2012). Solikhah, Hastuti, and Budiyono (2020) find that financial leverage has a positive and significant effect on the decision to undertake fixed asset revaluation, while liquidity, firm size, fixed asset sensitivity, and firm growth do not have any effect on the fixed asset revaluation. Valiyan, Abdoli, and Hashemi (2018) show that asset restructuring has a negative and significant relationship with financial leverage, and firms with the highest asset restructuring sensitivity adjust their actual leverage towards the target leverage.

Giani and Martani (2018) indicate that 20 percent of building construction companies undertaking asset revaluation have reduced financial leverage and increased debt.

Hypothesis 1-1: there is a significant relationship between financial leverage and fixed asset revaluation.

Hypothesis 1-2: the inflation rate moderates the relationship between financial leverage and fixed asset revaluation.

2.4. Liquidity and fixed asset revaluation

Liquidity refers to a firm's ability to pay off its short-term debts timely (Halsey et al., 2005). Firms with a low level of liquidity have a strong incentive to revalue their assets because asset revaluation provides more realistic information about the amount of cash that would be received from selling fixed assets and increases borrowing capacity (Tay, 2009). The fair value of a fixed asset indicates the price at which it can be sold. Thus, presenting assets at their fair values leads to an increased level of creditor confidence and enhanced borrowing capacity of a firm. Hence, managers are willing to revalue their assets to receive more loans from creditors (Tay, 2009). Mansouri, Saeedi Garaghani, and Asadi Dubani (2018) find that asset revaluation increases audit costs. Firms that revalue their assets experience more audit costs than firms using the historical cost model. Azmi (2018) shows that the benefits of the revaluation of fixed assets are realized in the subsequent year, and the motivation for revaluation is to disclose fixed assets' fair values to financial statements' users. Javid and Ahmadi Loyeh (2015) indicate that, due to inflation, the quality of adjusted accounting information is higher than accounting information based on historical costs.

Hypothesis 2-1: there is a significant relationship between liquidity and fixed asset revaluation.

Hypothesis 2-2: the inflation rate moderates the relationship between liquidity and fixed asset revaluation.

2.5. Firm size, fixed assets ratio, and fixed asset revaluation

The high proportion of fixed assets leads to information asymmetry, a conflict of interests, and agency costs. Thus, large firms with huge fixed assets constantly attempt to reduce information asymmetry through asset revaluation. Revalued fixed assets are presented at their fair values in financial statements, leading to the optimal use of information presented by insider and outsider users in financial statements. Thus, large firms seek methods for revaluing their assets to present a fair picture of assets' real values. Mert (2020) finds that countries facing the problem of rising inflation rates undertake fixed asset revaluation more extensively than countries with a constant inflation rate. In addition to applying international accounting standards, such countries have taken effective measures to reduce prices. Haqqani suggests that inflation in different societies and the increasing complexity of financial analysis methods have made it necessary to undertake asset revaluation. Taqi Nataj, Momenzadeh, and Momenzadeh (2017) show that although capital increase from the

revaluation surplus brings advantages such as increased ownership ratio and improved borrowing capacity, it leads to the reduction in many financial ratios, firm growth rate (including internal and acceptable growth rate), share intrinsic values, and P/E ratio.

Hypothesis 3-1: there is a significant relationship between firm size and fixed asset revaluation.

Hypothesis 3-2: the inflation rate moderates the relationship between firm size and fixed asset revaluation.

Hypothesis 4-1: there is a significant relationship between fixed assets ratio and fixed asset revaluation.

Hypothesis 4-2**:**the inflation rate moderates the relationship between fixed assets ratio and fixed asset revaluation.

2.6. Firm growth and fixed asset revaluation

Growing firms need capital sources to expand their business and increase their financial profitability. Asset revaluation leads to an increase in creditor confidence and the firm's borrowing capacity. Asset revaluation and the reflection of fair values in financial statements result in reduced information asymmetry and agency costs. When potential stakeholders such as investors and creditors have information about a firm's assets' position and fair values, they will be more inclined to invest in the firm and give it loans. Marfoo, Momenzadeh, and Momenzadeh (2020) find that, in some countries, the cost model is adopted as the accounting policy, and asset revaluation is not allowed.

In Iran, in recent years, with the adoption of some regulations, tax exemption has applied to revaluation surplus; thus, firms have displayed a growing tendency towards revaluation. Bae, Lee, and Kim (2019) show that asset revaluation leads to an increase in the value relevance and timeliness of the information. In contrast, firms with poor financial health and a high level of information asymmetry are more likely to experience higher stock price crash risk after revaluation.

Noravesh, Sarraf, and Pakdaman (2018) indicate that asset revaluation has different effects on banks' profitability and capital adequacy; that is, revaluation does not improve banks' profitability but is significantly and positively related to capital adequacy, i.e., the greater the number of revaluations, the higher the capital level of banks.

Hypothesis 5-1: there is a significant relationship between firm growth and fixed asset revaluation.

Hypothesis 5-2: the inflation rate moderates the relationship between firm growth and fixed asset revaluation.

3. Research Methodology

The present study is quasi-empirical analytical research. The data are quantitative, and in nature, this is considered to be positive research. This study is post-event research as it uses past information. In terms of purpose, this is applied research. Multiple regression is employed to test the research hypotheses. The F-statistic is used to test the significance of the regression model. The panel data model with fixed effects and the GLS method are employed to estimate the research models.

3.1. Statistical population and sampling method

The statistical population comprises all the companies listed on the TSE and BSE. The data used in this study, including the list of the companies listed on the TSE from 2015 to 2019, were collected from the website of the Securities and Exchange Organization (SEO) of Iran, Tadbir Pardaz, and Rahavard-e-Novin software, also; the data of the companies listed on the BSE during 2015-2019 were extracted from the database of the BSE. Considering the nature of the research and some inconsistencies among the companies listed on the TSE, the systematic removal sampling method is used.

The following conditions are considered to select the research sample from the TSE.

1- The research sample does not include banks, financial institutions, or investment and leasing companies.
2- To maintain the comparability, the fiscal year of the selected companies ends on 20th March.
3- The selected companies did not change their fiscal year during 2015-2019.
4- The selected companies had been listed on the TSE by 20th March 2015 and have been consistently active during 2015-2019.
5- The financial information of the selected companies is available.

Considering the above conditions, 112 companies were selected, and their related data were collected from the website of the SEO of Iran and Rahavard-e-Novin software. Also, 563 companies listed on the BSE were selected as the sample.

3.2. Measurement of research variables

Table 1 indicates the measurement of the research variables.

Table 1. Measurement of Research Variables

Variable description	Measurement	Variable type	Parameter
Fixed asset revaluation	It equals 1 if firm i revalued its assets in year t, and 0 otherwise.	Dependent variable (dummy variable)	FAR_{it}
Financial leverage	The ratio of total debt to total assets	Independent variable	LEV_{it}
Liquidity	The ratio of current assets to current liabilities	Independent variable	LIQ_{it}
Firm size	Natural logarithm of sales	Independent variable	FS_{it}
Fixed assets ratio	The ratio of fixed assets to total assets	Independent variable	TFS_{it}
Firm growth	Current year's assets minus prior year's assets divided into total assets	Independent variable	FG_{it}
Inflation rate	The inflation rate in each financial period announced by the central banks of Iran and India	Moderator variable	π_{it}

Source: Solikhah, Hastuti, and Budiyono, 2020

3.3. Research models for hypotheses testing

Model (1) is employed to test hypotheses 1-1, 2-1, 3-1, 4-1, and 5-1:

Model (1)

$$FAR_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LIQ_{it} + \beta_3 FS_{it} + \beta_4 TFS_{it} + \beta_5 FG_{it} + \varepsilon_{it}$$

Where:

FAR_{it}: fixed asset revaluation of firm i in year t,LEV_{it}: financial leverage of firm i in year t,LIQ_{it}: liquidity of firm i in year t,FS_{it}: the size of firm i in year t,TFS_{it}: the ratio of fixed assets of firm i in year t,FG_{it}: growth of firm i in year t,β_0: intercept, $\beta_1, \dots, \beta_5$: the regression coefficients, ε_{it}: the disturbance component

Model (2) is employed to test hypotheses 1-2, 2-2, 3-2, 4-2, and 5-2:

Model (2)

$$FAR_{it} = \beta_0 + \beta_1 \pi_{it} \times LEV_{it} + \beta_2 \pi_{it} \times LIQ_{it} + \beta_3 \pi_{it} \times FS_{it} + \beta_4 \pi_{it} \times TFS_{it} + \beta_5 \pi_{it} \times FG_{it} + \varepsilon_{it}$$

Where:

FAR_{it}: fixed asset revaluation of firm i in year t,$\pi_{it} \times LEV_{it}$: the moderating effect of inflation rate on financial leverage of firm i in year t, $\pi_{it} \times LIQ_{it}$: the moderating effect of inflation rate on the liquidity of firm i in year t, $\pi_{it} \times FS_{it}$: the moderating effect of inflation rate on the size of firm i in year t, $\pi_{it} \times TFS_{it}$: the moderating effect of inflation rate on the ratio of fixed assets of firm i in year t, $\pi_{it} \times FG_{it}$: the moderating effect of inflation rate on growth of firm i in year t, β_0: intercept,

$\beta_1, \dots, \beta_5$: the regression coefficients, ε_{it}: the disturbance component

4. Data Analysis

In this study, the data of 112 Iranian companies listed on the TSE and 563 Indian companies listed on the BSE during the period 2015-2019 are analyzed. The required statistical tests are carried out using the Eviews 10 software.

4.1. Descriptive statistics of research variables

Table 2. Descriptive statistics of research variables of companies listed on the TSE during the period 2015-2019

variable	mean	median	standard deviation	skewness	kurtosis	Min	max
Fixed asset revaluation	0.830	1	0.367	1.764	1.115	0.000	1
Financial leverage	0.634	0.625	0.282	1.245	2.183	0.013	2.849
Liquidity	6.217	1.186	1.145	0.837	0.152	0.908	14.652
Firm size	6.296	6.224	0.621	0.835	1.172	4.811	8.368
Fixed assets ratio	0.107	0.092	0.172	0.072	0.666	0.092	0.884
Firm growth	0.075	0.069	0.164	0.705	1.627	-0.790	0.627

source: the research findings

Firm size with the value of 6.296 has the highest mean, and the variable firm growth with 0.075 has the lowest mean. The value of the standard deviation of revaluation is 0.367, which shows the average dispersion around the mean of fixed asset revaluation. The liquidity variable has the greatest standard deviation, which indicates the dispersion of this variable compared to other variables.

Table 3. Descriptive statistics of research variables of companies listed on the BSE during 2015-2019.

Variable	mean	median	standard deviation	skewness	kurtosis	min	Max
Fixed asset revaluation	0.769	1	0.625	1.685	1.012	0.000	1
Financial leverage	0.896	0.523	0.635	1.075	2.785	0.196	2.769
Liquidity	5.452	1.036	1.825	0.739	0.652	0.796	12.385
Firm size	6.965	5.285	1.852	0.906	1.452	5.965	9.736
Fixed assets ratio	0.632	0.956	0.328	0.121	0.825	0.129	0.985
Firm growth	0.208	0.172	0.112	0.685	0.562	-0.052	0.956

source: the research findings

Firm size with the value of 6.965 has the highest mean, and firm growth with 0.208 has the lowest mean. The standard deviation of revaluation equals 0.625, which shows the average dispersion around the mean of fixed asset revaluation.

4.1. Inferential statistics

4.1.1. Equality of the variance of the error term (residuals)

In this study, the assumption of the equality of residual variances is tested using the Breusch-Pagan-Godfrey test. Considering the results of the table below, the significance level of the test for both models in two countries is less than 0.05; thus, the null hypothesis suggesting the equality of variances in both models is rejected. Therefore, the GLS regression addresses the inequality of variances.

Table 4. The results of the Breusch-Pagan-Godfrey testing of the TSE

Research model	Statistic	Degrees of freedom	Statistic value	P-value
Model (1)	F statistic	(4 and 661)	6.179	0.000
Model (2)	F statistic	(4 and 661)	3.717	0.005

source: the research findings

Table 5. The results of the Breusch-Pagan-Godfrey testing of the BSE

Research model	Statistic	Degrees of freedom	Statistic value	P-value
Model (1)	F statistic	(7 and 2807)	6.286	0.000
Model (2)	F statistic	(7 and 2807)	4.952	0.001

source: the research findings

4.1.2. The absence of residual autocorrelation

The results of the estimation of research models demonstrate that the Durbin Watson (DW) statistic values in both models in the TSE and BSEare in their allowed area. Thus, there is no reason for rejecting the absence of autocorrelation in the residuals. In other words, the hypothesis that there is no autocorrelation among the residuals holds in the research models.

Table 6. The results of testing the absence of residual autocorrelation in the TSE

Research models	Statistic	Statistic value
Model (1)	The Durbin Watson (DW) statistic	2.059
Model (2)	The Durbin Watson (DW) statistic	2.045

source: the research findings

Table 7. The results of testing the absence of residual autocorrelation in the BSE

Research models	Statistic	Statistic value
Model (1)	The Durbin Watson (DW) statistic	2.015
Model (2)	The Durbin Watson (DW) statistic	2.079

source: the research findings

Table 8. The results of testing the absence of multicollinearity among explanatory variables in the model (1) in the TSE

Variable	Variance Inflation Factor (VIF)
Financial leverage	1.148
Liquidity	1.131
Firm size	1.044
Fixed assets ratio	1.010
Firm growth	1.121

source: the research findings

4.1.3. The absence of multicollinearity among explanatory variables

The Variance Inflation Factor (VIF) is used to test the absence of multicollinearity. AVIFless than 10 suggests the absence of multicollinearity. The results presented in Table 8 demonstrate that the values of VIFs of independent variables in both models in the TSE and BSE are in their acceptable range.

Table 9. The results of testing the absence of multicollinearity among explanatory variables in model (2) in the TSE

Variable	Variance Inflation Factor (VIF)
Financial leverage x inflation rate	1.317
Liquidity x inflation rate	1.290
Firm size x inflation rate	1.021
Fixed assets ratio xinflation rate	1.036
Firm growth xinflation rate	1.631

source: the research findings

Table 10. The results of testing the absence of multicollinearity among explanatory variables in model (1) in the BSE

Variable	Variance Inflation Factor (VIF)
Financial leverage	1.317
Liquidity	1.290
Firm size	1.021
Fixed assets ratio	1.036
Firm growth	1.125

source: the research findings

Table 11. The results of testing the absence of multicollinearity among explanatory variables in model (2) in the BSE

Variable	Variance Inflation Factor (VIF)
Financial leverage xinflation rate	1.533
Liquidity xinflation rate	1.853
Firm size xinflation rate	1.143
Fixed assets ratio xinflation rate	1.347
Firm growth xinflation rate	1.049

source: the research findings

4.1.4. Normality of the error term (residuals)

To check the normality of the error term, Jarque–Bera testis is used. Regarding the results of the table below, the value of the significance level of the Jarque–Bera test for both models in the TSE and BSE is less than 0.05; thus, the residuals of research models do not follow a normal distribution. When the sample size is large enough and the classic assumptions hold, the violation of the normality assumption does not usually cause a major problem. Considering the central limit theorem (CLT), even if the residuals are not normally distributed, test statistics follow an approximately normal distribution and are unbiased and efficient. Thus, the non-normality of residuals does not cause a serious problem in the analysis process.

Tabel 12. The results of the normality of the error term in the TSE

Research model	Statistic	Statistic value	P-value
Model (1)	Jarque–Bera	10.283	0.005
Model (2)	Jarque–Bera	8.164	0.015

source: the research findings

Table 13. The results of the normality of the error term in the BSE

Research model	Statistic	Statistic value	P-value
Model (1)	Jarque–Bera	26.797	0.000
Model (2)	Jarque–Bera	8.268	0.016

source: the research findings

4.1.5. Testing the stationarity of research variables

The results of the stationarity test are presented in Tables (14) and (15). Considering the results of the "Levin-Lin-Chow" test results, the p-values of all variables are less than %5; thus, all the dependent and independent variables have been stationary during the research period. As shown in Tables (14) and (15), all the variables are stationary, and there is no need for a cointegration test.

Table 14. The results of testing the stationarity of research variables in the TSE

Variable	The Levin-Lin-Chow statistic	P-value	Result
Fixed asset revaluation	4.280	0.000	Stationary
Financial leverage	8.620	0.000	Stationary
Liquidity	-1.986	0.000	Stationary
Firm size	9.210	0.000	Stationary
Fixed assets ratio	5.229	0.000	Stationary
Firm growth	-6.340	0.000	Stationary

source: the research findings

Table 15. The results of testing the stationarity of research variables in the BSE

Variables	The Levin-Lin-Chow statistic	P-value	Result
Fixed asset revaluation	6.521	0.000	Stationary
Financial leverage	7.985	0.000	Stationary
Liquidity	1.125	0.000	Stationary
Firm size	9.958	0.000	Stationary
Fixed assets ratio	6.584	0.000	Stationary
Firm growth	2.854	0.000	Stationary

source: the research findings

4.1.6. F limmer test

As indicated in Tables (16) and (17), the p-values of the F limmer test of both research models in the TSE and BSE are less than %5; thus, to estimate both models, the panel data method is employed.

Table 16. The results of the F limmer test in the TSE

Research model	Statistic	Degrees of freedom	Statistic value	P-value
Model (1)	F limmer	(110 and 551)	1.497	0.002
Model (2)	F limmer	(110 and 551)	1.388	0.009

source: the research findings

Table 17. The results of the F limmer test in the BSE

Research model	Statistic	Degrees of freedom	Statistic value	P-value
Model (1)	F limmer	(562 and 2243)	1.974	0.000
Model (2)	F limmer	(562 and 2243)	1.293	0.034

source: the research findings

4.1.7. Hausman test

As presented in Tables (18) and (19), the p-values of the Hausman test of both models in the TSE and BSE are less than %5; thus, the fixed-effects model is used to estimate both models.

Table 18. The results of the Hausman test in the TSE

Research model	Statistic	Degrees of freedom	Statistic value	P-value
Model (1)	Hausman	4	37.686	0.000
Model (2)	Hausman	4	14.154	0.006

source: the research findings

Table 19. The results of the Hausman test in the BSE

Research model	Statistic	Degrees of freedom	Statistic value	P-value
Model (1)	Hausman	8	31.494	0.000
Model (2)	Hausman	6	35.107	0.000

source: the research findings

4.2. Model estimation and results analysis

4.2.1. Hypotheses testing in the TSE

The model's estimation method is determined after testing the regression and stationarity assumptions. Research models must be estimated considering the results of F limmer and Hausman tests, in which in both models, heteroscedasticity exists; thus, the GLS method is used to estimate the research models. The results of model (1) estimation in the TSE are as follows:

Table 20. The results of estimating the first model of research in the TSE (without considering the effects of the inflation rate)

$$FAR_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LIQ_{it} + \beta_3 FS_{it} + \beta_4 TFS_{it} + \beta_5 FG_{it} + \varepsilon_{it}$$

variable	the estimated coefficient	standard error	t statistic	p-value
Intercept	-0.393	0.032	-12.102	0.000
Financial leverage	0.085	0.017	4.828	0.000
Liquidity	0.055	0.004	11.981	0.000
Firm size	0.186	0.021	8.559	0.000
Fixed assets ratio	0.035	0.012	2.873	0.004
Firm growth	0.186	0.026	7.153	0.000
The coefficient of determination	0.525	The adjusted coefficient of determination		0.426
F statistic	5.344	p-value (F statistic)		0.000

source: the research findings

The p-value of the F-test is 0.000 (less than 0.05); thus, the model is significant, and there is a linear relationship between the dependent and independent variables. The R-squared equals 0.525, which shows that nearly 52 percent of changes in the variable of the revaluation of fixed assets are explained by independent variables, and the rest is affected by other factors that are not reviewed in this study.

Table 21. The results of estimating the second model of research in the TSE (considering the effects of the inflation rate)

$$FAR_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LIQ_{it} + \beta_3 FS_{it} + \beta_4 TFS_{it} + \beta_5 FG_{it} + \varepsilon_{it}$$

variable	the estimated coefficient	standard error	t statistic	p-value
Intercept	-0.417	0.033	-12.492	0.000
Financial leverage inflation rate	0.128	0.017	7.169	0.000
Liquidity inflation rate	0.045	0.005	8.302	0.000
Firm size inflation rate	0.172	0.023	7.224	0.000
Fixed assets ratio inflation rate	0.015	0.012	1.212	0.000
Firm growth inflation rate	0.196	0.017	11.529	0.001
The coefficient of determination	0.554	The adjusted coefficient of determination		0.462
F statistic	6.020	p-value (F statistic)		0.000

source: the research findings

The p-values of t statistics of independent variables equal 0.000 (less than 0.005), and all are positive and significant. Therefore, financial leverage, liquidity, firm size, fixed assets ratio, and firm growth, considering the inflation rate, have positive and significant effects on the revaluation of fixed assets; that is, with the increase in each of these variables, the revaluation of fixed assets of companies listed on the TSE increases; thus, hypotheses 1-2 to 5-2 are accepted at the 95 percent confidence level. Moreover, the p-value of the F–test is 0.000 (less than 0.05), thus, the model is significant. The

R-squared equals 0.554, i.e., nearly 55 percent of changes in the fixed-asset revaluation variable are explained by independent variables. The rest is affected by other factors that are not investigated in this study.

Therefore, without considering the role of the inflation rate in the companies listed on the TSE, there are positive and significant relationships between financial leverage, liquidity, firm size, fixed assets ratio, firm growth, and the revaluation of fixed assets. Furthermore, considering the role of the inflation rate in the companies listed on the TSE, the inflation rate moderates the relationships between financial leverage, liquidity, firm size, fixed assets ratio, firm growth, and fixed asset revaluation. The findings of the present study are consistent with the studies of Nurjannah (2013) and Iatridis and Kilirgiotis (2012). Also, the findings are consistent with Solikhah, Hastuti, and Budiyono (2020)concerning financial leverage but inconsistent regarding liquidity, firm size, the sensitivity of fixed assets, and firm growth.

4.2.2. Hypotheses testing in the BSE

The p-value of the F-test is 0.000 (less than 0.05); thus, the model is significant. The R-squared equals 0.465; that is, independent variables explain nearly 46 percent of changes in the variable financial leverage, and the rest is affected by other factors that are not investigated in this study. According to the results presented in Table (22), the p-value of the t-statistic of financial leverage, liquidity, firm size, fixed assets ratio, and firm growth equals0.000 (less than 0.05), and its coefficient is positive and significant. Thus, financial leverage, liquidity, firm size, fixed assets ratio, and firm growth, considering the inflation rate, have positive and significant effects on the revaluation of fixed assets; that is, with the increase in each of these variables, the fixed asset revaluation of companies listed on the BSE increases; thus, hypotheses 1-1 to 5-1 are accepted at the 95 percent confidence level.

Table 22. The results of estimating the first model of research in the BSE (without considering the effects of the inflation rate)

$$FAR_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LIQ_{it} + \beta_3 FS_{it} + \beta_4 TFS_{it} + \beta_5 FG_{it} + \varepsilon_{it}$$

variable	the estimated coefficient	standard error	t statistic	p-value
Intercept	-0.074	0.062	-1.201	0.030
Financial leverage	0.229	0.033	6.857	0.000
Liquidity	0.070	0.010	6.891	0.000
Firm size	0.082	0.044	1.840	0.006
Fixed assets ratio	-0.002	0.024	-0.373	0.008
Firm growth	0.027	0.012	2.187	0.029
The coefficient of determination	0.465	The adjusted coefficient of determination		0.355
F statistic	4.212	p-value (F statistic)		0.000

source: the research findings

The p-value of the F-test is 0.000 (less than 0.05); thus, the model is significant. The R-squared equals 0.573; that is, independent variables explain nearly 57 percent of changes in fixed asset revaluation in the BSE; the rest is affected by other factors that are not investigated in this study. Therefore, without considering the role of the inflation rate in the companies listed on the BSE, there are positive and significant relationships between financial leverage, liquidity, firm size, fixed assets ratio, firm growth, and the revaluation of fixed assets.

Table 23. The results of estimating the second model of research in the BSE (considering the effects of the inflation rate)

$$FAR_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LIQ_{it} + \beta_3 FS_{it} + \beta_4 TFS_{it} + \beta_5 FG_{it} + \varepsilon_{it}$$

variable	estimated coefficient	standard error	t statistic	p-value
Intercept	-0.351	0.033	-10.362	0.000
Financial leverage inflation rate	0.050	0.017	2.901	0.003
Liquidity inflation rate	0.057	0.020	2.833	0.004
Firm size inflation rate	0.419	0.072	5.794	0.000
Fixed assets ratio inflation rate	0.042	0.005	8.081	0.000
Firm growth inflation rate	0.160	0.021	7.289	0.000
The coefficient of determination	0.573	The adjusted coefficient of determination		0.483
F statistic	6.359	p-value (F statistic)		0.000

source: the research findings

Moreover, considering the role of the inflation rate in the companies listed on the BSE, the inflation rate moderates the relationships between financial leverage, liquidity, firm size, fixed assets ratio, firm growth, and fixed asset revaluation. The research findings are consistent with Iatridis and Kilirgiotis (2012). The findings are consistent with Solikhah, Hastuti, and Budiyono (2020) for financial leverage but inconsistent regarding liquidity, firm size, fixed asset sensitivity, and firm growth.

5. Conclusion

Many researchers have considered forecasting accuracy as the quality of accounting information in recent years. Suppose accounting items are recorded at their historical costs and are not adjusted to their fair values when an economy is experiencing inflation. In that case, ambiguity will arise as to whether the provided financial statements have the required qualitative characteristics for the right decision-making of shareholders. This study attempted to measure and compare some of the major historical and inflation-adjusted financial statement ratios by employing two appropriate models. Thus, the main issue is the existence of ambiguity about the quality of the accounting information of financial statements based on historical costs in an inflationary economy and its association with the asset revaluation practices of firms. The present study results showed that financial leverage, liquidity, firm size, fixed assets ratio, and firm growth, without considering the role of the inflation rate, are positively and significantly related to asset revaluation. Also, considering the role of the inflation rate, financial leverage, liquidity, firm size, fixed assets ratio, and firm growth have positive and significant relationships with asset revaluation. In other words, if firms have high financial leverage, liquidity, fixed assets ratio, growth, and size, they are highly likely to revalue their assets.

Suggestions based on the research hypotheses

Speculation, misconceptions, and investors' lack of knowledge about the capital increase, the prevailing market and industry conditions, and emotional reactions are why there is a difference between theoretical analyses and investors' decisions. When making decisions, especially long-term investment decisions, investors should completely and thoroughly review a firm's financial information and forecasts and consider the effect of capital increase from asset revaluation surplus on the firm's current and future financial position. Inflationary conditions and currency fluctuations in Iran have made it difficult to match historical financial information to economic realities. Standard 11 (tangible fixed assets) has suggested a solution for tackling this issue by allowing the selection of one of the historical cost or revaluation models; however, asset revaluation has not been widely used

as depreciation expenses are not deductible to the provisions of the direct taxes law. In recent years, regulators have encouraged revaluation through tax exemption. Still, the complexity of the process, the time limitation, the gradual withdrawal, and the tax exemption's future did not lead to public acceptance. If in Iran, similar to many countries of the world, the revaluation surplus was tax-free, firms' financial reporting would be more relevant and of higher quality, and firms would undertake asset revaluation more frequently. Currently, the market values of firms' assets are considerably different from their book values. Considering that the true value is not indicated in its financial statements, asset revaluation can improve the transparency and relevance of financial statements. Firms would be more willing to use the revaluation model, provided that the revaluation surplus was subject to tax exemption

In the current situation, accountants should offer proper solutions for reducing the accounting profit error caused by applying the historical cost model to maintain firms' capital and power. According to the direct taxes law, state-owned firms' fixed asset revaluation surplus is not subject to income tax and other taxes. Therefore, state-owned firms revalue their assets without any concern over the tax consequences of revaluation. To facilitate the process of revaluation, it is suggested that tax exemptions be considered for revaluations. Moreover, it is suggested that other firms also change their view on asset revaluation and improve the quality of financial reporting considering the inflationary conditions of Iran.

Further to the study

1) Future research could examine the effect of tax cut policy on the relationship between the revaluation of fixed assets and the future performance of companies listed on the TSE and BSE, emphasizing the role of inflation.
2) Moreover, it would be interesting to investigate the role of asset revaluation on other variables such as audit quality, earnings quality, financial reporting lag, value communication, information content, share price, and leverage of the companies listed on the TSE and BSE.
3) Further studies should be conducted to examine the effect of the revaluation of fixed assets on the timeliness and relevance of information disclosed in the financial reports of the companies listed on the TSE and BSE, emphasizing the role of inflation.

Research limitations

As with most studies, the present study is subject to some limitations. First, this study's systematic removal sampling method led to the removal of some industries, such as financial intermediation; thus, generalizing the results to all the industries should be done with caution. Second, research hypotheses were tested using a dummy variable instead of revalued amounts owing to the small number of revaluations during the research period. Third, it was not possible to use the one year ago and one-year headsets because of the small number of observations and the different times of firms' asset revaluations.

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