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The usefulness of accounting information quality in estimating future growth of companies

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Abstract

The purpose of this study was to determine the priority and measure the usefulness of qualitative factors of financial reporting affecting future growth of companies. This research is applied in terms of purpose and quasi-experimental in terms of the test method. As a result, applying interactive effects of financial reporting quality variables and life cycle stages and economic conditions will increase the accuracy of the estimation of future growth of companies. In conclusion, with the predictive ability, using the interactive effects the financial reporting quality, life cycle and economic situation criteria increase.

Keywords: Accounting Information, Quality Criteria, Stages.

La utilidad de la calidad de la información contable para estimar el crecimiento futuro de las empresas

Resumen

El propósito de este estudio fue determinar la prioridad y medir la utilidad de los factores cualitativos de la información financiera que afectan el crecimiento futuro de las empresas. Esta investigación se aplica en términos de propósito y cuasi-experimental en términos del método de prueba. Como resultado, la aplicación de los efectos interactivos de las variables de calidad de los informes financieros y las etapas del ciclo de

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vida y las condiciones económicas aumentará la precisión de la estimación del crecimiento futuro de las empresas. En conclusión, con la capacidad predictiva, el uso de los efectos interactivos aumenta los criterios de calidad de la información financiera, ciclo de vida y situación económica.

Palabras clave: Información contable, criterios de calidad, etapas.

1. INTRODUCTION

The valuable role of information in economic development and the efficient allocation of resources is the consensus among economists and accounting experts. Financial reporting is one of the sources of information available to capital markets, which is expected to play an effective role in expanding investment and increasing its efficiency. In this regard, researchers have always been seeking to increase the quality of financial reporting as a means of meeting the accountability of companies to meet the needs of their community. Obviously, having financial information from all qualitative features is always useful for economic decision making. But given that the various characteristics, and in particular the two attributes of relevance and reliability are often contradictory, and the reinforcement of one is at the expense of another, financial information cannot have high-quality features at the same time, and because of this, different decision-making groups make priority to certain characteristics based on their type of decision. In addition, all around the promotion of the quality of accounting information in all features increases the cost of

providing information and does not seem economical, logical, and rational considering the limitation of benefits over costs.

The statement number one theoretical framework of financial accounting states: "Financial reporting should provide information about the entity's financial performance over a period" (Zimmerman, 2013; Lyudmila, 2019). Therefore, financial reporting content provides as much information as possible about corporate financial performance for users, have greater quality. The information provided should be related to the decision-making of the users. Also, based on the theoretical concepts of financial reporting in Iran, the purpose of the financial statements is to provide summarized and classified information on the status, performance and financial flexibility of the business entity that would be useful for a wide range of users of financial statements in making economic decisions. Therefore, the information provided should be relevant to the issue of user decision-making. The main purpose is to provide useful information in decision making. Financial reporting goals originate from the information needs of outsourcing users. The main objective is to express the economic effects of financial events on the status, performance and financial flexibility to help outsourced people such as investors, shareholders, analysts and creditors. Since the basis for the adoption of the decision of accounting information users is financial statements, the existence of an appropriate level of

financial reporting and disclosure quality is indisputable. The quality of financial reporting can provide a better prediction of the performance and future growth of the company for the users of the financial statements.

Companies follow a certain policy based on the stage of their economic life, in a way that these policies can influence the way financial reporting and their disclosure quality. In other words, companies in different stages of their life cycle have different characteristics and conditions that may affect their financial reporting behavior. According to Moradi and Eskandari (2014), based on the theory of competitive advantage, companies in the growth stage seek to eliminate the risk of competitive advantage and provide low-quality information, and only improve the quality of their financial information if they go from the stage of development to the maturity stage. In competing theory, the signaling theory, companies in the growth stage, where they need to have outsourced financial sources, such as income from shares and bonds, try to raise the level of financial reporting quality and reduced asymmetry information and signaling about their future growth and performance opportunities; in a way that these companies after passing through the phase of growth and access to financial resources, as well as increased the level of assets and increased bailable power in order to obtain financial facilities, they

tend to lose sight of providing and disclosing financially sound data.

Given the limitation of increased benefits on costs to provide information for organizations, determining the relative importance of each of the criteria for measuring the quality of financial reporting that can improve at each stage of the life cycle and economic condition the company's future growth rate seems to be necessary. All-around improving information quality in all aspects, such as audit quality, the quality of internal control over financial reporting, providing corporate governance mechanisms to improve the quality of profits, and the full disclosure of information is strongly advised by auditors and regulatory bodies. But determining the relative priority and coefficients of the importance of each in different stages of the life cycle can help analysts, investors and creditors in the future growth estimation. On the other hand, investors and analysts also would have problems in estimating future growth of companies, and because of higher quality information, they will provide more useful and less error-based analyzes.

2. THEORETICAL BACKGROUND AND LITERATURE

The quality of financial reporting has been raised as an issue in the accounting literature. Financial scandals and the collapse of market value and the loss of investor confidence in the capital market have been considered as the consequences of not paying attention to it. The actions of legislative bodies such as the US Congress and the adoption of the Sarbanes–Oxley Act and the regulations issued by the Securities and Exchange Commission, as well as the increased requirements for accountability in the rules and regulations of the bourse, all contribute to the development of the importance of the financial reporting quality of the companies. Significant growth of research done in the field of financial reporting quality, the factors affecting it and its beneficial effects all indicate its importance for users. Financial reports are one of the most important products and outcomes of the accounting system that its main purpose is to provide the necessary information for economic decision making about performance appraisal and profitability. An important factor in achieving this goal is to measure and provide high-quality information in a way that enables past performance evaluation and to be effective in assessing the ability to profit and anticipate future business activities.

Zimmerman (2013) suggests that some researchers consider the quality of outsourced financial reporting as the first factor in the company's economic outcomes (the cost of capital and company value). In his opinion, the made inferences overlook the fact that

performances are the product of operational and investment activities. Zimmerman (2013) considers the competitive advantages of the products and provided services, the introduction of new products, powerful and high-level manpower, patents and the legal and tax environment around, the value chain of the company, strategic solidarity and other factors as first-grade stimulant factors. These features are disclosed through an accounting measurement system that is prone to managers' motivation risk, accounting standards imperfections, and the level of environmental and economic uncertainty of companies. Sobery has used the life cycle criterion to examine the relationship between earnings quality criteria and future growth and they have referred it as the economic status benchmark.

In this regard, Zimmerman (2013) believes that some researchers tend to point out the quality of financial reporting as the first factor in the company's value without any theory. Meanwhile, according to him, financial reporting quality is, at best, only the second factor in the company's value driver. In other words, once the first-grade criteria affect the company, then the criteria for financial reporting quality can affect the company's value. Based on this view, according to Dichow, the causal relationships between the financial reporting quality and the company's economic outcomes (such as the cost of capital), by eliminating some of the variables, are in the path of ambiguity and doubt. The conceptual

model below shows Zimmerman's theoretical basis (2013). Based on the conceptual model presented by Zimmermann (2013), financial reporting quality is a secondary factor and its effects and consequences should be addressed considering the economic conditions of the companies. According to him, in reviews and analyzes related to the prediction of performance and future growth of companies, control factors such as competitive advantages, new products and operational and investment activities in forecasting should be considered all of which factors are disclosed through the accounting system of measurement. The system is also influenced by the risk of managerial motivation that, depending on the environment, may change the financial reporting behavior and involve the bias in financial reporting. In the following, we examine theoretical foundations of the moderating variables affecting the usefulness of financial reporting quality criteria on the future growth of companies.

Figure1. The role of life cycle moderating in relation to the quality of financial reporting and performance and future growth of companies

According to Moradi and Eskandar (2014) companies based on the stage of economic life in which they are located follow a certain policy based on the stage of their economic life, in a way that these policies can influence the way financial reporting and their disclosure quality. In other words, companies in different stages of their life cycle have different characteristics and conditions that may affect their financial reporting behavior. Based on the theory of competitive advantage, companies in the growth stage seek to eliminate the risk of competitive advantage and provide low-quality information and only improve the quality of their financial information if they go from the stage of development to the maturity stage. In competing theory, the signaling theory, companies in the growth stage, where they need to have outsourced financial sources, such as income from shares and bonds, try to raise the level of financial reporting quality and reduced asymmetry information and signaling about their future growth and

performance opportunities; in a way that these companies after passing through the phase of growth and access to financial resources, as well as increased the level of assets and increased bailable power in order to obtain financial facilities, they tend to lose sight of providing and disclosing financially sound data.

Creatures are born, grow, aging, and eventually die. Based on the theory of life cycle, companies and enterprises are like all life-long living organisms. Companies, according to each stage of their economic life, follow a particular policy. These policies may affect the quality of accounting information and financial reporting of companies (Dehdar and Aghaei, 2012). According to Leos, the company's life cycle influences the quality of financial reporting. The competitive perspective emphasizes that increasing the corporate financial reporting quality is consistent with moving in the lifecycle, and, according to a signaling perspective, during the lifecycle, the quality of financial reporting declines. Sobery believes that the company's exposure to any of the factors of the life cycle affects the usefulness of financial reporting quality. According to them, the relationship between the financial reporting quality and the growth of companies is more at the maturity stage due to an increase in the capacity of the accounting measurement system compared to other steps. Because companies are evolved in the maturity stage and in terms of corporate governance and internal control systems for financial reporting, are in a more

appropriate and stable position in comparison with other stages. Therefore, the life cycle can be considered as a moderator of the relationship between financial reporting quality and future corporate growth.

According to the theory of life cycle, companies evolve inevitably and move from one stage to another (Porter, 2004). According to the mentioned theory, companies in a different stage of the life cycle follow a predictable pattern and this trend is not reversible. According to Grollean, dividend policies, and also according to Dickinson (2011), cash flow patterns of the company based on various stages of the life cycle are explainable. In other words, according to the theory of life cycle, corporate financial policies are dependent on different stages of life and adhere to the life cycle. In maturity condition, companies have less investment, financing, and cash holdings. Emerging companies that are in the transition from the introduction phase to the growth and maturity stage are in dire need of attracting foreign resources to finance their business activities. Another example is for companies that are in the phase of maturity or transition from maturity to a declining stage. This group of companies, due to reduced growth capacities, has less investment opportunities and less funding, and due to the inability of external financing, will inevitably use internal sources of the company. In order to attract funds, resource providers seek information transparency from applicants for financial resources

and the quality of financial reporting can be considered as a tool to reduce the lack of information asymmetry between the two parties to the contract.

2.1. Moderating role of the economic condition in relation to the quality of financial reporting and performance and future growth of companies

Another problem is the relationship between the quality of accounting information and performance related to the estimation period. Since 2008, the severe financial and economic crisis experienced by international markets has led to a recession and a fall in stock market value and a sharp decline in corporate financial performance, and many experienced negative growths in their performance indicators. For this reason, considering the economic situation or conditions or, in other words, the economic cycle as a moderating variable in explaining the relationship between the financial reporting quality and the performance and future growth of the companies is necessary. From the economic point of view, the financial and economic crisis has created uncertainty in capital markets not only for investors, but also for customers, providers of financial resources and, in general, the community.

It is important to note that the quality of accounting information provided by companies depends on the economic and

environmental situation. The economic situation may be associated with high growth rates and economic productivity, or that it is in a downturn phase with declining levels of economic productivity. As suggested by klaine, companies are investing more in macroeconomic productivity. On this basis, to signal and demonstrate the usefulness of investments, they seek to provide more qualitative and transparent information. Therefore, it is expected that the companies that have invested in the flourishing and prosperous economy, with a clear performance outlook and have a greater incentive to improve the quality of financial information and financial performance. On the contrary, in the downturn phase, there is a tendency to provide lower quality financial reporting, which is due to increasing the ambiguity and information asymmetry between suppliers and users of information, which is also considered as a factor in destroying the future growth path of companies (Ferrero, 2014). Therefore, considering the theoretical foundations it is expected the fluctuation and variability of the economic cycle, economic environment to be considered as a moderating factor for the relationship between financial reporting quality and future corporate performance. The following figure shows the conceptual model of the research according to the theoretical foundations.

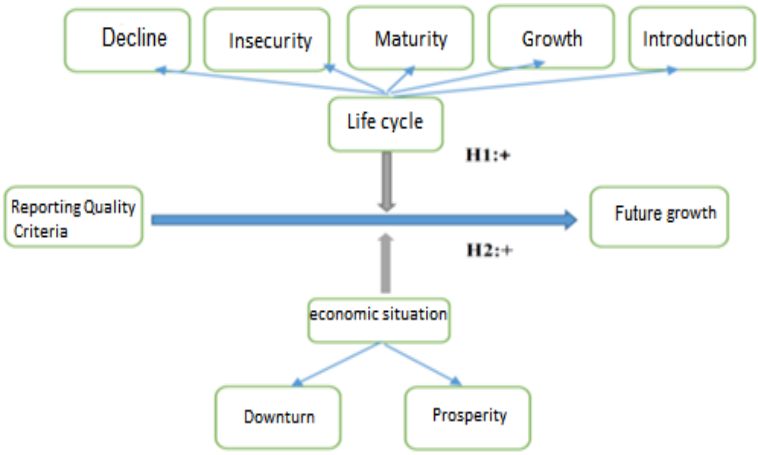

Figure2. Conceptual model of research

3. METHODOLOGY

The purpose of this research is development of empirical knowledge in a particular field. In this research, different criteria for measuring the quality of financial reporting from the subject literature are extracted and its impact on the future growth of companies is modeled along the life cycle and considering the economic conditions. The goal is to determine the stable and high-impact variables during the cycle of life and economic conditions. The variables used in the research are collected from the Rahavord Novin (new gift) software and the Tehran stock exchange website. This research is applied in terms of purpose and quasi-experimental in terms of the test method and in terms of the time period as a

year-to-year (cross-sectional) method. Data analysis was done using artificial neural networks method.

3.1. Statistical population and sample

The statistical population of the research is the companies listed in the Tehran stock exchange and a statistical sample including the information of the companies listed in the Tehran stock exchange during the years 2001 to 2015. Sampling is done by eliminating method and by applying the following restrictions:

1) Companies belonging to the intermediary industries (investments, banks, holdings and insurance) are excluded from the sample.

2) Companies that have changed the fiscal year during the research period are excluded from the statistical sample.

3) Companies that have been withdrawn from the list of bourse companies during the research period are excluded from the analysis.

Single-layer networks do not have the ability to implement non-linear functions that are why multi-layer networks are used. Multi-layer networks are more capable. In multi-layer neural

networks, there is an input layer that receives information; there are some hidden layers that take information from previous layers (in principle, the existence of a hidden layer is useful when the transformation function is nonlinear). Finally, there is an output layer that results of the calculation enter to it and its output is the final output of the network. After the neural networks were reinstated again in the 1980s, the Multilayer Perceptron Network or MLP was considered as one of the most effective in solving unresolved linear issues. This network, especially in predicting financial and economic variables, is highly predictable. The purpose of this type of neural network is to attempt to build patterns that act as the human brain. Its job is to create an output pattern based on the input pattern provided to the network. The simple structure of this model consists of a number of processing elements (artificial neurons) that these neurons receive and process the inputs and ultimately provides its output. The input can be raw data or other data elements of processing. Output can be the final or input for another neuron.

4. RESEARCH MODEL

The model used in this research, which has been compiled using the variables in the research literature on financial reporting quality, is as follows:

$$\begin{aligned}\mathrm{Growth}_{it+1} = {} & \theta_0 + \theta_1 \mathrm{Growth}_{it} + \theta_2 \mathrm{MtB}_{it} + \theta_3 \mathrm{ROA}_{it} + \theta_4 \mathrm{ROE}_{it} \\ & + \theta_5 \mathrm{Leverage}_{it} + \theta_6 \mathrm{AgencyCost}_{it} \\ & + \theta_7 \mathrm{FirmSize(Sales)}_{it} + \theta_8 \mathrm{FirmSize(Assets)}_{it} \\ & + \theta_9 \mathrm{ZScore}_{it} + \theta_{10} \mathrm{LifeCycle}_{it} \\ & + \theta_{11} \mathrm{EconomicCycle}_{it} + \theta_{12} \mathrm{Inflation}_{it} \\ & + \theta_{13} \Delta \mathrm{Debt}_{it} \\ & + \theta_{14} \Delta \mathrm{CFO}_{it} + \theta_{15} \mathrm{OperatingCycle}_{it} + \theta_k \mathrm{AQ}_{kit} \\ & + \theta_k \sum \mathrm{LifeCycle} * \mathrm{AQ}_{kit} + \theta_k \sum \mathrm{Economic} * \mathrm{AQ}_{kit} \\ & + \varepsilon_{it}\end{aligned}$$

4.1. The measurement method of the research variables

The following table shows how variables are measured and their role.

Table 1. The measurement method of the research variables

Measurement method	**Symbol**	**Descriptions**
Future growth	G_Sales_{it}, G_Assets_{it}, G_MVE_{it}, G_BVE_{it}	This results in the division of the growth criterion in year on year t-1. The components used include sales revenue, total assets, market value of equity and book value of equity.
Ratio of market value to book value	MTB_{it}	The market value of equity is its book value
Return on total assets	ROA_{it}	Dividend net income of period t on total assets in period t-1
Return of equity	ROE_{it}	Dividend net income of period t on equity at time t-1
Leverage	$Leverage_{it}$	The financial leverage resulting from the division of total debt into total assets in period t
Agency Cost	$AgencyCost_{it}$	The cost of agency i in year t.
Firm Size	$FirmSize_{it}$	Two criteria of the natural logarithm of sales revenue and total assets
Bankruptcy risk	$ZScore_{it}$	he risk of bankruptcy comes from the Altman Z-score
Inflation	$Inflation_{it}$	The annual inflation rate is

		extracted from the Central Bank website (www.cbi.ir)
Operating Cycle	$OperatingCycle_{it}$	Company operating cycle i in year t.
Change in debt	$\Delta Debt_{it}$	Change in the ratio of debt in year t compared to year t-1
Change in cash flows	ΔCFO_{it}	Change in operating cash flows in year t compared to year t-1.
financial reporting quality	AQ_{it}	Corporate financial reporting quality criteria in year t. In this research, 16 financial reporting quality criteria have been used.
Economic situation	$Economic_{it}$ 1) $High_{it}$ 2) Low_{it}	In the research period each year, if the adjusted gross domestic product is greater than the average GDP during the research period, the value of one is assigned to the variable (Highit = 1) and if the adjusted gross domestic product is less than the average, then the value one is assigned to the variable (Lowit = 1).
LifeCycle	$LifeCycle_{it}$	The virtual variable of life cycle that value one assigned to each stages of Introduction (I), Growth (G), Maturity (M), Insecurity (S), and Decline (D).

4.2. Company's life cycle

In this research, Dickinson methodology (2011) has been used to measure various stages of company life cycle. Dickinson (2011) introduced the corporate cash flow pattern as an indicator for the life cycle, which is determined by the patterns of operating cash flow, investment and financial performance of the company. According to the Dickinson (2011) pattern, a combination of eight-way cash flows can illustrate the company's life cycle:

Table 2 Measurement and determination of life cycle criterion based on Dickinson methodology (2011)

Description	**Emergence**	**Growth**	**Maturity**	**Turndown (insecurity)**	**Turndown (insecurity)**	**Turndown (insecurity)**	**Decline**	**Decline**
Operating cash flow	-	+	+	-	+	+	-	-
Cash flow of investment	-	-	-	-	+	+	+	+
Cash flow of financing	+	+	-	-	+	-	+	-

4.3. Financial reporting quality criteria

AQ_{it}: Accounting Information Quality Criteria: In this study, 16 common criteria used in thematic literature have been used. Since in analyzes, if any criteria are any more and in others, any less, the quality is higher, and in order to simplify and ease the analyzes, the criteria whose lower size indicates higher quality are multiplied in the negative number 1 and their symmetry is considered. Thus, in analyzes, the larger their symmetry is, the higher the quality.

4.4. The symmetry of fluctuation of operating profit $(AQ1_{it})$

Operating profit fluctuation $\delta_{t-3}^{t}E$ is measured by the standard deviation of operating profits, such as what was obtained in the research conducted by Francis et al. (2006), Francis et al. (2004) and others. Therefore, the standard deviation of 4 years ending in year t is homogeneous based on the sum of assets. The lower the operating profit fluctuates, the higher the quality.

4.5. The absolute value symmetry of the total accruals $(AQ2_{it})$

Given that it is probable that some business units have very large and very small and unstable accruals, in some studies, such Hesarzadeh et al. (2016) absolute value criterion of commercial accruals is used to determine the quality criteria. In this research, the absolute value of the total of accruals after the calculation is as follows, which is homogeneous based on the sum of assets, is used as a quality criterion:

$$-|TACC_{jt}| = -|E_{jt} - CFO_{jt}|$$

4.6. Correlation symmetry between changes in cash flows and accruals ($AQ3_{it}$)

The correlation between changes in cash flow and accruals as one of the earnings smoothing indicators is the focus of some quality research, such as Francis et al. (2005). Given the fact that the correlation between cash flows and accruals is expected to be negative, the more correlation the negative, the distortion of the fluctuation image in the economic performance and leads to lower quality. In this research, the correlation symmetry of cash flows and accrual items for four years is used as a quality criterion.

4.7. The symmetry of standard deviation ratio ($AQ4_{it}$)

Smoothing criterion that derives from the standard deviation of profits to the standard deviation of operating cash flows. Eckel's index ($AQ5_{it}$): The Eckel's index was first used by Imhoff through the ratio of the coefficient of change in profit to the coefficient of change in sales using the following relation. If the Eckel's index is less than one, it will be smoothing company, and if the ratio is larger than one, the company will be considered non-smoothing.

$$\frac{CV\Delta I}{CV\Delta S}$$

4.8. Annual adjustments ($AQ6_{it}$)

Given that the major part of the annual adjustments is indicative of correcting the mistakes in previous periods, to measure the quality in year t, the symmetry of absolute value of annual adjustment of the year t + 1, which are homogeneous based on the sum of assets, have been used. Annual adjustments are usually associated with refreshing financial statements. Annual adjustments have been used in many studies, including Crawth.

$$-\left|PPA_{jt+1}\right|$$

4.9. Symmetry of absolute value of cost of abnormal production ($AQ7_{it}$)

The cost of abnormal production as one of the indicators of earnings management has been considered in some studies such as Roychowdhury (2006) as a criterion of quality measurement. In the model of abnormal production costs as follows, after estimating the coefficients derived from the fitting of three variables: total assets, sales and sale changes on inventory changes of materials and

goods, the difference between production costs and the three variables mentioned is considered as costs of abnormal production. In this research, the symmetry of absolute value of the cost of an abnormal production (model error below) has been used as a quality criterion.

$$PROD_{jt} = \alpha_0 + \beta_1 \left({}^{1}/_{A_{jt}} \right) + \beta_2 \left({}^{S_{jt}}/_{A_{jt}} \right) + \beta_3 \left({}^{\Delta S_{jt}}/_{A_{jt}} \right) + \varepsilon_{jt}$$

4.10. The symmetry of total value of accruals ($AQ8_{it}$)

In some studies, such as Batacharia, total accruals are considered as a measure of the conservative nature of business units. As much as the total accruals less (more negative) is interpreted as indicating the early recognition of losses and delayed recognition of accounting earnings. Therefore, in this research, the symmetry of a total number of accruals assimilated by total assets is used as a criterion of quality measurement.

$$-TACC_{jt} = -(E_{jt} - CFO_{jt})$$

4.11. The symmetry (equation) of the absolute value of the error of fitting of receipts to sales revenue ($AQ9_{it}$)

In some studies, such as Dachow, the absolute value of some of the accounts that cannot be explained by the fitting of sales revenues can be considered as a quality criterion. In this research, this absolute value symmetry is used as a criterion of the quality of information.

$$REC_{jt} = \alpha_0 + \beta_1 S_{jt} + \varepsilon_{jt}$$

4.12. The symmetry of absolute value of abnormal accruals ($AQ10_{it}$)

The absolute value of abnormal accruals accrued by the fitting of sales and fixed assets overall accruals in some researches such as Kim et al. (2012) is considered as a quality criterion. In this research, the absolute value of the error of the following model is used.

$$TA_{jt}/A_{jt-1} = \alpha_0 + \beta_1 \, 1/A_{jt-1} + \beta_2 \left(S_{jt}/A_{jt-1}\right) + \beta_3 \left(FA_{jt}/A_{jt-1}\right) + \varepsilon_{jt}$$

4.13. The predictability of profits ($AQ11_{it}$)

The standard deviation of the standard error of fitting the operating profit of the current period to the subsequent period in some studies, such as Barth et al. (2001), has been defined operationally as a measure of predictability of profits and the quality. In this study, following the standard deviation of error of four years ending in year t is used to measure the quality of t. In order to homogenize the sum of assets has been used.

4.14. The absolute value of profit prediction error ($AQ12_{it}$)

The following absolute value of the regression model error is obtained:

$$E_{t+1} = \alpha_0 + \beta_1 E_t + \varepsilon_t$$

The profit stability coefficient ($\mathbf{AQ13_{it}}$): The following regression coefficient β_1 is calculated by the rolling method for each company separately.

$$E_{t+1} = \alpha_0 + \beta_1 E_t + \varepsilon_t$$

4.15. Type of auditor's comment ($AQ14_{it}$)

If the type of auditor's comment is unaccounted for (acceptable), the value of one is assigned otherwise, and zero is assigned to it. The type of auditor's comment is by researchers such as Koolinan has been addressed.

4.16. Improvement in the auditor's comment ($AQ15_{it}$)

If the auditor's report improves in the current period than the previous period, the value of one is assigned and otherwise zero. Improvement in the comment of the auditor was used by Koolinan.

4.17. Audit quality ($AQ16_{it}$)

If the auditor is an audit firm company, the value of one is assigned and otherwise a zero value.

5. RESULTS OF THE FINDINGS

To examine and statistical analysis of the collected variables, descriptive statistics of each data are presented in Table (3). As we see, three future growth variables, sales revenue and stock market value have been used to measure future growth. Some of the

variables presented to measure the quality of accounting information have been presented in a symmetry state to make analyses more consistent and easier, in such a way that larger variables always represent higher quality. In the table below, future growth variables include sales revenue, total assets and market value of equity as dependent variables and future growth components. The sales revenue variable has a minimum value of -0.591 and a maximum of 2.011 with an average growth rate of 20% over the study period. The above rate for total asset variables and equity market value is respectively 19.5% and 34% respectively.

Table 3. Descriptive statistics of the variables used in the research

Kurtosis	**skewness**	**SD**	**Mean**	**Maximum**	**Minimum**	**Symbol**	**Description**
4.750	1.438	0.352	0.200	2.201	-0.591	$GSales_{it+1}$	Sale revenue growth
2.656	1.363	0.240	0.195	1.275	-0.254	$GAssets_{it+1}$	Total asset growth
6.638	2.311	0.831	0.340	4.964	-0.656	$GMVE_{it+1}$	The growth of the equity market value
10.492	2.003	0.580	0.234	4.180	-2.223	$GBVE_{it+1}$	Growth of book value of equity
7.407	-2.282	0.068	-0.082	-0.009	-0.491	AQ1it	The symmetry of fluctuation of operating profit
1.660	-1.335	0.079	-0.092	-0.001	-0.422	AQ2it	The symmetry of absolute value of the total accruals
3.550	2.019	0.392	-0.735	0.842	-1.000	AQ3it	Symmetry of correlation between cash flows and accruals (profit smoothing)
8.911	-2.499	0.859	-0.945	-0.067	-6.901	AQ4it	The symmetry of standard deviation ratio

							(profit smoothing equation)
22.265	-1.993	7.001	1.676	38.860	-59.830	AQ5it	Eckel's index (Imhof)
8.109	-2.683	0.026	-0.019	0.000	-0.163	AQ6it	The symmetry of absolute value of annual adjustments
3.494	-1.661	0.081	-0.092	-0.001	-0.481	AQ7it	The symmetry of absolute value of real profit management (abnormal production cost)
1.422	0.730	0.144	0.042	0.616	-0.330	AQ8it	The symmetry of total accrual items
4.378	-1.912	0.056	-0.054	0.000	-0.357	AQ9it	The symmetry of absolute value of the error of matching receivables with sales revenue
4.400	-1.824	0.109	-0.120	-0.002	-0.680	AQ10it	The symmetry of absolute value of abnormal accruals
2.188	1.434	0.041	0.059	0.257	0.007	AQ11it	Profit predictability
15.549	-3.282	0.073	-0.058	0.000	-0.736	AQ12it	The symmetry of absolute value of the profit forecast error
66.732	4.201	0.665	0.245	11.825	-4.356	AQ13it	Earnings stability coefficient
-1.574	0.653	0.475	0.345	1.000	0.000	AQ14it	Auditor's comment type
26.398	5.327	0.176	0.032	1.000	0.000	AQ15it	Improvement in auditor's comment type
-0.807	1.092	0.439	0.260	1.000	0.000	AQ16it	audit quality
5.960	2.821	0.289	0.092	1.000	0.000	$I(Introduction_{it})$	Introduction stage
-1.962	0.200	0.498	0.450	1.000	0.000	$G(Growth_{it})$	Growth stage

-1.398	0.776	0.466	0.319	1.000	0.000	$M(Mature_{it})$	Maturity stage
5.758	2.785	0.292	0.094	1.000	0.000	$S(Shake\text{-}Out_{it})$	Insecurity stage
17.640	4.430	0.206	0.044	1.000	0.000	$D(Decline_{it})$	Decline stage
-1.501	0.707	0.471	0.333	1.000	0.000	$High_{it}$	Economic prosperity
-1.501	-0.707	0.471	0.667	1.000	0.000	Low_{it}	The economic situation of recession(turnd own)
4.155	1.773	1.997	2.409	12.515	-0.429	MTBit	Market value to book value
3.126	1.493	1.502	2.302	9.189	-0.453	Z-Scoreit	Bankruptcy risk
0.011	0.448	1.417	12.791	17.424	9.625	FirmSize1(Sales)	Size (sales revenue)
0.172	0.545	1.406	13.118	17.787	10.131	FirmSize2(Total Assets)	Size (Total Assets)
1.394	0.982	0.155	0.144	0.776	-0.223	ROA_{it}	Return on total assets
7.671	1.749	0.550	0.429	3.641	-2.004	ROE_{it}	Return on equity
1.665	0.368	0.197	0.648	1.609	0.155	$Leverage_{it}$	Leverage
1.749	1.040	0.416	0.834	2.592	0.066	$AgencyCost_{it}$	Agency Cost
1.433	1.024	140.660	256.780	829.822	33.244	$OperatingCycle_{it}$	Operating cycle
19.570	1.602	3.559	0.089	32.006	-23.254	ΔCFO_{it}	Changes in operating cash flows
6.786	0.790	0.915	0.378	5.779	-4.782	$\Delta Debt_{it}$	Change in debt ratio
0.218	1.172	7.215	17.433	34.700	10.400	$Inflation_{it}$	Inflation

5.1. Results of model estimation by multilayer perceptron neural network (MLP)

Figure (3) shows the importance of modeling by multilayer perceptron neural networks. In order to estimate the future growth

of sales revenue, 70% of the samples were selected as experimental samples and 30% were selected as test samples. The overall results show that the variables of financial reporting quality from the total ability to explain the model are 25.9% of importance and share. However, by adding moderating variables of the life cycle and economic status, it was found that interactive effects of all financial reporting quality and life cycle criteria are 48.59% and the interactive effects of financial reporting quality and economic status criteria of 21% important. The results of the model show that with the predictive ability using interactive effects, the financial reporting quality, life cycle and economic situation criteria increase (Zhai & Wang, 2016).

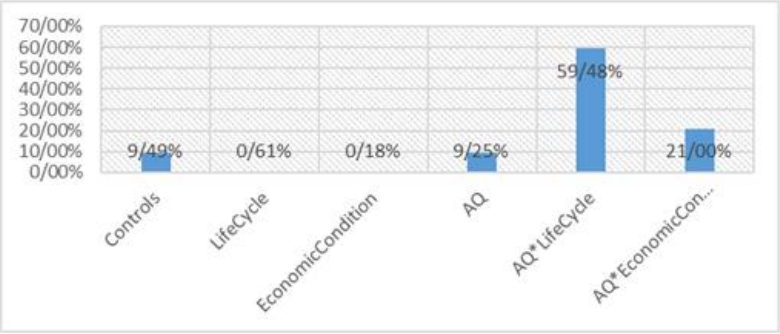

Figure 3. Diagram of determining the importance of each model variables for estimating future growth of sales revenue

Figure 4 shows the importance of the variables used in modeling by multilayer perceptron neural networks. In order to estimate the

future growth of total asset, 70% of the samples were selected as the experimental sample (learning) and 30% were selected as the sample of the test. The results show that the variables of the accounting information quality of the total ability to explain the model are 12.13 percent of importance and share. However, by adding the moderating variables of the life cycle and economic status, it has been determined that the interactive effects of all financial reporting quality and life cycle criteria are 57.88%, and the interactive effects of financial reporting quality and economic status criteria are 91.19%. The results of the model show that with the predictive ability, using the interactive effects the financial reporting quality, life cycle and economic situation criteria increase.

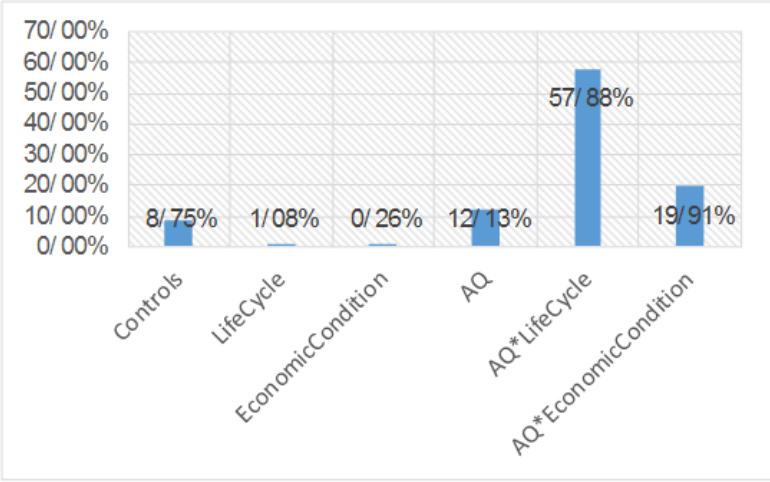

Figure 4 Diagram of determining the importance of each model variables for estimating future growth of all assets

Figure 5 shows the percentage of importance of the variables used in modeling. The results show that the variables of the accounting information quality of the total ability to explain the model are 44.8% of importance and share. However, by adding the moderating variables of the life cycle and economic status, it has been determined that the interactive effects of all financial reporting quality and life cycle criteria are 60.23 percent, and the interactive effects of financial reporting quality and the economic situation criteria are 20.40 percent. The results of the model show that with the predictive ability, using the interactive effects the financial reporting quality, life cycle and economic situation criteria increase.

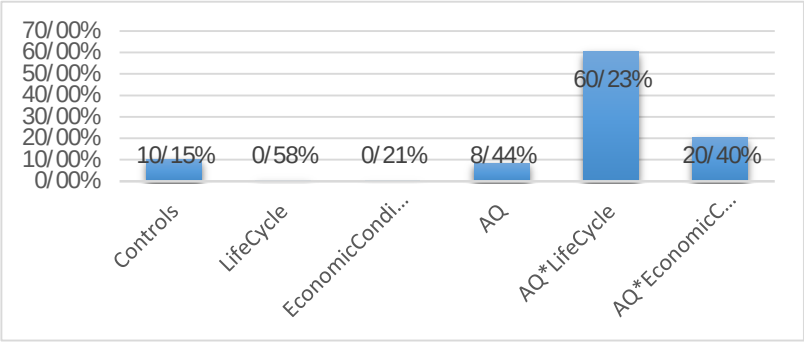

Figure 5 Diagram of determining the importance of each model variables for estimating future growth of equity market value

6. SUMMARY AND CONCLUSION

The purpose of this study is to provide a model for assessing the usefulness of financial reporting quality criteria for future growth in the company's life cycle process taking into account the economic situation. In the subject literature, the quality of financial reporting is considered as a multidimensional concept that does not have the capability of defining operational in one variable and is measured through a range of variables such as profit smoothing, earnings management, profitability predictability, earnings quality, annual adjustments, and so on. But their reliability and validity, or, in other words, the sustainability of their usefulness with regard to the economic conditions of the companies have so far been neglected. Therefore, the questions raised in this research are whether all the criteria for financial reporting quality in the economic conditions and the various stages of the life cycle have sustained effects.

6.1. Future suggestions

Considering the results obtained and increasing the accuracy of predictive modeling of future growth by using and applying the quality of financial reporting in the process of the life cycle of companies, it is recommended that the modeling routine for data-

processing approaches to be considered and the effect of those factors on the growth components and their future performance. In this research, the components of sales revenue growth, total assets and market value of equity have been investigated. For future research, it is suggested that other target variables such as the cost of capital, return on equity and profitability and investment efficiency be used.

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