The trend of relevance of value of accounting information: a study on pharmaceutical companies listed in the Tehran Stock Exchange

Norallah Khodadadi [1] iD, Mehrdad Ghanbari [1*] iD, Babak Jamshidinavid [1] iD, Javad Masudi [1] iD

1- Department of Accounting, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.
Corresponding author and reprints: Mehrdad Ghanbari, Assistant professor, Department of Accounting, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.
Email: Mehrdadghanbary@yahoo.com

Abstract

Background: Financial statements are one of the main ways for companies to communicate in order to provide financial and non-financial information to their stakeholders. The purpose of this research was to investigate the relevance of accounting information value. It was for pharmaceutical companies active in Tehran Stock Exchange.

Methods: This descriptive-correlational study was conducted on 26 pharmaceutical companies admitted to the stock exchange during the period of 2000 to 2019. The method of collecting information was based on two library models and the information included in the financial statements of the companies. To estimate the value relevance of accounting information in this study, the non-parametric method of classification and regression tree (CART) was used, which automatically includes non-linear relationships and interactions between variables, and simple linear regression was used to test the trend of value relevance.

Results: The results showed that the trend of relevance of the composite value of accounting information increased during the research period for pharmaceutical companies, but it was not statistically significant. The results of the relevance of the value of single variables show a decrease in the relevance of the value of known intangible assets, which includes goodwill and software, and an increase in the relevance of the value of alternative performance measures for pharmaceutical companies.

Conclusion: The relevance of the accounting information value of pharmaceutical companies allows investors to easily adjust their investment strategies in the Bahadra Stock Exchange and make informed decisions to achieve their goals and allocate resources to more profitable investments.

Keywords: Economics, Pharmaceutical; Financial Statements; Standards.

Introduction

One of the most important goals in financial reporting is to provide information to stock investors so that they can assess the value of the company. The validity of financial statements depends on the relevance of the value of the accounting information. Based on Francis & Schipper, value can be measured by the explanatory power of statistical relationships between accounting information and stock value or market returns (1). Studies have revealed the relationship between accounting amounts, especially profits, and indicate that accounting items have lost their relevance value (2). They have attributed this reduction to the emergence of a new economy in which the number of new

companies increases with business models focusing on intangible assets (3, 4). Another reason is the existence of loss-making companies (5). Many researchers such as Lev & Sougiannis (6), Brown et al. (7), Collins et al. (8), Morris & Alam (9) and Ohlson (10) address the concern about the relevance of value. It seems that there is a difference between the value of high-tech companies and the value of low-tech companies and their relevance of value decreases until the technology bubble and then increases Morris & Alam (9) and Ciftci et al. (11).

Most previous studies have investigated the relevance of dividends and book value of equity and have not considered important variables in the new economy. Hence, in this study, in addition to dividends and book value of equity, the trend relevance of a set larger than accounting variables including growth opportunities, intangible assets, performance alternatives to dividends, capital expenditures, total cost of goods sold, total assets and general administrative and sales costs are examined. In addition to combined trend of accounting variables, value of relevance of each accounting variable is examined individually. Its findings provide insights into accounting information that may be useful for better reflecting information to investors when evaluating a company and providing potential insights into stock valuation. Previous studies have largely used a linear relationship, but in this study, a nonparametric model called classification and regression tree (CART) was used to estimate the relevance of the value of accounting information. This study aims to survey the trend of relevance of value of accounting information: a study on pharmaceutical companies listed in the Tehran Stock Exchange

Methods

This research is a part of applied research and has been carried out using a descriptive-correlation method. The statistical population of this research is all the pharmaceutical companies accepted in the Tehran Stock Exchange, which were active in the period of 2000 to 2019. In this research, the statistical sample is determined by specifying the following limitations in the statistical population and adjusting.

The selected sample of this research included companies that met the following criteria:

1- It is possible to access the information of financial statements and accompanying reports and the information of accounting variables used in this research during the time period of 2000 to 2019.

2- The fiscal year ends at the end of March.

3- They have not changes in the financial period during the period under review.

In this study, for collecting information, first the library method was used. In the library method, the theoretical foundations of the research were collected from specialized Persian and Latin books and magazines. Then, to collect the data required for this study, the information contained in the financial statements and the accompanying reports of the financial statements by examining the information system of the Center for Research, Islamic Development and Studies of the Stock Exchange and Securities Organization at www. rdis.ir and Codal Network (Publishers Comprehensive Information System) at www. codal.ir were used. Also, the stock price information of the companies was collected through the system of Tehran Stock Exchange Technology Management Company at www.tsetmc.com and Tehran Stock Exchange at www. tse.ir. This study was applied research in terms of aim and its data were a quantitative data. In terms of method, it was conducted by descriptive-correlational method. In this study, regression analysis was used. In this research, first, using the method of

libraries, theoretical foundations and related to the research topic were extracted and reported from domestic and foreign resources. Then, the collected data were designed and organized in the form of program files (Excel). SPSS and R software was used for statistical analysis of data .To estimate the relevance of the value of accounting information, the explanatory power of classification and regression tree (CART) was used. Simple linear regression was used to investigate the relevance of the value of accounting information. The t-student test was also used to test the significance of the coefficients.

In this study, the explanatory power of the relationship between accounting information and stock price was used as the value of relevance, and in addition to the net profit and book value of equity, more variables related to intangible assets, including known intangible assets, research and development costs, advertising costs and Growth opportunities including cash and short-term investments and income growth and alternative performance criteria including operating cash, income, special items (net of other income and non-operating expenses) and other comprehensive profit have been investigated. Also, the variables of dividend profit, cost of goods sold, general, administrative and sales expenses, capital expenses and total assets, which have been shown to be relevant in previous researches, have been investigated.

Research models and variables

Estimating the relevance value

Estimating the relevance value of accounting information, the relationship between price and accounting variables was estimated annually according to Equation (1) and its explanatory power was considered as the relevance value.

$$P_i = CART(VAR_i) \qquad (1)$$

Dependent variable:

P_i =The share price three months after the end of the fiscal year

CART = It is a function of classification estimation and regression tree, which is similar to the decision tree. In short, CART is a nonparametric and flexible estimation approach that does not limit the researcher to determine and shape the potential relationship of variables. CART detects nonlinearities in relation to interactions between explanatory variables by recursively dividing them into variables, and automatically combines nonlinearity and interactions of variables that increase explanatory power.

Independent variables: VAR_i in model (1) includes the vector of 16 accounting variables, which are as follows.

Net profit per share (NI): It is obtained by dividing the company's net profit by the number of its shares.

Book value per share (BVE): is obtained by dividing the company's equity by the number of shares.

R&D cost per share (RD): It is obtained by dividing R&D cost by the number of shares of the company.

Intangible assets per share (INTAN): The sum of the identified intangible assets, including goodwill and software, on the number of shares of the company.

Advertising costs per share (ADV): it is obtained by dividing the advertising costs by the number of shares of the company.

Cash and short-term investments per share (CASH): it is obtained by the sum of cash and short-term investments on the number of shares.

Profit growth per share: is obtained from the difference between the sale at the end of the year and the first sale of the year divided by the number of shares.

Operating cash per share (CF): it is obtained by dividing operating cash by the number of shares of the company.

Revenue per share (REV): It is obtained by dividing the end-of-year revenue by the number of shares of the company.

Specific items per share (net other non-operating income and costs SPI): It is obtained by dividing the net other non-operating income and costs by the number of shares.

Other comprehensive income per share (OCI): is obtained by dividing the net other comprehensive income by the number of shares.

Dividend per share (DIV): it is obtained by dividing the dividend by the number of shares.

Capital expenditures per share (CAPX): It is obtained by dividing capital expenditures by the number of shares.

Cost of goods sold per share (COGS): it is obtained by dividing the cost of goods sold by the number of shares.

General, administrative and sales costs per share (SGA): it is obtained by dividing general, administrative and sales costs by the number of shares.

Assets per share (ASSETS): it is obtained by dividing the total assets by the number of shares.

Examining the trend of relevance of the combined value of accounting information

Equation (2) is used to test the relevance of the combined value of accounting information.

$$(2)\; OOSR2_t = \beta_0 + \beta_1 yEAR_t + \varepsilon_t$$

$OOSR2_t$ is an estimate of $OOSR^2$ which is estimated using Equation (1).

YEAR is the number of years of research and t is the number of years.

5-3- Examining the trend of relevance of the individual value of accounting variables:

We separate $OOSR^2$ for each accounting variable for each fiscal year to estimate the relevance of the value of each accounting variable, and then to examine the trend of relevance of the value of each accounting variable, Equation (3) is used as follows:

$$(3)\; VR_{K_t} = \beta_0 + \beta_1 YEAR_t + \varepsilon_t$$

The relevance of the value of the accounting variable is k. If we expect the accounting value to be more (less), we will expect it to be positive (negative).

VR_K is the percentage $OOSR^2$ attributed to the accounting value k.

To make VR_k, we specify that when we randomly determine each accounting value at a time relative to the other values, the correlation of the combined value decreases, which is obtained using the CART output.

We also estimate Equation (3) using the sum of VR_k for intangible assets, growth opportunities, and alternative performance criteria as follows.

Intangible assets (intans) = ADV INTAN + RD

Growth opportunities = CASH + REVGR

Alternative performance criteria (Altperf) = OCT + SPI + REV + FC

Results

Table 1 shows the descriptive statistics of the variables used in this study.

Mean and standard deviation statistics are presented for each variable.

Table 2 shows the correlation coefficient between the variables. The Pearson correlation coefficient was proposed to facilitate comparison with previous studies. The CART estimate is nonparametric, so any skewness in the apparent distribution in the difference between the Pearson and

Table 1. Summary of descriptive statistics for pharmaceutical companies

Variable	Abbreviation	pharmaceutical companies	
		Mean	SD
price	p	12039.97	17594.86
Net profit per share	NI	1351.62	1087.69
Book value per share	BVE	2913.28	3621.57
Research and development costs per share	RD	19.92	31.44
Intangible assets per share	INTAN	36.94	84.48
Advertising cost per share	ADV	38.51	78.65
Cash and short-term investment per share	CACH	307.36	472.97
Revenue growth per share growth	REVGR	977.04	3738.41
Operating cash funds per share	CF	1016.40	1373.93
Revenue per share	REV	6372.36	4271.11
Specific items per share (net non-operating income and expenses)	SPI	117.42	278.48
Other comprehensive income per share	OCI	4.64	58.62
Dividend per share	DIV	848.29	820.68
Capital expenditures per share	CAPX	138.38	253.95
Cost of goods sold per share	COGS	3996.56	2773.47
General administrative costs and sales per share	SGA	408.43	513.47
Assets per share	ASSETS	8248.17	4923.04

Spearman correlation coefficients has no effect on the estimates of this study.

According to Table 2, the correlation between price and net profit is the largest, followed by the correlation between price and dividend. Pearson (Spearman) correlation coefficient shows 0.447 (0.663) for net profit and 0.271 (0.449) for dividend.

The trend of relevance of combined value of accounting information showed that there was no significant relation and that the mean of relevance of value of accounting information for pharmaceutical companies was 51.85%.

every year from 2000 to 2019, the explanatory power of $OOSR^2$ is estimated using the CART method. The values in Table 3 show the mean, standard deviation and trend $OOSR^2$. β_1 is estimated using Equation 2 is as follows:

$$2 - OOSR2_t = \beta_0 + \beta_1 yEAR_t + \varepsilon_t$$

$OOSR2_t$ are percentages of $OOSR^2$ and $yEAR_t$ is the fiscal year t.

Table 3 shows the mean percentage of relevance of the individual value of each accounting variable from 2000 to 2019 for pharmaceutical companies and indicates that the value of other comprehensive income (OCI) and the value of the relevance of the research and development cost (RD) is zero.

Table 4 provides an estimate of the following regression.

$$VR_t = \beta_0 + \beta_1 yEAR_t + \varepsilon_t$$

VRt is the relevance of the value of a particular accounting variable in year t, which is a percentage of the total increase in the mean square error of the random allocation of the accounting variable. $yEAR_t$ is the financial year is t. *, **, ***, respectively, indicates significance at the level of 10, 5 and 1%.

Table 2. Pearson correlation coefficient at the top and Spearman (bottom) between the variables (n = 302)

Score variable	p	NI	BVE	RD	INTAN	ADV	CACH	REVGR	CF	REV	SPI	OCI	DIV	CAPX	COGS	SGA	ASSETS
p		0.447	0.122	0.001	0.098	0.041	0.078	0.094	0.094	0.168	0.059	-0.027	0.271	0.114	0.109	0.007	0.173
NI	0.663		0.407	0.051	0.290	0.282	0.268	0.107	0.293	0.361	0.204	-0.084	0.715	0.106	0.482	0.201	0.614
BVE	0.394	0.677		-0.045	0.057	0.273	0.131	0.062	0.152	0.254	0.028	-0.043	0.288	-0.009	0.156	0.077	0.286
RD	0.149	0.234	0.072		0.104	-0.307	0.026	0.031	0.026	0.160	-0.012	-0.045	0.006	0.064	0.199	0.015	0.084
INTAN	0.149	0.065	-0.044	0.222		0.103	0.085	0.162	0.058	0.363	-0.049	-0.034	0.195	-0.010	0.300	0.117	0.374
ADV	0.212	0.314	0.244	-0.019	0.078		0.216	0.055	0.207	0.336	0.059	-0.035	0.295	-0.071	0.258	0.156	0.428
CACH	0.213	0.291	0.271	0.219	0.281	0.041		-0.103	0.301	0.296	0.095	-0.042	0.250	0.079	0.254	0.103	0.312
REVGR	0.355	0.403	0.271	0.194	0.195	0.080	0.215		-0.034	0.296	-0.501	-0.016	0.084	-0.054	0.267	0.066	0.226
CF	0.294	0.410	0.307	0.208	0.136	0.209	0.348	0.125		0.379	0.001	-0.039	0.438	0.091	0.350	0.187	0.302
REV	0.386	0.621	0.462	0.398	0.350	0.396	0.411	0.556	0.445		000	-0.098	0.485	0.056	0.937	0.327	0.900
SPI	0.052	0.045	0.053	-0.081	-0.120	-0.065	0.078	-0.054	-0.025	-0.009		-0.028	0.172	0.119	0.020	-0.061	0.070
OCI	-0.061	-0.087	-0.084	0.014	-0.082	-0.048	-0.072	-0.055	-0.047	-0.109	0.009		-0.076	-0.032	-0.095	-0.054	-0.097
DIV	0.449	0.614	0.384	0.111	0.078	0.206	0.207	0.167	0.369	0.455	0.063	-0.087		0.101	0.395	0.154	0.481
CAPX	0.186	0.217	-0.012	0.318	0.240	-0.004	0.272	0.194	0.218	0.326	0.036	-0.009	0.220		0.035	0.212	0.021
COGS	0.294	0.480	0.325	0.393	0.340	0.207	0.361	0.475	0.379	0.909	0.059	-0.107	0.369	0.352		0.200	0.821
SGA	0.329	0.503	0.422	0.314	0.430	0.323	0.365	0.358	0.374	0.771	-0.187	-0.116	0.349	0.242	0.669		0.303
ASSETS	0.380	0.589	0.577	0.256	0.249	0.353	0.353	0.406	0.351	0.844	0.068	0.101	0.417	0.175	0.776	0.709	

Table 3. Percentage of mean relevance of individual value of accounting variables

variable	Pharmaceutical companies		
	Total years (2000-2019)	2000s	2010s
NI	20.8	21.4	20.2
BVE	14.4	12.6	16.2
RD	0	0	0
INTAN	3.3	6.4	0.2
ADV	6.6	9.6	3.6
CASH	1.3	2	0.6
REVGR	6	6.6	5.4
CF	4.1	3.2	5
REV	9.9	7.8	12
SPI	1	0	2
OCI	0	0	0
DIV	12.5	12.6	12.6
CAPX	2.5	3.2	1.8
COGS	5	2.6	7.4
SGA	4.7	5.8	3.6
ASSETS	7.7	5.8	9.6
Intans	9.9	16	3.8
Growth	7.3	8.6	6
Altperf	14.3	9.4	19.2

2000 to 2019 for pharmaceutical companies.

Table 4. The trend of relevance of the value of each accounting variable

Variable	Pharmaceutical companies		
	β_1	t	sig
NI	-0.408	-1.502	0.172
BVE	0.451	0.868	0.411
INTAN	-0.635	-3.477***	0.008
ADV	-0.296	-0.561	0.590
CASH	-0.206	-1.234	0.252
REVGR	0.048	0.104	0.920
CF	0.60	1.052	0.324
REV	0.455	1.407	0.197
SPI	0.146	0.850	0.420
DIV	-0.150	-0.304	0.769
CAPX	0.015	0.508	0.955
COGS	0.530	1.255	0.245
SGA	-0.179	-0.458	0.659
ASSETS	0.099	0.215	0.836
Intans	-0.932	-1.659	0.136
Growth	-0.142	-0.297	0.774
Altperf	0.862	2.926**	0.019

Relevance of value over time:

The findings of the relevance of the combined value of accounting information showed that the trend of combined value of relevance of accounting information for pharmaceutical companies (t = 0.027) is positive but not statistically significant.

In general, this finding shows that the trend of the value of relevance of accounting information for pharmaceutical companies during the research period has increased to some extent.

Relevance of individual value of accounting variables:

Figure 1 shows the percentages of the relevance of each accounting variable from

The pie chart shows the accounting variable with the highest value of relevance in clockwise, so that the number of needed variables to explain at least 90% of the combined value is required. The rest of the variables are grouped as "other". This chart shows a comparison between the 2000s and 2010s. In the 2000s, the relevance of value of NI is more than other variables, but in the 2010s, the relevance of value of NI has decreased slightly. Also, the pie chart shows that the BVE in the 2010s compared to the 2000s shows a slight increase. The pie chart shows that the relevance of the value of intangible assets in the 2010s compared to the 2000s for pharmaceutical companies has decreased significantly.
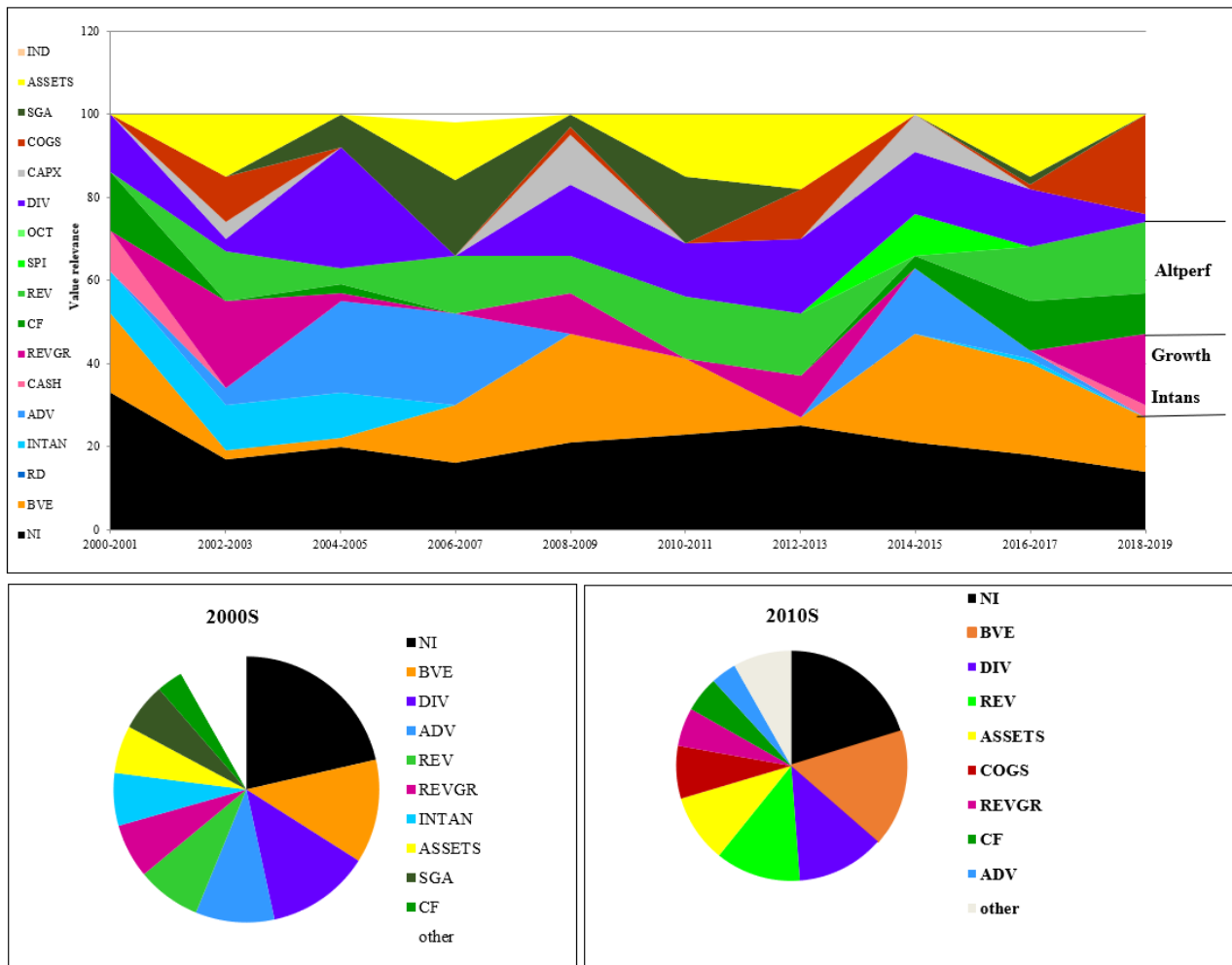
Figure 1. Relevance of the value of each accounting variable individually for pharmaceutical companies

Table 3 shows the statistics for Figure 1. According to Table 3, mean of relevance of NI over the entire period for pharmaceutical companies is 20.8%, which has the highest relevance value among the variables. However, in accordance with the declining trend, the relevance value of NI in the 2000s has decreased from 21.4% to 20.4% in the 2010s. The next variable that has the most relevance value is the book value variable with a mean of 14.4%, which has increased from 12.6% in the 2000s to 16.2% in the 2010s .Table 4 shows that the trend of relevance of known intangible assets (INTAN) variables decreased (t = 3.477) and alternative performance metrics (Altperf) increased (t = 2.659). Table 5 summarizes the results of relevance of the individual value of accounting variables for pharmaceutical companies.

Scale effects

As mentioned earlier, equation (1) for the variables is estimated per share so that it is possible to compare the relevance of the value of accounting information with previous researches. In addition, price deflation at the beginning of the year effectively transforms the dependent variable from price to yield. Inferences related to changes over time are attributed to price and return models, which are more than the effect of scale in terms of economic relations; Nevertheless, we estimate equation (1) using OLS with earnings and book value of equity as the only explanatory variables, and scaling with the beginning-of-year price. However, when it is estimated based on the first year's price from the CART method using all accounting variables, the findings without

Table 5. Summary of the results of the trend of relevance of the value of each accounting variable

Variable	Pharmaceutical companies	
	Trend sign	Statistical result
NI	Negative	Non-significant
BVE	Positive	Non-significant
INTAN	Negative	Significant
ADV	Negative	Non-significant
CASH	Negative	Non-significant
REVGR	Positive	Non-significant
CF	Positive	Non-significant
REV	Positive	Non-significant
SPI	Positive	Non-significant
DIV	Negative	Non-significant
CAPX	Positive	Non-significant
COGS	Positive	Non-significant
SGA	Negative	Non-significant
ASSETS	Positive	Non-significant
Intans	Negative	Non-significant
Growth	Negative	Non-significant
Altperf	Positive	Significant

the table do not show any significant decrease (t = -1.418). These findings suggest that additional accounting variables, non-linearity and interactions compensate for the reduction in the combined relevance of earnings value and book value of equity.

Discussion

This research has investigated the relevance of the value of accounting information for pharmaceutical companies admitted to the Tehran Stock Exchange and the changes that have occurred in them. Results suggest that although the trend of relevance of value of accounting information is not statistically significant, this trend has generally increased for pharmaceutical companies and this result is inconsistent with the results of studies conducted by Collins et al. (8) and Lev & Zarowin (12). In order that financial information to be relevant, there must be a

significant relationship between the accounting items and the value of company. If there is no relationship between accounting items and value of company, accounting information cannot be considered relevant, so financial statements cannot achieve any of their main objectives (13).

The trend of relevance of value of net profit for pharmaceutical companies has decreased, but is not statistically significant. The trend of relevance in the book value of equity has increased, but is not statistically significant. This result is in line with the results of studies conducted by Francis & Schipper (1), Barth & Clinch (2), Brown et al. (7) and Collins et al. (8). Studies conducted by Ohlson (10) and Olhson & Feltham (14) provide the foundation for redefining the relationship between the financial statements and the value of the company, and provide a framework for modeling in this area.

The results show a decrease in the relevance of the value of known intangible assets such as goodwill and software to pharmaceutical companies and this decrease is statistically significant. The trend of relevance of the value of variables of advertising cost, cash and short-term investments, dividends, general, administrative and sales costs, intangible assets and growth opportunities for pharmaceutical companies are negative but is not statistically significant. The trend of relevance of value of revenue growth, operating cash, income, special items (net profit and non-operating costs), capital expenditures, total cost of goods sold, positive asset value that are not statistically significant. Also, the trend of the relevance of value of alternative performance measures to pharmaceutical companies is positive and statistically significant.

Bhatia & Mulenga (15) and Collins et al. (8) also found in their study that the relevance of the value of profit value is less for loss-making companies. Barth & Clinch (2) also found that with decreasing

the financial soundness of companies, relevance of value of net profit decreased and relevance of book value increased, and this was seen as a sign of reduced financial health of companies. In the study of Barth & Clinch (2), which investigated the trend of the relevance of the value of accounting information, an increase in the trend of the relevance of the combined value of accounting information was found. Also, the trend of the relevance of value of intangible assets, growth opportunities, and performance appraisal criteria has also increased. The results suggest a decrease in the trend of relevance of net profit, dividends, capital expenditures, cost of goods sold and assets, and an increase in the relevance of book value of equity and operating cash. In the study conducted by Morris & Alam (9), the relevance of value of high-tech companies was higher that the relevance value of low-tech companies and their relevance of value decreases after bursting the technology bubble.

The results of a study conducted by Abayadeera show that the relevance of book value is more than other variables and voluntary disclosure of intangible assets, especially R&D costs has relevance value for high-tech industries. Development is relevant for high-tech industries. Also, the size and age of the company affect the relevance of value (16). The results of a study conducted by Ahmadpour & Hadian show an increase in the relevance of balance sheet information after the first accounting standards .Also, there is an inverse and significant relationship between the relevance and size of the company and between the relevance and debt of the company, and a direct and significant relationship between the relevance and growth of the company (17). Also, in the study conducted by Faghani Makrani, the relevance of book value, accounting profit and cash flow to stock prices was higher than other variables, and the relevance of value decreased over time and the profit or loss of the company decreased over time does

not affect the relevance of the combined value of profit and book value and cash flows (18).

The results of a study conducted by Hamdi et al., indicate the relevance of the value of accounting information based on returns and price models . However, profit and loss indices are more relevant than balance sheet indices. Also, the profitability or loss and the size of the company have affected the relevance of accounting information (19). In a study conducted by Setayesh et al., it was found that profit and dividends of relevant information are influential in investors' decisions, but there is no significant relationship between book value and stock price. The results also show that company size, leverage and industry are influential factors in determining the relevance of financial information and liquidity does not affect the relevance of value (20). The results of a study conducted by Khani et al., show that there is no significant relationship between research and development costs and stock returns. In addition, no significant relationship was found between research and development costs and risk premium in the risk coverage portfolio (21), which are in line with the studies of this study.

Recommendations

Based on the research results, investors are recommended to consider these variables in their decisions due to the relevance of the value of these variables. In their decisions, they should pay attention to the relevance of the value of the variables of this research. Also, standardizers are recommended to use the results of this research in their standardization and to pay attention to the factors influencing the relevance of the value of accounting information. The Securities and Exchange Organization is recommended to use the results of this study in its role in requiring disclosure of information in corporate financial statements. It is also recommended to examine the relationship

between corporate governance and the relevance of the value of accounting information. It is also recommended to investigate the relationship between the ownership concentration and the relevance of the value of accounting information. It is also recommended to examine the effect of earnings management on the relevance of the value of accounting information.

Conclusion

Since financial statements include information about a company's income, costs, assets and liabilities, it is a valuable source of information for investors looking to assess the future potential of the company to make investment decisions and as a key way for companies to communicate and it is one of the main ways for communication between companies to provide financial and non-financial information to their stakeholders. Thus, the information should reflect well the current performance of the company and provide good indications of future performance. Since one of the goals of financial reporting is to provide information related to stock investors to evaluate the value of the company, it is hoped that the results of the present study conducted to investigate the relevance of the value of accounting information in the Iranian Stock Exchange pave the way for investment for making conscious decisions to achieve their goal and allocation of resources towards more profitable investments.

Authors' contribution

Norallah Khodadadi and Mehrdad Ghanbari developed the study concept and design. Babak Jamshidinavid and Javad Masudi acquired the data. Norallah Khodadadi and Mehrdad Ghanbri analyzed and interpreted the data, and wrote the first draft of the manuscript. All authors contributed to the intellectual content, manuscript editing and read and approved the final manuscript.

Conflict of interest

The authors declare that they have no conflict of interests.

References

1. Francis J, Schipper K. Have financial statements lost their relevance?. Journal of Accounting Research. 1999;37(2):319-352. https://doi.org/10.2307/2491412
2. Barth ME, Clinch G. Scale Effects in Capital Markets-Based Accounting Research. Journal of Business Finance & Accounting. 2009;36(3):253-288. https://doi.org/10.1111/j.1468-5957.2009.02133.x
3. Donelson DC, Jennings R, McInnis JM. Changes Over Time in the Revenue-Expense Relation: Accounting or Economics?. Accounting Review. 2011;86(1):945-974. https://ssrn.com/abstract=1446924
4. Srivastava A. Why have measures of earnings quality changed over time?. Journal of Accounting and Economics. 2014;57(2):196-217. https://doi.org/10.1016/j.jacceco.2014.04.001
5. Hayn C. The information content of losses. Journal of Accounting and Economics. 1995;20(2):125-153. https://doi.org/10.1016/0165-4101(95)00397-2
6. Lev B, Sougiannis T. The Capitalization, Amortization and Value Relevance of R&D. Journal of Accounting and Economics. 1996;21(1):107-138. https://doi.org/10.1016/0165-4101(95)00410-6
7. Brown S, Lo K, Lys T. Use of R2 in Accounting Research: Measuring Changes in Value Relevance over the Last Four Decades. Journal of Accounting and Economics. 1999;28(2):83-115. https://doi.org/10.1016/S0165-4101(99)00023-3
8. Collins DW, Pincus M, Xie H. Equity Valuation and Negative Earnings: The Role of Book Value of Equity. Accounting review: A quarterly journal of the American Accounting Association. 1999;74(1):29-61. https://doi.org/10.2308/accr.1999.74.1.29
9. Morris JJ, Alam P. Value relevance and the dot-com bubble of the 1990s. The Quarterly Review of Economics and Finance. 2012;52(2):243-225. https://doi.org/10.1016/j.qref.2012.04.001
10. Ohlson JA. Earnings, Book Values, and Dividends in Equity Valuation: An Empirical Perspective.

Contemporary Accounting Research. 2001;18(1):107-120. https://doi.org/10.1111/j.1911-3846.1995.tb00461.x

11. Ciftci M, Darrough MN, Mashruwala R. Value Relevance of Accounting Information for Intangible-Intensive Industries and the Impact of Scale: The US Evidence. European Accounting Review. 2014;23(2):199-226. https://doi.org/10.1080/09638180.2013.815124

12. Lev B, Zarowin P. The Boundaries of Financial Reporting and How to Extend Them. Journal of Accounting Research. 1999;37(2):353-385. https://doi.org/10.2307/2491413

13. Beislund LA. A Review of the Value Relevance Literature. The Open Business Journal. 2009;2(1):7-27. https://doi.org/10.2174/1874915100902010007

14. Olhson JA, Feltham G. Valuation and Clean Surplus Accounting for Operating and Financial Activities. Contemporary Accounting Research. 1995;11(1):689-731. https://doi.org/10.1111/j.1911-3846.1995.tb00462.x

15. Bhatia M, Mulenga MJ. Value Relevance of Accounting Information: A Review of Empirical Evidence Across Continents. Jindal Journal of Business Research. 2019;8(2):179-193. https://doi.org/10.1177/2278682118823307

16. Abayadeera N. Value relevance of information in high-tech industries in Australia: financial and nonfinancial. Ph.D. Thesis, School of Accounting, Faculty of Business and Law, Victoria University, Melbourne, Australia;2010. https://vuir.vu.edu.au/15977/

17. Ahmadpour A, Hadian SA. Examining changes in the relevance of accounting information. Accounting and Auditing Reviews. Faculty of Management, University of Tehran. 2015;2(1):1-20. https://doi.org/20.1001.1.26458020.1394.22.1.2.9

18. Faghani Makrani Kh. Relationship between book value, accounting profit and cash flow with stock price. Management Accounting Quarterly. 2016;24(8):43-59. https://jma.srbiau.ac.ir/article_6505.html?lang=en

19. Hamdi K, FaalQayyumi A, BorzozadehZavareh M, Taghikhani N. Relevance of the value of accounting information and the factors affecting it. Financial Accounting and Auditing Research. 2013;19(5):176-193. https://doi.org/20.1001.1.23830379.1392.5.19.8.7

20. Setayesh MH, Rezaei G, Kobriaei AA. Relevance of accounting data and the factors affecting it. Accounting Reviews. 2015;3(1):41-61.

21. Khani A, Sadeghi M, MohammadiHoleh Soo M. The effect of research and development costs on the stock returns of pharmaceutical companies operating in the Tehran Stock Exchange. Financial Accounting. 2015;6(21):153-174. http://qfaj.mobarakeh.iau.ir/article-1-116-fa.html