

## The relationship between information content of depreciation and abnormal return and future benefits in manufacturing companies in Tehran Stock Exchange (TSE)

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### Abstract

In present study by virtue of the importance of the fiscal statement contents and illiquid items ignored by the merchant the depreciation contents relation with abnormal return of the shares and future benefits are examined in order to influence the items under consideration of the investors to take related decisions; 94 companies were selected from the accessible universe in five years (2006-2010) to have the data necessary for the study in order to achieve the goal & with the base of keeping attention to the manufacturing & nonmanufacturing companies in the whole industries of stock market except banks & insurance companies. The simple and multivariable regression statistical techniques Chow and Hausman Test were used to test the hypotheses. The significant test was conducted for the paradigms by using the 'F' and 'T' statistics. The study findings show local high inflation have affection on the both variable results & makes no relation for first variable, for future benefits shows parallel movements.

*Key Words: Abnormal return; Information Content; depreciation; future benefits*

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### 1. Introduction

One of the fiscal report goals is to gather the information necessary to comment the situation and assess the profitability of the economic unit. On the other hand, the investors try to maximize their profit, too. Fiscal statements and appended notes are of the most important accounting informative items to comment the conditions of the economic unit. Also irrespective of many definitions about accounting its main subject and function are reporting and commenting while the infrastructure of all of them is assessment. In line with this, the problem commonly the accountants encountered with is the lack of a reliable theory to assess and measure the appearances and events. Also depreciation is not out of the issue and many thoughts and discussions which created many misleading and susceptible policies have been since a long time ago.

U.S.A. Official Accountants Institute defines depreciation accounting in the bulletin 44 as follows:

“Depreciation accounting is the system distributing and sharing the assets cost based on the valuation during their lifelong after deducting the scrap value (If any) according to a logic and systematic method”.

A.A.A defines depreciation accounting as follows:

“Depreciation indicates the capacity decrease of long term assets service because of depletion and decrease of the value due to age”.

It is very important to find variable(s) justifying the relation between fiscal and real economy departments in behaviour study and the data influencing market and eventually market economy. As the essential elements of economic fiscal department, money market and capital are to secure fiscally the real economic department. The real

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economic department includes the markets which are real visible assets and may be touched physically such as the building, machinery and equipments to be transacted. In other words, the real part of economy is the goods and service part. In line with this, the industries owners consider the depreciation expense as something worthless in information view and is registered in the fiscal books and statements only in order to observe the regulations of general accounting (Kang, 2010).

In current study we examine the relation between abnormal return of shares and next profits with the depreciation expense and accumulated depreciation of the assets and briefly test the evidences by using the data from capital market to reply the main questions of the study: Is there any relation between the abnormal return of shares and depreciation expense in producing companies? Is there any relation between the next profits and accumulated depreciation in producing companies?

It seems necessary to do several studies to examine the problem in order to remove all doubts. Also the capital market experiences indicate the investors do not pay much attention to the illiquid criteria with appended fiscal statements. In line with this, we examine the depreciation data and its relation with price, the abnormal return of shares and next profits.

## 2. Literature Review

For someone with any familiarization with accounting it is the asset value decrease considering that the gained asset market price (In normal conditions of the market) decreases each year and the difference is considered as asset value depreciation by usual people. Here it is assumed that the used asset is cheaper than a new one ; in other words, although a second hand asset may be more useful and profitable than a new one it is cheaper than a new and unused one. So an amount should be mentioned as depreciation for such decrease in the accounts. In fact, as you see here the depreciation indicates the use rate of the asset capacity.

In Persian to Persian dictionary, 'depreciation' means 'Killing', 'To cause to perish', 'Destroying', 'Spending property and destroying it', 'Paying gradually a loan' and 'Settling accounts by paying defined installments'.

In English there are three different words for it (Assets value decrease):

*Depreciation:* It is used for ' Visible fixed assets value decrease ' which has physical and material presence and it gradually diminishes and becomes unusable (Like building) because of exploitation, corrosion, age, etc.

*Amortization:* It is used for ' Invisible fixed assets value decrease ' which has not physical presence or it is the reminder of debtor or creditor to be taken gradually and regularly from the expense or income.

*Depletion:* It indicates the value decrease of mines and natural sources becoming empty because of extraction.

In all above words the phrase 'Assets Value Decrease' is common and they differ from each other in the type of the assets which should be focused.

*But FASB defines depreciation in the sixth declaration as follows:*

Depreciation accounting is to allocate systematically and logically the asset cost price to the times with some profits. This declaration indicates the depreciation is because of corrosion due to the assets use.

Generally recent definition is the most usual one for depreciation. Professor Hendriksen comments this accepted definition as follows: This definition is a static one because the primary cost price of asset is considered fixed during the lifelong and the total mentioned depreciation is equal to the primary value of the asset minus each scrap value. He writes: The definition does not indicate how the cost price should be distributed during the useful life of the asset and only says that the division method should be logical and systematic.

Paton (1962) says in this regard, Notwithstanding many articles consider depreciation as something secret and discussible there is no dizzying and complicated thing about it. Paton introduces depreciation as unabsorbed value of the properties or the expense appropriated for the assets in a period and writes; The periodic expense is the depreciation of the establishments, equipments and properties used in commercial operations to be stated as money unit. He considers depreciation as the used capacity of the properties.

Wolk and Tearny (1947) stated about depreciation in the book 'Theory Of Accounting' as follows: The depreciable or finite asset is prorated on its useful life to have the depreciation of historic expense or the cost price of the purchase. The depreciation is allocated in different ways without any defined discipline; the ways include direct line, total years, the remainder of discount or producing goods units. By no means, there is an influential conditions confirming one way for a special case.

Management policy selecting the method depends on only the limiting factor created from the way fixation view during the continuous years. These systems include depreciation of some assets, a combination of them and replacement methods and eliminating the assets and finally the depreciation system of the goods of depreciable and finite assets for someones benefiting from special depreciation systems in special conditions reported based on historic cost in the balance sheet (Minus the depreciation reserve or accumulated depreciation reported in previous loss and profit statement) The amount is known as 'Book value' resulted from the costs allocation during the periods.

Depreciation may be because of following factors: 1–Corrosion because of benefiting from fixed asset. 2–Passing of time. 3–Corrosion and rusting. 4–Incompetency. 5–Replacing with another fixed asset (Because of unsuitability).

It is possible to classify the first three ones as physical and the fourth and fifth ones as applicable factor. The three physical ones influence the visible fixed assets and decrease its useful life. After a while even if the fixed asset is not benefited, its price decreases gradually because of natural conditions and factors such as cold and warm climate, rain, wind, humidity and sunshine. It goes without saying that supervising and repairing the fixed asset increase its useful life, but by no means, they may eternize it and prevent its disappearance (Wolk and Tearny, 1947).

The applicable factors namely incompetency and unsuitability are realized rarely. Unsuitability is when developed activity obliged some company to quit the producing machinery. In fact, the producing machinery are not sufficient because of activity and production increase. Unsuitability (Replacing with another fixed asset) may appear when present machinery and functions are considered unfashionable or without client due to technologic developments, innovations and new devices (Wolk and Tearny, 1947).

#### *The shares abnormal return and the factors influencing it:*

By virtue of the labor market hypothesis the investors are not permitted to benefit from general information to create abnormal return because the stock exchange price should reflect the available information. By virtue of study Rozeff (1992) different factors such as companies integration companies shares analysis and taking account the companies shares are influential in normal (Positive and negative) calculation.

In this section some done studies are mentioned in relation to the study subject as follows:

In their study Gore and Statt (1998) tested the depreciation data of some properties companies for 597 properties observation in 1991-96. They found the funds resulted from properties loss or profit operations are considerably in relation to the shares returns while the depreciation is not so and the shares abnormal return has no significant relation with the depreciation expense, but the shares cost has significant relation with accumulated depreciation and should be noted that previous studies have forgotten the role of depreciation expense played by each property company.

Vincent (1999) presented a comprehensive analysis of the data and the ability describing the funds from the operation against other known criteria of the company operation as profit of each share, etc. He used two ways for the levels and the changes concerning the operation criteria to decrease the dependences discussed above and having used the yearly data from 181 property companies he found the funds from each share operation has significant relation with the shares returns, but the profit of each share has not such quality and abnormal return has not any significant relation with the depreciation cost. On the other hand, having used seasonal data of 850 companies he found the profit of each share has significant relation with the shares returns, but the funds from operation are not so.

In their study Kang and Zhao (2010) examined the data and assessed the depreciation relation between the property and non-property industries. First they examined the differences between the funds from operation and net profit and then conducted all their tests to compare the two property and non-property industries. The study hypotheses are as follows:

*H<sub>0</sub>*–There is no relation between abnormal return of shares and depreciation cost.

*H<sub>1</sub>*–The relation between abnormal return of shares and depreciation expense between the property and non-property industries is the same.

*H<sub>0</sub>*–There is no relation between the shares cost and accumulated depreciation.

*H<sub>1</sub>*–The relation between shares cost and accumulated depreciation between the property and non-property industries is not the same.

*H<sub>0</sub>*–There is no relation between the sale loss and profit and the accumulated depreciation of the sold properties.

*H<sub>1</sub>*–There is no relation between the loss and profit from the sale and the accumulated depreciation of the sold properties between the property and non-property companies.

*H<sub>0</sub>*–There is no relation between next profits and the accumulated depreciation.

*H<sub>1</sub>*–The relation between next profits and the accumulated depreciation between the property and non-property companies is the same.

Having benefited from yearly industry file, Compostat databank and related data the researcher gained the abnormal return of the shares from Crocep file; the universe and sample were from 2000–2005 and included 1,146 evidences of the company year for 191 companies.

The study results indicate the relation between the depreciation expense and abnormal return, no relation between accumulated depreciation and the shares price and the relation between accumulated depreciation and next profits. It is noteworthy that the recent study was done in relation to property industry and except the next profits discussion related results differ from two previous studies.

### 3. Hypotheses Development

***H1: There is a significant relation between the abnormal return of shares and depreciation expense in producing companies.***

On this basis net profit is defined as:  $NI = FFO - Dep + Gain(Loss)$ .

It should be noted that certainly the depreciation expense has information content the data in net profit and by virtue of the Gore and Statt model (1998) abnormal return is:

$$AR = \alpha_0 + \alpha_1 \Delta FFO + \alpha_2 \Delta DEP + \alpha_3 \Delta GAIN + \alpha_4 \text{LOGMV}_{t-1} + \alpha_5 \text{BM}_{t-1} + \epsilon \quad (1)$$

which is equal to total changes of operational funds and depreciation and ...

So the changes of depreciation cost may show the fluctuations of abnormal return because of the changes of operational funds (Kang, 2010). If this relation is proved, it may conclude that the shareholders who pay attention to the appended notes and naturally to the depreciation cost they may benefit from the advantages of both abnormal and normal returns.

***H2: There is a significant relation between next profits and the accumulated depreciation in producing companies.***

By virtue of the accounting principles long term properties are evaluated as fixed asset. The accumulated depreciation of these assets indicates the corroded, unusable and out of order part which influences surely the production and next profits (Kang, 2010).

On this basis the models examined in current study are as follows:

First model:

$$AR = \alpha_0 + \alpha_1 \Delta FFO + \alpha_2 \Delta DEP + \alpha_3 \Delta GAIN + \alpha_4 \text{LOGMV}_{t-1} + \alpha_5 \text{BM}_{t-1} + \epsilon$$

Where:

AR = Abnormal return

FFO = The funds from the operations

DEP = Depreciation

GAIN = Gross profit

Log MV = Natural logarithm of market value equal to company size

BM = Book to market value

Second model, Next profits:

$$\text{SALE} = \gamma_0 + \gamma_1 \text{NOA} + \gamma_2 \text{ACCUDEP} + \omega \quad (2)$$

Where:

NOA = Net Operating Assets

ACCI.DEP = Accumulated depreciation

The variables to be examined in the study: funds from operations, log MV (Logarithm of market value), BV (Book value) of equity of each share and the ratio of BV to MV (Market value) as the secondary variables and depreciation expense and accumulated depreciation as the dependent variables.

*Abnormal return of the shares:*

In current study the abnormal return of the shares is calculated from:

Shares market return in a period – Total return of the market shares in a period.

Total return of the shares in a period = Priority right + share profit + dividend + shares price increase / Primary price of the share

Total return of the shares in a period = Primary price index & liquid + final price index & liquid / Primary price index & liquid

*The funds from the operation of each share and the change in the funds from the operation of each share:*

If the depreciation expense is added to the profit before unexpected items of current year and subtract current year sale loss and profit from it, the result is divided by and generally we should compare current year with the previous one in order to have the change in the funds from the operation of each share (Kang, 2010).

*The funds from operation:*

Profit (Loss) from the asset sale – depreciation expense + profit before unexpected items = funds from operation

The change in the funds from the operation of each share:

Funds from previous year operation – funds from current year / price at the end of fiscal year X Nos. of shares in previous fiscal year

Depreciation expense and change in it:

Depreciation expense is total depreciation of visible and invisible fixed assets in fiscal year.

It is possible to calculate the change in depreciation expense of each share as follows:

Depreciation cost of previous year – depreciation cost in current year / price at the end of fiscal year X Nos. of shares in previous fiscal year

Log MV (Natural logarithm of market value):

Log MV of equity is calculated as follows (Kang, 2010):

In( price at the end of fiscal year X Nos. of usual shares in previous year

BM (Book to market value):

BM is calculated as follows:

Equity of previous fiscal year / price at the end of fiscal year X Nos. of shares in previous year

Accumulated depreciation is calculated as follows (Kang, 2010):

Accumulated depreciation in current year / total company price  
 The fee of sale growth is calculated as follows (Kang, 2010):  
 Net sale of previous year–net sale of current year / net sale of previous year

**4. Data Analysis**

Descriptive statistics of the study variables:

Descriptive statistics of dependent, independent and control variables are presented in 470 evidences in following table:

**Table 1. Descriptive statistics**

Variables	Mean	Std	Min	Max
BM	0/785755	0/572498	-2/014600	2/602700
depreciation expense changes	0/006667	0/035037	-0/254100	0/492600
changes in liquid funds of operation	0/018686	0/374175	-1/918100	1/799900
abnormal return accumulated	0/012478	0/132338	-0/723800	1/052300
depreciation of last year	0/341064	1/278463	0/008465	1/453293
accumulated depreciation	0/371610	0/318711	0/013645	1/453293
changes in net profit	0/030045	0/175314	-0/946200	0/888200
log MV	12/59320	1/437436	9/059704	17/20604
net value of operational assets	0/133473	0/788031	-6/040700	7/405200
Sale	1/806070	1/217523	0/098700	7/301800

The results from testing the study hypotheses:

*H1: There is a significant relation between the abnormal return of shares and depreciation expense in producing companies.*

The dependent variable namely the abnormal return of shares with dependent variable (The ratio of depreciation expense changes to the shares market value at the end of the period) and control variables (The ratio of liquid fund changes from operational activities to the shares market value at the end of the period, the ratio of the gross profit changes to the shares market value at the end of the period, log MV of the company and ratio of BV to the shares market value of company) were examined in order to test first hypothesis.

Primarily Chow test was conducted to select one of the fixed and common influences ways in order to test first hypothesis and estimate the model. In following step Hausman Test(1978) was conducted to select one of the fixed and random influences ways. Considering the results from Chow and Hausman test have confirmed the combined data regression model by fixed influences method the Pagan’s test (1980) to select one of the random and common influences ways was ignored. Related results are shown in the following table:

**Table 2: The Related Result**

type of the test	Results from Chow Test			Results from Hausman Test		
	test statistic	freedom degree	significance	Chi-square Test	freedom degree	Significance
'F' Test	1.7462	(93.371)	0.0002			
Chi-square Test	170.6398	93	0.0000	16.7436	5	0.005

As you see in the Table the significances of 'F' statistic and Chi-square are less than 0.05 indicating the fixed influences way use is better than the common influences one.

Also the significance of Chi-square statistic is less than 0.05 indicating the fixed influences way use is better than the random influences one. The random influences way was used to test the first hypothesis and the results from regression model estimation are presented in following tables:

**Table 3. The results from examining model-first hypothesis**

R	R <sup>2</sup>	'F' statistic	'F' statistic significance	Durbin-Watson
0.3204	0.1409	1/7852	0/000	2/7516

If there is no relation between dependent in a multivariable regression equation, independent and control variables, all the coefficients of independent and control variables in the equation should be equal to zero. Hence, the significance of the regression equation should be tested by 'F' statistic (Abassinezhad, 2001–2010). As you see in above Table the 'F' statistic rate and its significance indicate the statistic zero hypothesis namely meaningless total model (All the coefficients are zero) is not accepted and the estimated regression model is generally significant. The R<sup>2</sup> is the criterion describing the potential of the relation between dependent, independent and control variables. The coefficient rate indicates how much the dependent variable changes percent is described by the independent and control variables. In the model the definition coefficient is 0.3204 namely 32.04 percent of the dependent variable changes is describable by the independent and control variables. In addition, the Durbin–Watson statistic model is 2.7516. The results from examining self-correlation of wrong phrases by the Durbin–Watson statistic and by virtue of  $d_L$  and  $d_U$  of the Durbin–Watson statistic while the samples are 94 the Nos. of independent and control variables are 5 and the confidence rate is 99 percent are 1.406 and 1.636, respectively and the statistic gained in the  $d_U < d_0 < 4-d_U$  range indicates the lack of self-correlation between the model errors.

The results from examining model variables coefficients are presented in following table:

**Table 4. Results from examining partial coefficients of model- First hypothesis**

variables	coefficients	standard error	'T' statistic	Significance
Ratio of depreciation liquid changes resulted from operations to market value of shares at the end of the period	0/0121	0/1727	0/0702	0/9441
Ratio of gross profit changes to the market value of shares at the end of the period	0/0077	0/0156	0/4943	0/6214
changes in liquid funds of operation	-0/1242	0/0360	-3/4473	0/0006
log MV of the company	0/0335	0/0169	1/9801	0/0484
ratio of BV to the shares market value of company	-0/0012	0/0171	-0/0691	0/9450
fixed rate	-0/04049	0/2198	-1/8426	0/0662

As you see the significance level of 'T' statistic variable indicates there is no significant relation between the ratio of

depreciation expense changes to the shares market value at the end of the period and abnormal return. So first hypothesis is not accepted. The 'T' statistic significance level relating to control variables indicates the ratio of gross profit changes to the shares market value at the end of the period have a significant and negative relation with abnormal return, but natural log MV of the shares market value has a significant and positive relation with abnormal return though there is no significant relation between the ratio of liquid changes resulted from operations to the shares market value at the end of the period and the ratio of BV to the shares market value of company with abnormal return. Second hypothesis: There is no significant relation between future benefits and the accumulated depreciation in producing companies.

The dependent variable namely the price of current sale with shares market value at the end of the period with independent variable (The ratio of accumulated depreciation of previous period to the shares market value at the end of the current period) and the control variables (The ratio of operational asset of previous period to the shares market value at the end of the current period) were examined to test the third hypothesis. Primarily Chow test (1960) was conducted to select one of the fixed and common influences ways.

In following step Hausman Test(1978) was conducted to select one of the fixed and random influences ways. Considering the results from Chow and Hausman test have confirmed the fixed influences method the Pagan's test (1980) to select one of the random and common influences ways was ignored. Related results are shown in the following table:

**Table 5: Related Result**

type of the test	Results from Chow Test			Results from Hausman Test		
	test statistic	freedom degree	significance	Chi-square Test	freedom degree	Significance
'F' Test	7/2032	(93/374)	0.0000	33/4294	2	0/0000
Chi-square Test	482/3449	93	0.0000			

As you see in above Table the significance of 'F' statistic and Chi-square are less than 0.05 indicating the fixed influences way use is better than the common influences one. As you see in above Table the significance of 'F' statistic and Chi-square are less than 0.05 indicating the fixed influences way use is better than the common influences one. So the fixed influences way was used to test the second hypothesis and the results from regression model estimation are presented in following table:

**Table 6. The results from examining model- Second hypothesis**

R	R <sup>2</sup>	'F' statistic	'F' statistic significance	Durbin-Watson
0/7263	0/6568	10/4494	0/000	2/2845

As you see in above Table the 'F' statistic rate and its significance indicate the statistic zero hypothesis namely meaningless total model (All the coefficients are zero) is not accepted and the estimated regression model is generally significant. In this model the definition coefficient (R<sup>2</sup>) is to indicate how much the dependent variable changes percent is described by the independent and control variables. In the model the definition coefficient is 0.7263 namely 72.63 percent of the dependent variable changes is describable by the independent and control variables. In addition, the Durbin–Watson statistic model is 2.2845.

The results from examining self-correlation of wrong phrases by the Durbin–Watson statistic and by virtue of d<sub>L</sub> and d<sub>U</sub> of the Durbin–Watson statistic while the samples are 94 the Nos. of independent and control variables are 2 and the confidence rate is 99 percent are 1.474 and 1.563, respectively and the statistic gained in the d<sub>U</sub> < d<sub>0</sub> < 4-d<sub>U</sub> range indicates the lack of self-correlation between the model errors.



The results from examining model variables coefficients are presented in following table:

**Table 7. Results from examining partial coefficients of model- Second hypothesis**

variables	coefficients	standard error	'T' statistic	Significance
the ratio of accumulated depreciation to shares market value at the end of the current period	0/8060	0/1941	4/1531	0/0000
the ratio of net operational assets of previous period to shares market value at the end of the current period	-0/1545	0/0589	-2/6233	0/0091
fixed rate	1/5518	0/0742	20/9038	0/0000

As you see the coefficient and significance level of independent 'T' statistic variable indicate there is positive and significant relation between the ratio of accumulated depreciation of previous period to the shares market value at the end of the current period and current sale ratio to the shares market value at the end of the period. So third hypothesis is accepted in the confidence level of 95 percent. The coefficient and significance level of 'T' statistic relating to control variable indicate the ratio of net operational asset of previous period to the shares market value at the end of the current period has negative and significant relation with the ratio of current sale to the shares market value at the end of the period.

## 5. Conclusion

The first hypothesis is to examine the presence or lack of any significant relation between depreciation expense and abnormal return of the shares and as it was stated in theoretical principles of first model the fluctuations of depreciation expense influence abnormal return by influencing the fluctuations of operational liquid funds, but the results from statistic analyses show there is no significant relation between above two variables and the findings of Gore and Statt (1998) and Vincent(1999) confirm it while the findings of Kang and Zhao (2010) show there is a relation between the two variables. The discussion examines the relation between accumulated depreciation and sale (Or next profits of company) which was not verified enough in the studies before. The statistic analysis done in this hypothesis indicates there is a significant and positive relation which is in harmonization with the findings of Kang and Zhao (2010).

Analyzing the results that presented above: show that no significant relation in the first hypothese is because of the high inflation during these years in Iran, that will affects on the historical cost of the assets & we see that they have no important value in analogy with present value of them,so they lose their affection the other items of the financials statements. For the second hypothese on the bases of accounting principles,the accumulated depreciation of fix assets show the abuse & old part of the assets that will surely affects on the production and future benefits(sale).but in high inflation because of the rise of the prices historical cost and simultaneously accumulated depreciation will lose their value and results in showing the high sales virtually. This research and same researchs on this topic show that using the illiquid items of the balance sheet especially depreciation will be usefull for investors of the market to choose better,in buying the shares at the stock market,when the situation of inflation is normal.

## References

- Gore, R., & D. Stott. (1998). Toward a more informative measure of operating performance in the REIT industry: Net income vs. funds from operations. *Accounting Horizons* 12 (4): 323-339.  
 Hendriksen, E. (1982) , *Accounting Theory* , chap. 15 R.D.Irwin Inc.Illinois.

- Kang, S. & Zhao, Y. (2010), Information content and value relevance of Depreciation: A cross-Industry Analysis , *The Accounting Review*, Vol.85 pp.227-260.
- Paton, W.A.(1962), *Significance of Depreciation Accounting Studies in Accounting Theory*, R. D. Irwin 1962.
- Rozeff, M. (1992), "How Companies set their Dividend-Payout Ratios" , in: Stern, J. M. and Chew, D.H., *The Revolution in Corporate Finance*, Blackwell Publishers, Oxford.
- Vuong, Q. (1989). Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica* 57 (2): 307–333.
- Vincent, L. (1999). The information content of funds from operations (FFO) for real estate investment trusts (REITs). *Journal of Accounting and Economics* 26 (1): 69–104.
- Wolk, H. I., Tearney, M. G., & Dodd, J. L. (2004). "Accounting Theory: A Conceptual and Institutional Approach", 5th ed. Cincinnati, OH: South-Western College Publishing.