

# A study on the effect of deferred income tax on stock pricing under different audit environments--a comparative analysis based on motherboard and gem market

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## Abstract

In stock pricing, the accounting information of deferred income tax has value relativity, can help investors to make reasonable estimate to the company's value quality and future profitability, and the company's periodical Information Distortion financial report may mislead investors to price the stock too high, The audit report issued by the External Auditor can disclose the financial report authenticity and revise the stock pricing. This paper chooses the manufacturing data of Shenzhen Gem and motherboard as samples, and obtains the real reliability of the value relativity of deferred income tax under the highly quality audit environment through empirical analysis.

## Keywords

Audit quality deferred income tax stock pricing.

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## 1. Introduction

For listed companies, the relevant regulatory bodies, in addition to requiring managers to disclose the company's financial information on time, also requires the financial information prior to disclosure to be audited by an independent auditor to ensure the reliability of the financial information obtained by stakeholders, including investors. This shows that auditors play a vital role in safeguarding the reliability of listed companies' financial information. As a result of this role of auditors, in the process of making investment decisions, the audit results are usually regarded as an important reference for stock bidding. From this point of view, the quality of audit has a certain impact on the pricing of stock, but whether the audit quality is the pricing factor of stock, the academic circle has not formed a clear research conclusion. Some scholars have studied that audit quality has explanatory power to the excess return rate of stock market in our country, and audit quality can influence stock price, that is, it has the function of stock pricing.

Based on this, this paper attempts to verify the empirical research on the impact of stock price on the basis of the report information under different audit quality environment. At present, some scholars have studied the role of auditors in stock pricing, such research mainly focuses on the impact of auditor on IPO pricing. Specifically, there are two different viewpoints on the impact of audit quality on IPO premium. Some scholars believe that pre-IPO audit will inhibit the IPO premium, Willenborg (1999), such as the auditor through the issuance of independent, fair Audit report, reduce the information asymmetry between the enterprise and investors, so that the IPO price closer to the real value of the stock, thereby reducing the IPO premium rate, some scholars are more inclined to use auditor's reputation to explain this phenomenon, Holl and Horton (1993) and other research results show that the reputation of the damaged auditor's customer share price will be adversely affected, reputable auditors can improve customer stock prices, reduce the rate of underpricing, The domestic scholar Wang Bing and so on (2009) Apply the data of China a A-share market, also got the conclusion that auditor's reputation can reduce IPO premium. Another view is that the pre-IPO audit will push up the IPO underpricing, Datar (1991) that the enterprise through the quality of audit

services to pay a "quality premium" to the market to send positive signals to guide the stock price rise. The domestic scholar Hudan(2011) obtains the more persuasive conclusion by considering the information environment factor: The pre-IPO audit will improve the IPO underpricing rate depending on the information environment of the first market through signaling mechanism.

On the whole, the current academic focus on the IPO premium, focusing on the evaluation of audit quality and the role of a larger research space, on the audit quality of listed stock price fluctuations in the impact of the study is still slightly inadequate. This paper chooses the manufacturing data of Shenzhen Gem and motherboard as sample, and applies Excel2016, stata14.0 two software to statistics and processing of deferred income tax panel data, through empirical analysis, this paper attempts to verify the empirical research on the influence of stock price under different audit quality environment according to the report information, and verify that the financial statements in the highly quality audit environment are more authentic and reliable.

## 2. Data collation and model setting

In the financial statements of enterprises, the confirmation and measurement of deferred income tax account will affect the accounting of income tax expenses and the net profit of enterprises, thus affecting the stock value of enterprises. The audit quality of enterprises in different markets differs, therefore, this paper chooses the main board and the Enterprise board two market financial statements in the deferred income tax subject to explore its impact on the share price.

### 2.1 Sample selection and data source

After the promulgation of the new Enterprise Accounting Standards, 2007 in the implementation of the listed companies, the new enterprise Income Tax law and its implementation regulations were enacted in 2007, the implementation of 2008, the enterprise income tax rate from 33% to 25%. Therefore, in order to eliminate the new enterprise accounting standards and the promulgation of the new Enterprise Income tax Law on the impact of the sample company, this article selected 2008-2016 Shenzhen A A-share of the listed companies. In the GEM Market sample selection process, select the consolidated report data, the specific number of enterprises per year, such as Table 1.

Table 1 GEM Market manufacturing listed companies 2008-2016 quantity statistics

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of the enterprise	0	33	119	187	226	240	268	324	175

In the process of selecting the main board market sample, the data of the consolidated report is selected, and the company with the lack of financial data in the relevant year is excluded, and the final sample is 231 listed companies in 2008-2015 years. This part of the content of the selected data from the country's Taian database, early on data collection and screening work mainly through the Excel software to achieve.

### 2.2 Research hypothesis

Through reading the literature to understand the value of accounting information in the study, the most used is the price model and income model. The research model selected in this paper is the price model. The quality of accounting information is crucial to the decision of the users of financial statements, accounting information is the main basis to judge the business situation. The balance sheet debt method not only realizes the concept of income tax in our country, but also makes the deferred income tax assets and deferred income tax liabilities in the balance sheet as assets and liabilities in two types of accounts, and reveals them in the notes. So as to reflect the impact of the enterprise's economic interests on the value of the enterprise in the future accounting period. Therefore, the balance sheet debt method can provide more information to the users of the report, which is helpful to the investors to make a comprehensive and reasonable analysis of the financial situation of the enterprise and improve the quality of accounting information. That is, the new method of balance sheet debt, which is introduced by accounting standards, is of value relevance to the deferred income

tax recognized. Deferred income tax liabilities and deferred income tax assets are clearly two different categories of accounting subjects, and their impact on the value of listed companies is also different. Therefore, this paper makes the following assumptions:

H1: Deferred income tax liabilities and stock prices show a significant negative correlation;

H2: There is a significant positive correlation between deferred income tax assets and stock prices.

The main difference between China's motherboard market and GEM market is the size of the listed company and its financing amount. In the main board market, enterprises are mostly mature enterprises, capital scale and a stable profitability, and in the GEM market listed in the majority of companies engaged in High-tech business, has a high growth, and often set up a short scale, performance is not outstanding, as well as two of market companies have a certain number of property types are different, Therefore, the maturity of its financial accounting system and the way of accounting are also different, to a certain extent, will affect the measurement of deferred income tax items, so, put forward a third assumption:

H3: The value relevance of deferred income tax items of listed companies in Gem Market is less than the value relativity of deferred tax items of listed companies in the main board market.

### 2.3 Variable definition and model building

1995 Feltham and Ohlson based on the price model, the paper puts forward the residual income pricing model, the core expression of which is the sum of the book value of the stock price equal to the present value of the expected future residual income, and establishes the relationship between the company value and the net assets and the accounting profit. The data of net assets in the model comes from the balance sheet, the accounting profit data is derived from the profit statement, and a large number of data studies show that the test results of the model are more comprehensive and less deviation. In order to make the model more concise and simplify the model to a linear form, this paper examines the basic model of the value relativity of accounting information and uses the model which is commonly used in this research, and its expression is:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it} \tag{1}$$

The quality of accounting information itself has the characteristics of quality, it is difficult to quantify, only from the angle of market reaction to study the relevance. In the study of the value relativity of deferred income tax, scholars usually use the residual income pricing model to study the value relativity. If the stock price has made a significant market reaction to the deferred income tax accounting information, it shows that the accounting information provides investors with more information about decision making, and then explains that the accounting information of deferred income tax has value relativity. Therefore, based on the residual income pricing model, the model is established for hypothesis one and two, respectively, as follows:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 DTL_{it} + \varepsilon_{it} \tag{2}$$

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 DTA_{it} + \varepsilon_{it} \tag{3}$$

Table 2 The definitions of variables in the test model

Variable	Variable variable name	Describe
$P_{it}$	Variable change stock price per share net assets	Describe I company T year end of the stock price
$BV_{it}$	Earnings per share	Represents I company T year end of the net assets per share
$EPS_{it}$	Deferred income tax assets per share	Represents the earnings per share of the company T year end
$DTA_{it}$	Deferred income tax liability per share	The deferred income tax assets that represent the end of I company T year divided by the number of stocks at the end of T
$DTL_{it}$	Residual error	The deferred income tax liability of I company T year end divided by the number of stocks at the end of T
$\varepsilon_{it}$	Coefficients of the Independent variables Quantity Name	Indicates a random error entry
$\alpha_j$	Variable change stock price per share net assets	Represents a regression coefficient in which J=0,1,2,3

### 3. Empirical test and analysis.

#### 3.1 Regression analysis of the motherboard market

##### (1) Correlation test of variables

It is necessary to analyze Pearson correlation coefficient before regression test, this step is used to understand the relationship between the variables used in the model, and get table 3.

Table 3 correlation coefficient test

Variable	P	EPS	BV	DTA	DTL
P	1.0000				
EPS	0.5952	1.0000			
BV	0.1134	0.0861	1.0000		
DTA	0.1579	0.1823	0.7450	1.0000	
DTL	0.0197	0.0803	0.5695	0.5686	1.0000

It can be seen from the table that the stock price and the net assets per share, each share income and deferred income tax are related, so it is necessary to study the value relativity of deferred income tax accounting information. The data in the observation table can be found that the correlation coefficients are not greater than 0.8, so there is no collinearity between the variables.

##### (2) Analysis of regression results

Regression results for regression of models (1) and (2) were shown as tables, which included the regression coefficients, t-values, and sig of the explanatory variables in the model. (Show the P value of the significant test). Analysis.

Table 4 Motherboard Market return results

Variable Model	$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it}$			$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 DTL_{it} + \varepsilon_{it}$		
	Regression coefficient	T value	Sig.	Regression coefficient	T value	Sig.
P						
EPS	5.8118	15.77	0.000	5.7026	15.31	0.000
BV	0.0279	1.62	0.106	0.0473	2.10	0.036
DTL	--	--	--	-7.4523	-1.29	0.198
Residual difference value	10.3382	53.79	0.000	10.4214	53.59	0.000
R-squared	0.3581			0.3628		
F value	125.43 (0.000)			79.84 (0.000)		

Analysis of the empirical results of the above table shows that: two models of each share of the stock price has a significant explanatory power; for each share of net assets (BV), the increase of deferred tax on the price of BV to improve the ability to interpret the stock prices The P value of the significant test for each deferred income tax liability is 0.198, so its explanation for the stock price is not very significant, since the regression coefficient of each share of deferred income tax liabilities is -7.4523, it is concluded that there is a negative correlation between the net deferred income tax liability and the stock price per share, that is, the increase of net deferred liabilities per share will reduce the value of the enterprise and fully confirmed the assumption of H1. Regression results for models (1) and (3) are shown as tables, and the regression coefficients, t-values, and sig of the explanatory variables in the model are displayed. (The P value of the significant test).

Table 5 Motherboard Market return results

Variable Model	$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it}$			$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 DTA_{it} + \varepsilon_{it}$		
P	Regression coefficient	T value	Sig.	Regression coefficient	T value	Sig.
EPS	5.8118	15.77	0.000	5.8086	15.76	0.000
BV	0.0279	1.62	0.106	-0.0213	-0.52	0.600
DTA	--	--	--	3.9943	1.34	0.181
Residual difference value	10.3382	53.79	0.000	10.2905	52.66	0.000
R-squared	0.3581			0.3555		
F value	125.43 (0.000)			84.26(0.000)		

It is known from the F value that the two models are very significant. According to the regression results of two models: the value of the significant test of the deferred income tax assets per share is 0.181, the regression coefficient is 3.9943, so the explanation of the stock price is positive but not very significant, that is, the increase of the net deferred assets per share will make the value of the enterprise increased, which fully confirms the hypothesis H2.

### 3.2 A regression analysis of gem market

Regression results for models (1) and (2) are shown as tables, and the regression coefficients, t-values, and sig of the explanatory variables in the model are displayed. (The P value of the significant test).

Table 6 return results of Gem market

Variable Model	$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it}$			$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 DTL_{it} + \varepsilon_{it}$		
P	Regression coefficient	T value	Sig.	Regression coefficient	T value	Sig.
EPS	17.9826	15.26	0.000	17.9366	15.23	0.000
BV	0.4925	5.70	0.000	0.4894	5.67	0.000
DTL	--	--	--	-16.9507	-1.58	0.113
Residual difference value	15.8256	27.63	0.000	15.9449	27.65	0.000
R-squared	0.3097			0.3111		
F value	226.11 (0.000)			151.31 (0.000)		

The net assets (BV) and EPS per share of the two models have significant explanatory power to the stock price, and it is known from the F value that the two models are very significant. And the significance of each deferred income tax liability test of the P value of 0.113, that is, the stock price has not very significant explanatory ability, because the regression coefficient of the deferred income tax liability per share is -16.9507, it is concluded that there is a negative correlation between the net deferred income tax liability and the stock price per share, that is, the increase of net deferred liabilities per share will reduce the value of the enterprise. According to the comparison between the two model regression results, the model (1) increases the influence factor of deferred income tax liability, and the fitting goodness of model (2) r-squared is 0.3111, and the model (1) The optimal degree of fit is 0.3097, which shows that deferred income tax liability can increase the overall explanatory ability of price model to some extent. Although the r-squared of the model does not meet the approximate optimal degree required by statistics, the overall interpretation ability of the model (2) can be considered to be very low under the price model. Regression results for models (1) and (3) are shown as tables, and the regression coefficients, t-values, and sig of the explanatory variables in the model are displayed. (The P value of the significant test).

Table 7 return results of Gem market

Variable Model	$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it}$			$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 DTA_{it} + \varepsilon_{it}$		
P	Regression coefficient	T value	Sig.	Regression coefficient	T value	Sig.
EPS	17.9826	15.26	0.000	17.8991	15.15	0.000
BV	0.4925	5.70	0.000	0.5321	5.58	0.000
DTA	--	--	--	-26.1803	-0.98	0.325
Residual difference value	15.8256	27.63	0.000	16.1142	25.05	0.000
R-squared	0.3097			0.3104		
F value	226.11 (0.000)			151.06(0.000)		

The net assets (BV) and EPS per share of the two models have significant explanatory power to the stock price, and it is known from the F value that the two models are very significant. And the significance of each deferred income tax liability test of the P value of 0.113, that is, the stock price has not very significant explanatory ability, because the regression coefficient of the deferred income tax liability per share is -16.9507, it is concluded that there is a negative correlation between the net deferred income tax liability and the stock price per share, that is, the increase of net deferred liabilities per share will reduce the value of the enterprise. According to the comparison between the two model regression results, the model (1) increases the influence factor of deferred income tax liability, and the fitting goodness of model (2) r-squared is 0.3111, and the model (1) The fitting excellent degree is 0.3097, which indicates that the deferred income tax liability has a significant explanatory power to the stock price in the two models, each share net assets (BV) and each share income (EPS), and the two models are very significant by the F value. According to the comparison between the two model regression results, the model (1) increases the influence factor of the deferred income tax asset, the fitting goodness of the model (3) is r-squared 0.3104, and the model (1) The fitting merit is 0.3097, which shows that deferred income tax assets can increase the overall explanatory ability of price model to a certain extent, that is to say, the relativity of deferred income tax assets accounting information quality is improved. Although the r-squared of the model is not up to the approximate optimal degree required by statistics, this numerical model is generally low, so the interpretation ability of the model (3) can be considered good.

### 3.3 Comparison and analysis of market regression results between gem and motherboard.

In table 8, the regression coefficient for each deferred income tax asset is -26.1803, and in contrast to the hypothetical H2, the increase in the net deferred assets per share of the motherboard market increases the value of the enterprise and fully confirms the assumption of 2. That is, the impact of deferred income tax assets on stock prices in the gem market is very different from the impact of deferred income tax assets on stock prices in the motherboard market. The reason may be that deferred income tax assets are derived from the value of the depreciation, the difference between the fair value and the book value, although it is the asset class in the balance sheet, but it is a negative factor in the economic sense, so the stock purchaser of the gem market has a lower approval degree to the real reliability of the deferred income tax assets, Thus, the higher the value of deferred income tax assets, the lower the share price. This indicates that the value relevance of the listed companies in the gem market is less than that of the main board market, and this conclusion confirms the third hypothesis presented in this paper. The sources of deferred income tax assets include impairment loss of assets, fair value change, deductible losses, deferred income, expected liabilities, etc., which will affect the pricing of stocks. Deferred income tax assets is a special accounting subject, whose information users need to pay attention to the proportion of the tangible assets, because the larger the proportion of virtual assets, the lower the quality of assets, the future can bring economic benefits to enterprises the uncertainty is higher.

#### 4. Research conclusions

This paper takes the implementation of the new income tax accounting standard as the research background, takes the gem of the Shenzhen manufacturing industry and the listed company of the main board market as the research sample, and empirically tests the value relativity of the deferred income tax accounting subject. It is verified that the deferred income tax has different influence on the stock price under the different audit quality environment. In the capital market, investors mainly use the financial reports disclosed by the listed companies (mainly the surplus level) to price the stock. However, because of the information asymmetry problem, the Enterprise Manager may carry on the surplus manipulation to whitewash the financial information, misleading the investor to the company stock price exorbitant. In this context, the auditor as an independent forensic agency, through the issuance of professional audit reports to reflect the quality of financial reports, improve the credibility and integrity of the public financial information, so as to help investors to revise the pricing of stocks, so that they are as close as possible to the equity value of equity. Based on this, the empirical results show that the stock value of the manufacturing industry in the main board market is positively correlated with deferred income tax assets, which is negatively correlated with deferred income tax liabilities and passed the robustness test. Accounting conservatism requires that enterprises should not overestimate assets or profits, underestimate liabilities or costs, so the recognition of deferred income tax liabilities embodies the robustness characteristics. And in the manufacturing industry gem market listed companies, although there is a negative correlation between the deferred income tax liability and the stock price, the impact on the enterprise value is smaller than that of the main board market, and the influence of deferred income tax assets on the stock price of the gem market is very different from that of the main board market. The reason may be that investors have differentiated the risk assessment of listed companies in the two different markets of the motherboard and gem. Deferred income tax assets are derived from the value of depreciation, the difference between fair value and book value, although it is an asset class in the balance sheet, but it is a negative factor in the economic sense, so the stock purchaser of the gem market has a lower approval degree to the real reliability of the deferred income tax assets, In order to reduce its risk, it appears that the higher the value of deferred income tax assets, the lower the price.

This conclusion not only provides a further explanation for the mechanism of stock pricing in China's capital market, but also promotes the equity return to its fair value by strengthening the role of auditor in the supervision layer. Therefore, the recommendations that may be made to stakeholders based on the findings of the study are: Information users need to pay attention to deferred income tax assets of the special accounting account in the proportion of tangible assets, because the general situation of the larger proportion of virtual assets, indicating the lower the quality of their assets, the future can bring economic benefits to enterprises the uncertainty is higher. Secondly, when making investment decision, we should not only look at the profit of the report, but also pay attention to the influence of the deferred income tax on the profit of the enterprise in the financial statement. The users of financial statements should pay more attention to the phenomenon that the enterprise assets are inflated by deferred income tax assets in the gem market.

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