A Study on Impact of Internal Control on Accounting Information Quality and Their Relationships

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Abstract

With development and improvement of the capital market, accounting information quality and internal control quality are increasingly connected to each other. Internal control of enterprises can monitor generation of accounting information quality from the root. Low internal control efficiency would directly compromise accounting information quality and influence decision-making of listed companies. Therefore, the study on impact of internal control on accounting information quality and their relationships has become an important task for listed companies. The thesis herein commences from the connotation of accounting information quality and internal control, then analyzes the status quo of China’s internal control and information quality and causes, and builds models accordingly for the purpose of providing reference and inspiration for the listed companies in improving accounting information quality and boosting implementation efficiency of internal control.

Keywords: Accounting information quality, Internal control, Relevance.

1. LITERATURE REVIEW

1.1 Research background

Accounting information quality has always held an important position in all listed companies, specifically reflecting their running condition. The main reason is that accounting information can provide decision-making foundation for enterprises’ external interests and internal management. However, accounting information quality of existing enterprises faces serious problems. For example, China Aviation Oil Supply Corporation and Guangxia (Yinchuan) Industry Co.,Ltd. suffered huge losses due to low implementation efficiency of internal control; problems in internal control cost Yamato Transportation and Barings Bank billions of dollars; WorldCom and Enron fraud scandals posted an unprecedented challenge for American economy. These cases not only brought negative effect on enterprises’ image but also deprived investors of faith in the concerned enterprises. Against the backdrops, listed companies demand more about accounting information quality in the hope of optimizing it by improving efficiency of accounting information and expertise of the personnel. Nevertheless, taking accounting information quality as a starting point can’t improve the current status as the root lies in whether enterprises’ internal control system is effective(Zhao, 2014). Therefore, the thesis herein focuses on enterprises’ internal control system in study and proposes measures to optimize enterprises’ information quality based on relationships between enterprises’ internal control and accounting information quality.

1.2 Research scope

As valuable resources of listed companies, accounting information can provide decision-making foundation for enterprises’ management with its quality deciding effectiveness of decision-making. The thesis herein studies relevance between enterprises’ internal control and accounting information quality and bears significance in terms of both theory and practice(Wang, 2015).

Theoretically speaking, the thesis herein explores factors influencing enterprises’ accounting information quality through internal control information disclosure indicator and factor indicator, builds related regression function and analyzes their relationships quantitatively. It expands perspective of empirical analysis and provides technical foundation for theoretical analysis. In terms of practice significance, accounting information fraud has a severely negative impact on enterprises’ image and disturbs domestic market order. Therefore, it’s high time the matter of accounting information quality be studied. The thesis herein starts from status quo of enterprises’
2. REVIEW ON ACCOUNTING INFORMATION QUALITY AND INTERNAL CONTROL

2.1 Connotation of accounting information quality

Accounting information quality provides decision-making foundation for enterprises’ managers and owners, helping enterprises carry out production for the next phase and reducing enterprises’ error rate in decision-making. In addition, timely disclosure of enterprises’ accounting information can enlarge their market share, improve operation efficiency and use efficiency of capital, and optimize enterprises’ resource allocation. In a word, accounting information is comprehensive assessment and objective reflection of enterprises’ business returns and management situation. With deepening of economic globalization over the years, demand of large-scale public facilities and financing projects increases dramatically. Disclosure of accounting information becomes important support for enterprises’ construction, analyzing enterprises’ market trend, deciding enterprises’ development direction and providing valuable information for market risk analysis (Dai, 2011). So, fine accounting information quality is crucial for enterprises’ development.

2.2 Connotation of internal control

With constant development of China’s market economy, internal control plays an increasingly important role in management of enterprises. Dating back to as early as the 1990s, it mainly includes five parts, namely supervision, communication and information, control activities, risk assessment and control environment. It objectively reflects and analyzes enterprises’ production management, guarantees reliability and authenticity of financial reports according to social mechanism and laws and provides reference and assistance for enterprises’ future development. As far as structure of internal control is concerned, enterprise management, board and other members are its important parts. Currently, connotation of internal control has developed to a generality: procedures and policies formulated by auditing institutions for the purpose of protecting asset integrity and safety and ensuring normal activities and integrity and lawfulness of accounting materials and made up by control procedures and control environment system (Wen, 2011). Refer to Table 1 for stages of internal control’s definition.

<table>
<thead>
<tr>
<th>Particular year</th>
<th>Publishing organ</th>
<th>Canonical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>COSOC committee</td>
<td>Internal control - integrated framework</td>
</tr>
<tr>
<td>2004</td>
<td>COSOC committee</td>
<td>Risk management - integrated framework</td>
</tr>
<tr>
<td>2008</td>
<td>Five committees</td>
<td>Basic concepts of enterprise internal control</td>
</tr>
</tbody>
</table>

2.3 Relationship between accounting information quality and internal control

Internal control can restrain accounting information quality to some extent and guarantee function property of accounting information quality. Generally speaking, the restraint can be found in two aspects. Firstly, internal control performs supervision on accounting information quality to make sure monitoring of accounting information quality is legal and rational and submits accounting information to decision-makers truly and accurately. Secondly, internal control can timely summarize and analyze record of accounting information quality to find problems if there is any. Besides, guarantee and assessment standard of accounting information quality is mainly internal control system and internal control. Internal control environment can enhance efficiency of internal control which directly influences accounting information quality (Hu, 2014). Therefore, internal control is crucial for enterprises’ accounting information quality. Only by strengthening management of internal control, can enterprises’ accounting information quality be improved and enterprises’ sound development be guaranteed (You, 2014). Refer to Figure 1 for relationship of the three.
3. STATUS QUO OF CHINA’S INTERNAL CONTROL AND ACCOUNTING INFORMATION QUALITY

3.1 Status quo of internal control and causes

At the beginning of the 20th century, Shenzhen Stock Exchange and Shanghai Stock Exchange promulgated provisions for information disclosure of listed companies. In July, 2006, the Ministry of Finance, along with China Insurance Regulatory Commission, China Banking Regulatory Commission and China Securities Regulatory Commission, established Internal Control Standard Commission, laying a foundation for establishment of internal control system of China’s enterprises. In 2012, the Ministry of Finance required listed companies to start establishment of internal control system and formulated specific rules about information disclosure of listed companies. Despite improvement compared with the past, China’s internal control system is still troubled by many problems such as implementation of internal control, awareness of internal control and internal control system. What’s more, China’s internal control started late in both practice and theory. Enterprises’ internal control didn’t step into formal development until recent years (He, 2016). Generally speaking, there is still large room for improvement of internal control quality of China’s enterprises with rules on specific assessment standard and formats of information disclosure still lacking (Wang, 2016).

Problems in China’s internal control quality can be attributed to reasons of two layers. The superficial reason is that most Chinese enterprises don’t have a complete internal control system and lack deployment and leadership in internal accounting control. In addition, enterprise decision-makers don’t have adequate awareness about internal control system with some even lacking basic common sense, so importance of internal accounting control system is not fully realized. A more profound reason is that restraint of internal control system itself undermines development of enterprises. For example, internal control system can’t decide enterprises’ business environment and governmental policies, nor improve enterprises’ management quality, nor guarantee that enterprise decisions are right. All these problems and difficulties about which internal control can do nothing are main causes of status quo of internal control of Chinese enterprises (Song, 2016).

3.2 Status quo of accounting information quality and causes of problems

With development of China’s accounting, acquisition of accounting information has been increasingly scientific and reasonable. However, most acquired accounting information is still characterized with low quality and especially lack of authenticity. According to the national inspection report on accounting information quality released in 2010, fraud, fabricated account book, and falsely increased profits severely violating regulations are found common in some state-owned enterprises and privately held enterprises, which not only violates national finance and revenue rights but also disturbs national economic order to some extent and severely deters economic development.

The problems are largely due to two causes. First, accounting system and accounting technique are restrained. Man-made against certain political and economic backdrops, many accounting system and techniques are left behind by advancing economy and society and changing political situations, which is the fundamental cause of low accounting information quality. The other cause is weak social supervision. Accounting information is mostly audited and monitored by certified accountants in an objective and just manner so as to screen out qualified and high-quality accounting information. However, nowadays, due to questionable morality and work virtue of some certified accountants and inadequate supervision of some competent departments, many certified accountants collude with enterprises to commit frauds against accounting laws and regulations, which is the direct cause of low accounting information quality.
4. MODEL BUILDING AND INDICATOR SELECTION

4.1 Building of internal control indicator model

4.1.1 Designing principle

Operability, significance and cost effect, combination of practice and theory are main designing principles of internal control assessment indexes. First, operability means internal control assessment system should be dominated by internal governance and supported by external governance so that internal governance of enterprises can be truly reflected. Significance and cost effect means we should pay special attention to noteworthy problems inside enterprises and assign heavy weight to them while performing internal control indicator assessment. Combining practice and theory requires us to learn from western internal control system and formulate an internal control system peculiar to Chinese enterprises. It would be unwise to entirely copy mature control model and blindly imitate COSO mechanism developed by western countries (Zhou, 2012).

4.1.2 Model building

While building index model of internal control, the thesis herein divides internal control system into four parts according to COSO report, namely target setting, risk affirmation, risk response and information monitoring and subdivide the four parts further. Refer to Table 2 for details.

<table>
<thead>
<tr>
<th>W1 target setting</th>
<th>Do you subdivide your company goals? Are goals set in line with corporate risk preferences?</th>
<th>Take 1 instead of 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2 risk identification</td>
<td>Is the company’s risk arrangements? Risk prevention for subsidiaries?</td>
<td>Meets 1, does not conform to take 0</td>
</tr>
<tr>
<td>W3 risk response</td>
<td>Are there any potential risks that should be addressed?</td>
<td>Meets 1, does not conform to take 0</td>
</tr>
<tr>
<td>W4 information monitoring</td>
<td>Do you change offices? Is the internal control system improved? Are you warned or punished by the exchange or the Securities Regulatory Commission?</td>
<td>Take 1 instead of 0</td>
</tr>
</tbody>
</table>

In light of the indicator setting above, the author builds corresponding internal control index model:

\[ ICI = \beta_1 W_1 + \beta_2 W_2 + \beta_3 W_3 + \beta_4 W_4 \]  

ICI refers to internal control index. \( \beta_1, \beta_2, \beta_3, \beta_4 \) are calculated based on analysis method. \( w_1, w_2, w_3, w_4 \) are subtotal of each of the four indicators and calculated by adding up the fractions in the table above.

4.2 Indicator selection of accounting information quality

When choosing indicators of accounting information quality, many scholars generally study one particular feature of accounting information quality such as transparency, soundness or timeliness. However, study shows that this research method can’t comprehensively disclose features of accounting information quality of listed companies. Actually, earning quality is the facet used most in studying relationship between internal control and accounting information quality. So, the thesis herein chooses earning quality which is the most comprehensive and mostly concerned as study indicator and focuses on impact of internal control on enterprises’ accounting earning quality.

While studying earning quality, it’s normal to divide accrued profits into uncontrollable profits and controllable profits and the former is standard of measuring earning quality. Thus, the thesis choose Jones model to measure earning quality.

\[ \frac{P_t}{A_{t-1}} = \frac{b_{11}}{A_{t-1}} + \frac{b_{12}(\Delta REVU_t + \Delta REC_t)}{A_{t-1}} + \frac{b_{13} FA}{A_{t-1}} + \frac{b_{14} IA}{A_{t-1}} + \epsilon_n \]
Among it, An-1 refers to total asset, P1 refers to total profit, △RECit refers to accounts receivable balance, △REVit refers to revenue gap, from bl1 to b4i are model coefficients, IA refers to invisible asset and FA refers to fixed asset. As to application of the model, total asset An-1 shall be calculated first. Then, subtract uncontrollable profit from the total asset to get controllable profit. Generally speaking, the larger the controllable profit is, the more manipulative earning management can be.

5. EMPIRICAL ANALYSIS

5.1 Sample selection

The thesis herein selects data of 700 listed companies from Shenzhen Stock Exchange. Among them, data of 16 enterprises are not available and 54 financial listed companies are excluded. So, the main study subjects are the remaining 630 listed companies. Refer to Table 3 for details.

<table>
<thead>
<tr>
<th>Listed company of Shenzhen Stock Exchange</th>
<th>700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data cannot be obtained</td>
<td>16</td>
</tr>
<tr>
<td>Excluding financial listing formula</td>
<td>54</td>
</tr>
<tr>
<td>sample data</td>
<td>630</td>
</tr>
</tbody>
</table>

While selecting samples, it’s normal to adopt data of disclosure situation of related reports and systems and then directly evaluate internal control. Data are obtained based on information disclosed on the website of Shenzhen Stock Exchange and sorted out by the author personally. Financial data from CSMAR database are selected as relevant data of internal control and accounting information quality (Xu, 2012).

5.2 Model introduction

While studying relationship between internal control and accounting information quality, the thesis herein uses the Jones Model mentioned above to assess earning quality of the 630 concerned enterprises.

\[ P_n = \Delta V E_n - \Delta C L_n + \Delta S T D E B T_n - \Delta T P_n + D E P_n \]

Among it, \( P_n \) refers to total project of the nth phase, \( \Delta V E_n \) refers to debt change of the nth phase, \( \Delta C L_n \) refers to asset change of the nth phase, \( \Delta S T D E B T_n \) refers to loan difference of the nth phase, \( \Delta T P_n \) refers to depreciation expense and amortized expense of the nth phase and \( D E P_n \) refers to cash flow change of the nth phase.

Besides the model mentioned above, the thesis also uses least square method to calculate residual error of four indicators namely communication and information, control activities, risk assessment and internal supervision to indicate controllable surplus of enterprises and study earnings management of the enterprises. The model is as follows:

Communication and information model: \( A_1 = a_1 \beta_1 + g_i G_i + \epsilon_{1t} \)

Control activities model: \( A_2 = a_2 \beta_2 + g_i G_i + \epsilon_{2t} \)

Risk assessment model: \( A_3 = a_3 \beta_3 + g_i G_i + \epsilon_{3t} \)

Internal supervision model: \( A_4 = a_4 \beta_4 + g_i G_i + \epsilon_{4t} \)

Among it, \( a_1, a_2, a_3, a_4 \) are coefficient vectors, \( \beta_1, \beta_2, \beta_3, \beta_4 \) are variable vectors and \( G_i \) is total asset of control variable in the tth phase. Goodness of fit and statistical significance of the four models can judge effectiveness and interpreting ability of the four indicators so as to assess earnings management of the 630 enterprises (Wang, 2012).
5.3 Analysis of empirical results

The thesis herein uses Jones Modified Model and obtains results showed in Table 4.

<table>
<thead>
<tr>
<th>variable</th>
<th>T test</th>
<th>coefficient</th>
<th>The value of P</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>$A_n$</td>
<td>-15</td>
<td>0.023</td>
<td>0.001</td>
<td>0.36</td>
</tr>
<tr>
<td>$P_n$</td>
<td>-345</td>
<td>0.04</td>
<td>0.001</td>
<td>-0.78</td>
</tr>
<tr>
<td>Cons</td>
<td>5.6</td>
<td>0.015</td>
<td>0.001</td>
<td>0.34</td>
</tr>
</tbody>
</table>

Table 4: Jones Model Table

According to the table, goodness of fit R inspection and F inspection pass significance level, which means the model is capable of powerful interpreting. Calculation result from the model validates hypothesis of the thesis: the four indicators, internal control, communication and information, control activities, risk assessment and internal supervision, are positively related to earnings quality of enterprises. Thus, it’s reasonable to conclude that quality of internal control influences accounting information quality of enterprises to some extent (Li, 2002).

6. CONCLUSIONS

The thesis herein studies impact of internal control on accounting information quality and their relationships from empirical and theoretical aspects and proposes control and supervision measures by factors constituting internal control in the process of accounting information generation for the purpose of ensuring enterprises’ accounting information quality and providing reliable competitive foundation for enterprises on the highly competitive market (Wang, 2008).

According to study, internal control is with no doubt positively related to accounting information quality, which indicates significance of internal control to enterprises’ accounting information quality in the sense of improving enterprises’ resource allocation efficiency and reducing business cost. In addition, enterprises’ internal control can monitor accounting information and alertly adopt related strategies to avoid risks and guarantee normal business operation when accounting information quality received by the investors from the enterprises is too low.

REFERENCES