

# Applying Accounting Management for Small and Medium Construction Businesses: Empirical Evidence in Central Vietnam

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This study was conducted on the basis of collecting data from 270 managers from the head of accounting departments of 90 small and medium-sized construction companies. The study was designed to measure the factors influencing the application of management accounting in the companies. Descriptive statistical methods, Cronbach's Alpha test, impact factor analysis (EFA), and regression analysis were used in the study. Based on qualitative research and quantitative research, the empirical research results show that: firm size, competitive pressure, management perspective, and information technology application are factors that positively impact and affect the application of management accounting to varying degrees. The result of this study offers a scientific basis for managers to make appropriate decisions to improve the application of management accounting in enterprises in the future.

**Key words:** *Management accounting, Small and medium, Construction enterprises, Vietnam.*

## Introduction

Management accounting is considered as a process of providing managers and employees in an organisation with relevant information, both financial and non-financial to make decisions, allocate resources, and monitor, evaluate and reward implementation (Atkinson et al. 2012).

Currently, Vietnamese enterprises in general and small to medium scale companies (SME) operating in the field of construction, in the provinces of the Central region in particular, have to deal with both domestic and international competition. Therefore, in order to survive and develop amidst the competition of the market economy, enterprises must first thoroughly understand the economic laws, must know how to best use their available resources, and must know how to seize opportunities. Enterprises must have useful information related to information inside and outside the enterprise. The application of management accounting to the management of SMEs in the field of construction is influenced by many factors. Therefore, the study of identification and analysis of the impacts of each factor on the application of management accounting of these enterprises in the central provinces is an important and urgent topic.

### **Background Theory and Research Hypothesis**

Asymmetric information theory of enterprise management accounting relates to the interaction relationship within the operating environment of enterprises. In other words, a suitable international economic system depends on the characteristics of the enterprise and the business environment within which it operates. This means that building an effective accounting management system must be appropriate for each enterprise, within the internal and external environment in which it operates.

Researchers (Gordon and Miller, 1976; Hayes, 1977; Waterhouse and Tiessen, 1978; Otley, 1980; Nicolaou, 2000; Gerdin and Greve, 2004) choose to study factors that affect movement applying management accounting techniques to enterprises. Most of the research results show that there is no one management accounting model that is suitable for all types of businesses as well as showing resilience across different stages, and that the factors affecting the application of international economic techniques can be divided into two types: internal factors within enterprises and external factors (Walker, 1996).

Chenhall (2003) discusses the uncertainty-based theoretical framework with the assumption that a governance control system is developed and selected to help achieve the targets and objectives proposed by the enterprise. The management accounting system in this case is uncertain for such factors as external business environments, enterprise technology, enterprise structure, firm size, corporate strategy, and ethnic culture.

Agency theory emphasises that shareholders need to use appropriate mechanisms to limit the divergence of interests between shareholders and managers. According to Jensen and Meckling (1976), the relationship between shareholders and company managers is understood as a representative relationship, or a trust relationship. This relationship is referred to as a contractual relationship whereby shareholders (principals), appoint, designate others, manage

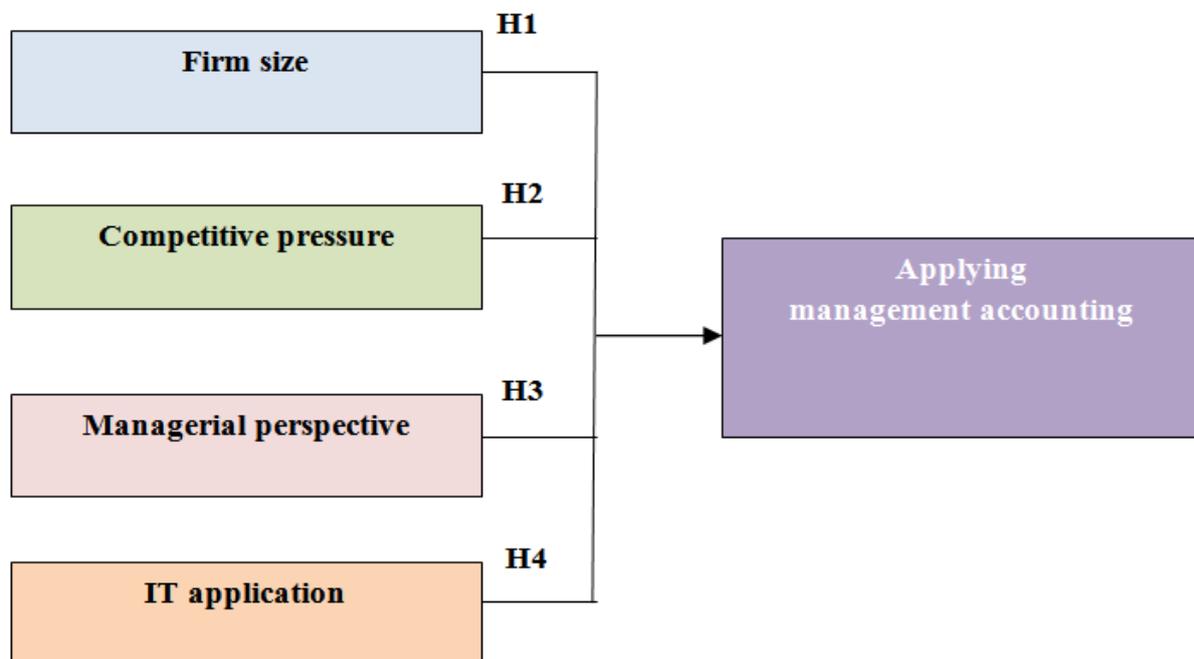
the company (agents), to perform public management, including the granting of authority to make decisions about the disposition of a company's assets. The theory of agency states that if both parties in this relationship (shareholders and company managers) want to maximise their interests, then there is a basis to believe that the manager will not always act in the best interests of the owner; it is the shareholders who will.

According to Healy and Palepu (2001), the optimal contract between the administrator and the investor must include agreement of remuneration and bonus of the administrator, solutions to reconcile the benefits between the enterprise administrator (owner businesses) to the benefit of outside investors. These transactions often require businesses to use information provided by the management accounting system such as a budget estimation system, cost control information, allocation of resources to investors to assess compliance with contractual commitments and assess corporate governance with the company's resources tied to the interests of outside investors.

### *Research Models and Hypotheses*

#### *The Proposed Research Mode*

**Figure 1.** Model of research proposals



**Source:** Research's authors

### ***Research Hypotheses***

#### ***Hypothesis (H1): The Larger the Scale of Enterprises, the greater the Need to Apply Management Accounting in Construction SMEs***

According to experts, the scale factor affects the application of management accounting in SMEs in both capacity and content. In fact, it is shown that the rate of small and micro enterprises applying management accounting is extremely low, or if it is applied, it will only revolve around simple traditional technical tools. The rate of the application of management accounting increased for medium enterprises. This can be interpreted according to the trend that once businesses grow in size, such as the number of works increases, sales growth or market expansion leads to the increase in the number of employees or the development of additional businesses. Occupations increase the number of departments, leading to the need for more efficient economic efficiency standards and economic management tools. This is the basis for SMEs to boldly apply management accounting tools, as well as applying more complex technical tools to obtain information to support better decision-making processes (Klaus Flacke and Klaus Segbers, 2005 ; Khaled Abed Hutaibat, 2005).

Enterprise size is a factor that many authors are interested in when studying the effects of these factors on the application of management accounting. The research works of Joshi (2001), Haldma & Laats (2002), Szychta (2002), Pierce and O'Dea (1998), Abdel-Kader and Luther (2006), Abdel-Kader et al (2008), Ahmad, K. (2012), Albu, N. et al (2012), Leite, 2015) all consider size as an important influential factor and focus on the application of management accounting in businesses. Large-sized enterprises often need more management information as well as financial resources to apply management accounting. In Western countries, the use of cost-based operational accounting is often associated with firm size (Chenhall and Langfield-Smith, 1998); Large companies often value cost-based information more (Hoque, 2000). The research results of Pierce (1998) show that large-scale enterprises have a higher level of management accounting application than small-sized enterprises (Pierce, 1998). Bruns & Waterhouse (1975) and Merchant (1981) both stated that firm size is an important factor affecting corporate accounting and management systems, especially control and evaluation systems. Merchant stated that the estimation control system in large-scale enterprises is better than small-scale enterprises. Research by Al-Omiri and Drury (2007) also concluded that firm size has a significant influence on the application of cost-performance method in enterprises. According to the research of Abdel-Kader and Luther (2008), large enterprises with more resources will easily access and apply management accounting. Haldma and Laats (2002) show similar results (Abdel-Kader, 2008).

Increasing firm size is often associated with increased environmental control and an increase in organisational resources, as well as increased use of control methods. Studies conducted in

developed countries have also demonstrated that large enterprises often increase the use of more sophisticated accounting management methods (Chenhall, 2003). However, Pollanen (2010) makes some exceptions; the size of medium and large enterprises is not the main factor affecting the extent to which management accounting is applied in Canadian manufacturing enterprises (Pollanen, 2010). Similarly, the study of van Triest and Elshahat (2007) did not find any association between firm size and characteristics of cost accounting systems (van Triest, 2007).

***Hypothesis (H2): The Higher the Competitive Pressure of Enterprises, the More They Need to Apply Management Accounting in Construction SMEs***

The more competitive and volatile the business environment is, the more the need for Vietnamese SMEs to use management accounting techniques to forecast and gather information to make appropriate decisions to minimise business risks. In addition, the higher the level of competition, the more complex the application technique is in which the market's level of competition can be interpreted and measured through the level of competition actions as follows: competition price, competition in developing new products, competition in distribution channels, marketing, market share, revenue, the number of competitors in the same market segment and competitive actions of rivals. For this scale of business, experts have commented that the observed variables are relatively consistent with Vietnamese business characteristics. However, for the perception factor of environmental instability, experts agree that this factor actually has similarities and somewhat shows (or is affected by) the degree factor: market competition. This can be interpreted according to the trend that the higher the level of competition in the market, the more difficult businesses will operate and make the business owners themselves feel the market is unstable at a higher level. However, this factor is heavily sensory from the business owner. In addition, awareness of environmental instability can also be affected by other factors such as ethnic conflicts, political parties, wars etc. However, this reality is not appropriate. In the context of the current situation in Vietnam, it is possible to combine these two factors and measure via the only representative factor, that is, the competitiveness of the market.

Competitive pressure is reflected by the increasing competition in the market of materials supply, labour recruitment, and product sales. In order to survive and develop in a competitive market, businesses must pay attention to efficiency, thereby paying attention to information that supports decision making. Management accounting systems play an important role in providing information to support administrators in the decision-making process. Improving productivity, quality and minimising costs force businesses to apply new management accounting techniques (Kaplan, 1984). Also, according to Kaplan (1986, page ref), "the current cost accounting system does not meet the need for useful information for production activities, so it is necessary to change to meet the increasing competition".

Therefore, the relationship between competitive pressure in the market and the application of management accounting in businesses has been interesting to many researchers. Research by Halma and Laats (2002), Ahmad, K. (2012), Doan Ngoc Phi Anh (2016), Ahmad, K. et al (2012), (Leite, 2015) all showed that increasing competition led businesses to use resources and make decisions more effectively, thereby generating a need for information for corporate governance. Therefore, accounting management methods are actively applied by businesses in order to meet this demand. The research results of Libby & Waterhouse (1996), Granlund & Lukka (1998), Mia & Clarke (1999), Al-Omiri & Drury (2007), (Sulaiman, 2015), (Leite, 2015) also show that competitive pressure in the market has a positive effect on the level of corporate accounting management.

***Hypothesis (H3): The Perspective of Business Managers Positively Affects the Application of Management Accounting in Construction SMEs***

This is based on the current situation of management accounting applications of Vietnamese SMEs. Due to Vietnam's recent economic transition to a market economy in the future, most SMEs are not familiar with management accounting and instead focus on financial accounting according to requirements and orders of regulatory agencies, rather than the actual management needs of businesses. Therefore, the application of management accounting is difficult to successfully implement or cannot even be applied if the business managers do not understand the benefits brought about by the use of management accounting tools. It is the understanding of new management accounting techniques that helps business executives generate the need for applying management accounting to their businesses, helping them appreciate the usefulness of the accounting tools, and to not hesitate to invest in the management accounting applications.

Administrators are people who directly use management accounting information to make decisions, so the demand for information by administrators has an important influence on the application of management accounting in enterprises. In addition to information needs, the support of administrators in accessing new management accounting techniques and applying them to businesses is also a positive factor affecting the application of management accounting in enterprises. The research results of Shields, (1998), Sulaiman et al (2004), Karanja et al (2013), Abdel-Kader and Luther (2008), Sulaiman et al (2015), Halbouni et al. (2014), Pollanen and Abdel-Maksoud (2010), Abdel-Kader (2008) show that the interest of managers has a significant influence on the level of application of management accounting in enterprises.

***Hypothesis (H4): The More Developed the IT Applications in Management in Enterprises Is, The Easier it is to Apply Management Accounting in Construction SMEs.***

With the development of modern science and technology, the application of IT in accounting and management has brought many benefits to businesses. It allows for the running of businesses in a more logical manner and can save costs when hiring employees and factories. Furthermore, the use of management accounting systems helps promote professionalism and the advancement of businesses.

In the era of a science and technology boom, information technology has a strong influence and impact on all aspects of social life. The impact of information technology on management accounting is no exception. Studies by Efendi et al (2006), and Granlun and Mouritsen (2003) show that information technology has a strong influence on accounting systems, management accounting and the application of management accounting in businesses. The application of information technology and computers helps provide information in a timely, appropriate and more useful manner thus aiding the international economy (Abdel-Kader, 2006). Research conducted by Halbouni (2014) shows that 71.5% of respondents believe that information technology has a strong influence on the change in management accounting.

## **Results and Discussion**

Preliminary quantitative research was carried out in order to discover and adjust factors affecting the application of management accounting in construction enterprises. The survey canvassed 30 people working in different businesses and different positions, then proceeded to run SPSS 20.0 to test the reliability of the scale and establish the EFA discovery factor.

### ***Description of Survey Sample***

After the preliminary quantitative survey, the author conducted an official survey. The time for taking traps from July 1, 2019 to July 12, 2019 in many different SMEs construction in 12 province and city of central Viet Nam such as: Nghe An; Thanh Hoa; Ha Tinh; Quang Binh; Quang Tri; Thua Thien Hue; Da Nang; Quang Nam; Quang Ngai; Binh Dinh; Phu Yen; Khanh Hoa. The number of survey questionnaires was 300 (including 100 preliminary surveys), 270 of which were valid surveys (90.57%), while 30 were deemed invalid. Therefore, the final sample size was 270, comprising 183 males and 87 females.

**Table 1:** Descriptive statistics of the sample

Characteristic	Frequency	%
1. Sex	N = 270	100
Male	183	68
Female	87	32
2. Age	N = 270	100
Under 35	32	11.7
35 - 45	117	43.8
Over 45	119	44.5
3. Seniority	N = 270	100
Under 5 years	21	7.5
5 – 10 years	88	32.8
Over 10 years	171	59.6
4. Degree	N = 270	100
Under bachelor	27	10
Bachelor	145	56.7
Over bachelor	98	33.3

**Source:** Survey of authors, 2019

### *Test Cronbach's Alpha and EFA Coefficients*

Cronbach's Alpha test results for the scale shown in Table 2 above show that these scales all have Cronbach's Alpha coefficient > 0.6 and the total correlation coefficient > 0.3. Therefore, no observed variables were excluded, and the model included 20 variables used in the subsequent EFA analysis.

**Table 2:** Results of reliability analysis and factor analysis

Scales	Factors				
	1	2	3	4	5
1. Applying accounting management (KTQT): Cronbach's Alpha = 0.933					
KTQT1_ Firm size increases needed to apply MA	0.916				
KTQT2_ Competitive pressure needed to apply MA	0.927				
KTQT3_ Awareness of rising management needs to apply MA	0.890				
KTQT4_ Rapid IT development requires MA	0.915				
2. Firm size (QMDN): Cronbach's Alpha = 0.900					
QMDN1_ The size of the number of employees		0.881			
QMDN2_ Market size		0.880			
QMDN3_ Size of revenue		0.862			
QMDN4_ Scale of total assets		0.860			
3. Competitive pressure (ALCT): Cronbach's Alpha = 0.889					
ALCT1_ Competitive pressure on capital			0.843		
ALCT2_ Pressure to reduce costs			0.878		
ALCT3_ Competitive pressure on attracting customers			0.887		
ALCT4_ Competitive pressure on construction quality			0.874		
4. The manager's perspective (QDQL): Cronbach's Alpha = 0.892					
QDQL1_ Managers knowledgeable MA				0.862	
QDQL2_ Managers develop strategies MA				0.872	
QDQL3_ Analysis of competitor information				0.856	
QDQL4_ Competitive strategy analysis				0.851	
5. Information technology applications (UDCN): Cronbach's Alpha = 0.893					
UDCN1_ Good IT system					0.862
UDCN2_ Accounting knowledgeable, IT application system					0.850
UDCN3_ Update accounting software					0.895
UDCN4_ Estimation works					0.835
KMO = 0.864; Bartlett's Test (Chi-Square = 2830.156; df = 120; Sig. = 0.000); Variance of extract = 74.078%; Eigenvalue = 1.183 – 7.622)					

**Source:** Analysis results from SPSS 20

The above analysis results show that KMO coefficient > 0.5, the Batlett test has p-value equal to 0.000 < 0.05, extracted variance > 50%, all loading factors are greater than 0.5 and the coefficient is Eigen Value > 1. Thus, the standards when using the EFA discovery analysis show that the factors are consistent with the research data set.

After extracting the factors from exploratory factor analysis, we conducted regression analysis to identify factors affecting the application of international economic integration to small and medium-sized construction enterprises in the regions of central Vietnam. Regression analysis will be performed with four independent factors. The value of each factor used to run the regression is the average of the observed variables of that factor.

**Table 3:** Pearson index analysis

		KTQT	QMDN	MDCT	QDQL	UDCN
KTQT	Pearson Correlation	1	.379**	.287**	.371**	.254**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	270	270	270	270	270
QMDN	Pearson Correlation	.379**	1	-.052	.066	-.010
	Sig. (2-tailed)	.000		.396	.280	.870
	N	270	270	270	270	270
ALCT	Pearson Correlation	.287**	-.052	1	.197**	.010
	Sig. (2-tailed)	.000	.396		.001	.875
	N	270	270	270	270	270
QDQL	Pearson Correlation	.371**	.066	.197**	1	-.062
	Sig. (2-tailed)	.000	.280	.001		.309
	N	270	270	270	270	270
UDCN	Pearson Correlation	.254**	-.010	.010	-.062	1
	Sig. (2-tailed)	.000	.870	.875	.309	
	N	270	270	270	270	270

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source:** Analysis results from SPSS 20

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**Table 4:** Model Coefficients and Collinearity Statistics

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.182	.334		.546	.586		
QMDN	.339	.043	.374	7.808	.000	.991	1.009
ALCT	.212	.043	.242	4.963	.000	.956	1.046
QDQL	.275	.043	.316	6.460	.000	.951	1.051
UDCN	.247	.043	.275	5.757	.000	.996	1.004

**Source:** Analysis results from SPSS 20

**Table 5:** Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
.831 <sup>a</sup>	.598	.589	.496	.598	43.830	4	265	.000	1.951

**Source:** Analysis results from SPSS 20

Based on Table 4, the results are shown:

- The QMDN factor has a value of Sig = 0.000 < 0.05, so it should be rejected H<sub>0</sub>, meaning that the factor of firm size has a positive impact on the application of management accounting for construction SMEs in the central provinces of Vietnam.
- The factor ALCT has Sig value = 0.000 < 0.05, so it should be rejected H<sub>0</sub>, meaning that the competitive pressure factor has an impact on the application of management accounting for construction SMEs in the central provinces of Vietnam.
- The QDQL factor has a value of Sig = 0.000 < 0.05, so it should be rejected H<sub>0</sub>, meaning that the decision factor of a manager has a positive impact on the application of management accounting for construction SMEs in the central provinces of Vietnam.
- The factor UDCN has a value of Sig = 0.000 < 0.05, so H<sub>0</sub> should be rejected, meaning that the application factor of information technology has a positive impact on the application of management accounting for SMEs built in the central provinces of Vietnam.

$$KTQT = 0.374QMDN^* + 0.242ALCT^* + 0.316QDQL^* + 0.275UDCN^* + e$$

## Conclusions and Recommendations

As a result of the above model, all four factors affect the application of management accounting at construction SMEs in the central region provinces of Vietnam. The following order of influence are: (1) firm size, (2) managerial perspective, (3) application of information technology and (4) competitive pressure.

The factor of firm size means that this will increase the feasibility of applying management accounting in enterprises; with large enterprise size, the effect will be clearly shown through revenue, number of employees, and the number of departments with clear, independent functions (Joshi,2001), Haldma & Laats ,2002, Szychta, 2002, Sulaiman et al, 2004, Pierce and O'Dea,1998). In contrast to the small size of enterprises, it is not advisable to apply the international economy, but it is necessary to make available the key economic knowledge necessary for the business executives (Joshi,2001); Haldma & Laats,2002; Szychta, 2002; Sulaiman et al, 2004; Pierce and O'Dea,1998).

The competitive pressure factor affecting the application of management accounting in small and medium sized construction enterprises is completely consistent with the studies of Sulaiman et al. (2004), Halma and Laats (2002), Bruns. and Kaplan (1991), Luther and Longden (2001), Karanja et al (2013), Sulaiman et al (2015), Ahmad, K. (2012), and Doan Ngoc Phi Anh (2016). The biggest difficulties faced by SMEs are capital, human resources, and technology. Currently, only 30% of SMEs have access to capital through bank channels. The main reason is that most enterprises are inexperienced, do not have enough collateral, and their financial statements are incomplete and not sufficiently transparent. In the context of integration, the construction SMEs need to identify their strengths to choose the supply chain in accordance with the trend, while also capturing what the domestic and international markets bring. From there, individual business development plans can be set.

The perception factor of an enterprise executive means that if the enterprise executive has a good knowledge and understanding of management and accounting techniques, it will increase the feasibility of applying management accounting in enterprises. This is entirely consistent with the findings of Shields, (1998), Sulaiman et al (2003), Karanja et al (2013), Abdel-Kader and Luther (2008), Sulaiman and et al (2015), Halbouni et al (2014), Pollanen and Abdel-Maksoud (2010), and Abdel-Kader (2008). Changing the management thinking of managers in SMEs is extremely important and necessary. Updating management knowledge, including that which relates to international economics, is something that not only managers in large enterprises should do, but something that administrators in SMEs should also be aware of. Business executives would be well advised to immediately acquire knowledge of the international economy from many different sources. In the process of applying an international audit, accounting staff play a specific role in the classification and provision of information to



the international economy, so staff should be regularly trained with respect to the international economy.

In addition, SME managers can help build a change in the management mindset and collaborate with universities in relation to recruiting personnel for the workforce, especially with respect to maths students. If this issue is promoted, and combined with theory and practice, SMEs might solve the problem of management human resources through training with a commitment to the potential labour force. They can conduct simulations of business situations that enterprises themselves have had to go through or confront in reality. The construction SMEs should also create conditions for senior students to practice internship in their businesses, as there will be opportunities to recruit highly skilled members of the workforce without having to pay brokerage fees.

The IT application factor means that if the management accounting tools (computers, software) are as good as possible or the construction accounting software is updated as quickly, this will increase the feasibility of applying management accounting in enterprises. This is entirely consistent with the findings of Efendi et al. (2006), and Granlun and Mouritsen (2003).

The application of management accounting techniques is an effective measure with which to increase the business efficiency of any enterprise. However, carefully considering the compatibility of the business in terms of scale, business strategies, staff qualifications, and corporate culture and pairing it with suitable management accounting and management tools is important. This will help businesses improve efficiency and overcome the fear of extensive costs when applying management accounting systems.

When choosing the right accounting and management technical tool for enterprises themselves, managers should pay attention to the development prospects of their enterprises in both the short and the long term. This will make businesses more active when changing from small to medium-sized enterprises or from medium-sized enterprises to large ones in the future, because it is clear that the complexity of the management accounting techniques must change to match the change in the size of businesses.

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