Corporate Tax Avoidance and Performance: Evidence from China's Listed Companies

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Abstract: *This paper examines the impact of corporate tax avoidance on firms' financial performance. China is the country of focus because of its unique reform experience. The results using structural equation modeling (SEM) show that there is a significant negative direct relationship between tax avoidance and market value. It indicates that the opaque nature of China's stock market creates 'opportunities' for managers using tax avoidance as an instrument to engage in rent seeking activities, which hurt shareholders' value. However, this study also finds significant positive indirect relationships between tax avoidance and market value as it has stimulated firms' growth and increase in profitability as the additional after-tax cash arising from tax avoidance has helped expand the firm's market value. The results imply that tax avoidance can be a value-adding activity but for firms to appropriate its advantages, there is a need to strengthen internal supervision and management capability. Additionally, the State Administration of Taxation of China should enhance the legal provisions to prevent managerial rent extraction.*

1. Introduction

To the extent that taxation impacts firms' performance, the textbook argument that tax imposes a burden on firms has been subject to extensive research. Thus, tax planning to reduce this burden through tax avoidance is expected to have a significant impact on firms. Following Dyreng, Hanlon, and Maydew (2008) and Hanlon and Heitzman (2010), tax avoidance can

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be defined as any activity that can explicitly reduce a firm's tax burden, reflected in its effective tax rate, and covers tax reductions that are fully legal and those that occupy a grey area (Dyreng, et al., 2008).

If successfully deployed, a tax avoidance strategy would transfer wealth from the state or government to shareholders. Therefore, it should result in relatively low taxes payable (that is, low ETRs), and higher after-tax cash flows, which will show up in analysts' financial reports and ultimately, stock prices. According to Swenson (1999), the stock market perceives low-tax paying firms that pay lower taxes as being better at controlling costs. However, empirical evidence on tax avoidance shows the opposite is the case. The conflicts of interest between managers and shareholders (Chen & Chu, 2005; Crocker & Slemrod, 2005) create opportunities for managerial diversions which discount the value of firms (Desai & Dharmapala, 2006, 2009).

Further, even if shareholder wealth is maximised, tax avoidance can nevertheless have both adverse firm- and macro-level effects (Hanlon & Heitzman, 2010; Hanlon & Slemrod, 2009; Robinson, Sikes, & Weaver, 2010). At the firm level, tax avoidance diminishes the firm's discharge of its social irresponsibility (Erle, 2008). At the macro-level, tax avoidance represents the loss of resources to the government that can finance the provision of public goods (Sikka, 2010).

This study examines the relationship between tax avoidance and selected firms' performance, manifested through the firms' value, in the context of China. China represents a case worthy of study because its development model is hotly debated. This model is one of state-led growth, with a strong state sector coexisting with a vibrant private sector although a series of reforms have also blurred the distinction between enterprises in both sectors (Cheong, Ran, & Miao, 2014). China's reforms saw Chinese corporations made to pay corporate income tax. However, the Chinese taxation system is itself in a state of transition. The coverage of the present system is not comprehensive and has loopholes giving opportunities to corporations, especially those connected to the state, to exploit. These flaws may intensify the agency problems in Chinese listed companies, not just state enterprises, which would directly or indirectly affect firms' performance.

Given the above, this paper seeks to answer the following research questions that correspond with the research objectives. The first question is whether there exists a link between tax avoidance and firm value in China and the associated objective is to explore this link in Chinese companies. The second question is whether the country's transition and corporate reforms have moved China's enterprise environment closer to the norm of other countries so that the tax avoidance − firm value linkage in China converges with what is found in the other countries. To the extent gaps in

convergence remain, the third question and objective are respectively to ask why and to explain these gaps in terms of China's reform experience.

In undertaking this study, existing studies do not provide much guidance. Compared with research on developed markets, especially the US, studies of tax avoidance in emerging markets especially China, are very limited. Most extant research on China examines the relationship between tax avoidance and firm characteristics, such as firm size, ownership and leverage (Adhikari, Derashid, & Zhang, 2006; Badertscher, Katz, & Rego, 2013; Wu, Wang, Luo, & Gillis, 2012). This study, however, focuses on the impact of tax avoidance activities on a firm's market value improvement through improving growth and profitability.

The structure of this paper is as follows: Section 2 presents a brief literature review and the hypotheses to be tested. Section 3 lays out model specification and data, including measures of four latent variables, model specification, data characteristics and data analysis. Section 4 discusses the estimated results. Finally, Section 5 concludes the paper by drawing several implications.

2.   Literature Review and Hypotheses

Tax avoidance has been defined as the reduction in a firm's explicit tax liabilities (Hanlon & Heitzman, 2010). Therefore, tax avoidance consists of tax planning strategies with perfectly legal activities at one extreme and illegal tax evasion at the other (Hanlon & Heitzman, 2010).

Corporate tax avoidance is traditionally viewed as a tax-reducing device that transfers interest from the government to shareholders to maximise shareholders' value, although an expanding body of work on agency theory emphasises that tax avoidance is closely related to corporate governance because of the agency cost implications. In practice, the complexity and ambiguity of tax avoidance can shelter managers who engage in various forms of managerial rent extraction such as earnings manipulation and insider transactions which would reduce after-tax cash flows (Desai & Dharmapala, 2009; Desai, Dyck, & Zingales, 2007). Enron's case is a striking example. In the 1990s, Enron made use of structured financing transactions to evade tax, leading to government prosecution and its collapse. Beyond that, firms also need to shoulder the combined tax avoidance costs, which include direct tax planning, compliance and non-tax costs. Lee, Dobiyanski, and Minton (2015) suggest that if shareholders cannot fully understand the cost-benefit calculus, tax avoidance activities could actually reduce firm value.

Empirical research on the impact of corporate tax avoidance on firm value has produced mixed findings. Desai and Dharmapala (2009) found no

significant relationship between tax avoidance and firm value, but a positive relationship for firms with dominant institutional ownership. They suggest that shareholders consider that ability to control the manager can add value to tax avoidance. Hanlon and Slemrod (2009) examined the market reaction to news about a firm's application for tax shelters. They find that such news dampened stock price. Chen, Hu, Wang, and Tang (2014) showed that tax avoidance is also inversely related to firm value, but this can be mitigated by information transparency.

In comparison with the aforementioned research focused on developed countries (Wahab & Holland, 2012; Badertscher, et al., 2013; Desai & Dharmapala, 2009), Claessens and Fan (2002) argued that the agency problems in Asian countries are compounded by a lack of corporate transparency that permitted rent seeking and insider transactions. China represents a special case because of the important role played by the government. Piotroski, Wong, and Zhang (2015) reported that China's financial market and listed firms are operating in an environment of poor information. In addition, China's taxation system started to open up only in the last three decades, is not comprehensive and has many loopholes. These factors provide more space for managers to engage in managerial opportunism and finally to maximise their self-serving objectives.

Given the above, and further in the context of the Chinese institutional setting, corporate tax avoidance may not necessarily increase firm value. Reflecting this, the first hypothesis is:

Hypothesis 1: corporate tax avoidance has a direct negative relationship with firms' market value.

Extensive empirical literature has shown that firms with good profitability and growth performances are generally associated with better firm value. Varaiya, Kerin, and Weeks (1987) found that firm profitability and growth significantly impact shareholder value. Naceur and Goaied (2002) investigated the relationship between value creation and profitability in the Tunisia stock exchange. They found that future value creation is significantly and positively related to a firm's profitability. Furthermore, Fama and French (1998) argued that if firms have a good record of profitability, a positive relationship exists between taxation of dividends and firm value. For these reasons, good profitability and growth performance should be important factors in firm value maximisation.

Literature also shows corporate governance has a significantly positive association with profitability and growth. Durnev and Kim (2005) found firms with better governance to grow faster and be more profitable. In addition, Peni and Vähämaa (2012) reported that large publicly traded US banks with stronger corporate governance mechanisms have higher

profitability. Moreover, Harford, Mansi, and Maxwell (2012) indicated that firms with low shareholder rights spend cash more quickly than those with stronger governance. Besides, Yen (2005) stated that firms with a management-friendly board structure would choose projects for which growth prospects are promising.

The above suggests that corporate governance impacts a firm's profitability and growth. Therefore, profitability and growth performance are posited as two mediators in the relationship between tax avoidance and firm value. The following are Hypothesis 2a and 2b:

Hypothesis 2a: Profitability performance mediates the relationship between tax avoidance and market value. (Path *cd*, shown in Figure 1)

Hypothesis 2b: Growth performance mediates the relationship between tax avoidance and market value. (Path *ab*, shown in Figure 1)

Profitability performance reflects firms' history of generating returns (Glick, Washburn, & Miller, 2005), and growth performance represents firms' past ability to grow in size (Whetten, 1987). Firm size is positively related to economies of scale and market power, both of which result in higher future profitability. Moreover, the market value of firms is based on their expected performance, which should be correlated with firms' profitability and growth performance (Santos & Brito, 2012).

Therefore, corporate tax avoidance would have an indirect effect on market value through improving its growth and then profitability. Hence, Hypothesis 3:

Hypothesis 3: Tax avoidance is positively but indirectly related to market value through growth and profitability. (Path *aed*, shown in Figure 1)

Figure 1: Conceptual Model
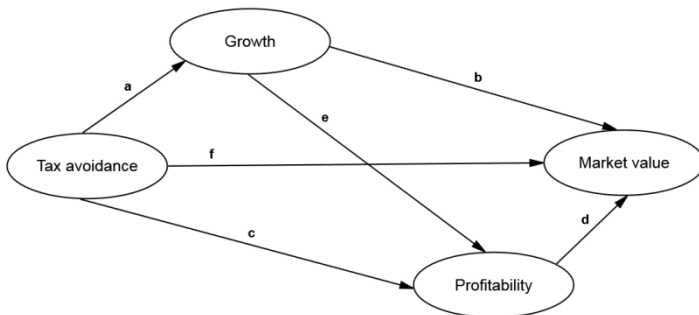
3.   Model Specification and Data

3.1 *Measures*

Four constructs are used in the model to examine the relationships between corporate tax avoidance, firms' growth performance, profitability performance and market value performance. The constructs and their indicators (observed variables) are discussed below.

3.1.1 Corporate tax avoidance

Previous research had considered the effective tax rate (ETR) as a proxy for the corporate tax burden (Gupta & Newberry, 1997; Porcano, 1986; Salihu, Obid, & Annuar, 2013; Wu, et al., 2012). It is simultaneously an important index used to measure the effectiveness of tax avoidance. This study adopts two effective tax rates (ETRs) to represent tax avoidance (risky and non-risky strategies) (Badertscher, et al., 2013). The first measure is the ETR 1 defined under GAAP as total tax expenses divided by pre-tax income. The second measure is the ETR 2 defined on a cash basis as tax expenses minus deferred tax expenses dividend by pre-tax income. In the model process, we use the opposite number of the two ETRs.

   All ETR measures are well understood by financial statement users. Specifically, GAAP ETR is affected by changes in tax reserves and the valuation allowance while Cash ETR is influenced by the timing of tax payments, settlements with tax authorities and some type of earnings management (Hanlon & Heitzman, 2010). However, in focusing on ETR as the proxy for tax avoidance and its link with firm value, this study does not investigate the differences between the two measures.

3.1.2 Profitability performance

Profitability is this study's major performance dimensions of concern. It is defined as the firm's earnings net of costs and is commonly measured by return on assets (ROA), return on invested capital (ROIC) and return on sales (ROS). The ROA is the most often used accounting measure of performance in financial research (Cable & Mueller, 2008). because it has been shown to represent a firm's performance well (Rowe & Morrow, 1999; Peng & Luo, 2000). It represents the ability of firms to use their assets to generate profit. The ROS is also used by many researchers (Delen, Kuzey, & Uyar, 2013; Jang, & Park, 2011) because it can reflect the profits from a company's sales in the short-term. The ROIC is a measure of the return earned on the invested capital. Damodaran (2007) notes that ROIC is

a key input in both corporate finance and valuation. This study employs all of the three measures to make up the latent variable of profitability. (See Appendix 1)

3.1.3 Growth performance

In this study, a firm's growth performance is measured by the growth rates of sales revenue (SALG), sales income (SIG) and net income (NIG). Sales growth has become a common measure of firm growth rate in many studies (Anthony & Ramesh, 1992; Brush, Bromiley, & Hendrickx, 2000; Jang & Park, 2011; Serrasqueiro, 2009). Wang and You (2012) believed that the growth rate of sales income would yield more reliable estimation results in the case of China. Moreover, net income growth represents the rate at which firms have grown profits. Stocks that experience faster net income growth are generally favoured over those with slower net income growth rate. Therefore, the study employs growth rate of net income (Delen, et al., 2013). Appendix 1 describes the variables' definitions.

3.1.4 Market value performance

This study measures firms' market performance using three market-based measures of return. These are Price-to-book (PB) ratio, Tobin's Q, and Market capitalisation improvement. The PB is the ratio of stock price to book value per share (Brealey & Myers, 2000; Montgomery, Thomas, & Kamath, 1984). In addition, Tobin's Q is the ratio of the market value of a firm's debt and equity to the ending total assets (Desai & Dharmapala, 2009; Yu, 2013). It is widely used because it takes account of the book and market values of equity[1] and the value of debt (Demsetz & Lehn 1985; Desai & Dharmapala, 2009; Firth, Gong, & Shan, 2013). Moreover, market capitalisation reflects the stock market's valuation of a firm (Abdolmohammadi, 2005) and is defined in this study as the improvement of the total market value of the shares outstanding. (See Appendix 1)

3.2 Model specification

Figure 2 shows the structural model which underpins the causal relationships among four latent constructs: tax avoidance, growth performance, profitability performance and market value.

Figure 2: Structural Model
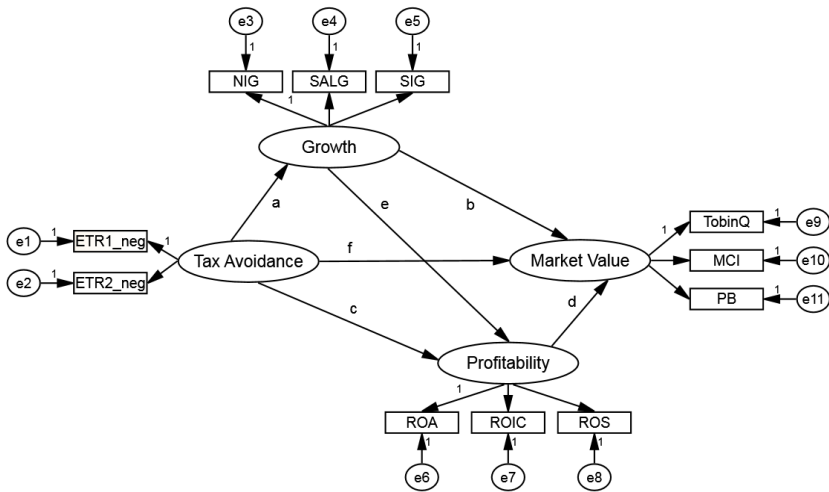
The direct relationship between tax avoidance and firms' market value (Hypothesis 1) is first examined using Chinese listed companies (Figure 2, Path *f*). Given the existing evidence on the profitability, growth and corporate governance relationships and the impact of their relationships on firms' market value as explained in Section 2, we investigate the mediating roles of profitability and growth in the tax avoidance - firm market value relationship. Paths *ab, cd, aed* (Figure 2) represent three different specific indirect relationships between tax avoidance and firms' market value, which are Hypothesis 2a, 2b, and 3.

3.3 Data and sample selection

The annual time series data is for the period 2004-2012. For ETRs, the deferred tax expenses were calculated based on the previous year's data, which means that the period of analysis begins with 2005. All data were obtained from the China Stock Market and Accounting Database (CSMAR).

Data used excludes the following: (1) financial industry firms which, according to the China Securities Regulatory Commission Industry Classifications, are heavily regulated and their tax incentives may differ from firms in other industries; (2) "Special Treatment" (ST) stocks[2]; (3) ETRs with negative values or values larger than one (Gupta & Newberry, 1997; Wu, Wu, Zhou, & Wu, 2012); and (4) observations with missing

values. We finally arrived at a sample of 7651 firm-year observations over the period 2005-2012.

Because the bootstrap method is sensitive to extreme values (Ette & Onyiah, 2002), the study winsorises data at the 2.5% level to reduce the effect of outliers (Zhang, Farrell, & Brown, 2008). The sample selection process is shown in Table 1. All estimations were done using AMOS Version 21. Table 2 shows the correlation coefficients between variables.

Table 1: Sample selection

Non-financial Chinese A-share listed companies	Total sample
Initial observations	19,184
Less: observations with ETRs less than 0 or over than 1	17,330
Less: ETRs with missing value	10,183
Less: MV[1] variables with missing value	8,556
Less: GP[2] variables with missing value	7,653
Less: PP[3] variables with missing value	7,651
Number of observations in the final analysis	7,651

Source: from China Stock Market and Accounting Database (CSMAR).
[1] MV, latent variable of Market value performance, including P/B ratio, Tobin's Q and MCI;
[2] GP, latent variable of Growth performance, including sales growth, net income growth, and sales income growth;
[3] PP, latent variable of Profitability performance, including ROA, ROS, ROIC.

3.4 Data analysis

Structural equation modeling (SEM) is used for hypothesis testing. The SEM methodology is used for three reasons. First, this study examines tax avoidance and firm performance by looking at three parts of firm financial performance, implying a series of causal relationships, which the SEM is well suited to handle. Second, this study uses 14 observed variables in which are embedded four latent variables which traditional multivariate techniques cannot deal with (Byrne, 2009). Third, the study tests mediation effects, which again can be done using SEM (Anderson & Gerbing, 1992; Baron & Kenny, 1986).

The SEM consists of the measurement model and the structural model. First, we test the measurement model so as not to be affected by possible interactions between the models. Confirmatory factor analysis (CFA) was conducted on the full measurement model to examine model fit. Then, the structural model was used to estimate the causal relationships among the four latent constructs.

Table 2: Correlation

	ETR1_neg	ETR2_neg	NIG	SALG	SIG	ROA	ROIC	ROS	Tobin's Q	MCI	PB
ETR1_neg	1										
ETR2_neg	0.773***	1									
NIG	0.102***	0.092***	1								
SALG	0.044***	0.024**	0.394***	1							
SIG	0.046***	0.062***	0.823***	0.405***	1						
ROA	0.277***	0.297***	0.238***	0.196***	0.192***	1					
ROIC	0.162***	0.173***	0.163***	0.172***	0.122***	0.709***	1				
ROS	0.231***	0.244***	0.147***	0.064***	0.109***	0.627***	0.498***	1			
Tobin's Q	0.127***	0.119***	0.135***	0.052***	0.132***	0.420***	0.334***	0.231***	1		
MCI	0.027**	0.0180	0.307***	0.211***	0.303***	0.174***	0.114***	0.100***	0.481***	1	
PB	0.058***	0.041***	0.213***	0.170***	0.203***	0.364***	0.317***	0.178***	0.772***	0.579***	1

Note: t statistics in parentheses. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. variables are defined in Appendix 1.

   Where the data are found to follow a multivariate non-normal distribution, the bootstrap (Preacher & Hayes, 2008) and Mackinnon PRODCLIN2 methods (MacKinnon, Fritz, Williams, & Lockwood, 2007) are used in the analyses. The chi-square (x2) is used as the first fit index. Where x2 is found to be heavily influenced by sample size (Byrne, 2009), other goodness-of-fit indices are used (Byrne, 2009; Hair, Black, Babin, & Anderson, 2009; MacCallum & Austin, 2000). This study employs several other model fit indices. These include the root mean square error of approximation (RMSEA), root mean square residual (RMR), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), and normed fit index (NFI). In a model with good fit, the GFI, CFI, AGFI and NFI should be above 0.9 (Byrne 2009, Hair, et al., 2009). The RMSEA and RMR should be less than 0.08 (Hu & Bentler, 1998) to signify acceptability.

4.   Results

In this section, we first discuss the goodness-of-fit for both the models. In addition, this section also presents the hypothesised relationships between latent constructs.

4.1 Measurement model

Table 3 shows the fit indices for the overall measurement model which indicate that the model was acceptable (Hair, et al., 2009). All the indices have statistically significant relationships with their factors.

Table 3: Summary of model fit indices for CFA model

Model	χ^2	df	GFI	AGFI	CFI	NFI	RMSEA	RMR
CFA	1790	38	0.961	0.933	0.957	0.956	0.078	0.024

Note: 5,000 bootstrap samples (Hayes 2009). RMSEA, root-mean-square error of approximation; RMR, root-mean-square residual; GFI, good-of-fit index; AGFI, adjusted goodness of fit index; NFI, normed fit index; CFI, comparative fit index.

To measure reliability, the study adopts composite reliability (CR) and average variance extracted (AVE). As shown in Table 4, the indicators are internally consistent because the composite reliability scores for all the constructs exceed the recommended 0.70 (O'rourke, Psych, & Hatcher, 2013). In addition, reliability is achieved because the AVE for each construct exceeds the desired 0.5 (Fornell & Larcker, 1981). To assess construct validity, convergent validity is assessed by determining whether

each indicator's estimated pattern coefficient on its posited underlying construct factor in the measurement model is significant (Anderson & Gerbing, 1988; Marsh & Grayson, 1995). Table 4 shows that convergent validity is assured since all factor loadings for items are greater than 0.4 and are statistically significant ($p<0.001$) (Cabrera-Nguyen, 2010). Moreover, for discriminant validity, the average variance extracted for each construct must be greater than the squared correlations between the construct and other constructs in the model (Nusair & Hua, 2010). Table 5 shows that the squared correlations are lower than their corresponding AVE for the latent variables. Overall, the measurement model is shown to be valid and acceptable.

Table 4: Confirmatory factor model

Constructs and variables	Factor loadings	Composite reliability (C.R)[a]	Average variance extracted (AVE)[b]
Tax Avoidance		0.873	0.776
ETR1 (ETR1_neg)	0.85		
ETR2 (ETR2_neg)	0.92		
Market value performance		0.840	0.643
Market capitalization improvement (MCI)	0.61		
Price to book ratio (PB)	0.94		
Tobin's Q (TobinQ)	0.83		
Profitability performance		0.834	0.632
ROA	0.96		
ROIC	0.74		
ROS	0.65		
Growth performance		0.814	0.613
Sales revenue growth (SALG)	0.44		
Net income growth (NIG)	0.91		
Sales income growth (SIG)	0.90		

Note: 5,000 bootstrap samples.
[a] CR = ($\sum$Standardised loadings)^2/ [($\sum$Standardised loadings)^2 + $\sum$εj].
[b] AVE = $\sum$(Standardised loadings^2)/[$\sum$(standardised loadings^2) + $\sum$εj], where εj is the measurement error.

Table 5: Discriminant validity matrix

	Tax avoidance	Growth	Profitability	Market value
Tax avoidance	**0.776**	0.009	0.112	0.006
Growth		**0.613**	0.062	0.064
Profitability			**0.632**	0.179
Market value				**0.643**

Note: The AVE for the respective constructs are shown in bold.

4.2 Structural model

The overall structural model fit indices are shown in Table 6. All the indices suggest an acceptable fit (Hair, et al., 2009) indicating that the model fits the data well. Since both models are shown to be valid and reliable, the path relationships among the constructs can now be analysed.

Table 6: Structural equation model indices

Model	χ^2	GFI	AGFI	CFI	NFI	RMSEA	RMR
CFA	1790	0.961	0.933	0.957	0.956	0.078	0.024

Note: 5,000 bootstrap samples. RMSEA, root-mean-square error of approximation; RMR, root-mean-square residual; GFI, good-of-fit index; AGFI, adjusted goodness of fit index; NFI, normed fit index; CFI, comparative fit index.

In the multiple-step multiple mediator model (Hayes, 2009), the sampling distributions of *ab, cd, aed* (Figure 2) tend to be asymmetric, with nonzero skewness and kurtosis (Bollen & Stine, 1990; Hayes, 2009, Stone & Sobel, 1990). Using the bootstrapping method and Mackinnon PRODCLIN2, this study found the structural model's total, specific mediation and direct effects to be statistically significant (Hayes, 2009; Mackinnon et al., 2007; Preacher & Hayes, 2008) (Table 7), indicating that partial mediation effects existed[3].

The results (Table 7) also show that the specific indirect effects of tax avoidance on firm value through profitability and growth are significantly different from zero. Thus, all three mediation hypotheses (H2a, H2b, and H3) are supported[4]. Overall, it is clear profitability and growth are mediators for tax avoidance's impact on firm value. The total indirect effect (total minus direct effect) through the three specific mediation paths (*ab,cd,aed*; shown in Table 7), has a point estimate of 1.088 and 95% BC

Table 7: Mediation of the effect of corporate tax avoidance on market performance through profitability and growth performance

Variables	Point Estimate	Product of Coefficients		Bootstrapping*				Machinnon Prodclin 2. 95% CI	
				Bias-corrected 95% CI		Percentile 95% CI			
		SE	Z	Lower	Upper	Lower	Upper	Lower	Upper
Total Effect	0.567	0.096	5.906	0.380	0.757	0.375	0.752	0.252	0.606
Total Direct Effect	-0.520	0.094	-5.536	-0.709	-0.340	-0.709	-0.341	-0.697	-0.344
Total Indirect Effect	1.088	0.061	17.849	0.970	1.211	0.970	1.211		
Specific Indirect Effects									
ab	0.108							0.076	0.143
cd	0.918							0.824	1.017
aed ae	0.061	0.001	61.018	0.005	0.010	0.005	0.010	0.005	0.010
ed		0.006	0.000	0.059	0.081	0.059	0.081	0.059	0.079

Note: *5,000 bootstrap sample. The results based on unstandardised parameter estimates. CI, Confidence Interval.

and Percentile bootstrap CI of 0.970 to 1.211. This difference is non-zero. The specific indirect effect through profitability (Point estimate = 0.918) is larger than that through growth (Point estimate = 0.108) and growth*profitability (Point estimate = 0.061).

Overall, the results of the SEM model summarised in Table 8 indicate that firms that avoid taxes affect their market value both directly and indirectly, the latter through increasing firm's profitability and growth. The indirect relationship between tax avoidance and market value through growth and then profitability (*aed*, shown in Figure 1) is positive, because good growth performance can raise market power to enhance profits and cash generation. Table 8 shows the paths of tax avoidance towards achieving the desired market value.

Table 8: Hypotheses standardised regression paths

Hypothesis	Regression paths coefficients	standard path	Results
H1	Tax avoidance ➤ Market value	-0.073	support
H2a	Tax avoidance➤ Growth➤ Market value	0.015	support
H2b	Tax avoidance➤Profitability➤Market value	0.128	support
H3	Tax avoidance➤ Growth➤ Profitability ➤ Market value	0.009	support

Note: 5,000 bootstrap samples. All regression parts are significant at 0.001.

5. Conclusion

Tax reforms have been a major pillar of overall economic reforms that many governments have pursued to balance government budgets. This paper analysed corporate tax avoidance impact on firm performance in China. Using data on large public-listed companies, the paper analysed how corporate tax avoidance impacted market value and the mediators of profitability and growth. This is necessary as tax avoidance, if unscrupulously pursued, will deny governments revenue that will be necessary to finance government expenditure. The results offer three important findings that address this paper's research questions.

First, in addressing the first research question, the results reveal that corporate behaviour in China differs from those in most existing studies, which show no direct impact of tax avoidance on firm value (Desai & Dharmapala, 2009). We show a significant positive relationship that is made up of significant direct (negative) and indirect (positive) impacts.

Second, the similarities between China and market economies suggest that China's corporate reforms have moved the Chinese corporate environment closer to that of market economies. This answers the second research question posited earlier.

Third, and in answering the third research question, we believe the above results can be explained by China's particular circumstances. The significant negative direct relationship between tax avoidance and market value in Chinese listed firms is consistent with the agency cost theory of tax avoidance and its consequences on managerial rent extraction. China's still evolving market reforms show that there are imperfections that require addressing through legal and other provisions to prevent managerial rent extraction. However, the positive indirect relationship between tax avoidance and market value through the mediating role of firm profitability and growth performance suggest that tax avoidance could be continued but they need to be bolstered by legal regulations to reduce the possible negative consequences from managerial rent seeking.

The above results are obtained using the SEM approach which offers a more robust set of results than past studies based on traditional regression equations. Also, past studies have not investigated the impact of after-tax cash from tax avoiding activities on firm value. Hence, this paper provides direct evidence on how tax avoidance can help maximise firm performance. What implications can be drawn from the findings?

First, with China's corporate reforms applied to an enterprise system that differ from but converging with the structure in most market economies the question arises as to how urgent it is that China's system should be transformed to the latter, as has been repeatedly advised. Second, and more specifically, these findings leave open the question of the relevance of the agency perspective under state-ownership for the analysis of tax policy. In China, state-ownership is an important firm characteristic impacting on firms' financial decisions, which require continued research to track the consequences of enterprise reforms. A third implication relates to the types of policies - governance, tax, regulatory, etc. - that can limit the abuses of tax avoidance. Given that tax avoidance works directly as

well as indirectly to affect firm value, it is not sufficient to put in place policies that directly address tax avoidance issues.

The findings of this paper also suggest several fruitful areas for further research. One is the policy mix that would lead to minimisation of tax avoidance abuses. Another is to determine if tax avoidance behaviour was based on firm type, e.g. state enterprises, private enterprises, and foreign invested enterprises, or by size of enterprises. A third research area is to estimate the impact of specific major corporate reforms. Finally, given the rapid pace of change in China's economic scene, updating research findings becomes an important exercise.

Notes

[1.] In China, due to the special split-share structure, some shares are non-tradable in the stock market. We adopt the same method as to set the market value of non-tradable shares as their book value (Qian, & Wu, 2003, "China's Transition to a Market Economy," How Far Across the River? Chinese Policy Reform at the Millennium, p. 31). In this study, the calculation of the Tobin's Q is the market price per share multiplied by the number of tradable shares plus the book value of equity per share multiplied by the number of non-tradable shares plus book value of total debt over the book value of total assets.

[2.] All stocks labeled ST have seen their business in the red for two consecutive years representing the firms with financial problem or other abnormal conditions, which are technically on the brink of delisting. ST or Special Treatment shares and the original idea behind this classification is that it would act as a warning to investors.

[3.] For bootstrapping percentile and bias-corrected methods, and Mackinnon PRODCLIN2, if zero is not between the lower and upper bound, then the effect is not zero with 95% confidence Hayes, A. F. (2009) "Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium," *Communication Monographs*, 76, 408-420. Percentile and bias-corrected methods are used to identify the existence of indirect effects. Then, Mackinnon PRODCLIN2 is used to identify and distinguish the specific indirect effects.

[4.] In Table 7, because zero is not contained in the interval; therefore, the specific indirect effects can be distinguished in terms of magnitude.

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Appendices

Appendix 1: Summary of tax avoidance and firm performance and indicators selected

Constructs	Causes-effects	Definition of indicators
	Causes	
A. Tax Avoidance	ETR1_neg	Opposite of Effective tax rate 1; ETR1 = Tax expenses / pre-tax income
	ETR2_neg	Opposite of Effective tax rate 2; ETR2 = (Tax expenses-deferred tax expense) / pre-tax income
	Effects	
B. Firm performance		
Profitability	ROA	Return on Total asset; Net income / total assets
	ROIC	Return on invested capital; Net operating profit after taxes /Invested capital
	ROS	Net profit margin; Net income / revenues
Growth	SIG	Sales income growth rate; (Sales income$_t$ -Sales income$_{t-1}$)/Sales income$_{t-1}$
	SALG	Sales growth rate; (Sales$_t$-Sales$_{t-1}$)/Sales$_{t-1}$
	NIG	Net income growth rate; (Net income$_t$-Net income$_{t-1}$)/Net income$_{t-1}$
Market value	Tobin's Q	Tobin's Q
	PB	Price-to-book ratio;
	MCI	Market capitalisation improvement

In China, due to the special split-share structure, some shares are non-tradable on the stock market. We adopt the same method as (Wu, et al. (2012)) to set the market value of non-tradable shares as their book value. The calculation of Tobin's Q is the ratio of the market price per share multiplied by the number of tradable shares plus the book value of equity per share multiplied by the number of non-tradable shares plus book value of total debt over the book value of total assets.