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CONTENTS

THE IMPACT OF ECONOMIC GROWTH ON UNEMPLOYMENTIN SOUTH AFRICA: 1994 – 2012

Handson Banda*, Ireen Choga**

Abstract

One of the most pressing problems facing the South African economy is unemployment, which has been erratic over the past few years. This study examined the impact of economic growth on unemployment, using quarterly time series data for South Africa for the period 1994 to 2012.Johansen Co-integration reflected that there is stable and one significant long run relationship between unemployment and the explanatory variables that is economic growth (GDP), budget deficit (BUG), real effective exchange rate (REER) and labour productivity (LP). The study utilized Vector Error Correction Model (VECM) to determine the effects of macroeconomic variables thus REER, LP, GDP and BUG on unemployment in South Africa. The results of VECM indicated that LP has a negative long run impact on unemployment whilst GDP, BUG and REER have positive impact. The study resulted in the following policy recommendation: South African government should re-direct its spending towards activities that directly and indirectly promote creation of employment and decent jobs; a conducive environment and flexible labour market policies or legislations without impediments to employment creation should be created; and lastly government should prioritise industries that promote labour intensive. All this will help in absorbing large pools of the unemployed population thereby reducing unemployment in South Africa.

Keywords: Unemployment, Economic Growth, Vector Error Correction, South Africa

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1 Introduction

South Africa is one of the African countries that is endowed with a lot of resources, both human and minerals. However due to activities such as increase in corruption, gross mismanagement and adverse policies of various governments, these resources have not been optimally utilised. For instance, Faul (2013) points out the controversial scenario of the misuse of taxpayer's money and government funds worth almost 250 million rands on the upgrade of President Zuma's private house in his home village. Osinubi (2005) adds that resources should be fully utilised and channelled to profitable investments so as to bring about maximum economic benefits. As a result of not fully utilising and channelling resources in the right direction then a nation with end up having continual problems of unemployment and poverty (Osinubi, 2005). This is true of South Africa which is facing the greatest challenge of chronic unemployment which has maintained a rising trend over the past years (Berkowitz, 2011). Unemployment is undesirable and it significantly contributes to widespread of poverty and income inequality in South Africa. Furthermore, unemployment and poverty have led to tremendous increases in crime rates, morbidity and unrests, just mentioning few.

The issue of unemployment in South Africa is well pronounced as evidenced by many schools leavers and even graduates who cannot find jobs and many engage in jobs in which their potentials are not fully utilised. Isobel (2006) highlights that the chronic nature of unemployment in South Africa is reflected by the fact that many unemployed people have never worked before. In addition, many people who are unemployed and are still actively looking for work have been looking for employment in excess of 3 years. The total labour force or economically active population in South Africa is comprised of all individuals of working age (between 15-64 years) who are either employed or unemployed. The youths consist of the large fraction of the unemployed population in South Africa.

According to Lings (2012), the released first quarter for 2012 of Labour Force survey (FLS) by Stats SA reflects that there were 32.786 million people aged between 15 and 64 years in South Africa (up by 116 000 relative to Q4 2011 and up by 472 000 year on year). The number of economically active people was 17.948 million for comparison purposes with 2011 reflecting an increase by 207 000 relative to Q4 2011 and up by 466 000 on year to year. From this group, 13.497 million were employed, reflecting a decrease of 75 000 of employed people relative to Q4 2011 and up by 304 000 year on year. On the hand

4.526 million were unemployed, reflecting an increase of 282 000 relative to Q4 2011 and up by 162 000 year on year (Lings, 2012).

The problems that were inherited from apartheid to a greater extent had and continue to have an influence on the nature of development in South Africa in terms of post-apartheid policies to subdue problems such as of unemployment, poverty and income inequality. The advent of democracy in 1994 created hope for better living standards and other expectations among previously disadvantaged population. Chikulo (2003), states that in an effort to reduce not only socio-economic imbalances in South Africa but also to meet these high expectations among the majority of the black population. The new government pledged rapid socio-economic development by prioritising reduction in unemployment, poverty alleviation and income inequality in its development strategy agenda. In the early years of a democratically elected government entering into power, the issue of unemployment, poverty and income inequality needed immediate attention. The South African government thus introduced various development polices and strategies namely (i) Redistribution Development Programme (RDP), (ii) Growth Employment and Redistribution Policy (GEAR), (iii) Accelerated and Shared Growth Initiative of South Africa (ASGISA), and (iv) Joint Initiative for Priority Skills Acquisition (JIPSA). These policies were introduced to combat challenges of chronic unemployment, poverty and income inequality.

Theoretically, economic growth is viewed as the most prominent instrument for reducing unemployment, poverty and to help improve the living standards of people. Kreishan (2010) states that an increase in the growth rate of GDP of an economy is expected to increase employment levels thus reducing unemployment. This is a widely accepted view in economics theory;hence the theoretical proposition relating output and unemployment is referred to as Okun's Law. Okun's law describes one of the famous empirical relationships of output and unemployment in macroeconomics theory and has been found to hold for several countries mainly in developed countries (Lee, 2000; Fariso and Quade, 2003 and Daniels and Ejara, 2009). Osinubi (2005) observed that although economic growth is necessary for trimming down unemployment and poverty alleviation, it is not sufficient because growth alone cannot overcome all the crucial factors that contribute to unemployment and poverty. Therefore there is need to adopt more policies that help to construct investment programs which enable job creation, thus spurring economic growth and eradicating of poverty.

2 Literature review

The theoretical underpinnings discussed in this study are the unemployment theories (Classical and Keynesian) and economic growth theories (Neoclassical and Endogenous). The classical theory of unemployment based its argument based on the assumptions that full employment and flexibility of prices and wages are a remedy to correct any disequilibrium in labour market. Classical economists regarded the doctrine of the existence of full employment in the economy to be normal. Moreover, according to Samuel (1987), the classical theory postulated that they could never be a general over production or market glut in the economy. Hence, any deviation from the full employment was regard as abnormal. The classical theory suggested that any unemployment that exists in the economy would be short lived and the operation of the free market forces automatically restores full employment in the economy.

The Keynesian theory of unemployment hypothesized that unemployment arises due to insufficient aggregate demand (Keynes, 1936). Keynes criticized the classical assumption that unemployment can exist due to the interference with the workings of free market in the form of trade unions or minimum wage legislation imposed by the government. In turn, Keynes argued that unemployment was due to the view that aggregate demand was not sufficient to generate work for all those seeking to work at the going wage rate. The Keynesian approach assumed that wages were more inflexible downward than upward thus wages were rigid downwards. Keynes theory posited that wages were rigid downward due to the trade union and minimum wage legislation imposed by the government and these would not allow employers to reduce the wage rate. In addition, workers would strongly resist, not willing to accept any reduction in wages thus workers are reluctant to allow their nominal wages to reduce. However, workers would accept a wage increment thus wages tends followed an upward direction with time. As a result of inflexibility downward of wages (rigidity downwards of wages), Keynes (1936) believed that involuntary unemployment would occur in the economy.

The neo-classical growth model is also known as the exogenous growth model or Solow growth model. The neoclassical growth presented addresses limitations in the Harrod-Domar model which places emphasis on exogenous factor accumulation as a determinant of knife-edge growth. In response to this, the Solow growth model depicts that steady state of growth is driven by technology progress while the adjustment to stable steady state growth is achieved by endogenous changes in factor accumulation. Aghion and Howiit (1997) argue that the most basic proposition of the growth theory is that in order to sustain a positive growth rate of output per capita in long run, there must be continual advances in the technological progress that offsets the dampening effects of diminishing returns. Hence the neoclassical growth model developed by Solow (1956) and Swan

(1956) shows that if there is no technological progress then the effects of diminishing returns to capital accumulation would eventually cause economic growth to cease (Aghion et al, 1997).

Modern endogenous growth theories attempt to explain the rate of technological progress, which the Solow model takes as exogenous. However, endogenous growth economists firmly believe that the sources of economic growth are endogenous. Accumulation of knowledge (learning by doing) and human capital are regarded as the driving forces of economic growth. Among the simple endogenous growth models that considered accumulation of human capital were the AK model of endogenous growth of Rebelo (1991) and the model of Mankiw, Romer and Weil (1992) that extended the Solow-Swan model by adding human capital. This study will consider the endogenous growth models, the so called AK model proposed by Rebelo (1991) and it assumes that the economy employs a single factor of production which is capital (*K*) to produce the total output (*Y*). Rebelo (1991)'s model, assumes that the production function is linear with respect to capital thus there is a linear relationship between output, *Y* and the single factor of production, capital *K*. Hence there are constant returns to scale and constant returns to capital.

There are many empirical studies that have been done in developed countries helped spur economic growth, in turn reducing unemployment levels and improving living standards of fellow citizens. These empirical studies include the works of Walterskirchen (1999), Swane and Vistrand (2006), Sawtelle (2007) and Yerdelen Tatoglu (2011). Most studies found that the relationship between GDP growth and change in unemployment was divided into two components: the link between GDP and change in employment is governed by economic factors whilst those between change in employment and unemployment rates are governed by demographic influences and labour market policies. Results obtained from the studies show a positive and significant relationship between GDP and employment. Many scholars and researchers have published and documented a lot of articles from developing countries. Hence this contributes to the studies focusing on the coherent relationship between economic growth and unemployment and even its effects amongst each other in the developing countries. These studies include the works by Hussain, Siddiqi and Iqbal (2010), Aktar and Ozturk (2009), Andrei, Vasile and Adrian (2010), Messkoub (2008) and Sodipe and Ogunrinola (2011).

Previous studies have examined the effects of economic growth on unemployment and its relationships in South Africa and how the post-apartheid government tried to lessen issues such as high unemployment, poverty, inequality and how to spur economic growth. These studies include works done by Biyase and Bonga-Bonga (2010), Mahadea (2003), Burger and Von Fintel (2009), Kingdon and Knight (2001), Marinkov and Geldenhuys (2007) and Mahadea and Simson (2010).

3 Methodology

3.1 Model specification

This study modifies the model adopted by Aktar and Ozturk (2009) of unemployment as a function of inter alia economic growth and foreign direct investment in Turkey? The model specified that:

$$UR_t = f(GDP_t, EXP_t, FDI_t) \quad (3.1)$$

Where t is time trend, UR_t,GDP_t, EXP_t, FDI_t are unemployment rate, gross domestic product, exports and foreign direct investment respectively.

In examining the impact of economic growth on unemployment in South Africa, the selection of variables was influenced by the literature reviewed and on the availability of data. In modifying the model in (3.1), this study adds three variables which are government deficit, labour productivity and real effective exchange rate. Equation (3.2) below is modelled with variables adjusted to suit this study, where unemployment is modelled as a function of gross domestic product, budget deficit, labour productivity and real effective exchange rate. The empirical model of the study therefore is specified as follows:

$$UR_t = \beta_0 + \beta_1 GDP_t + \beta_2 REER_t + \beta_3 BUG_t + \beta_4 LPt + \varepsilon_t \quad (3.2)$$

β_0, β_1, β_2, $\beta_3$and$\beta_4$are the parameter estimates or coefficients of explanatory variables and ε is the error term.

All the variables used in this study are converted to natural logarithms so as to minimise the impact of outliers and to obtain elasticity coefficients of these variables. Therefore, the model to be estimated is as follows:

. $$InUR_t = \beta_0 + \beta_1 InGDP_t + \beta_2 InREER_t + \beta_3 InBUG_t + \beta_4 InLP_t + \varepsilon_t \quad (3.3)$$

Where:

$InUR_t$ is the natural logarithm of unemployment in South Africa.

$InGDP_t$ is the natural logarithm of gross domestic product and is used as a proxy for economic growth

InREER$_t$ is the natural logarithm of real effective exchange rate, measured in foreign currency terms.

InBUG is the natural logarithm of budget deficit.

InLP is the natural logarithm of labour productivity.

4 Results

4.1 Stationarity results

The paper first examined the time series properties of data in order to detect if these variables were stationary or non-stationary. Two formal methods were used to test for stationarity; these include DF, ADF and P-P tests. Unit root test results based on the Augmented Dickey-Fuller and Phillips-Perron approach for the selected data series used in the study are presented in Tables 4.1(a) and 4.1(b). A typical unit root test is carried out using three kinds of regressions namely; without intercept and trend, with intercept but no trend, with both intercept and trend. Table 4.1(a) and 4.1(b) below display the results when there is intercept but no trend and also with both intercept and trend

Table 4.1(a) Stationarity results of augmented dickey-fuller test

Order of Integration	Variable	Intercept	Trend and Intercept
Level	LUN	-2.428105	-2.163671
1st differenced	DUN	-8.600376***	-8.787136***
Level	LGDP	-0.767991	-2.322597
1st differenced	DGDP	-2.859157*	-2.827792
Level	LREER	-2.767420*	-3.715454**
1st differenced	DREER	-9.452219	-9.389639***
Level	LLP	-0.718396	-4.318353*
1st differenced	DLP	-6.868514***	
Level	LBUG	-1.863169	-1.576961
1st differenced	DBUG	-3.215054**	-3.446540*
1 %	Critical Value	-3.520307	-4.094550
5 %		-2.900670	-3.475305
10 %		-2.587691	-3.165046
Values marked with a *** represent stationary variables at 1% significance level, ** represent stationary at 5% and * represent stationary variables at 10%.			

Table 4.1(b) Stationarity results of phillips-perron test

Order of Integration	Variable	Intercept	Trend and Intercept
Level	LUN	-2.387832	-2.002433
1st differenced	DUN	-10.51225***	-11.32200***
Level	LGDP	-0.588012	-5.134607***
1st differenced	DGDP	-18.97381***	
Level	LREER	-2.758381*	-2.709520
1st differenced	DREER	-9.454330	-9.391353***
Level	LLP	-0.698362	-3.403712*
1st differenced	DLP	-6.917136***	-6.876002***
Level	LBUG	-6.247430***	-6.227271***
1 %	Critical Value	-3.520307	-4.085092
5 %		-2.900670	-3.470851
10 %		-2.587691	-3.162458
Values marked with a *** represent stationary variables at 1% significance level, ** represent stationary at 5% and * represent stationary variables at 10%.			

Most variables failed to pass both the ADF and P-P tests when they are in level expect the REER and BUG. Failure to reject the null hypothesis (failing to pass units tests) implies that the variables are non-

stationary at level and this requires first or higher order differencing in order to make them stationary. The null hypothesis is rejected if the value of test statistic has a more absolute value than that of critical value. The other variables: GDP, LP and UN only became stationary after the first differencing. This reflected that null hypothesis was rejected in favour of alternative hypothesis and making the series to be stationary. Therefore it can be concluded that the variables used are integrated in the same order I(1). Since the variables are stationary and integrated in order of one, one can employ co-integration tests between variables.

4.2 Tests for co-integration

Given that the variables used in this study are integrated of the same order, it is important to perform co-integration tests so as to determine whether there exists long run equilibrium amongst the variables. This paper employed the Johansen's (1991, 1995) maximum likelihood method to test for co-integration. The Johansen technique requires an indication of lag of the lag order and the deterministic trend assumption of the VAR. In order to select the lag order for the VAR, this study applied the information criterion approach as a direction to choose the lag order. Table 4.2 confirms the lag lengths selected by different information criterion.

Table 4.2 Lag selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-776.5719	NA	3433.208	22.33063	22.49123	22.39442
1	-493.8867	516.9102	2.183465	14.96819	15.93183	15.35096
2	-461.3659	54.82071	1.780788	14.75331	16.51999	15.45506
3	-400.2641	94.27131	0.652822	13.72183	16.29154	14.74255
4	-318.5443	114.4078	0.136296	12.10126	15.47401*	13.44096
5	-265.6853	66.45131*	0.067368*	11.30529	15.48107	12.96396*
6	-238.9146	29.83017	0.073869	11.25470*	16.23351	13.23235

The results for lag length selection criteria reported in Table 4.2 highlighted that the criteria selected lag 5. Information criterion- LR, FPE and HQ selected the most lag order of 5.

Table 4.3 Unrestricted co-integration rank tests (trace) results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.391669	79.70581	68.81889	0.0066
At most 1	0.283952	42.92512	47.856143	0.1344
At most 2	0.164315	18.20856	29.7977	0.5507
At most 3	0.064359	4.925260	15.49471	0.8167
At most 4	3.42E-05	0.002528	3.841466	0.9575

Trace test indicates 1 co-integration eqn(s) at the 0.05 level, *denotes rejection of the hypothesis at the 0.05 level, ** MacKinnon-Haug-Michelis (1999) p-values

Table 4.4 Unrestricted co-integration rank test (maximum eigenvalue) results

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.391669	36.78069	33.87687	0.0066
At most 1	0.283952	24.71656	27.58434	0.1344
At most 2	0.164315	13.28330	21.13162	0.5507
At most 3	0.064359	4.922732	14.26460	0.8167
At most 4	3.42E-05	0.002528	3.841466	0.9575

Max-eigenvalue test indicates 1 co-integration eqn(s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level, ** MacKinnon-Haug-Michelis (1999) p-values

The results of trace tests that are reported in Table 4.3 reflect that at least one co-integration equation exists at 5% significant level. The null hypothesis of no co-integrating vectors is rejected

since the trace (test) statistic of 79.70581 is greater than the 5% critical value of approximately 68.81889. The results of maximum Eigenvalue test in Table 4.4 achieved similar results to that of the trace test as it rejects the null hypothesis of no co-integration. Therefore one can reach a conclusion that there is stable and one significant long run relationship between unemployment and the explanatory variables, these are GDP, BUG, REER and LP. Since variables can either have short or long run effects, a vector error correction model (VECM) was used to disaggregate these effects.

4.3 The vector error correlation model (vecm)

After establishing that all variables are stationary and co-integrated in the previous section, the next step in this study is to apply the VECM. The purpose of VECM technique is that it allows us to distinguish between long and short run impacts of variables for the unemployment model. Using the results obtained from co-integration tests, the VECM was specified and the results of VECM are reported in Table 4.5 and 4.6.

Table 4.5 Long run co-integration equation results

Variables	Coefficient	Standard error	t-statistic
Constant	-286.3074		
UN(-1)	1.000000	-	-
GDP(-1)	19.49725	21.4227	0.91012
REER(-1)	0.446199	0.05322	8.38481
LP(-1)	-0.288840	0.19680	-1.46771
BUG(-1)	0.609186	0.21191	2.87472

The long run impact of explanatory variables (GDP, REER, LP, and BUG) on unemployment as shown in Table 5.5 is illustrated using equation 5.1:

$$UN = -286.307 + 19.497GDP + 0.446REER - 0.289LP + 0.609BUG \quad (4.1)$$

The equation 5.1 reflects that GDP, REER and BUG have a positive long run relationship with unemployment. It is worth mentioning that REER and BUG are statistically significant in explaining unemployment since they have absolute t-values greater 2.

The results therefore suggest that a one percent unit increase in REER (an appreciation) increases unemployment by approximately 0.446. The results also suggest that an appreciation leads to reduction on job creation in the long run. Depreciation in REER is usually associated with lower levels of unemployment since depreciated REER incentivises more intensive use of labour due to fact that the relative price of that production factor (where price of labour measure in the international currency) has fallen (Frenkel, 2004).

The results reported in Table 4.5 suggest that a unit increase in GDP increases unemployment by approximately 19.497. Usually an increase in economic growth is accompanied by a decline in unemployment. However when growth is not accompanied with job creations, this is regarded as a "jobless growth" phenomenon. Mahadea (2003) produced similar results and emphasised that positive economic growth rates have been associated with shrinking job creation. Samson, Quene and Niekerk (2001) also pointed out that the Reserve Bank's 2001 Annual Report revealed fallen fall in the rates of job creation even as GDP growth rates rose during the 1990s. This was attributed to a number of combined factors such as pressure on domestic producers to be competitive in an increasingly globalised market, increasing rates of capital intensity, slow pace of foreign direct investment among others. The results confirm the jobless growth hypothesis that states South African GDP growth is failing to create jobs.

On the other hand, equation 4.1 also reflects that only LP has a negative long run relationship with unemployment. Consequently the results suggest that a one per cent unit increase in LP reduces unemployment by approximately -0.289. This relationship is compatible with the economics theory. Marginal productivity theory, specify that as long as the marginal product of the extra worker is increasing this induces firms or businesses to hire more workers hence reflecting a negative relationship between LP and unemployment. Furthermore, the results suggest that a per cent unit increase in BUG increases unemployment by approximately 0.609. This relationship does not concur with the economic theory. For instance based on the Keynesian theory, policymakers recommended the use of a budget deficit policy, when government spends more than the revenue it collects so as to boost employment creation and reduces unemployment levels. Higher government spending might be on things such as on infrastructure, education, employment inducing programmes among others that lead to reduction in

unemployment levels. The VECM results suggested evidence of error correction as depicted in Table 4.6.

Table 4.6 Error correction results

Variable	Coefficient	Standard Error	t-statistic
D(UN)	-0.431765	0.15212	-2.83832
D(GDP)	0.002450	0.00073	3.34783
D(REER)	-1.070730	0.57300	-1.86863
D(LP)	0.671146	0.19927	3.36797
D(BUG)	0.440239	0.13679	3.21832

The error corrections results shown in Table 4.6 reflect a correct sign (negative) and significant which indicates that any short-term fluctuations between the explanatory variables and the dependant variable will give rise to a stable long run relationship between the variables. Results reported in Table 4.6 depict that the coefficient of the differenced dependent variable (UN) is -0.431765 reflect that the speed of adjustment is approximately 43.177 per cent. This implies that if there is a deviation from equilibrium, approximately 43.177% of unemployment is corrected in one year as the variable moves towards restoring equilibrium.

4.4 *Diagnostic checks*

In order to validate the parameter evaluation of the outcomes attained by the unemployment model employed in this paper, diagnostic checks were performed. The model was tested for fitness using three tests, namely white test for heteroskedasticity, langrage multiplier (LM) test for serial correlation and the Jarque-Bera (JB) test for normality. In a nutshell the results of the diagnostic checks suggest that there is no serial correlation, no conditional heteroskedasticity and normal distribution in the unemployment model.

Table 4.7 Diagnostic checks results

Test	**Null hypothesis**	**T-statistic**	**Probability**
Langrage Multiplier (LM)	No serial correlation	30.03959	0.2228
White (CH-sq)	No conditional heteroskedasticity	32.39	0.0657
Jarque-Bera(JB)	There is a normal distribution	2.000358	0.3678

5 Conclusions

This study examined the impact of unemployment on economic growth in South Africa using time series data for the period from 1994 to 2012.The study was motivated by the growing importance of unemployment and growth relationship in developing countries. A significant amount of research has been conducted in developed countries examining the unemployment-growth nexus and this has yield different results based on the period and country of study. However, little has been done to explore the unemployment-growth nexus in developing countries especially in Africa. The South African economy is currently experiencing problems of job shortage and the rate of unemployment has been erratic over the past years. This led to policymakers and economists to construct sets of possible reasons why the level of

5.1 Policy implications and recommendations

In light of the above summary, the results suggest several policy recommendations that can be drawn in order to reverse the trend of erratic unemployment. These recommendations are expected to significantly contribute to employment generation in South Africa:

- After apartheid the South African government promulgated several laws that have significantly changed the labour market institutions. Arora and Ricci (2006) argues that aspects of some labour practices and regulations such as laws governing collective bargaining processes, labour standards and working conditions have contributed to high unemployment by rendering the labour market inflexible. In addition changes in the labour market institutions consist of significant costs to employers and consequently deter employment creation. An important issue raised in this study was that government alone cannot combat high level of unemployment that is in South Africa. The government needs to create conducive environment and flexible labour market policies or legislations that entice many private sector and small businesses, thus consolidating the existing entrepreneurship with the new entrepreneurial so as to creates more employment and absorbing a large pool of unemployed group.

- Attainment of high growth and creation of decent employment still remains a challenge in South Africa. The study revealed that economic growth plays a vital role in curtailing down unemployment levels. However, in order to achieve impressive growth rates that will help to boon the nation or economy and boost the demand for labour and decent employment creation. Policymakers should create policies that support and promotes accelerated and sustained economic growth.
- The study revealed that a one per cent increase in BUG increases unemployment by approximately 0.609. In contrary, some economists and policymakers acclaimed the use of adopting a budget deficit policy; when government spends more than the revenue it collects so as to promote and boost employment creation thus reduces unemployment levels. However to curtail down the unemployment levels, the study suggest that the South African government should re-direct its spending towards activities that directly or indirectly promote the creation of employment through improving healthcare facilities, infrastructure development strategy, education and employment inducing programmes. Even activities that help in crime fighting can assist in creating a good reputation for South Africa and to be a safe investment destination for many investors (whether they are domestic or international investors), consequently reducing unemployment levels.
- Unemployment has been persistent for quite some time. Samson et al (2001) elucidated that the technological production method employed within the South African economy is more capital intensity rather than labour intensity and also increasing the demanding for skilled labour. This tend to be a challenging factor since the most unemployed groups are unskilled and less skilled labour therefore job creation policies on sectors that employ these groups should be prioritised through engaging in labour intensive industries.

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THE IMPACT OF POSITIVE OPERATING CASH ON BONDS' PRICING INTERNATIONAL EVIDENCE

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Abstract

This paper aims to ascertain the relationship existing between the ratings of bonds and the ending cash balance of the operating section in the cash flow statement. In our study, which lasted for 18 years, 600 companies were selected from 26 countries to construct our sample. With purpose of detecting how the positive cash balance of the operating section in the cash flow statement characters the likelihood of rising the bonds ratings, we have applied a Probit regression analysis. Consequently, a robust proof stating that the bonds ratings are significantly impacted by the positive operating cash balance. That is to say, generating enough cash flow from the operating activities increases the company's chances to have greater bonds ratings raises, meanwhile lowering the cost of debt given that higher bond ratings decreases the cost of company for raising funds (in the form of bonds). More confirmation to the creditors' rights shields was added through our outcomes, in addition to its impact on the cost of debt.

Keywords: Credit Ratings, Operating Cash Position, Default Risk

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1 Introduction

Information is an essential key for the stock markets to function efficiently. Securities are fairly priced whenever the appropriate information about companies is integrated into the prices. The main role of financial analyst in this process is to come up with new information concerning companies. Normally, analysts' research reports, forecasts, and recommendations are considered by stakeholders, especially creditors, as relevant sources of information, the reason why they use them while taking decisions related to ratings. To illustrate, in Brunnermeier and Pedersen (2009), a large market shock leads to a low liquidity, high margin equilibrium, where markets are illiquid, leading to higher margin requirements. Prior literature explained the significance of cash management mechanisms and their usefulness for the companies while applied correctly. Adequate level of liquidity permits companies to have direct access to debt financing and at the lowest costs (interest), allowing the company to benefit from a competitive advantage over others. This competitive advantage makes it possible for the company to enhance its income because the cost of debt is low.

With the aim of improving the positive image regarding the financial situation of the company, cash management that is defined as one of the important mechanisms of good firm's performance may play a considerable role to achieve this objective. High positive cash balances indicates that the company has enough money to encounter its short term duty without any liquidation costs. Nevertheless, taking into consideration the ending balance of cash for the year, using the comparative balance sheet or the cash flow statement, may be misrepresentative. The three principal activities from which companies can engender cash are the following: investing, financing and operating.

Every activity that is related to changes in tangible assets, especially long term assets including properties, plants and equipment defines investing activities. In other words, questions may be raised due to the positive cash balance ensuing from this section. Generating cash from company's operating activities means that the company is selling its means of production (downsizing). However, this circumstance is not tolerated by stakeholders, especially creditors.

Changes associated with long term debts, including loans, bonds and notes payable, and stockholders' equity refer to financing activities. Generating positive cash balances under this section indicates that the company is acquiring capital using one of the followings: issuing stocks, obtaining loans, or writing-off bonds. The fact that a company benefits from a positive balance does not entail any information, except if how this money was spent and how much it cost is recognized, taking into consideration the financial leverage and the ideal capital structure. However, having a negative cash balance under this section indicates either the company is repurchasing its own common shares outstanding or paying off its debt. Zeidan (2010)

asserts that generally speaking, a negative ending balance of cash under the financing section sends positive signals, indicating that the company is able to meet its liabilities through its cash requirement.

Finally, the operating activities is the main point discussed in this research. A positive net cash balance indicates that the company is capable of generating enough from its operating activities. Hence, we should not torment ourselves regarding the future of the company, Amat (2013). Conversely, a negative ending balance of cash refers to the inability of the company to engender enough cash from its principal operations. Consequently, all stakeholders will agonize regarding the future of the company even in the short run.

In accordance with the three sections discussed above, the valuation of the companies is regularly based on the net cash provided from the operating activities. This statement does not imply that the financing and investing activities of the cash flow statement are unusable, but it only emphasizes on operating activities as they are more informative mostly due to the nature of activities and transactions that it embraces, Ojo and Marianne (2013)

Positive cash balances send optimistic signals to all stakeholders, indicating that the company is able to meet all obligations, which decreases the external financing costs for companies. This occurs because both creditors and shareholders will be aware of the ability of the company to pay them back at any time, therefore, demanding a lower returns. In fact, they ask for small returns because the company's perspectives and its liquidity levels are clear. In opinion of fact, positive operating cash balance might have other effects on a company. For instance, demonstrating that a positive operating cash balance may have a positive impact on the bonds ratings for companies indicates that a small level of default risk results in lower cost of debt keeping in mind that Kisgen and Strahan (2009) ascertained that higher ratings influence creditors so that they request lower returns. In reality, the risk of creditors that is related to the company's failure to pay back its debts (default risk) is reduced with higher ratings of bonds. Consequently, for companies with high ratings, the creditors' risk perception and the company's cost of debt are reduced because creditors will ask for lower required returns. Overall, a few studies has been conducted regarding the effect of cash management or default risk levels on companies' cost of debt. However, no study were conducted examine the following hypothesis: do rating agencies value the operating cash balance of a company when rating firms' bonds? If our outcomes support this hypothesis, then lowering the costs of debts may be caused by a positive operating cash balance.

Our goal is to empirically find out how operating cash balance of the cashflow statement affects the cost of debt for companies. More precisely, we intend to identify whether the rating agencies decisions to rate firms' bonds are affected by the company's operating cash position (whether negative or positive). Our study is similar in spirit to Hamdi et al. (2013) who study the value of the auditor choice and how it affects the corporate bond rating.

Our main objective is to discover in which way the companies' cost of debt is influenced by the operating cash balance of the cash flow statement. Indeed, we aim to detect if the company's operating cash position (whether negative or positive) really affects the rating agencies decisions to rate firms' bonds. Our study is the same as the one conducted by Hamdi et al. (2013) in which they explore the value of the auditor choice and its effect on the corporate bond rating.

2 Literature review

The stock markets function efficiently using information and good corporate governance. Securities are fairly priced whenever the appropriate information about companies is integrated into the prices. The main role of financial analyst in this process is to come up with new information concerning companies. Normally, analysts' research reports, forecasts, and recommendations are considered by stock market participants as relevant sources of information, the reason why they use them while taking decisions related to ratings. Jensen and Meckling (1976) propose that financial analysts have the ability to reduce the agency problems existing within firms as information intermediaries. Merton (1987) claims that the market value of a firm is an increasing function of the breadth of investor awareness.

Berger (1995) has found out a positive relationship between the return on equity and the ratios of capital to assets. He clarified that the higher the capital ratio, the lower the cost of funds on account and the quantity of funds required. Consequently, both the firm's net interest income and the profitability will increase. Conversely, the opposite was determined by Navapan and Tripe (2003). In fact, they discovered a negative relationship between profitability and capital. Kontus (2012) gave an explanation stating that a decrease of profitability that is shown in terms of return assets is a consequence of an increase of short-term debt.

Odders-White and Ready (2006) proclaimed that companies characterized by more liquidity have better credit quality that the ones with less liquidity. Indeed, companies with high liquidity have less chance to default. "They have assets that they can use in case of emergency". Moreover, as the authors state further, companies with more liquidity are continuously benefiting from high quality credit terms and they tend to settle on more. Considering creditors, especially banks, good customers benefit from their rights and they are trying their hardest not only to keep them, but they go for more. Furthermore, Butler

et al. (2005) found out that liquidity has an impact on the cost of issuing equity, more precisely the direct cost of issuing debt. That is to say, higher liquidity leads to a small risk, resulting in a lower interest rate. Otherwise, the lower the liquidity, the higher the risk, therefore, the higher the interest rate.

One of the principal components of corporate finance is the working capital management as stated by Deloof as it influences both the companies' profitability and liquidity. As a result, having an efficient management of working capital would be essential to create the highest shareholder value. In reality, a majority of companies work on maintaining a perfect level of working capital that will enhance their value (Deloof, 2003; Afza & Nazir, 2007). Nevertheless, Matuva (2010) explained that some decisions tend to augment the profitability, hence, lessen the chances of appropriate liquidity. Conversely, emphasizing only on liquidity may reduce the potential of companies' profitability. Moreover, Lazaridis and Tryfonidis (2006) discovered that an arithmetical relationship between profitability, which is computed using Gross Operating Profit, and the cash conversion cycle. They perceived that managers are able to create price for shareholders through handling appropriately the cash conversion cycle and preserving each component to an optimal level.

3 Liquidity and the cost of debt

The cost of debt of any company is influenced by various firm's specific characteristics. Jenzazi (2010) pointed out that the cost of debt in affected by the company's cash management. Among his research paper, a score from 0 to 4 was attributed to the cash management according to various factors (refer to table 1 for more information about these factors). Out outcomes revealed that when there is an increase in the score, there is a decrease in the cost of debt.

The above arguments lead us to the following testable hypothesis:

H1: Generating positive cash balance will reduce the company's cost of debt financing.

H2: Generating positive net cash provided from operating activities leads to higher bonds ratings.

Knowing that the existing literature is limited, our research will add some values in many ways. Our first objective is to assess the perception of the corporate bond market of the quality of the company's liquidity. Secondly, our research differs from Jenzazi (2010) and the other studies because it will emphasize on the international context regarding this issue. That is to say that not only we will have a better understanding of the functioning of the different debt markets around the world, but this will enable us to perceive in which way the external governance mechanisms (such as the legal and extra-legal institutions) relate to the internal mechanisms (in our case cash generated from operating activities) in order to improve the entire governance quality in one country.

4 Methodology and descriptive statistics

4.1 Specifications

Examining the correlation existing between the positive operating cash and the bonds ratings is the aim of our research. We will use the following general specification with the intention of studying the relationship between these two variables.

Bond Rating = f (operating cash position, Issuer Characteristics, Issue Characteristics)

Three major determinants of bonds rating (Operating cash position, Issuer Characteristics, and Issue Characteristics) are included in this model. The issuer characteristics variables consist of the company profitability (computed using the company's return on assets, the company size which measured by the company total assets, the company risk that is measured by the company variability of earnings, and the leverage that is measured by the debt to equity ratio). Regarding the issue characteristics variables, they are composed of the issue size or the size of the bonds, the bonds maturity, and the convertible provision (an option enabling a bondholder to exchange the bonds for shares).

The rating bonds used are from seven diverse ordering categories (exemplified by the S&P ratings). The last statement signifies that since the bond rating is an ordinal variable, we can use the Ordered Probit Model.

4.2 Data sources and variables

600 companies from 26 countries were selected to be included in our sample. A description of the sample and the distribution of the 600 observations that are from 2002 to 2012 were provided in Table 2. The bonds ratings were taken from the S&P credit ratings. These ratings have a range from AAA to D, including 22 potential ratings. These ratings refer to companies' creditworthiness. That is to say, they show whether a company is able to repay back their loans at the due date. Appendix demonstrates that the suggested ratings obtained from S&P have been converted to ordering numbers ranging from 1 to 7, 1 representing the lowest rating and 7 the highest one. The conversion of the ratings was based on the research that was conducted by Ashbaugh, Collins, and LaFond (2006). The data of bonds ratings were obtained from F- Database

The panels below give a description of the sample that was used to derive the outputs. Panel A specifies the countries that companys in the sample operate in. Panel B gives the distribution of the observation on a yearly basis (starting from 1996 to 2006). Panel C gives a description of the observations based on the industry.

Table 2. Sample description

Panel A: Sample Distribution per Country			**Panel B:Sample Distribution per Years**		
Country	**Number**	**Percent**	**Years**	**Number**	**Percent**
Argentina	8	1.33	1996	2	0.33
Australia	11	1.83	1997	23	3.83
Austria	8	1.33	1998	22	3.67
Brazil	23	3.83	1999	55	9.17
Canada	136	22.67	2000	100	16.67
Chile	7	1.17	2001	120	20.00
Colombia	1	0.17	2002	122	20.33
Denmark	7	1.17	2003	55	9.17
Finland	7	1.17	2004	45	7.50
France	23	3.83	2005	43	7.17
Germany	35	5.83	2006	13	2.17
Hong Kong	12	2.00	**Total**	**600**	**100**
Korea (South)	22	3.67	**Panel C: Sample Distribution per Industries**		
Malaysia	2	0.33	**Industry**	**Number**	**Percent**
Mexico	14	2.33	Manufacturing	230	38.33
Netherlands	13	2.17	Transport	10	1.67
New Zealand	1	0.17	Trades	40	6.67
Norway	6	1.00	Financial Services	243	40.50
Philippines	6	1.00	Utility	77	12.83
Poland	2	0.33	**Total**	**600.00**	**100.00**

The value of 1 is given to the dummy variable that is the operating cash balance if it is positive and 0 otherwise.

With the intention of giving more clarifications regarding the bonds ratings, we add two control variables to the model that are the issue and issuer variables. More details concerning these variables are provided in Table 1. The control variables data were acquired from W.S Database. As was applied in the research papers of Anderson, Mansi and Reeb (2003) and Boubakri and Ghouma (2008), the computation of the bonds ratings, the convertible provision, and the issue size (the issue characteristics) was based on a portfolio approach. We assembled the entire company issues associated to each year, and the size of the issue to the total issues represented the weight used in the computation of the average bonds ratings, the convertible provision, and the issue size related to each company over every year of the duration of our research.

Since we defined the variables used in our model, we can express the bond rating model as the following:

Prob. (Bonds Ratings=X) = F (b_1. operating cash position + b_2. Company Profitability + b_3. Company Size + b_4. Company Risk + b_5. Bonds Maturity + b_6. Convertible Provisions + b_7. Issue Size + b_8. Leverage + Institutional variables + Year Dummies+ Industry Dummies + ei); Where X belongs to {1, 2, 3, 4, 5, 6, 7}

Table 1. Variables description and sources

Variable	Description	Source
Bonds Ratings	Appendix A gives detailed information about this ordinal variable. The bond ratings that are used by S&P are converted to a range from 1 to 7 where 1 is the lowest rating and 7 the highest rating. The rating of bonds depends on the company bonds portfolio.	F-Database
Company's Cash balance	A dummy variable that is assigned 1 if the company's yearly operating cash balance is positive and 0 otherwise.	W-S Database
Company Profitability	A variable that measures the profitability of the company by dividing its net income to its total assets	W-S Database
Company Size	The company size is determined by its total assets in dollar amounts.	W-S Database
Company risk	The company's risk is measured by the standard deviation of the net income of every company in the sample.	W-S Database
Bonds Maturity	A variable that measures the log maturity in years. The weights are determined by the size of the issuance of the maturity class to the total size of the issuance for a given year. Then, the weights are multiplied to the respective maturity and added to get the bonds weighted average maturity.	W-S Database
Convertible Provisions	A dummy variable that gives 1 to companys with convertible provisions and 0 to companys with no convertible provisions. These provisions allow the bondholder to convert his or her bonds to shares.	W-S Database
Issue Size	A variable that identifies the size of the issuance.	W-S Database
Leverage	A variable that identifies the leverage of the company; measured by dividing the company debts to its equity.	W-S Database
Creditors Rights	This variable is an index that ranges from 0 to 4. When a country imposes restrictions in the favor of creditors, 1 is added to its score. When the secured creditors ensure that they will get their investment back, the score becomes 2. When the secured creditors are the first to receive their money in case of bankruptcy, the score becomes 3. At the end, when the secured creditors don't wait till the problems are solved to get their money back, the score becomes 4.	Djankov et al. (2005)
Public Registry	Public registry is a database that is developed by public authorities. This database includes all the debt positions of borrowers in the economy. The collected information is available to all financial institutions. The variable is assigned 1 if the country has a public registry and 0 otherwise.	Djankov et al. (2005)
Efficiency of Bankruptcy Process	When a company incurs bankruptcy costs, theses costs are deducted from the company terminal value and this value is discounted to get the present value. The higher the value, the better the company.	Djankov et al. (2007)
News Circulation	Daily newspapers sold divided by the number of citizens	Dyck and Zingales(2004)
Manufacturing	Dummy variable that equals 1 if the company operates in the Manufacturing industry; 0 otherwise	
Trades	Dummy variable that equals 1 if the company operates in the Trades industry; 0 otherwise Trades	
Finance	Dummy variable that equals 1 if the company operates in the Finance industry; 0 otherwise Finance	
Utility	Dummy variable that equals 1 if the company operates in the Utility industry; 0 otherwise.	

5 Empirical results

The descriptive statistics related to the variables used in our study is provided in Panel (A) in table 3. The panel begins with the credit rating variable that have a mean of 4.432, an equivalent to an S&P rating of BBB+.

Table 3. Summary statistics. **Panel A.** Descriptive statistics

Variable	Observations	Mean	Standard Deviation
Bonds Ratings	600	4.432	1.321
Cash position	600	0.423	0.342
Company Profitability	600	4.134	23.543
Company Size (in million of U.S Dollars)	600	89.89	1.54
Company risk	600	435,534.7	654,087.3
Bonds Maturity (in years)	600	6.43	0.543
Convertible Provisions	600	0.034	0.457
Issue Size	600	746,923.4	4,687,234
Leverage	600	432.367	1,432.674

The table is split into three panels. Panel (A) illustrates the descriptive statistics, Panel (B) illustrates the correlation analyses, and panel (C) gives a mean test comparison using the T-test and the Wicoxon-Mann-Whitney tests. The variables that are used are the following: Bond Ratings which is an ordinal number that ranges from 1 to 7 as the later being the highest rating and the former the lowest rating. Auditor's Choice: a dummy variable that assigns 1 to companys that have their auditor from the big five group and 0 otherwise. Company Profitability: the company profitability measured in term of its return on assets. Company Size: the total assets were used to get the size of the companys that are included in the sample. Company Risk: it is measured by the standard deviation of net income. Bonds Maturity: the average maturity for the bonds portfolio issued by a company; weights were assigned on the basis of the size of the issuance to the total issuances. Convertible Provisions: a dummy variable that gives 1 to companys with the convertible option and 0 otherwise. Issue Size: it represents the size of the issuance in term of dollars. Leverage: the company leverage is measured by the debt to equity ratio. The stars that appear in the tables mean the following: *** for a significance that is lower than 1%, ** and * are for a significance that is lower than 5% and 10% respectively.

We refer to the issuer characteristics variables used in our research by the following descriptive statistics. The first variable consists of the operating cash position with a mean of 0.71. The last statement indicates that approximately 71% of the companies from our sample are benefiting from a positive operating cash balance. The average mean for the return on assets regarding the profitability of the company is 4.03. 65 million dollars, which was computed by averaging the total assets of the 600 companies composing the sample, represent the mean of the company size.

With reference to the issuance variables, 5.44 years refer to the mean average for the bonds maturity. The convertible bonds option refers to the second variable used in this category that has a mean of 8.5%. It indicates that 8.5% of the companies gave this option to their bondholders.

The relationship existing between our dependent variable (Bond Rating) and the operating cash position, the issue characteristics variables, and the issuer characteristics variables is described in Panel (B1) from table 3. The outcomes reveal that various independent variables are noticeably connected with the ratings of bonds. The operating cash position, the company performance, the company size, and the convertible option were judged to be related to the ratings of bonds in a positive way at important levels of less than 1 percent. Furthermore, it was shown that the company leverage is interrelated positively at a significant level of 5 percent. However, we found one variable (Bonds maturity) that is negatively connected with the Bond Ratings at an important level of less than 1 %. On the other hand, it was divulged that the two variables, the issue size and the company risk, are not significantly related to the bonds ratings.

We suggest running the mean comparison tests in order to verify the first hypothesis. For that reason, our sample was divided into two sub groups: firstly, we gather companies with a positive operating cash balance. Secondly, this group includes the other ones. Our hypothesis is confirmed through the T-test output knowing that the first group's mean has a higher value (4.7) compared with the second group's mean (4.1). Furthermore, both the T-Test and the Wilcoxon-Mann-Whitney test approve the difference between the two means that is significantly different from zero (5% significance level).

This information signifies that this company has its place among the positive operating cash group that benefits from higher credit ratings

Table 3. Summary statistics. **Panel B1.** Correlation between the operating cash position and Bonds Ratings

Variable	Bonds Ratings	Cash Position	Company Profit	Company Size	Company risk	Bonds Maturity	Convertible Provisions	Issue Size	Leverage
Bonds Ratings	1.000								
Cash position	0.1305 (0.0016)***	1.000							
Company Profitability	0.1156 (0.0006)***	0.0568 (0.02340)**	1.000						
Company Size	0.3688 (0.0005)***	0.0543 (0.0334)*	-0.1433 (0.887)	1.000					
Company risk	0.0209 (0.4534)	-0.0432 (0.3645)	-0.0366 (0.5976)	0.6789 (0.0004)***	1.000				
Bonds Maturity	-0.2345 (0.0003)***	0.321 (0.2342)	-0.0033 (0.8766)	-0.3456 (0.0000)***	-0.0854 (0.4434)	1.000			
Convertible Provisions	0.2345 (0.0000)***	0.0322 (0.6300)	0.0543 (0.5324)	-0.0543 (0.0065)***	0.0654 0.3324	0.0432 (0.0322)**	1.000		
Issue Size	0.0480 (0.1690)	-0.0212 (0.5431)	0.0057 (0.8700)	0.0268 (0.4432)	0.1655 (0.0000)***	-0.0751 (0.0312)**	-0.0174 (0.6175)	1.000	
Leverage	0.0865 (0.0345)**	-0.0643 (0.0778)*	-0.0083 (0.6753)	0.1045 (0.0123)***	0.0001 (0.8654)	-0.1144 (0.0064)***	-0.0539 (0.1345)	0.0045 (0.9753)	1.000

Table 3. Summary statistics. **Panel B2.** Correlation between the bonds ratings and the institutional variables

Variable	Bonds Ratings	Creditors' Rights	Public Registry	Efficiency of Bankruptcy Process	News Circulation
Bonds Ratings	1.000				
Creditors' Rights	0.1567 (0.0000)***	1.000			
Public Registry	0.1556 (0.0003)***	-0.3453 (0.0000)***	1.000		
Efficiency of Bankruptcy Process	0.0554 (0.4325)	0.5643 (0.0000)***	-0.8765 (0.0000)***	1.000	
News Circulation	0.1255 (0.0000)***	0.6543 (0.0000)***	-0.1245 (0.0000)***	0.6543 (0.0000)***	1.000

The outcomes concerning the Ordered Probit estimation for the bonds ratings are given in Panel A from Table 4. Our expected results before running the regression match with most of these outcomes. They reveal that the bonds ratings are highly positively influenced by the positive operating cash balance (+0.4 at a significance level of 5%). In fact, this result confirms our first hypothesis supporting that generating cash from the main operations of the company gives more chance to the firm to have higher bonds ratings. Both the company profitability and size influence positively the bonds ratings. However, regarding the convertible bonds option, it is the only variable that is able to have a significant positive effect on companies' bonds ratings. On the other hand, no important effect on the bonds ratings is caused by the other issue and issuer variables.

As expected, the other control variables have a positive and important impact on bond ratings. The increase in cash provided from all activities has a positive impact (+0.3) on the bonds ratings at a considerable level of 5%. Indeed, our second hypothesis is confirmed by this result as we discovered that the higher the positive cash balances, the higher the bonds ratings.

The table gives the output for the Ordered Probit Regression of the Bond Ratings as being the dependent variable. The variables that are listed below are: Bond Ratings which is an ordinal number that ranges from 1 to 7 as the later being the highest rating and the former the lowest rating. Company's cash: a dummy variable that assigns 1 to companys that have a positive cash operating balance and 0 otherwise. Company Profitability: the company profitability measured in term of its return on assets. Company Size: the total assets were used to get the size of the companys that are included in the sample. Company Risk: it is measured by the standard deviation of net income. Bonds Maturity: the average maturity for the bonds portfolio issued by a company; weights were assigned on the basis of the size of the issuance to the total issuances. Convertible Provisions: a dummy variable that gives 1 to companys with the convertible option and 0 otherwise. Issue Size: it represents the

size of the issuance in term of dollars. Leverage: the company leverage is measured by the debt to equity ratio. Concerning the other variables, more description is given in table 1. The stars that appear in the tables mean the following: *** for a significance that is lower than 1%, ** and * are for a significance that is lower than 5% and 10% respectively.

Table 4. The effect of company's operating cash on bond ratings

Dependent Variable = Bonds ratings	Expected Sign	Model
Company's operating cash position	+	0.341 (0.044)**
Company Profitability	+	0.0123 (0.005)***
Company Size (in billions of U.S Dollars)	+	55.6 (0.000)***
Company risk (in millions of U.S Dollars)	-	-232 (0.765)
Bonds Maturity	-	-0.543 (0.345)
Convertible Provisions	+	0.600 (0.000)***
Issue Size	-	3.65×10^{9} (0.678)
Leverage	-	-0.000 (0.234)
Creditors Rights	+	0.244 (0.056)**
Public Registry	+	1.432 (0.000)***
Bankruptcy Efficiency	+	0.006 (0.003)***
News Circulation	+	0.235 (0.075)*
Manufacturing		0.344 (0.333)
Trades		-0.008 (0.876)
Finance		0.788 (0.003)***
Utility		0.624 (0.054)*
N		600
Pseudo R^2		13.67%
LR – Chi^2		234.77
Significance		(0.0000)***

The liquidity of the company affects the bond ratings as found by Jenzazi (2010). However, his research has some limitations regarding the overall cash position. Also, it considers only companies operating in the U.S. Our outcomes reveal that operating activities influence considerably the bond ratings on an international scale. The company may enjoy a relative high level of bond ratings as long as it has a positive operating cash balance. For that reason, the costs of debt, in the form of bonds, is reduced because creditors request quite lower premium to lend their money.

6 Limitations

Our sample representativeness faces one major limitation. In point of fact, F-Database and W-Database provided us with the bonds ratings data and auditors' data, respectively. These two databases enabled us to gather 600 observations that follow the distribution presented in Table 2. In fact, our sample representativeness could have been affected by this statement.

7 Conclusions

The relationship existing between the liquidity of the companies and the ratings of bonds on an

international scale was explored along our research. 600 companies operating in 26 different countries were included in our sample, and the data used last for a period of 10 years (from 2002 to 2012). Our expectations go with the results of the Ordered Probit regression. That is to say, a company with a positive cash flow has a higher possibility to have a high level of bonds ratings. The extent to which a company is able to generate cash from its operating activities has an impact on its cost of debt. In fact, a positive operating cash position makes it possible for a company to benefit from a greater bonds ratings, which results in a lower cost of debt (in the form of bonds). Our research's result will add more value to the existing research given that no prior studies concerning this field were conducted on a national or international scale. A positive operating cash balance sends a positive signal saying that the company is doing well in its main operations, which gives the opportunity to the firm to benefit from a low cost of debt which augment its profitability and earnings.

The change in total cash balance as a proxy for liquidity has been used in prior work. Nevertheless, the expansion of cash position can be done by many firms through the investing and financing activities. When we take only the cash generated from operating activities into consideration, we are rejecting other sources of cash that have the ability to influence the outcome. Besides, even though there is an operating cash, a window of manipulation and misleading is still present. From time to time expenses, as an example, depreciation is considered as a source for operating cash while in actual fact is not. The reason why depreciation is a source of cash is because it is a non-cash expense. Moreover, another source of cash can be the increases in accounts payable under the indirect method. However, these increases in accounts payable mean that the payments of the current expenses are postponed to a future date.

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Appendices

Appendix A. S&P Credit Ratings Conversion

S&P Bonds Ratings	**From D to CCC+**	**From B- to B+**	**From BB- to BB+**	**From BBB- to BBB+**	**From A- to A+**	**From AA- to AA+**	**AAA**
New Ratings	1	2	3	4	5	6	7

THE VALUE RELEVANCE OF FIRMS' ANTI-BRIBERY AND CORRUPTION EFFORTS THE ITALIAN EVIDENCE

Marco Fazzini*[*] *, Lorenzo Dal Maso

Abstract

In this paper, we utilized a sample of Italian companies to explore the influence of firms' Anti-Bribery and Corruption efforts on firm value. On a sample of 47 Italian listed companies followed by Asset4 (Thomson Reuters business collecting corporate social responsibility data) during period 2002 to 2013, we investigate the relevance of information related to firms' Anti-Bribery and Corruption efforts in explaining stock price through the accounting-based valuation model developed by Ohlson (1995). Results corroborate empirical evidence of a positive correlation between efforts made by firms in avoiding bribery and corruption during operations (i.e., whether a company describes, claims to have or mentions processes in place to avoid Bribery and Corruption practices at all its operations) and stock price.

Note from the Authors: Although this paper is the result of an analysis discussed and shared by the authors in all of its parts, in order to highlight the contribution, this is referred as follows: Paragraphs 1 and 2 are attributed to Marco Fazzini, Paragraphs 3 and 4 are attributed to Lorenzo Dal Maso, while Paragraph 5 is a common part shared between the two authors

Keywords: Asset, Market, Value Relevance, Bribery, Corruption, Employee Training

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1 Introduction

In recent years, corporate financial disclosure has become one of the topics in accounting theory which is most often and most widely investigated. Corporate disclosure, defined as "any deliberate release of financial and non-financial information, whether numerical or qualitative, required or voluntary, through formal or informal channels" (Gibbins et al., 1990, p. 122), is considered to be an important activity, as it facilitates communication between management and capital providers and is thought to mitigate information asymmetry problems and agency conflicts (Akerlof, 1970; Rothschild and Stiglitz, 1976).

Recently, there has been a growing interest in corporate non-financial disclosure; that is, Corporate Social Responsibility (CSR) reporting, which represents additional disclosures provided mainly on a voluntary base (see Dhaliwal et al., 2014 for an overview of different countries' rules on CSR reporting). CSR reporting has attracted a large amount of academic interest with a special concern on the role that such disclosures play in firm valuation (Moser and Martin, 2012). During recent years, firms have demonstrated strong commitment in providing information regarding firms' environmental and social impact on society thus resulting in a higher level of social disclosures (see Ioannou and Serafeim, 2012). In other words, an increasing number of companies have started to disclose non-financial information related to their commitment to environmental preservation, human rights protection, as well as employees and social welfare because it is well-recognized that investors and intermediaries (i.e., buy and sell-side analysts) in capital markets increasingly integrate environmental, social and governance (ESG) data in their valuation models, creating demand for sustainability reporting (Eccles et al., 2011). As a result, firms establish a positive corporate image throughout society, and this creates reputation capital which can reduce the threat of regulation (Maxwell et al., 2000). However, there is social information that has been less investigated on a micro level which is strictly related to Bribery and Corruption.

With this term, even if it is not easy to define, we refer to "the act by which 'insiders' profit at the expense of 'outsiders' " (Evans, *The cost of corruption*[1]), or commonly, the abuse of public power for private gain (e.g., Lapalombara, 1994; Habib and Zurawicki, 2002; Aguilera and Vadera, 2008; Alon and Hageman, 2013). However, this does not mean that corruption exists only within public sector but in fact it is a practice that is well-embedded into the private business. That is the reason why during recent years, firms demonstrated a strong commitment in

[1] Accessible at: http://www.tearfund.org/webdocs/Website/Campaigning/Policy%20and%20research/The%20cost%20of%20corruption.pdf

trying to reduce and avoid bribery and corruption in their operations.

However, even if it is well recognized that "Corruption is increasingly viewed as a significant impediment to economic development" (Healy and Serafeim, 2014, p. 2), research on corruption has focused on its country level causes and consequences, leaving many questions unanswered at firm level (Healy and Serafeim, 2014). Especially, while managers are likely to understand the impact that Bribery and Corruption might have on a firm's reputational capital, it is not clear whether investors are able to understand bribery incident can decrease firm competitiveness (Serafeim, 2013). Therefore, starting from this premise, our study aims to investigate the value relevance of firms' Anti-Bribery and Corruption efforts on the Italian scenario. That is, based on the model of Ohlson (1995) which is considered to be the conventional approach used to examine value relevance of disclosure (i.e., non-financial information) in accounting-based market research – we investigate whether the market gives a relevance to information related to a firm's effort in eliminating Bribery and Corruption from its operations.

For the purpose of our research, we select an Italian sample of listed companies followed by Asset4 during period 2002 to 2013. We decided to investigate the market value of such information on the Italian market because according to the Corruption Perception Index (CPI) (2014), an indicator created by Transparency International (TI) which ranks countries and territories based on how corrupt their public sector is perceived to be, Italy ranks 69th over 175 countries, which is one of the latest position if we compare this result on a European Union and Western Europe base[2]. For this reason, Italy ratified the Council of Europe (COE) Criminal Law and Civil Law Conventions on Corruption in June 2013. That is, as a result of serious corruption-related concerns reflected by perception surveys and by the number of high-level corruption cases investigated, a new set of anti-corruption reforms was launched by the Italian Government in 2012 (European Commission, 2014). For the above motivations, we consider Italy to be a good experimental environment in which to investigate our research question (i.e., is firm's effort in avoiding bribery and corruption from its operations correlated with stock market prices? If so, in which manner?).

Results in table 6 show that firms which describe, claim to have or mention processes in place to avoid Bribery and Corruption practices in all of their operations have a stock market price higher with respect to those which do not provide any information (significance level $p<0.01$). This result is robust even if we use a different dependent variable (DV) or different period of analysis. Therefore, our results provide empirical evidence that in the Italian scenario, firms' Anti-Bribery and Corruption efforts are positively correlated with stock market prices.

To explore the issues outlined above, the remainder of the paper is organized as follows: section 2 provides a brief review of relevant literature, section 3 describes the nature of our data and the methods we employed, while results of our analyses are reported in section 4. Finally, we offer major findings, policy implications, and some concluding remarks in section 5

2 Literature review

The idea underpinning our paper is that if a company describes, claims to have or mentions processes in place to avoid Bribery and Corruption practices in all its operations this should be considered as a sort of firm's accountability and sustainability behavior. That is, firms disclose information on a voluntary base in order to obtain a benefit from a market perspective.

The empirical body of literature on disclosure features analyzes a range of issues, including the determinants of voluntary disclosure and compliance with regulations, the economic and market consequences of disclosure, and analyst coverage (Hassan and Marston, 2010). Many researchers have argued that the possession and provision of high-quality information may reduce the volatility of stock returns and the cost of equity, as well as increase firm value (Lambert et al., 2007; Lang et al., 2003). In contrast to these positive outcomes, information disclosure has also been shown to have some negative effects. Specifically, information disclosed to competitors can increase costs of compliance, as well as costs associated with lost competitiveness (Hassan et al., 2009). Moreover, disclosure may enhance competitors' market positions and, as a result, damage a firm's competitiveness (Healy and Palepu, 2001). Nevertheless, recent studies proved that firms engaged in CSR reporting generally take advantage of a lower cost of equity capital (Dhaliwal et al., 2011; Dhaliwal et al., 2014), lower earnings management (Kim et al., 2012), higher analyst following (Jo and Harjoto, 2014), more favorable analyst recommendations (Ioannou and Serafeim, 2014) and higher analyst forecast accuracy (Dhaliwal et al., 2012) among other positive outcomes.

However, this literature mostly focuses on CSR reporting, thus using overall score as a proxy of firm sustainability (i.e., KLD score) while, to the best of our knowledge, no previous studies apart from Healey and Serafeim (2014) focus attention on a firm's self-reported anticorruption efforts. Nevertheless, our study is different from that of Healy and Serafeim (2014) because we investigate the value relevance of firm's self-reported Anti-Bribery and Corruption efforts (i.e., if the company describes, claims to have or mentions processes in place to avoid Bribery and

[2] Source: http://www.transparency.org/cpi2014/ infographic /regional/european-union-and-western-europe.

Corruption practices in all its operations) while their tests examine whether these forms of disclosure (firm's self-reported Anticorruption efforts) are real efforts to combat corruption or are worthless chatter (Healy and Serafeim, 2014, p. 1). Therefore, our study is the first attempt, to the best of our knowledge, that investigates the value relevance of such non-financial information. Drawing on the previous literature on CSR reporting, and considered that we consider firms' Anti-Bribery and Corruption efforts to be a sort of firms' social proactivity, it is our conjecture that this information should be positively correlated with stock market price.

3 Methodology and variables

3.1 Sample selection

For the purpose of our study, we select all the Italian companies covered by Asset4 during period 2002-2013 which are, respectively, the first and last data on bribery and corruption available on Asset4. As reported in the table below, from the initial sample, we removed those without: (a) accounting and market information and (b) Asset4 corruption information. As a result, we obtained a sample composed of 47 firms and 436 firm-year observations.

Table 1. Sample selection process

	Sample selection procedure
543	The sample selection process considers as a starting point all the firm-year observations for Italian listed companies followed by Asset4, during 2002 and 2013, with fiscal year end in December.
n obs. dropped	**Reason for dropping**
7	Negative BPS
16	Missing Price
84	Missing Asset4 Information
436	Final sample – firm-year observations (47 firms)

3.2 Econometric model

In order to investigate the relevance of accounting and non-accounting information in explaining stock price, we adopt the accounting-based valuation model developed by Ohlson (1995) because it has become the conventional approach used to examine value relevance of disclosure (i.e., non-financial information) in accounting-based market research (Semenova et al., 2010).

In according with the previous literature (e.g., Cormier et al., 1993; Amir and Lev, 1996; Hassel et al., 2005; Cormier and Magnan, 2007; Habib and Azim, 2008; Moneva and Cuellar, 2009; Semenova et al., 2010; Cardamone et al., 2012; Clarkson et al., 2013; Iatridis, 2013), our model considers the market value of equity as a function of (a) book value, (b) accounting earnings and (c) non-accounting information. This non-accounting information is, in our model, related to Anti-Bribery and Corruption effort made by firms. Therefore, our regression models are as follows :

a) $$P_{it} = \beta_0 + \beta_1 BPS_{it} + \beta_2 EPS_{it} + \beta_3 B\&C_{it} + \beta_4 Year_{dummy} + \varepsilon_{it}$$

where, P_{it} is stock market price (Datastream code WC05001) of firm $_i$ at fiscal year-end$_t$; BPS_{it} is book value per shares of firm $_i$ at time $_t$ calculated as Common shareholders' equity (WC03501) divided by Common shares outstanding (WC05301); EPS_{it} is value of earnings per share of firm $_i$ at time $_t$, calculated as Net income (WC01706) divided by Common shares outstanding (WC05301), $B\&C_{it}$ is our variable of interest which is equal to 1 if firm $_i$ at time $_t$ describes, claims to have or mentions processes in place to avoid Bribery and Corruption practices in all its operations, zero otherwise (SOCODP0127) while ε is the error term. Our regression analysis is run with a Fixed Effects estimation method and with standard error clustered by firm.

Then, in order to verify whether or not B&C disclosure influences the value relevance of accounting variables (i.e. EPS and BPS) we followed the approach used by Cormier and Magnan (2007) and Cardamone et al. (2012), by adding the two interaction terms as follows:

b) $$P_{it} = \beta_0 + \beta_1 BPS_{it} + \beta_2 EPS_{it} + \beta_3 B\&C_{it} + \beta_4 B\&C_{it} \times BPS_{it} + \beta_5 B\&C_{it} \times EPS_{it} + \beta_6 Year_{dummy} + \varepsilon_{it}$$

In both model (a) and (b) we expect a positive coefficient of BPS, EPS and B&C while at the same manner we do not posit any a priori expectation with respect to the interaction terms. According with previous studies (even if the non-financial information is different - e.g. Clarkson et al., 2013), a positive

coefficient of B&C (or B&C_T where used as alternative proxy of firms' anti bribery and corruption efforts) would mean that this information represents an incremental information.

Regarding the time of dependent variable (DV), even if it is common in value-relevance research to use stock price after the release of the financial statements, the current study uses stock price at the end of the fiscal year as DV. In fact, according to Habib and Azim (2008, p. 172) "post-year events could add noise to the measurement process". Moreover, since our sample is made up of big Italian companies, which are large enough to be followed by analysts, we expect that that financial statement information became public before the financial statements were released.

Then, in order to strength our results, we substitute our variable B&C with other information available on Asset4 which provides an alternative measure of firms' anticorruption efforts. This is Bribery and Corruption training, $B\&C\_T_{it,}$ which is equal to 1 if firm $_i$ at time $_t$ trains its employees on the prevention of Corruption and Bribery, zero otherwise (Datastream code SOCODP008). We decided to adopt this measure as an alternative proxy of firm's efforts because differently from other information available on Asset4 (e.g., Community Reputation Policy Elements/Bribery and Corruption – SOCODP0017), this evidences that firms are effectively enforced in avoiding corruption in its operations. In other words, having an Anti-Bribery and Corruption policy *per se* does not represent an effort while on the contrary, it could figure out as an opportunistic (i.e., strategic) manager's decision or simply anything other than worthless chatter (Healy and Serafeim, 2014).

4 Results

Table 2 and 3 report the sample distribution across industries, year and B&C information disclosed. Starting from table 2, it shows that the sample is quite stable along the years with the majority of observations that are related to Banks industry (97 observations). As reported, we can see that the percentage of firms that describes, claims to have or mentions processes in place to avoid Bribery and Corruption practices it all its operations, i.e., B&C (1), is low for Bank industry (26.8%), Fixed Line Telecom (8.3%), Internet (14.3%) and Full Line Insurance (38.1%), while it is above or equal to 50% for all the other industries.

Table 2. Observations f distribution across industry/B&C disclosure

Industries (Datastream INDM)	B&C (0)	B&C (1)	Total	%Yes
Alt. Electricity	0	4	4	100.0%
Asset Managers	6	0	6	0.0%
Automobiles	5	7	12	58.3%
Banks	71	26	97	26.8%
Broadcast & Entertain	14	7	21	33.3%
Building Mat.& Fix.	6	10	16	62.5%
Clothing & Accessory	4	8	12	66.7%
Comm. Vehicles, Trucks	0	1	1	100.0%
Con. Electricity	14	24	38	63.2%
Defense	2	10	12	83.3%
Distillers & Vintners	4	0	4	0.0%
Electrical Equipment	0	7	7	100.0%
Exploration & Prod.	0	6	6	100.0%
Fixed Line Telecom.	11	1	12	8.3%
Food Products	2	7	9	77.8%
Footwear	3	0	3	0.0%
Full Line Insurance	13	8	21	38.1%
Gas Distribution	2	10	12	83.3%
Integrated Oil & Gas	5	7	12	58.3%
Internet	6	1	7	14.3%
Life Insurance	5	14	19	73.7%
Multiutilities	2	14	16	87.5%
Oil Equip. & Services	5	5	10	50.0%
Prop. & Casualty Ins.	10	0	10	0.0%
Publishing	8	16	24	66.7%
Restaurants & Bars	6	6	12	50.0%
Specialty Finance	3	7	10	70.0%
Tires	6	6	12	50.0%
Transport Services	5	6	11	54.5%
Total	*218*	*218*	*436*	*50%*

Table 3 reports the sample distribution with respect to year and *B&C* and *B&C_T* (as described in the previous paragraph) disclosure. It is noteworthy, that starting from year 2007 there has been an increase in the number of firms which both disclose information regarding processes in place to avoid Bribery and Corruption practices in all their operations and that train employees on the prevention of Bribery and Corruption. These results might be supported by the fact that with the Italian Legislative Decree n.32 (2.2.2007), following the European Commission (EC) 51/2003/CE directive, introduced new relevant features regarding the drawing up of Italian business reports, such as nonfinancial key performance indicators which are relevant to the particular business, including information relating to environmental and employee matters.

Table 3. Observations of distribution across year/disclosure

Year	B&C (0)	B&C (1)	*Total*	B&C_T (0)	B&C_T (1)	*Total*
2002	17	2	*19*	19	0	*19*
2003	18	3	*21*	21	0	*21*
2004	24	5	*29*	28	1	*29*
2005	32	2	*34*	32	2	*34*
2006	28	6	*34*	31	3	*34*
2007	18	20	*38*	28	10	*38*
2008	14	29	*43*	24	19	*43*
2009	14	28	*42*	20	22	*42*
2010	14	30	*44*	21	23	*44*
2011	14	31	*45*	18	27	*45*
2012	13	31	*44*	16	28	*44*
2013	12	31	*43*	15	28	*43*
Total	*218*	*218*	*436*	*273*	*163*	*436*

Table 4 reports the main descriptive statistics for the entire sample. The mean (median) value of price is 10.54 € (6 €) with a mean (median) value of EPS and BPS, respectively, about 0.43 € (0.28 €) and 8.14 € (3.97 €). Further, on average during period 2002-2013 there is 50% of the sample disclose information regarding B&C while there are only 37.3% of trained employees on the prevention of Bribery and Corruption.

Table 4. Main descriptive statistics

Variable	Obs	Mean	St. Dev.	Min	0.25	Median	0.75	Max
Price^{w}	436	10.5402	13.3642	0.403	2.5515	6.084	13.855	84.052
EPS^{w}	436	0.4333	1.4005	-5.1403	0.0617	0.2826	0.8154	6.1553
BPS^{w}	436	8.1448	11.3253	0.4072	1.6255	3.9706	10.5977	71.9691
B&C	436	0.5	0.5006	0	0	0.5	1	1
B&C_T	436	0.3739	0.4844	0	0	0	1	1

Price is the stock market price (WC05001) of firm $_i$ at fiscal year-end$_t$; BPS_{it} is book value per shares of firm $_i$ at time $_t$ calculated as Common shareholders' equity (WC03501) divided Common shares outstanding (WC05301); EPS_{it} is value of earnings per share of firm $_i$ at time $_t$, calculated as Net income (WC01706) divided by Common shares outstanding (WC05301); $B\&C_{it}$ is equal to 1 if firm $_i$ at time $_t$ describes, claims to have or mentions processes in place to avoid Bribery and Corruption practices in all its operations, zero otherwise (SOCODP0127) while $B\&C\_T_{it}$ is equal to 1 if firm $_i$ at time $_t$ trains its employees on the prevention of Bribery and Corruption, zero otherwise (SOCODP008). ^{w}variables are Winsorized at the 1st and 99th percentiles to avoid the effects of outliers.

Moreover, table 5 reports Spearman's correlation coefficients. As reported, B&C and B&C_T are correlated at 52% between and negatively correlated with Price while positively with EPS and BPS (however statistically not significant). Therefore, results reported in table 6 provides a clearer picture regarding the relevance of firms' Anti-Bribery and Corruption efforts.

Table 5. Pearson correlation analysis

	Price^{w}	EPS^{w}	BPS^{w}	B&C	B&C_T
Price^{w}	1				
EPS^{w}	0.6954*	1			
BPS^{w}	0.7657*	0.4877*	1		
B&C	-0.0674	0.0076	0.0121	1	
B&C_T	-0.1519*	-0.081	-0.0037	0.5262*	1

Price is the stock market price (WC05001) of firm $_i$ at time $_t$; BPS_{it} is book value per shares of firm $_i$ at time $_t$ calculated as Common shareholders' equity (WC03501) divided Common shares outstanding (WC05301); EPS_{it} is value of earnings per share of firm $_i$ at time $_t$, calculated as Net income (WC01706) divided by Common shares outstanding (WC05301); $B\&C_{it}$ is equal to 1 if firm $_i$ at time $_t$ describes, claims to have or mentions processes in place to avoid Bribery and Corruption practices in all its operations, zero otherwise (SOCODP0127) while $B\&C\_T_{it}$ is equal to 1 if firm $_i$ at time $_t$ trains its employees on the prevention of Bribery and Corruption, zero otherwise (SOCODP008). ^{w}variables are Winsorized at the 1st and 99th percentiles to avoid the effects of outliers. * Significant at a 1% level.

At a glance, the R^2 values for all models are around 60%, indicating the good fitting of the model within the data. In particular, model (1), which is the result of application of the simple Ohlson (1995) model, provide evidence that the framework fits with the Italian data. The F-Statistic is significant in all cases, while multicollinearity does not affect our model, since the highest value is less than the threshold of 10 as proposed by Hair et al. (2009). In model (2) we added our variable of interest (B&C) without any interaction with EPS and EBS. As we can see from the positive change of Adj-R^2, this non-financial information is relevant in explaining stock price, and this information is positively correlated with the DV. That is, firms that describe, claim to have or mention processes in place to avoid Bribery and Corruption practices in all their operations have a level of price higher by 2.69 € with respect to those which not ($p<0.1$). Moreover, in model (3) we add the interaction terms of B&C with EPS and BPS in order to test whether this information influence accounting data (e.g., Cardamone et al., 2012). As reported, the B&C term increases in magnitude and statistical significance; that is, if all factors are equal, then the stock price of a company which provides evidence of its effort in reducing bribery and corruption from all its operations is 5.25 € higher with respect to those which do not provide any information (significance level $p<0.01$). Interesting to note the value of the interaction terms: if B&C is positive then those firms experience a lower value of BPS (significance level $p<0.01$) and EPS (no statistical significance). In other words, 1 € of shareholders' equity translates into 0.396 € (0.667 - 0.271) of market value for firms which provide evidence regarding B&C effort, meaning that stock prices are slightly related to firms' book value. Taken together this results allows us to confirm our initial conjecture that firms' evidence of Anti-Bribery and Corruption efforts are relevant and positively related with stock market prices. After, we strength our results by running our regression models (a) and (b) with a different horizon. That is, since as reported in table 4 there has been an increase in disclosure during 2007 we decided to drop all the observations before that date in order to test whether this influences our coefficients; as we can see from model (4) and (5), in table 6 the coefficient of B&C is still positive and statistically significant while there is a lack of significance on interaction terms of B&C and BPS (i.e. there is no differences in the value relevance of accounting variables between firms that disclose and not).

As a last, we tested whether prices are influenced by B&C information by using a different proxy of firm's Anti-Bribery and Corruption effort, which is whether firms train their employees on the prevention of Bribery and Corruption. As can be seen, models 6 output confirms our previous result (i.e., model 3); that is we have, in both the situations, a positive relevance of a firm's effort in preventing Bribery and Corruption and that the interaction term with BPS is negative and statistically significant.

Table 6. Regression selection process

	Predicted	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
BPS^w	+	0.656***	0.649***	0.667***	0.728***	0.742***	0.642**
		(2.77)	(3.09)	(2.98)	(8.99)	(9.74)	(2.62)
EPS^w	+	3.150***	3.123***	3.172**	1.652***	1.928**	3.035**
		(2.90)	(2.88)	(2.65)	(3.44)	(2.53)	(2.67)
B&C	+		2.697*	5.256***	4.263**	4.630**	
			(1.89)	(2.89)	(2.67)	(2.38)	
BPS^w x B&C	+/-			-0.271***		-0.0146	
				(-3.56)		(-0.19)	
EPS^w x B&C	+/-			-0.758		-0.633	
				(-0.86)		(-0.75)	
B&C_T	+						4.860***
							(2.80)
BPS^w x B&C_T	+/-						-0.373***
							(-4.02)
EPS^w x B&C_T	+/-						-0.819
							(-0.91)
Year Dummy		*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
α	?	4.971**	5.062***	4.827**	5.254***	5.017***	5.358**
		(2.53)	(2.82)	(2.61)	(4.84)	(4.88)	(2.56)
N		436	436	436	299	299	436
adj. R^2		0.631	0.638	0.653	0.607	0.607	0.654
VIF-Max		1.75	2.76	4.14	2.71	4.15	3.49
F		85.41	147.8	203.6	206.6	571.8	272.1

The table presents the result of regression models (a) and (b). Each model is calculated via the Fixed Effect method with standard errors clustered by firm (XTREG procedure on STATA). The DV is the stock market price (WC05001) of firm $_i$ at fiscal year-end $_t$. The IDs are: BPS_{it} is book value per shares of firm $_i$ at time $_t$ calculated as Common shareholders' equity (WC03501) divided Common shares outstanding (WC05301); EPS_{it} is value of earnings per share of firm $_i$ at time $_t$, calculated as Net income (WC01706) divided by Common shares outstanding (WC05301); $B\&C_{it}$ is equal to 1 if firm $_i$ at time $_t$ describes, claims to have or mentions processes in place to avoid bribery and corruption practices at all its operations, zero otherwise (SOCODP0127) while $B\&C\_T_{it}$ is equal to 1 if firm $_i$ at time $_t$ trains its employees on the prevention of corruption and bribery, zero otherwise (SOCODP008). Model 1, 2, 3 and 6 cover the entire period of analysis (i.e. 2002/2013) while model 4 and 5 are restricted on 2007/2013. ^{w} variables are winsorised at the 1st and 99th percentiles to avoid the effects of outliers. * Significant at a 10% level (two-tailed); ** Significant at a 5% level (two-tailed); *** Significant at a 1% level. T-statistics are reported in parentheses.

5 Conclusion

Our study aimed at investigating the value relevance of firms' self-reported anticorruption efforts *in the Italian market during period 2002-2013. In particular, our study tested whether market values were impacted by such information disclosed regarding firms' efforts in eliminating Bribery and Corruption from their operations. Our analysis is based on a sample of Italian listed firms because our initial conjecture, corroborated by results reported in table 6, is that firms that evidence an extra effort in avoiding Bribery and Corruption are rewarded if they operate in a country with a low Corruption Perceptions Index (i.e., Italy ranks 69th on 175 countries).*

As table 6 shows, the information regarding firms' anti-bribery and corruption efforts is relevant and positively correlated with stock market price (statistically significant) even when we add the interaction terms with accounting variables (i.e. EPS and BPS). However, the difference in significance of

accounting variables due to the information disclosed is less robust to change in the time period analyzed while, at the same time, the coefficient of B&C maintain its positive and statistical significance even if we start the analysis in 2007. Moreover, in order to strengthen our results, we use an alternative proxy of firms' Anti-Bribery and Corruption efforts (i.e. B&C_T) and a different horizon of analysis and we find, in both situation, similar results; that is firms Bribery and Corruption efforts are positively correlated with stock market price.

Taken together our results provide empirical evidence that in the Italian scenario, firms' Anti-Bribery and Corruption efforts are rewarded and valued positively by the market. Therefore, managers should consider that any efforts made in avoiding Bribery and Corruption from their firm's operations are positively valued by the market. However, our results are sensitive to the horizon analyzed (i.e., 12 years) and the particular context (i.e., Italy). Finally, a limitation of our study is mainly that it investigates the relevance of information related to firms' Anti-Bribery and Corruption efforts without considering (i.e., controlling) for the quality of information disclosed, even if using a dichotomous variable allowed us to control for bias deriving from the lack of common standards. Future research should move in that direction; that is, the next analyses should focus on the role played by the quality of such information disclosed in mitigating information asymmetry with investors and intermediaries from other markets.

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EARNINGS MANAGEMENT, INSTITUTIONAL SHAREHOLDING AND IDIOSYNCRATIC VOLATILITY: EVIDENCE FROM INDIA

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Abstract

Existing research provide mixed evidence on the relationship between earnings management and idiosyncratic volatility. However, the effect of institutional shareholding on this relationship has not been investigated. We investigate the relationship between earnings management and idiosyncratic volatility and the effect of institutional shareholding on this relationship. Using 2SLS regression, our results suggest a positive relationship between earnings management and idiosyncratic volatility. The results, however, do not suggest that institutional shareholding has a significant effect on the relationship between earnings management and idiosyncratic volatility. The results are robust to different methods of estimating earnings management and idiosyncratic volatility.

***Keywords*:** Idiosyncratic Volatility, Earnings Management, Institutional Ownership, 2SLS Regression

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1 Introduction

Conventional asset pricing theory and models suggest that only systematic risk should be priced as investors can diversify the unsystematic risk. However, when the investors are undiversified, firm specific risk or idiosyncratic risk becomes an important aspect of total returns. In such situations, it is important to understand the behavior and sources of idiosyncratic risk. In a seminal study on this issue, Campbell et al. (2001) argue that "aggregate market return is only one component of the return to an individual stock" and it is important to understand the other component that is industry level and idiosyncratic firm- level shocks. The study finds a temporal increase in idiosyncratic volatility since 1962 in the U.S. stock markets. Brandt et al. (2010) and Fink et al. (2010) document decline in idiosyncratic volatility from 2001 to 2006. Morck et al. (2000) finds that relative idiosyncratic risk (proportion of idiosyncratic risk to systematic risk) has decreased over time in U.S.

Understanding of idiosyncratic volatility and its sources is important for portfolio diversification issues, arbitrage under mispricing of individual stocks as well as pricing of an option on an individual stock. Since the study of Campbell et al. (2001), understanding the sources of idiosyncratic stock return volatility has emerged as one of the important areas of research in finance and economics.

Further, number of studies has attempted to explain the sources of rise and decline in idiosyncratic volatility. Brandt et al.(2010) document that such rise and fall is due to trading of low priced stocks by retail investors. Zhang (2010) on the other hand argues that such changes can be explained by the fundamentals, current earnings, and growth in future earnings. Ferreira and Laux (2007) investigate the relationship between relative idiosyncratic volatility and corporate governance and show that corporate governance related to anti-takeover provisions is negatively related to relative idiosyncratic risk. Further, they document that trading by institutions strengthens the negative relationship between idiosyncratic volatility and anti-takeover provisions.

However, only few studies have documented the relationship between earnings management and idiosyncratic volatility. Rajgopal and Venkatachalam (2011) investigate the relationship between earnings quality and stock return volatility and show that deteriorating earnings quality is associated with higher stock return volatility. Cheng et al. (2012) investigate the relationship between variance in idiosyncratic volatility and discretionary accrual volatility and document a positive relationship between the two. These studies have been carried out on the U.S. and other developed markets. Not many studies on the association of earnings management and idiosyncratic volatility are available with respect

to emerging economies with special reference to Indian context. It is important to understand the nature of these associations in context of an emerging economy like India as studies (e.g. Jian and Wong, 2003 and Leuz et al., 2003) have found that practices of earnings management are more pervasive in emerging economies than in developed economies owing to weak legal enforcement system. Therefore, we propose this study in Indian context.

Prior studies have documented a positive association between institutional ownership and idiosyncratic volatility (e.g. Xu and Malkeil, 2003; Dennis and Strickland, 2009) and have provided mixed evidence on relationships between earnings management and institutional ownership (e.g. Bushee, 1998; Chung et al.,2002; Burgsthaler and Dichev, 1997; Barth et al., 1999; Koh, 2003). However, we are not aware of any study that has analyzed the effect of institutional shareholding on the relationship between earnings management and idiosyncratic volatility.

The objectives of this paper are two-fold. First is to empirically analyze the relationship between earnings management and idiosyncratic volatility in Indian context. Second is to understand how institutional shareholding in a firm affects the relationship between earnings management and idiosyncratic volatility.

To achieve these objectives, we analyze the relationship between idiosyncratic volatility and accrual based earnings management (inverse of financial reporting quality). The earnings management measures we consider is absolute value of discretionary accruals (DA) estimated using Kothari et al. (2005) model and tested for robustness using Jones (1991) model and Modified Jones (Dechow et al. 2005) model. These models assume that fundamental shifts in operating activities such as revenue, fixed assets and past performance determine the accruals and any deviations from such fundamentals are due to managerial discretion. Idiosyncratic volatility is measured by taking the annualized variance of residual of the market model. For robustness purposes, we also consider the annualized variance of the residual of the Fama and French (1992) three-factor model.

We also investigate the effect of institutional shareholding on the relationship between earnings management and idiosyncratic volatility. The conjecture is that institutional shareholders may exert significant influence on the decision making process in a firm as well as the managerial discretion. This influence may lead to higher or lower levels of earnings management, which can then affect the idiosyncratic volatility of the firm's stock. We expect a positive effect of institutional shareholding on the relationship between earnings management and idiosyncratic volatility. We test for this effect firstly by considering overall institutional shareholding in the firm and secondly by considering only the shareholding of non-promoter institutional shareholder. Our methodology here is motivated by the prior research (see Burgsthaler and Dichev, 1997; Barth et al., 1999; Koh, 2003; Hsu and Koh, 2005) that suggest that short term or transient shareholder, due to their myopic view, may encourage the practices of earnings management.

As pointed out by earlier studies (e.g. Rajgopal and Venkatachalam, 2008) endogenity may be a concern in studies such as ours. Following Mishra and Modi (2013) we actively control the problem of endogenity by using 2SLS regression. Using 2SLS we are able to specify earnings management as an endogenous variable explained by lagged values of idiosyncratic volatility and various corporate governance factors. The utilization of 2SLS allows us to generate statistically robust findings.

Using a sample of 2,221 firm years from the financial year 2005-06 to 2012-13, we document a significantly positive relationship between earnings management and idiosyncratic volatility. These results are consistent with the theory that worsening earnings quality causes noisier earnings (Easley and O'Hara (2004) and O'hara (2003)).

With regard to institutional shareholding, our results suggest a positive but insignificant (at 5% significance level) effect of institutional shareholding on the relationship between earnings management and idiosyncratic volatility. The results are similar whether we use overall institutional shareholding or only non-promoter institutional shareholding. These results therefore indicate that idiosyncratic volatility is affected more by trading by unsophisticated traders rather than institutional trading. These results are consistent with Harris (2003) who argues that "transitory volatility is due to trading activity by uninformed traders".

The rest of the paper is organized as follows. Section 2 reviews the related literature and describes the hypotheses. Section 3 provides the research methodology, sample data and variables. Section 4 discusses the results and Section 5 concludes the paper.

2 Literature review and hypothesis development

Accounting research provides mixed evidences on informativeness of accounting information. On one hand Lev and Zarowin (1999) argue that relevance of accounting information for stock markets has declined and on the other hand Francis and Schipper (1999) and Landsman and Maydew (2002) demonstrate that relevance of financial statements has not decreased over time. Sloan 1996 shows that firms with low accruals earn significantly higher abnormal returns than firms with high accruals. Bradshaw et. al (2001) and Richardson (2003) provide further evidence to this effect. Healy, Hutton and Palepu (1999) argue

that improved financial disclosures reduces the information asymmetries and thereby reduces the volatility in stock returns. Similarly, Easley and O'Hara (2004) and O'hara (2003) argue that worsening earnings quality causes noisier earnings and thus influence the information risk and the idiosyncratic volatility of the firm. Leuz and Verrechia (2000) finds that improvement in the financial disclosure (proxied by shift from German GAAPs to IAS) results into decline in information asymmetries proxied by bid and ask spread.

Rajgopal and Venkatachalam (2011) posit a positive relationship between deteriorating earnings quality and idiosyncratic volatility over time. They take a sample of firms listed on NYSE, AMEX, NASDAQ spanning from 1962 to 2001 and show that idiosyncratic volatility is positively related to interaction of time and worsening earnings quality.

Cheng et al. (2012) hypothesize that poor information quality underlying managerial discretion induces high idiosyncratic volatility. They decompose earnings volatility into pre-managed earnings volatility (PMEV), discretionary accrual volatility (DAV) and correlation between pre-managed earnings and discretionary accruals ($\rho_{PME,DA}$). They argue that DAV and $\rho_{PME,DA}$ measure the multi-period managerial discretion in accruals. Their results, based on the sample of firms listed on stock exchanges in US, show that idiosyncratic volatility is associated with PMEV, DAV and $\rho_{PME,DA.}$

Our hypothesis is related to the mixed evidence on market transparency, market efficiency, and stock return synchronicity. Morck et al. (2000) argues that there is negative relation between market synchronicity (proxied by R^2) and firm's information environment transparency such that higher transparency leads to lower R^2 as more firm-specific is incorporated in stock prices. On the other hand Dasgupta et al. (2010) argues that in efficient markets the more transparent is the firm environment, the more information of future earnings gets absorbed in stock prices and there are less shocks when the firm-specific event actually occurs. This leads to a higher R^2 or market synchronicity. Consistent with the arguments of Dasgupta et al. (2010) and the results of Rajgopal and Venkatachalam (2011) and Cheng et al. (2012), we posit that higher idiosyncratic volatility (inverse measure of market synchronicity) is associated with higher earnings management (inverse measure of transparency). Specifically, our first hypothesis is as below:

H1: Earnings management is positively associated with idiosyncratic volatility.

Prior research have also documented positive association between Institutional ownership and idiosyncratic volatility. Xu and Malkeil (2003) investigate whether idiosyncratic volatility is affected by institutional sentiment and find a positive relationship between idiosyncratic volatility and institutional ownership. Dennis and Strickland (2009) also document the same relationship. In similar vein, Piotroski and Roulstone (2004) find a positive association between idiosyncratic volatility and institutional trading.

Prior literature also provides mixed evidence of the effect of institutional shareholding on earnings management. One school of thought suggest that due to involvement of institutional shareholders in governance of the firm and their active control over the managers, the manager's ability to manage earnings gets restricted. Mitra and Cready (2005) finds that influence of institutional investors improves the quality of governance in the firm and thereby reduces the manager's discretionary abilities to manage earnings. Bushee (1998) find that when institutional shareholding is high, managers are less likely to reduce the R&D expenditure to manage higher profits. Chung et al (2002) argue that because of influence and discipline that institutional shareholders exert on the management, the manager's ability to manage earnings gets restricted.

The other school of thought argues that due to dependence on capital invested by institutional shareholders, management comes under pressure to perform. This pressure from institutional shareholders incites the manager to manage the earnings aggressively. Burgsthaler and Dichev (1997) and Barth, Elliot and Finn (1999) suggest that managers manage the earnings of the firm due to pressure exercised by the institutional investors. Such pressure is higher more in case of short term institutional shareholders, sometimes called as transient institutional investors, who wish to book profits on their investment in short term. Bushee (2001) argues that these type of investors have focus on current earnings and are generally dominant. They exert less monitoring on the management of the firm. Koh (2003) investigates the relationship between institutional ownership and aggressive earnings management in Australian setting. The results suggest a negative association when institutional ownership is high and a positive relationship when institutional shareholding is low. Extending on the arguments put forth by Koh (2003), Hsu and Koh (2005) investigates the relationship between earnings management and short-term and long term institutional ownership. They find that short-term and long-term institutional ownership have opposite effects on earnings management. While long-term institutional ownership controls the practice of earnings management, short-term institutional ownership is positively associated with earnings management. Cheng and Reitenga (2009) investigates the effect of institutional blockholders and institutional non-blockholders on earnings management and find that institutional blockholders tends to have a conservative approach in the sense that they constrain income-increasing earnings management but not income-decreasing earnings management. Peasnell et al (2005), however,

do not find any significant relationship between institutional ownership and earnings management.

From the above discussion, it follows that there is a mixed evidence of the influence of institutional shareholders on management's discretion to manage earnings. They respond differently in different settings. Long-term institutional investors may attempt to constrain the practices of earnings management whereas short-term institutional shareholders because of their myopic view may encourage earnings management. The net effect of opposing forces of long-term and short-term institutional shareholders would impact the institutional investors sentiments and may lead to bulk trading. Further, institutional shareholders due to bulk trading in stocks can also influence the idiosyncratic volatility. Therefore, we posit that institutional shareholding would enhance the positive relationship between idiosyncratic volatility and earnings management. Specifically, our second hypothesis is as below:

H2: Institutional shareholding increases the effect of EM on IV.

3 Methodology, data and variables

3.1 Methodology

To test the first hypothesis, our base model is:

$$IV_{it} = \beta_0 + \beta_1 DA_{it-1} + \varepsilon_{it} \quad (1)$$

Where, IV_{it} is the idiosyncratic volatility for firm i in year t and DA_{it-1} is the discretionary accruals (proxy for earnings management) in year t-1. For the second hypothesis, we argue that institutional ownership increases the impact of earnings management on idiosyncratic volatility. Specifically, we posit that

$$\beta_1 = \alpha_0 + \alpha_1 IS_{it-1} + \psi_{it} \quad (2)$$

Substituting (2) into (1), we get,

$$IV_{it} = \lambda_0 + \lambda_1 DA_{it-1} + \lambda_2 DA_{it-1} * IS_{it-1} + \varepsilon_{it..} \quad (3)$$

In order to control for potential omitted variables that might effect the relationship between earnings management and idiosyncratic volatility, we include number of control variables:

$$IV_{it} = \lambda_0 + \lambda_1 DA_{it-1} + \lambda_2 DA_{it-1} * IS_{it-1} + \lambda_3 ROE_{it-1} + \lambda_4 Lev_{it-1} + \lambda_5 PBR_{it-1} + \lambda_6 Size_{it-1} + \lambda_7 Age_{it-1} + \varepsilon_{it} \quad (4)$$

Where, ROE_{it-1} is the lagged return on equity, LEV_{it-1} is the leverage in year t-1, PBR_{it-1} is the price to book ratio, $Size_{it-1}$ is the firm size and Age_{it-1} is the age

Prior studies (e.g. Rajgopal and Venkatachalam, 2011) have indicated that even after having large number of control variables to mitigate omitted variable bias, studies like this may have endogentiy issues. We actively control the problem of endogenity by following the approach used by Mishra and Modi (2013). We used the two-stage-least-squares (2SLS) procedure to examine the hypothesis. The use of 2SLS allows us to specify both idiosyncratic volatility and earnings management as endogenous variables, and thus provide robust statistical estimates. Specifically, we estimate the system of equations:

$$IV_{it} = \lambda_{IV0} + \lambda_{IV1} DA_{it-1} + \lambda_{IV2} DA_{it-1} * IS_{it-1} + \lambda_{IV3} ROE_{it-1} + \lambda_{IV4} Lev_{it-1} + \lambda_{IV5} PBR_{it-1} + \lambda_{IV6} Size_{it-1} + \lambda_{IV7} Age_{it-1} + \varepsilon_{it} \quad (5a)$$

$$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1} IV_{it-1} + \lambda_{EM2} ROE_{it-1} + \lambda_{EM3} Lev_{it-1} + \lambda_{EM4} PBR_{it-1} + \lambda_{EM5} Size_{it-1} + \lambda_{EM6} Age_{it-1} + \varepsilon_{it} \quad (5b)$$

However, eq. 5a and 5b presents an under-identified model. In order to estimate the model, we require some more variables that are correlated with DA. The extant literature on relationship between earnings management and corporate governance provide that various corporate governance factors affect the levels of earnings management. With a sample of 282 firms, Xie et al (2003) finds that proportion of independent directors in the board is negatively related to the level of earnings management. Klein (2002), Beasley (1996) and Davidson et al. (2005) has documented similar results with larger number of control variables. However, Peasnell et al. (2005) and Bradbury et al. (2006) could not find any significant association between board independence and earnings management. With a sample of 500 Indian firms, Sarkar et al. (2008) also found that higher independence of the board does not lead to lower of level of discretionary accruals. Osma (2008) argues that independent directors are competent enough to ascertain and restrict earnings management practices. With a sample of 770 firm years, Jaggi et al (2009) argues that an independent board generally proves to be an effective monitor for earnings management practices. However, such monitoring reduces in case of family controlled firms. Considering the prior empirical findings, we include percentage of independent directors on the board of

the firm as one of instruments for earnings management in the second equation.

Xie et al. (2003) argue that when board meetings are rare, issues such as earnings management may not be on the priority list due to paucity of time. In such cases, the function of the board is reduced to a mere rubber stamp to sign off management plans. Further, Xie et al.(2003) finds a significant negative association between earnings management and number of board meetings. Further, it is essential to analyze that even if the board meets frequently, how many directors actually attend the board meeting. Sarkar et al.(2008) in a study of 500 manufacturing firms in India find that board diligence i.e. number of meetings attended by the independent directors has a significant negative association with earnings management. Considering this, we include percentage of board meetings attended by the directors as an instrumental variable for earnings management in second equation.

Prior literature also document relationships between earnings management and multiple directorships. Jiraporn, Kim and Davidson (2008) argue that multiple directorships reduce effective monitoring and thus cause reduction in shareholder's wealth. Using number of directorships as proxy of independent director's reputation, Shivdasani (1993) and Vafeas (1999) argue that independent directors with more directorships are better monitors. Another instrument for earnings management, therefore, is average number of directorships in other firms held by the board members.

As discussed earlier, institutional shareholding may also a have a significant association with earnings management and hence institutional ownership is also include as one of the instruments in the second equation.

Lastly, previous studies have found associations between external auditor and earnings management. The argument is that an independent external audit may restrain the practices of earnings management and thus should result into better quality of financial reporting and earnings. One of the important factors about external audit is the size of the auditor. Krishnan (2003) and Habib (2011) find that firms audited by big N auditors tend to have lower earnings management. The reasons include lower economic dependence on clients and their reputation. Cohen and Zarowin (2010) and Chi et al. (2011), however, find that firms that are audited by big N audit firms tend to have high real earnings management. Contrary to this, Zang (2012) does not find a any association between big N auditors and real earnings management. Considering the above literature, we include auditor size as another instrumental variable. This variable is a dummy variable that takes the value one if the auditor is a big 4 audit firm and zero otherwise.

Considering the above arguments, our final system of equations to test our hypotheses is as below:

$$IV_{it} = \lambda_{IV0} + \lambda_{IV1}DA_{it-1} + \lambda_{IV2}DA_{it-1}*IS_{it-1} + \lambda_{IV3}ROE_{it-1} + \lambda_{IV4}Lev_{it-1} + \lambda_{IV5}PBR_{it-1} + \lambda_{IV6}Size_{it-1} + \lambda_{IV7}Age_{it-1} + \varepsilon_{it} \quad (6a)$$

$$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1}IV_{it-1} + \lambda_{EM3}IS_{it-1} + \lambda_{EM4}AudSize_{it-1} + \lambda_{EM5}PID_{it-1} + \lambda_{EM6}PBM_{it-1} + \lambda_{EM7}OCD_{it-1} + \lambda_{EM8}ROE_{it-1} + \lambda_{EM9}Lev_{it-1} + \lambda_{EM10}PBR_{it-1} + \lambda_{EM11}Size_{it-1} + \lambda_{EM12}Age_{it-1} + \varepsilon_{it} \quad (6b)$$

where, IS is the proportion of shares held by institutional shareholders, AudSize is a dummy variable that takes the value 1 if the firm is audited by a big 4 auditor else 0, PID is the proportion of independent directors in the board, PBM is the average percentage of board meetings attended by the directors, and OCD is the average outside directorships held.

3.2 Data

The data for this study is taken from Prowess Database created and managed by Center for Monitoring Indian Economy (CMIE). The Prowess database contains data related to stock prices of the Indian companies, financials, as well as corporate governance. The sample for this study spans from the financial year 2005-06 to 2012-13. We started with the initial set of 500 companies listed on National Stock Exchange of India and forming part of S&P CNX 500 index. S&P CNX 500 is a broad based index covering companies from 72 industries. From this, we have eliminated companies from financial services and utilities following the previous literature. For computing discretionary accruals, we require the industry corresponding to the sample company to have atleast 10 firms each year. We eliminated all such industries that had less than 10 firms in a year. Further we eliminated those firm-year observations for which data related to stock returns, financials or corporate governance was not available. The data was then winsorized at 1% to avoid outliers leaving the final data of 2221 firm year observations. The final sample is distributed as in Table 1.

3.3 Measurement of variables

Our objective is to study the effect of earnings management on idiosyncratic stock return volatility keeping corporate governance factors as the variables that may impact earnings management. Further, we attempt to study the effect of relationship between earnings management and institutional ownership on idiosyncratic volatility. Based on the hypothesis, our dependent variable is idiosyncratic volatility. Following discussion provides the details for measurement of variables

Table 1. Distribution of firms in sample

		Financial Year								
Sector	NIC - 2 Digit	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Manufacturing	10 , 11, 13, 14, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 34	164	182	197	204	203	213	223	209	**1595**
Construction	41, 42	12	11	15	15	19	25	27	27	**151**
Wholesale and retail trade	46	3	3	6	8	8	8	9	9	**54**
Transportaion and Storage	50, 52	4	5	8	15	16	15	16	15	**94**
Accomodation and food services	55	3	2	2	3	3	3	4	4	**24**
Information and Communication	58, 59, 61, 62, 63	16	19	21	33	37	38	41	43	**248**
Real Estate Activities	68	1	1	1	3	11	12	13	13	**55**
Total		**203**	**223**	**250**	**281**	**297**	**314**	**333**	**320**	**2221**

3.3.1 Dependent Variable

Idiosyncratic volatility: Our measure of idiosyncratic stock return volatility is based on Ferreira and Laux (2007). Specifically, we use the market model and regress excess daily return for each stock for each year on the excess returns of market. For stock *i*,

$$r_{id} = \alpha_i + \beta_i r_{md} + \varepsilon_{id} \quad (7)$$

where, r_{id} is the excess daily return on stock i on day d, r_{md} is the excess daily return on market index on day d and $E(\varepsilon_{id}) = Cov(r_{md}, \varepsilon_{id}) = 0$. Under this market model, the $\beta_i = \sigma_{im}/\sigma^2_m$, where $\sigma_{im} = Cov(r_{id}, r_{md})$ and $\sigma^2_m = Var(r_{md})$. Idiosyncratic volatility is then defined as the variance of the error term and can be measured as below:

$$\sigma^2_{ie} = \sigma^2_i - (\sigma^2_{im}/\sigma^2_m) \quad (8)$$

where $\sigma^2_i = Var(r_{id})$. We use daily return of the stock i and market index to compute idiosyncratic volatility and multiply it by 250 to annualize. Further, for robustness testing, we also compute idiosyncratic volatility using Fama and French (1992) three-factor model. In order to apply the Fama and French (1992) three fator maodel, we first classify all stocks using two classifications for each year. First classification is between small stocks and big stocks. We use market capitalization of stocks at the beginning of each year for this classification. The stocks are then classified into small stocks (S) bottom 50 percent and big stocks (B) top 50 percent. Second classification is based on value factor using price to book (P/B) ratio. We classify all stocks into three groups low (L) bottom 33.33 percent, Medium (M) 33.33 percent to 66.66 percent and high (H) top 33.33 percent. Based on the intersection of the above two classifications we form six portfolios i.e S/L, S/M, S/H, B/L, B/M and B/H. Next we compute the size and value variables on a daily basis for the Fama and French (1992) three factor model. Specifically, the size variable (SMB) is computed as below:

$$SMB = ((S/L + S/M + S/H) - (B/L + B/M + B/H))/3 \quad (9)$$

where S/L is the average daily return of the portfolio of small and low value (distressed) stocks. Other variables have the analogous definition. The value variable (HML) is computed as below:

$$HML = ((S/H + B/H) - (S/L + B/L))/2 \quad (10)$$

After computing the size and value variables we run the Fama and French (1992) three factor model. Specifically, we run the below regression equation: The idiosyncratic volatility is then computed in the similar way that of the market model.

$$r_{id} = \alpha_i + \beta_i r_{md} + \beta_{smb} SMB + \beta_{hml} HML + \varepsilon_{id} \quad (11)$$

3.3.2 Independent Variables

Earnings management: Observing earnings management directly in the financial statements of a firm is not possible. One way to estimate the potential earnings management is to look for innovations in accruals relative to changes in the firm fundamentals such as sales and property, plant and equipment. Deviations of accruals from those determined by firm's fundamental factors are deemed to be influenced by management's discretion and are thus called discretionary accruals. Discretionary accruals are thus considered the proxy for earnings management.

In our base econometric model, we apply performance-matched discretionary accruals model using the approach suggested by Kothari et al (2005). Specifically we estimate the following regression for each industry having at least 10 firms in year t.

$$TA_{it}/A_{it-1} = \alpha_0 + \alpha_{1i}(1/A_{it-1}) + \beta_{1i}[(\Delta REV_{it}/A_{it-1})-(\Delta REC_{it}/A_{it-1})] + \beta_{2i}(PPE_{it}/A_{it-1}) + \beta_{3i}ROA_{it-1} + \varepsilon_{it} \quad (12)$$

where TA is firm i's total accruals in year t and are computed using balance sheet approach. Under balance sheet approach, total accruals are the change in non-cash current assets less change in current liabilities (excluding the current portion of long-term debt) less depreciation. ΔREV is change in sales for firm I in year t, ΔREC is change in firms receivables in year t, PPE is property, plant and equipment of firm I in year t, ROAit-1 is lagged return on assets and Ait-1 is lagged total assets of the firm. Form this projection we compute non-discretionary accruals for the sample firms for each year as below,

$$NDA_{it}/A_{it-1} = \alpha_0 + \alpha_{1i}(1/A_{it-1}) + \beta_{1i}[(\Delta REV_{it}/A_{it-1})-(\Delta REC_{it}/A_{it-1})] + \beta_{2i}(PPE_{it}/A_{it-1}) + \beta_{3i}ROA_{it-1} \quad (13)$$

The discretionary accruals are then the difference in total accruals and estimated non-discretionary accruals. Firms may have motives to either income-increasing discretionary accruals or income-decreasing accruals. In either case, discretionary accruals represent earnings management. Following previous literature (mention few studies here), we consider the absolute value of discretionary accruals. In addition to the Kothari et al (2005) model, for robustness check we use Jones (1991) Model and Modified Jones (1995) model by Dechow et al (1995). For Jones model (1991) we estimate the following regression for each industry that has at least 10 firms in year t:

$$TA_{it}/A_{it-1} = \alpha_i(1/A_{it-1}) + \beta_{1i}(\Delta REV_{it}/A_{it-1}) + \beta_{2i}(PPE_{it}/A_{it-1}) + \varepsilon_{it} \quad (14)$$

From this, the non-discretionary accruals are estimated as below:

$$NDAit/Ait\text{-}1 = \alpha_i(1/A_{it-1}) + \beta_{1i}(\Delta REV_{it}/A_{it-1}) + \beta_{2i}(PPE_{it}/A_{it-1}) \quad (15)$$

The discretionary portion of accruals is then the difference in total accruals and non-discretionary accruals. For the Modified Jones (1995) model, we estimate the non-discretionary accruals as below:

$$NDA_{it}/A_{it-1} = \alpha_i(1/A_{it-1}) + \beta_{1i}[(\Delta REV_{it}/A_{it-1})-(\Delta REC_{it}/A_{it-1})] + \beta_{2i}(PPE_{it}/A_{it-1}) \quad (16)$$

Again, the discretionary component of accruals is the difference between total accruals and non-discretionary accruals.

Institutional Ownership: Based on our second hypothesis, we attempt to look for the effect of the interaction of earnings management and institutional ownership. For this purpose, we compute institutional ownership as the percentage of shares held by Institutions.

3.3.3.Instruments and Control variables

Based on the literature and to actively control endogenity, we use number of instrumental variables in our specification. These variables are:

Lagged value of idiosyncratic volatility (IV_{t-1}): We use lagged value of idiosyncratic volatility to predict earnings management. We include lagged value of idiosyncratic volatility to control endogenity problem.

Institutional shareholding (IS_{t-1}): As discussed above, institutional shareholding may have varied effects on the level of earnings management. Therefore, we include institutional shareholding as one of the predictors of earnings management.

Board of directors characteristics: Prior literature suggest that board of directors characteristics have significant effect on levels of earnings management. The characteristics may include the independence of the board, diligence of the board and busyness of the board. We include three measures related to board of directors to predict the level of earnings management. These three measures are:

Percentage of independent directors (PID_{t-1}): Independent directors play critical role in overall governance of the firm. Prior literature also suggest that percentage of independent directors may reduce the level of earnings management in the firm. Hence, we include percentage of independent director as one of predictors of earnings management.

Percentage of Board meetings attended by directors (PBM_{t-1}): Unless the board is diligent, it may act only as a rubber stamp to attest the actions of the management without much review. In such as situation, the managers may go scot free with practices of earnings management. Percentage of board meetings attended by the directors measures the diligence of the board.

Average number of directorships in other companies (OCD_{t-1}): Busyness hypothesis suggest that higher the number of directorships held by the directors, more busy they are expected to be and therefore the amount control reduces. In such a situation, the managers may have incentive to manage the earnings aggressively without being questioned by the directors. We measure the busyness of the directors by average number of directorships held in other firms.

Auditor (AudSize): An external auditor plays a critical role in detecting and controlling the level of earnings management. In that, Big four auditors are expected to be more diligent as they have their reputation on stake. We measure this factor with a dummy variable that takes the value of 1 if the auditor is a big 4 auditor and 0 otherwise.

Based on prior literature on idiosyncratic volatility and earnings management, we consider five control variables. These control variables include

Return on equity (ROE): This is measured as a ratio of profits after tax to total equity.

Leverage (LEV): This is measured as a ratio of total term liabilities to total assets.

Price to book ratio (PBR): This is measured as a ratio of market value of equity to book value of equity.

Size: This is measured by natural log of market capitalization

Age: This is measured by natural log of the number of years since listing on the National Stock Exchange (NSE) of India. Table 2 presents a summary of the variables used in our research.

Table 2. Description of variables

Variable	Description
Idiosyncratic Volatility	Annualized variance of unexplained returns in the market model and alternatively in Fama and French (1992) three factor model
Discretionary Accruals	Estimated using Kothari et al. (2005) model and alternatively using Modified Jones (1995) model and Jones (1991) model
Institutional Shareholding	Proportion of shares held by Institutional shareholders
Big 4 Auditor	Dummy variable that takes the value of 1 if the auditor is a big 4 audit firm, else 0
Percentage of independent directors	Percentage of independent directors in the board
Percentage of board meetings attended by directors	Average percentage of board meetings attended by the directors
Average directorships in other companies	Average number of directorships held in other companies by the directors
Return on Equity	Ratio of profits after tax to total equity
Leverage	Ratio of total term liabilities to total assets
Price to Book ratio	Ratio of market value of equity to book value of equity
Size	Natural log of market capitalization
Age	Natural log of the number of years

4 Results

4.1 Descriptive statistics

Table 3 presents the descriptive statistics. The idiosyncratic variance is essentially the variance of the unexplained returns in the market model, and alternatively, in the Fama-French (1992) three factor model. The average variance under market model is 0.162 and that under the Fama-French (1992) three factor model is 0.148. The variance under the Fama-French (1992) three factor model is less than that in the market model since the Fama-French (1992) three factor model is expected to explain the stock returns better than the market model. Earnings management under three alternative models viz. Kothari et al

(2005), Modified Jones (1995) and Jones (1991), have similar magnitude and distribution. On average the firms in the sample have 22% institutional shareholding. Further, 46 percent firms in the sample are audited by the big four auditors. On average 50 percent directors on the board are independent directors and the directors attend 78.5 percent meetings. Average directorships of the directors in other companies are 5.6.

Table 3. Descriptive statistics

Variable		Mean	Std. Deviation
Idiosyncratic Volatility (Market Model)	IV	.162	.097
Idiosyncratic Volatility (Fama and French (1992) three factor Model)	IV	.148	.086
Discretionary Accruals (Kothari et. al, 2005 Model)	EM	.100	.103
Discretionary Accruals (Modified Jones 1995 Model)	EM	.097	.099
Discretionary Accruals (Jones 1991 Model)	EM	.096	.100
Institutional Shareholding	IS	.220	.133
Big 4 Auditor	AUD	.461	.499
Percentage of independent directors	PID	.496	.150
Percentage of board meetings attended by directors	POBM	.785	.110
Average directorships in other companies	AOCD	5.626	3.048
Return on Equity	ROE	.208	.271
Leverage	LEV	.163	.153
Price to Book ratio	PBR	3.572	4.648
Size	Size	9.895	1.456
Age	Age	2.261	.649

4.2 Econometric results

Table 4 presents the results of our base model that tests the effect of earnings management and of interaction between earnings management and institutional shareholding on idiosyncratic volatility.

Table 4. 2SLS Regression of Idiosyncratic Volatility on Earnings Management and Institutional Shareholding

This table reports estimates of coefficients of 2SLS regression specified by below equations:

$$IV_{it} = \lambda_{IV0} + \lambda_{IV1}DA_{it-1} + \lambda_{IV2}DA_{it-1}*IS_{it-1} + \lambda_{IV3}ROE_{it-1} + \lambda_{IV4}Lev_{it-1} + \lambda_{IV5}PBR_{it-1} + \lambda_{IV6}Size_{it-1} + \lambda_{IV7}Age_{it-1} + \varepsilon_{it}$$

$$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1}IV_{it-1} + \lambda_{EM3}IS_{it-1} + \lambda_{EM4}AudSize_{it-1} + \lambda_{EM5}PID_{it-1} + \lambda_{EM6}PBM_{it-1} + \lambda_{EM7}OCD_{it-1} + \lambda_{EM8}ROE_{it-1} + \lambda_{EM9}Lev_{it-1} + \lambda_{EM10}PBR_{it-1} + \lambda_{EM11}Size_{it-1} + \lambda_{EM12}Age_{it-1} + \varepsilon_{it}$$

Where IV is idiosyncratic volatility measured using market model under specification 1 and using Fama and French (1992) three factor model under specification 2 and DA is discretionary accruals estimated using Kothari et al. (2005) model. The other factors are institutional shareholding (IS), return on equity (ROE), leverage (LEV), price to book ratio (PBR), market capitalization (Size), firm age (Age), dummy for big 4 auditor (AudSize), percentage of independent directors in the board (PID), average percentage of board meetings attended by the directors (PBM), and average number of directorships held in other companies by the directors (OCD). Refer Table 2 for variable definition. Regression includes industry fixed effects. Column 1 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 2 provide heteroskedasticity robust standard errors under specification 1. Column 3 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 4 provide heteroskedasticity robust standard errors under specification 2.

	Specification 1: IV Market Model		Specification 2: IV Fama and French (1992) Three Factor Model	
	Coefficient	H.C.Std. Err.	Coefficient	H.C.Std. Err.
	(1)	(2)	(3)	(4)
Const	-0.201	0.241	-0.212	0.225
	(0.4034)		(0.3453)	
DA (Kothari et al., 2005)	4.353***	1.516	4.008***	1.426
	(0.0041)		(0.0049)	
DA x IS	1.503	0.927	1.425*	0.856
	(0.105)		(0.0959)	
ROE	0.103	0.088	0.095	0.081
	(0.2394)		(0.2447)	
Lev	0.297***	0.09	0.264***	0.084
	(0.001)		(0.0017)	
PBR	-0.018**	0.009	-0.016**	0.008
	(0.0381)		(0.045)	
Size	-0.008	0.009	-0.006	0.009
	(0.3762)		(0.5092)	
Age	0.027	0.029	0.025	0.027
	(0.350)		(0.3631)	
Industry Fixed Effects	Yes		Yes	
Hausman test statistic	253.994***		262.927***	
	(0.0000)		(0.0000)	
Sargan over-identification test statistic	5.665		5.602	
	(0.2256)		(0.2309)	
N	2221		2221	

***denotes significant at 1%; ** at 5%; and * at 10% level

The model has been used under two specifications for robustness. Under Specification 1, idiosyncratic volatility has been computed using the market model, whereas under specification 2 the Fama and French (1992) three-factor model has been used to compute the idiosyncratic volatility. Under both specifications, heteroskedasticity-consistent standard errors have been used to take care of any potential heteroskedasticity issues.

The Hausman test has been used to estimate the consistency and efficiency of 2sls against OLS. The null hypothesis for this test is that OLS estimates are consistent and efficient. The Hausman test statistic is significant at 5 percent level. Therefore, the null hypothesis is rejected in favor of 2sls. Further, the Sargan over-identification test has been used to estimate whether the model is over-identified. The null hypothesis for this test is that all instruments are valid. In other words, the model is not over-identified. The test statistic is not significant at 5% level and therefore the null hypothesis is not rejected. Overall, both the Hausman test and Sargan over-identification test suggest that the model has an appropriate fit.

The results of the model, under both specification 1 and specification 2, provide support for hypothesis 1. We observed that discretionary accruals have a positive and significant effect on idiosyncratic volatility (Under Specification 1: β = 4.353, p-value = 0.0041; Under Specification 2: β=4.008, p-value =0.0049). However, results failed to indicate support at 5% significance level for hypothesis 2, which posited an incremental effect of institutional shareholding on the relationship between earnings management and idiosyncratic volatility. Under specification 1, the coefficient of the interaction term is positive but significant only at 10.5% level. Under specification 2, the coefficient of the interaction term is positive and significant only at 10% level. Therefore, we have only limited support for hypothesis 2 and therefore it is difficult to suggest that institutional shareholding causes an increase in the effect of earnings management on idiosyncratic volatility.

Further, we investigated whether non-strategic institutional shareholding has an incremental effect on the relationship between earnings management and idiosyncratic volatility. For this purpose, we excluded

promoter-institutional shareholding and analyzed the role of non-promoter institutional shareholders. Therefore, we changed the specification of institutional shareholding with non-promoter institutional shareholding. Table 5 presents the results:

Table 5. 2SLS Regression of Idiosyncratic Volatility on Earnings Management and Non- Promoter Institutional Shareholding

This table reports estimates of coefficients of 2SLS regression specified by below equations:

$$IV_{it} = \lambda_{IV0} + \lambda_{IV1}DA_{it-1} + \lambda_{IV2}DA_{it-1}*NPIS_{it-1} + \lambda_{IV3}ROE_{it-1} + \lambda_{IV4}Lev_{it-1} + \lambda_{IV5}PBR_{it-1} + \lambda_{IV6}Size_{it-1} + \lambda_{IV7}Age_{it-1} + \varepsilon_{it}$$

$$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1}IV_{it-1} + \lambda_{EM3}IS_{it-1} + \lambda_{EM4}AudSize_{it-1} + \lambda_{EM5}PID_{it-1} + \lambda_{EM6}PBM_{it-1} + \lambda_{EM7}OCD_{it-1} + \lambda_{EM8}ROE_{it-1} + \lambda_{EM9}Lev_{it-1} + \lambda_{EM10}PBR_{it-1} + \lambda_{EM11}Size_{it-1} + \lambda_{EM12}Age_{it-1} + \varepsilon_{it}$$

Where IV is idiosyncratic volatility measured using market model under specification 1 and using Fama and French (1992) three factor model under specification 2, DA is discretionary accruals estimated using Kothari et al. (2005) model and NPIS is non-promoter institutional sharholding. The other factors are institutional shareholding (IS), return on equity (ROE), leverage (LEV), price to book ratio (PBR), market capitalization (Size), firm age (Age), dummy for big 4 auditor (AudSize), percentage of independent directors in the board (PID), average percentage of board meetings attended by the directors (PBM), and average number of directorships held in other companies by the directors (OCD). Refer Table 2 for variable definition. Regression includes industry fixed effects. Column 1 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 2 provide heteroskedasticity robust standard errors under specification 1. Column 3 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 4 provide heteroskedasticity robust standard errors underspecification 2.

	Specification 1: IV Market Model		Specification 2: IV Fama and French (1992) Three Factor Model	
	Coefficient	H.C.Std. Err.	Coefficient	H.C.Std. Err.
Const	-0.201	0.2424	-0.2117	0.2261
	(0.407)		(0.3491)	
DA (Kothari et al., 2005)	4.3578***	1.5265	4.0119	1.4348
	(0.0043)		(0.0052)	
DA x NPIS	1.7132*	0.9735	1.6244	0.8993
	(0.0784)		(0.0709)	
ROE	0.104	0.0886	0.0954	0.0821
	(0.2403)		(0.2456)	
Lev	0.3018***	0.0913	0.26815	0.0851
	(0.001)		(0.0016)	
PBR	-0.0179**	0.00865	-0.0162	0.0081
	(0.0385)		(0.0454)	
Size	-0.0088	0.00945	-0.0062	0.0088
	(0.3511)		(0.4774)	
Age	0.0271	0.0295	0.0246	0.0276
	(0.3591)		(0.3725)	
Industry Fixed Effects	Yes		Yes	
Hausman test statistic	256.8876		266.7694	
	(0.0000)		(0.0000)	
Sargan over-identification test statistic	5.4774		5.3989	
	(0.2417)		(0.2488)	
N	2221		2221	

***denotes significant at 1%; ** at 5%; and * at 10% level

The results are similar to our base model. The interaction between earnings management and non-promoter institutional shareholding is positive but significant only at 8% significance level as compared to 10% in the base model. Therefore, it is difficult to conclude that the institutional shareholding (whether strategic or non-strategic) enhances the effect of earnings management on idiosyncratic volatility.

4.3 Robustness check

We perform robustness testing of our base model in two ways. First, we estimate discretionary accruals using Modified Jones (1995) model and Jones (1991) model. Second, we use Generalized Method of Moments (GMM) to substantiate the results of our base model.

Table 6 and 7 presents the results where Modified Jones (1991) model and Jones (1991) model respectively have been used to estimate earnings management.

Table 6. 2SLS Regression of Idiosyncratic Volatility on Earnings Management and Institutional Shareholding

This table reports estimates of coefficients of 2SLS regression specified by below equations:

$$IV_{it} = \lambda_{IV0} + \lambda_{IV1}DA_{it-1} + \lambda_{IV2}DA_{it-1}*IS_{it-1} + \lambda_{IV3}ROE_{it-1} + \lambda_{IV4}Lev_{it-1} + \lambda_{IV5}PBR_{it-1} + \lambda_{IV6}Size_{it-1} + \lambda_{IV7}Age_{it-1} + \varepsilon_{it}$$

$$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1}IV_{it-1} + \lambda_{EM3}IS_{it-1} + \lambda_{EM4}AudSize_{it-1} + \lambda_{EM5}PID_{it-1} + \lambda_{EM6}PBM_{it-1} + \lambda_{EM7}OCD_{it-1} + \lambda_{EM8}ROE_{it-1} + \lambda_{EM9}Lev_{it-1} + \lambda_{EM10}PBR_{it-1} + \lambda_{EM11}Size_{it-1} + \lambda_{EM12}Age_{it-1} + \varepsilon_{it}$$

Where IV is idiosyncratic volatility measured using market model under specification 1 and using Fama and French (1992) three factor model under specification 2 and DA is discretionary accruals estimated using Modified Jones (1995) model. The other factors are institutional shareholding (IS), return on equity (ROE), leverage (LEV), price to book ratio (PBR), market capitalization (Size), firm age (Age), dummy for big 4 auditor (AudSize), percentage of independent directors in the board (PID), average percentage of board meetings attended by the directors (PBM), and average number of directorships held in other companies by the directors (OCD). Refer Table 2 for variable definition. Regression includes industry fixed effects. Column 1 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 2 provide heteroskedasticity robust standard errors under specification 1. Column 3 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 4 provide heteroskedasticity robust standard errors under specification 2.

	Specification 1: IV Market Model		Specification 2: IV Fama and French (1992) Three Factor Model	
	Coefficient	HC Std. Err.	Coefficient	HC Std. Err.
Const	-0.206	0.203	-0.210	0.186
	(0.3099)		(0.2574)	
DA (Mod. Jones, 1995)	3.802***	1.068	3.464***	0.98
	(0.0004)		(0.0004)	
DA x IS	1.527*	0.828	1.439	0.755
	(0.0652)		(0.0568)	
ROE	-0.011	0.065	-0.011	0.059
	(0.8633)		(0.8538)	
Lev	0.285***	0.074	0.251***	0.068
	(0.0001)		(0.0002)	
PBR	-0.012**	0.006	-0.01*	0.005
	(0.0444)		(0.0543)	
Size	-0.008	0.008	-0.006	0.007
	(0.3012)		(0.4305)	
Age	0.05191*	0.029	0.047*	0.027
	(0.0747)		(0.0784)	
Industry Fixed Effects	Yes		Yes	
Hausman test statistic	337.747***		350.609	
	(0.0000)		(0.0000)	
Sargan over-identification test statictic	4.708		4.748	
	(0.3186)		(0.3142)	
N	2221		2221	

***denotes significant at 1%; ** at 5%; and * at 10% level

Table 7. 2SLS Regression of Idiosyncratic Volatility on Earnings Management and Institutional Shareholding

This table reports estimates of coefficients of 2SLS regression specified by below equations:

$IV_{it} = \lambda_{IV0} + \lambda_{IV1}DA_{it-1} + \lambda_{IV2}DA_{it-1}*IS_{it-1} + \lambda_{IV3}ROE_{it-1} + \lambda_{IV4}Lev_{it-1} + \lambda_{IV5}PBR_{it-1} + \lambda_{IV6}Size_{it-1} + \lambda_{IV7}Age_{it-1} + \varepsilon_{it}$

$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1}IV_{it-1} + \lambda_{EM3}IS_{it-1} + \lambda_{EM4}AudSize_{it-1} + \lambda_{EM5}PID_{it-1} + \lambda_{EM6}PBM_{it-1} + \lambda_{EM7}OCD_{it-1} + \lambda_{EM8}ROE_{it-1} + \lambda_{EM9}Lev_{it-1} + \lambda_{EM10}PBR_{it-1} + \lambda_{EM11}Size_{it-1} + \lambda_{EM12}Age_{it-1} + \varepsilon_{it}$

Where IV is idiosyncratic volatility measured using market model under specification 1 and using Fama and French (1992) three factor model under specification 2 and DA is discretionary accruals estimated using Jones (1991) model. The other factors are institutional shareholding (IS), return on equity (ROE), leverage (LEV), price to book ratio (PBR), market capitalization (Size), firm age (Age), dummy for big 4 auditor (AudSize), percentage of independent directors in the board (PID), average percentage of board meetings attended by the directors (PBM), and average number of directorships held in other companies by the directors (OCD). Refer Table 2 for variable definition. Regression includes industry fixed effects. Column 1 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 2 provide heteroskedasticity robust standard errors under specification 1. Column 3 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 4 provide heteroskedasticity robust standard errors under specification 2.

	Specification 1: IV Market Model		Specification 2: IV Fama and French (1992) Three Factor Model	
	Coefficient	HC Std. Err.	Coefficient	HC Std. Err.
Const	-0.246	0.234	-0.249	0.217
	(0.2936)		(0.2522)	
DA (Jones, 1991)	4.679***	1.469	4.277***	1.358
	(0.0015)		(0.0016)	
DA x IS	2.155**	1.083	2.019**	0.99
	(0.0466)		(0.0414)	
ROE	-0.084	0.141	-0.077	0.128
	(0.5528)		(0.5474)	
Lev	0.334***	0.102	0.296***	0.094
	(0.0011)		(0.0017)	
PBR	-0.013	0.008	-0.011	0.007
	(0.1076)		(0.1245)	
Size	-0.009	0.01	-0.007	0.009
	(0.3176)		(0.4288)	
Age	0.055	0.033	0.05	0.031
	(0.0992)		(0.1037)	
Industry Fixed Effects	Yes		Yes	
Hausman test statistic	387.623		402.215	
	(0.0000)		(0.0000)	
Sargan over-identification test statictic	1.996		2.018	
	(0.7364)		(0.7324)	
N	2221		2221	

***denotes significant at 1%; ** at 5%; and * at 10% level

The results are similar as that of the base model. Earnings management has a positive and significant (at <1% significance level) relationship with idiosyncratic volatility. The relationship between idiosyncratic volatility and interaction of earnings management with institutional shareholding remains positive but insignificant except when we use Jones (1991) model for estimating earnings management, in which case it becomes significant at 5% level. This provides limited evidence on the incremental effect of institutional shareholding on the relationship between earnings management and idiosyncratic volatility. Hausman's test statistic remains significant and Sargan's over-identification test statistic remains insignificant. For robustness purposes, we also test our base model using GMM. Table 8 provides the results of GMM

Table 8. GMM Estimation of Idiosyncratic Volatility on Earnings Management and Institutional Shareholding

This table reports estimates of coefficients of GMM estimation specified by below equations:

$$IV_{it} = \lambda_{IV0} + \lambda_{IV1}DA_{it-1} + \lambda_{IV2}DA_{it-1}*IS_{it-1} + \lambda_{IV3}ROE_{it-1} + \lambda_{IV4}Lev_{it-1} + \lambda_{IV5}PBR_{it-1} + \lambda_{IV6}Size_{it-1} + \lambda_{IV7}Age_{it-1} + \varepsilon_{it}$$

$$DA_{it-1} = \lambda_{EM0} + \lambda_{EM1}IV_{it-1} + \lambda_{EM3}IS_{it-1} + \lambda_{EM4}AudSize_{it-1} + \lambda_{EM5}PID_{it-1} + \lambda_{EM6}PBM_{it-1} + \lambda_{EM7}OCD_{it-1} + \lambda_{EM8}ROE_{it-1} + \lambda_{EM9}Lev_{it-1} + \lambda_{EM10}PBR_{it-1} + \lambda_{EM11}Size_{it-1} + \lambda_{EM12}Age_{it-1} + \varepsilon_{it}$$

Where IV is idiosyncratic volatility measured using market model under specification 1 and using Fama and French (1992) three factor model under specification 2 and DA is discretionary accruals estimated using Kothari et al. (2005) model. The other factors are institutional shareholding (IS), return on equity (ROE), leverage (LEV), price to book ratio (PBR), market capitalization (Size), firm age (Age), dummy for big 4 auditor (AudSize), percentage of independent directors in the board (PID), average percentage of board meetings attended by the directors (PBM), and average number of directorships held in other companies by the directors (OCD). Refer Table 2 for variable definition. Regression includes industry fixed effects. Column 1 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 2 provide standard errors under specification 1. Column 3 provides coefficients and the p-value in parentheses corresponding to the Student t statistic and column 4 provide standard errors under specification 2.

	Specification 1: IV Market Model		Specification 2: IV Fama and French (1992)Three Factor Model	
	Coefficient	Std. Err.	Coefficient	Std. Err.
const	-0.2003	0.2391	-0.2094	0.222
	(0.4022)		(0.3456)	
DA (Kothari et al.,2005)	4.4279***	1.5063	4.0574***	1.41
	(0.0033)		(0.004)	
DA x IS	1.3091	0.9141	1.263	0.8409
	(0.1521)		(0.1331)	
ROE	0.1323	0.0838	0.1201	0.0774
	(0.1145)		(0.1207)	
Lev	0.2750***	0.0889	0.2424***	0.0824
	(0.0020)		(0.0033)	
PBR	-0.0194**	0.0083	-0.0174**	0.0077
	(0.0192)		(0.0239)	
Size	-0.0075	0.0092	-0.0053	0.0085
	(0.4187)		(0.5379)	
Age	0.0265	0.0292	0.0235	0.0271
	(0.3625)		(0.3868)	
Industry Fixed Effects	Yes		Yes	
GMM criterion [Q(b)]	0.0024		0.0024	
J Test	5.36626		5.38	
	(0.2517)		(0.2505)	
N	2221		2221	

***denotes significant at 1%; ** at 5%; and * at 10% level

Results under GMM are consistent with the results of the base model under 2SLS. The relationship between earnings management and idiosyncratic volatility remains positive and significant. However, relationship between idiosyncratic volatility and interaction of earnings management with institutional shareholding is positive but insignificant.

5 Conclusion

Recent work in finance literature has attempted to study the sources of idiosyncratic volatility. In this paper, we investigate whether accrual based earnings management is associated with higher idiosyncratic return volatility. We use three measures for accrual based earnings management viz. performance matched discretionary accruals model (Kothari et al., 2005), Modified Jones (1995) model and Jones (1991) model and two measures of idiosyncratic volatility using market model and Fama and French (1992) three-factor model. We also investigate whether institutional shareholding increases the effect of earnings management on idiosyncratic volatility. We use a sample of 2221 Indian firm -years from the firms listed on National Stock Exchange (NSE) and

part of S&P CNX 500 Index. We use 2SLS regression to actively control for endogenity concerns.

Based on our analysis on Indian Companies' data, we find that idiosyncratic volatility is positively related with accrual based earnings management. These results are consistent with Rajgopal and Venkatachalam (2011) and Cheng et al. (2012). The results suggest that stock returns of a firm that aggressively manages the earnings contain higher firm specific shocks than others.

Our results, however, do not suggest that institutional shareholding significantly affect the association between earnings management and idiosyncratic volatility. The results are similar even if we consider ownership of non-promoter institutional shareholders. These results imply that irrespective of the level of institutional shareholding in a firm, the effect of earnings management on idiosyncratic volatility remains same.

Our study makes following contributions to the existing literature. Firstly, understanding that discretionary accruals have positive and significant association with idiosyncratic volatility can help investors identifying better diversification strategies. In order to reduce volatility of the portfolio, investors may diversify their portfolios by investing in firms with lower discretionary accruals. Secondly, managers may be able to reduce the cost of capital of firms by reducing idiosyncratic volatility by increasing the transparency in financial reporting. Finally, ours is the first study in Indian context that empirically test the association between idiosyncratic volatility and earnings management. If the practices of earnings management are widespread due to weak legal enforcement system as argued by Jian and Wong (2003) and Leuz et al. (2003), then the results of our study are important for policy makers in India to improve the legal enforcement.

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THE IMPORTANCE OF RECORD KEEPING TO THE GROWTH OF SMALL AND MEDIUM SCALE ENTERPRISES (SMES) IN ZIMBABWE

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Abstract

This study sought to investigate the influence quality financial reporting systems have on the performance of small and medium enterprises. Descriptive survey design was employed. The sample size was 100 SMEs, selected using stratified random sampling. Data were collected using a questionnaire and an observation list. Data collected using questionnaire were analyzed using Statistical Package for the Social Scientists (SPSS). The study found an absence of formal accounting systems in many firms due to lack of financial and accounting knowledge among the owner-managers. It is recommended that financial institutions and policy makers need to focus on educating such owner-managers with necessary accounting and financial management skills.

Keywords: Record Keeping, Growth, Small Scale Enterprises, Medium Scale Enterprises, Zimbabwe

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1 Background

In Zimbabwe, small and medium scale enterprises (SMEs) are described as registered companies with a maximum of 100 employees and an annual turnover in sales of a maximum of 830, 000 U.S. dollars (Maseko and Manyani, 2011). Ndoro (2012) has it that in Zimbabwe, SMEs contribute approximately 90% of the economic growth. An authentic study of the number of the SMES in Zimbabwe was conducted in 1994 by GEMINE and the number of small businesses amounted to 942 000 (USAID, 1994). By 1998 there was an estimated number of 10 000 registered SMEs in Zimbabwe, controlling 65 percent of the total corporate purchasing power (Machipisa, 1998). Most of the SMEs were unregistered mainly due to their reluctance to formalize operations to evade paying tax (Dewar, 2005). Thereafter, Zimbabwe had an unmonitored rise of small to medium entities in the economy until 2009 according to Mudariki (2013). Mangudya (2013) reports that there has not been up- to- date information on SMEs since a national survey on SMEs undertaken in 2009. The 2009 national survey concluded that it was difficult to come up with correct data as most of the small enterprises were rising and dying quickly because of hardships in the economic environment (Simpson et al, 2010)

McMahon & Davies (1994) postulate that improved financial reporting is part of a broader competence in business management which, taken together with other factors, is likely to lead to effective and efficient management of the business. In the same vein, Hutchinson and Ray (1986) concluded that financial reporting systems and practices appear to change as a result of experiencing rapid growth. This conclusion means that financial reporting systems are not a contributor of growth but a result of growth. Cooke and Wallace (1990), as cited in Zeghal and Mhedhbi (2006) assert that accounting systems have a small impact on the growth of the firm because there are other factors external to the entity. In addition to the above assertions, Fathun (2012) postulates that such factors could include the country's economic growth and the level of wealth, the level of inflation, the education level, the legal system, the country's history, and geographical location. Though accounting systems may differ, any reporting system should be there to monitor the financial position and performance of an entity McMahon (1994). This means timely and relevant financial statements have to be prepared.

In Zimbabwe, Maseko and Manyani (2011) have concluded that accounting systems and performance are closely related .In Ghana, Mugerwa (2011) concluded that accounting recording systems affect performance. In Kenya, Kengere et al (2010) also concluded that performance is closely related to effectiveness of the accounting system being used by a small entity. In Thailand poor record keeping and inefficient use of accounting information are a major cause of the failure of small entities according to Berryman 1982 (Berryman 1982 quoted in Siop 1997). The researcher took an interest to investigate if there was any strong association between quality financial reporting system and performance of SMEs in Gweru, Zimbabwe. The study attempted to extend prior researches which were made with a similar

objective, especially that of Mairura (2011) from Nigeria and of Maseko and Manyani (2011) from Zimbabwe. The researcher focused on the extent to which quality financial reporting practices improve performance of SMEs. In this study, quality financial reporting systems were measured using the following variables which are; availability of source documents and books of accounts, the availability of a historical balance sheet (Statement of financial position) for 2012 and two comparative years, the availability of a historical profit and loss statement (Statement of Comprehensive Income) for 2012 and two comparative years, the availability of a historical statement of cash flow for 2012 and two comparative years, the uses of the statements compiled (analysis and evaluation) , availability of budgets and the kind of budgets available.

Financial performance was measured using the following variables which are; the movement of annual sales turnover from the year 2010-2012 , the movement of profit figures from the year 2010-2012 , the movement of liquidity ratios from 2010-2012, and the movement of return on equity. Non-financial performance was measured by the number of defects returned, number of customer complains, rate of staff turnover ,awards for innovation and inventions, and the ability to improve the market share

This study was motivated by the fact that although prior researches have been conducted to find the impact of different factors upon performance of SMEs, very few studies have singled out and measured the strength of the relationship that exists between financial reporting systems of SMEs and performance. The research findings from this study are expected to provide knowledge to owners of SMEs so as to improve their performance. It can also be used by academicians, researchers and management consultants as a source of knowledge and reference.

It can also be used to investigate the extent to which accounting information is being used in measuring financial performance by SMEs and to assess the need for specific regulation of accounting and financial reporting practices of SMEs in Zimbabwe.

The target population for this study was 384 SMEs of which a sample of 100 SMEs owners or managers were chosen to participate in the study. Pearson correlation coefficient and simple linear regression were used to analyze quantitative data. Pearson correlation coefficient was used to determine the degree of association between proper bookkeeping practice and financial performance. The analyzed data was presented using statistical tables

2 Definition of small and medium scale enterprises

In the whole universe, researchers have not been able to come up with one definition of Small and Medium enterprises (SMEs) because different countries view these entities in different ways and dimensions (Maseko and Manyani, 2012). Some countries just use the number of employees as the sole criteria for determining whether a business is an SME or not. Other countries use this same criterion, plus an additional criterion based on either the value of the firm's assets or the size of revenues, typically denominated in the local currency (Beck et al., 2005; Zindiye et al. 2008). In Uganda a "Small Enterprise" is an enterprise employing a maximum of 50 people, with annual turnover of a maximum Ugandan Shillings 360 million and total assets of maximum Ugandan Shillings 360 million (Margaret, 2005). A Medium Enterprise is defined as an enterprise employing more than 50 people; annual sales/revenue turnover of more than Ugandan Shillings. Small and medium enterprises (SMEs) in Thailand are defined as firms with 15 to 200 employees and 30 to 200 million Baht in fixed assets (Margaret, 2005)

In Kenya a small business is any business that is independently owned and operated and is not dominant in its field of operation (Kuehl, 1990). In the Kenya development plan, GOK (1989-93, 92) a small business is described as a company with less than 50 employees and an annual turnover of up to five million shillings. It goes further to state that these small scale businesses are characterized by:-ease of entry and exit, low capital requirement for establishment, dependence on local resources and recycled wastes, family ownership, labour-intensive production technologies, low cost skill acquisition mainly outside formal schooling and ability to operate under highly competitive market conditions (Mairura, 2010). IASB, in their 2009 publication of IFRS for SMEs describe the SMEs as those entities which are not publicly accountable and thus publish financial statements with general purpose for its external users. SMEs cut across several sectors and activities, ranging from the single artisan producing farming implements for the village market, the coffee shop at the corner, the internet cafe in a small town to a manufacturer. In Zimbabwe illegal small miners have been invited to licence their operations and in no soon than later mining will be flooded with small enterprises

3 Research design

To achieve the objective of the study, the researcher used descriptive research design which was considered to be the most appropriate. Descriptive research according to Fowler (1993) is a means of gathering information, usually through self-report using questionnaires or interviews. Its purpose is to generalize from a sample to a population so that inferences can be made and it is also economical (Creswell, 2003). This study employed a self-administered questionnaire which was distributed to finance officers, secretaries , accountants and or

managers or owner- managers Descriptive research approach focuses primarily on the construction of quantitative data, and quantitative data is a systematic record that consists of numbers constructed by researcher utilizing the process of measurement and imposing structure (Kent, 2007). The quantitative research approach employ measurement that can be quantifiable while qualitative cannot be measured (Bryman & Bell, 2007).

Taylor (2000:80) defines research designs as "constructed plans and strategies developed to seek, explore and discover answers to research questions". Denzin and Lincoln (2005:14) suggest a similar definition, which they describe as "a flexible set of guidelines that connect theoretical paradigms to strategies of inquiry and methods for collecting empirical materials." Research design, it can be argued, is the manner in which the entire process is planned and managed until its final stage of report writing (Bowling, 2007). It is an arrangement of procedures and methods of research project that includes sampling, data collection and analysis and interpretation of the results. In conclusion, it could be argued therefore, that a research design provides guidelines and structure to the research process in order to prevent haphazard procedures.

3.1 Sample selection

According to Cohen et al. (2005), covering the entire SMEs around Zimbabwe in the study makes the study difficult. Both stratified and simple random sampling techniques were used for the study. Stratified sampling was appropriate since it ensured that the 4 sub-groups of SMEs are proportionally represented and that the difference in the sub-group characteristics is accounted for. It is a technique that identified sub groups in the population and their proportion and selected from each sub group to form a sample. This technique was used to ensure that the target population is divided into different homogenous strata and each stratum is represented in the sample in a proportion equivalent to its size in the population. Simple random sampling was used to ensure that each member of the target population has an equal chance of being included in the sample. Therefore, the researcher decided to draw 100 respondents of the whole population for investigation.

3.2 Data collection instruments

Data was collected from both primary and secondary sources:

Primary data was collected from respondents through issue of questionnaires. Some of the respondents who were able to interpret and follow the questions in the questionnaires were guided by the researcher to fill in the information they required. The questionnaire contained open ended, closed ended and likert scale questions.

3.2.1 Presentation

Data entered into excel was presented by the use of frequency tables. Data analyzed by statistical packages for social scientists was presented in form of Pearson correlation coefficient table which shows the strength of the relationship between accounting record keeping and performance of small scale business units. Graphs were also included

3.2.2 Age range of respondents

The study captured different employment positions ranging from if one is the owner of the business, the manager or the employee. The distribution was as in the table below.

Table 7. Position of employment of respondents (n=100)

Position of Employment	Frequency	Valid percent	Cumulative percent
Owner	62	62	62
Manager	22	22	84
Employee	16	16	100
Total	100	100	

Source: primary data for question 1

From table 1, 62% of the respondents were the owners of the business, with 22% being managers and 16% as employees. This implies that most of the respondents were much involved in the running of the business, since the majority of the SMEs are operated by owners; this implies the majority of the respondents were eligible enough to answer questions in the questionnaire.

3.2.3 Level of education

The researcher was interested in the level of education to find out the skills, expertise. The responses were shown as in table 2. From table 2, 48% of the respondents were certificate holders, 32% were diploma holders, 18% were degree holders and 2% had a Masters degree. This implies that the respondents had the capacity to answer the questions in the questionnaire though a higher percentage was at a lower level of qualification.

Table 2. Level of education (N=100)

Response	Frequency	Valid percent	Cumulative percent
Certificate	48	48	48
Diploma	32	32	80
Degree	18	18	98
Masters	2	2	2
Total	100	100	

Source: primary data for question 2

3.2.4 Number of people employed in business

Findings on the number of people employed by the SMEs were considered and the information is presented in table 3. From table 3, 67% of the respondents employed between 1-5 people, 22% employed between 6 - 20 people, 8% employed between 21 - 50 people and 3% employed between 50 and 100. The sample distribution of companies by size is positively skewed: 67% has up to 5 employees, while only 3% employed above 50 employees .The sample firms size were grouped into different sizes, very small (VS) for1-5 employees, small (S) 6-20 employee, medium for 21-50 and large for 51-100 employees for easy analysis

Table 3. Number of people employed in business (N=100)

Responses	Frequency	Valid percent	Cumulative percent
1-5 people	67	67	67
6 -20 people	22	22	89
21 - 50 people	8	8	97
50 - 100	3	3	100
Total	100	100	

Source: primary data for question 3

3.2.5 Period spent by respondents in business

The time period respondents had spent in business were considered and findings are recorded in table 4 below. From table 4, 50 % of the respondents had spent 1-3 years in business, 32 % had spent 3-5 years, 13 % had spent 5-10 years and 5 % had spent 10 years and more. The age profile of the respondents reveals that only 5% of the firms are over 10 years, and may be considered as matured firms. It is to be noted that some 82% of the firms are in existence only for up to 5 years and they employ relatively few employees. This implies that small businesses are failing to survive.

Table 4.Period spent by respondents in business (N=100)

Response	Frequency	Valid percent	Cumulative percent
1-3 years	50	50	50
3-5 years	32	32	82
5-10 years	13	13	95
10 years and above	5	5	100
Total	100	100	

Source: primary data for question 4

3.2.6 Nature of business engaged in

The nature of business which the respondents engage in was considered and the findings are recorded in table 5. From table 5, 70 % of the respondents were operating trading businesses, 20 % of the respondents were operating manufacturing shops and 10 % were operating services business. This implies that most of the respondents were operating retail shops (involved in the buying and selling of goods).

Table 5. Types of businesses (N=100)

Response	Frequency	Valid percent	Cumulative percent
Trading	70	70	70
Manufacturing	20	20	90
Services	10	10	10
Total	100	100	

Source: primary data for question 5

3.2.7 Aim of business establishment

The aim of the business establishment was considered and the findings are recorded in table 6 below. From table 6, 46 % of the respondents are in business to make a living, whilst 40 % are in business as a form of self-employment and 14 % are in business for wealth creation. This indicates that SMEs are playing a great role as far as reducing the level of unemployment which is at very high levels in the formal sector in Zimbabwe. It also means that small businesses do not set targets for higher profits because very few wish to be wealthy.

Table 6. Main aim of establishing the Business (N=100)

Response	Frequency	Valid percent	Cumulative percent
Making a living	46	46	46
Self-employment	40	40	86
Becoming wealth	14	14	100
Total	100	100	

Findings on accounting record keeping, use of accounting ratios and proper use of accounting books

Businesses record financial transactions in either a counter book, writes invoices for credit transactions, keeps stock cards

A consideration was made to establish if the SMEs record financial transactions and the findings are recorded in table 7 below. From table 7, 35 % of the respondents strongly agree that they use the records listed above, 20 % agree, 33 % disagree, and 12 % strongly disagree. This indicates that about 55 % of the businesses considered keeping some form of a record of their transactions. This is important as it is supported by the available empirical studies such as Hughes (2003). It also implies that most businesses are aware that record keeping is essential

Table 7. Businesses record financial transactions (N=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	35	35	35
Agree	20	20	55
Not sure	0	0	55
Disagree	33	33	88
Strongly disagree	12	12	100
Total	100	100	

Source: primary data for question 7

Findings on whether business transactions are recorded using appropriate financial records and accounting statements such as ledger, income statements, balance sheet, cash flow statement, bank reconciliation statement

From table 8, it is evident that 25 % of the respondents keep proper or quality financial records in their business, 20 % agree, 40 % disagree whilst 5 % strongly disagree. The findings from this table implies that SMEs do not keep all accounting records, especially Income Statement, Cash flow statement and the bank reconciliation statement. Such statements are important as they assist the owner or manager to make informed decisions

Table 8. Financial Statements are recorded in appropriate financial records (N=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	25	25	25
Agree	20	20	45
Not sure	0	0	45
Disagree	45	45	95
Strongly disagree	10	5	100
Total	100	100	

Source: primary data for question 8

Smes who compute and use accounting ratios in decision making

The researcher considered also if SMEs calculate accounting ratios and uses them in decision making. The findings are recorded in table 9. The findings in table 9 indicates that the majority of SMEs do not use financial ratios in decision making. Specifically, 39 % agree to using financial ratios against 61 % which do not support the use of accounting ratios. This again has implications for the success of the business. Ratios are effective signals of the situations which the business is facing or is likely to face in the future**.**

Table 9. SMEs calculate Accounting Ratios (n=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	9	9	19
Agree	30	30	39
Not sure	0	0	39
Disagree	40	40	79
Strongly disagree	21	21	100
Total	100	100	

Source: primary question for question 9

Smes who use single entry system

A consideration was made to establish if SMEs use single entry system in recording their transactions. The findings are recorded in table 10 below. The results in table 10 indicate that the majority of SMEs do not use single entry system, rather they use the double entry system. However the percentage which does use single entry as much as it is less as compared to those who use the double entry system is worrying (40%). This makes it difficult in tracing the source as well as the effect of the transactions, hence impacting on the operation of the business.

Table 10. SMEs use single entry system (N=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	10	10	10
Agree	30	30	40
Not sure	0	0	40
Disagree	45	45	85
Strongly disagree	15	15	100
Total	100	100	

Source: primary data for question 10

Smes owners do all the accounting records

The researcher was interested in finding out who is responsible for record keeping in the business and the findings can be evidenced in the table below The findings in table 11 indicate that about 70 % of the owners of SMEs do record all the accounting transactions and keep records. This is inconsonance with Maeset (2004) who argues that SME owners do much of the work relating to financial matters due to not having enough money to hire experts to manage records on their behalf. This again may have implications for the business considering that most of them have to many roles and tasks.

Table 11. Business owners and shop keepers are responsible for record keeping (n=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	20	20	20
Agree	50	50	70
Not sure	0	0	70
Disagree	20	20	90
Strongly disagree	10	10	100
Total	100	100	

Source: primary data for question 10

Accounting records are essential for decision making

The researcher was interested in finding out the extent to which accounting information is essential for decision making. The results are recorded in table 12 below. The findings in table 12 indicate that about 5 % of the respondents strongly rely on accounting information for decision making. 36 % agree, 10 % not sure, 44 % disagree, with 4 % strongly disagreeing. This indicates that most SMEs do not consider accounting information as a useful tool in decision making as reiterated by Padach (2012) that SMEs do not seem to attach the same importance to accounting and finance function as for the other areas of their businesses. This can be perculiar to the Zimbabwean case taking note of the issues of ill - liquidity, challenges in accessing capital amongst others which can guide decision making. According to a study by Tanwongsval and Pinvanichkul (2008), SMEs ranked 'assessing profitability' for decision making second on the list of reasons for preparing financial statements well after 'sole purpose of tax preparation' which was ranked first.

Table 82. Accounting Records are essential for decision making (N-100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	5	5	5
Agree	36	36	41
Not sure	10	10	51
Disagree	44	44	96
Strongly disagree	4	4	100
Total	100	100	

Source: primary data for question 10

Business involves reliance on mental and verbal information

The researcher was interested in finding out whether SMEs rely on mental and verbal information in their business and the findings are recorded in table 13. The findings in table 13 indicate that about 11 % of the respondents strongly agree to relying on mental and verbal information. 26 % agree, whilst 43 % disagree and 20 % strongly disagree. This result is consistent with a study by Mugerwa (2011).

Table 93. Accounting Records are essential for decision making (N=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	11	11	11
Agree	26	26	37
Not sure	0	0	37
Disagree	43	43	80
Strongly disagree	20	20	100
Total	100	100	

Source: primary data for question 10

Smes rely on outside accounting firms to mantain business records

The researcher was interested in finding out whether small scale businesses rely on outside accounting firm to maintain business records and the findings were as shown below in the table

Table 104. Businesses rely on outside accounting firms to maintain business records (n=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	0	0	0
Agree	0	0	0
Not sure	20	20	20
Disagree	48	48	68
Strongly disagree	32	32	100
Total	100	100	

Source: primary data for question 10

Normally it is expected that the presence of outside parties would enhance the formality of processes for assessing financial decisions and the greater would be the chances that more advanced financial practices will result. The findings in table 14 indicate that the majority of the SMEs sampled do not utilize outside accounting firms in maintaining records. Unlike the case of companies in which there is separation of ownership and control of the firms, SME owners manage their businesses and they do not see any need to engage external accounting firms to maintain their records. This is also attributed to the simplicity of the transactions of SMEs. However, this can at times have consequences for the success of the firm when proper accounting methods are not applied and there is no one to check. This finding is consistent with Maalu (1990) and Mugerwa (2011).

Smes measure their businesses relative to other businesses in the same line

The researcher was interested to find out if SMEs compare their businesses to other firms which are in the same line with them. The findings are recorded in table 15

Table 15. Small scale businesses measure performance of their businesses (n=100)

Response	Frequency	Valid percent	Cumulative percentage
Strongly agree	10	10	10
Agree	20	20	30
Not sure	0	0	30
Disagree	50	50	80
Strongly disagree	20	20	100
Total	100	100	

Source: primary data for question 10

The findings in table 15 indicate that the majority of SMEs do not compare themselves with other firms which are in the same line of business. About 50 % disagree with 20 % strongly disagreeing. This therefore suggest that SMEs base their decisions on other factors apart from what can be regarded as a bench mark in which they compare themselves against and see if there is need for improvement.

Business has a record of satisfying staff

The researcher was interested in finding out whether employees are satisfied in working at the SMEs which they are attached to, and the results are reported in table 16 below.

Table 16. Workers provide a strongest linkage to successful business performance (N=100)

Response	Frequency	Valid percent	Cumulative percent
Strongly agree	31	31	31
Agree	42	42	73
Not sure	8	8	81
Disagree	9	9	90
Strongly disagree	10	10	100
Total	100	100	

Source: primary data for question 10

The findings in table 16 indicates that 31 % of the respondents strongly agree that employees are a valuable asset with 42 % agreeing, 8 % not sure, 9 % disagreeing and 10 % strongly disagreeing. This finding is important as employees are a tool which the business can use to accomplish its objectives. With a strong and dedicated workforce there are high chances of the business prospering as compared to a firm in which employees are disgruntled.

Reasons for not keeping Accounting records

The researcher also was interested in finding the reasons why at times businesses do not keep records and the findings are recorded in table 17 below.

Table 17. Reasons for not keeping Accounting records (n=100)

Response	Frequency	Valid percent	Cumulative percent
No Accounting Staff	36	36	36
Accounting staff Costly	34	34	70
Business too small	10	10	80
Evade paying taxes	0	0	80
Formal Account complex	16	16	96
Accounting records do not add value	4	4	100
Total	100	100	

Source: primary data for question 10

The findings in table 17 indicate that 36 % of the staff do not keep books of accounting because they do not have staff, 34 % they regard it as costly, 10 % they do not see it as important as the business is small, 16 % regard formal accounts as too complex, whilst 4 % regard accounting records as not important at all. This indicates that there is need to equip entreprenures with accounting knowledge and skills. As much as they may have good ideas, there is need to engage in practices which promote the success of the business.

Comparison of performance of SMEs that keep quality records and SMEs that do not keep proper books of accounts

The researcher tried to compare the performance of SMEs which keep proper books of accounts against those which do not.

However, the data collected indicated that 40% of SMEs do not use double entry system and of these, 100% of SMEs that employ 1-5 employees do not keep all books of accounts. Some keep a list of credit customers in counter books. The data of these firms indicated that 94% of the firms have an average turnover ratio that is less than 31 – 40%, with an average profit percentages in the range 0-10 % and liquidity ratios which are also between 0-10%'.

Table 18. Financial performance of those who keep incomplete records - (40% of respondents)

Turnover %	0-10%	11-20%	21-40%	Above 40%	Total percentages
2012	57	32	9	2	100
2011	53	42	4	1	100
2010	46	39	13	2	100
Profit%					
2012	59	23	15	3	100
2011	67	26	7	1	100
2010	61	31	8	0	100
ROE					
2012	74	18	8	0	100
2011	65	22	13	0	100
2010	69	17	14	0	100
CURRENT RATIO					
2012	57	38	5	0	100
2011	58	45	1	0	100
2010	63	37	0	0	100

Source: Primary data for question

Table 19. Financial performance –those who keep formal accounts (60% of respondents)

Turnover%	0-10%	11-20%	21-40%	Above 40%	
2012	7	56	25	12	100
2011	16	43	30	11	100
2010	19	47	26	8	100
Profit%					
2012	14	48	32	6	100
2011	17	51	25	7	100
2010	35	44	19	2	100
ROE					
2012	8	47	34	9	100
2011	20	53	26	11	100
2010	18	48	31	3	100
CURRENT RATIO					
2012	7	33	51	12	100
2011	16	40	36	8	100
2010	12	35	48	5	100

Other reasons why SMEs fail

The researcher was interested in finding out if there are other reasons why SMEs fail, the findings are reported in table 20 below: The findings in table 21indicate that the major reasons why SMEs fail is innovation and lack of proper records, followed by lack of support from the government which represents 27 %. Other reasons mentioned by respondents include lack of skills and poor management. Wang (2003) concludes that quality records are essential for the preparation of current financial statements, such as statement of comprehensive income, statement of financial position and cash flow statement, these statements in turn are crucial in maintaining good relationship with Banks and other financial institutions. In case the business enterprise is in need of financial support, such statements will be used for assessment because they present a complete picture of the business .

Table 20. Reasons why SMEs fail (N=100)

Response	Frequency	Valid percent	Cumulative percent
Lacks innovation and creativity	30	30	30
No proper books of Accounts	27	27	57
No support from the government	25	25	70
Economic conditions	10	10	80
Owners use stock and money for personal use	15	15	95
Do not disclose profits to evade tax	5	5	100
Total	100	100	

Source: primary data for question 11

4 Conclusion

The chapter has focused on presentation and interpretation of results on establishing the association between performance of SMEs and quality record keeping. The conclusion from the results indicates that the majority of small scale firms in Zimbabwe do not keep quality accounting records and that affects their survival. However it was also discovered that keeping accounting records is not the sole reason why these firms fail. According to the correlation analysis results of 0.652 quality record keeping has a positive relationship with performance. Thus keeping quality accounting records that can be evaluated improves performance. It also emerged that combining record keeping with good business practices will guarantee the success of the business considering other factors such as customer relations, employee satisfaction, and innovation.

5 Recomendations

5.1 Recommendation on accounting record keeping.

- Small scale business units need to ensure complete and accurate business records are kept because they are essential for decision making.
- This can be ensured by undertaking short course training about record keeping and hiring workers with knowledge and skills about accounting record keeping.

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BRAND VISION AS THE MODERATOR VARIABLE FOR THE COMPANY CULTURE AND BRAND PERCEPTION

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Abstract

The first purpose of this research is to test empirically the culture influence on brand perception and the second is to test empirically the moderator impact of brand vision toward brand perception culture. The research method used to test the first purpose was Partial Regression and the second purpose with Moderated Regression Analysis. The used sample was as many as 226 manufacture company registered in Biro Pusat Statistik in 2010. This research purpose shows that the company cultures those are hierarchy culture, group culture, rational culture, and developmental culture influence positively and significantly brand perception. Meanwhile this research result also shows that the variable moderation of brand vision influences strongly the company culture on brand perception.

Keywords: Company Culture, Hierarchical Culture, Group Culture, Rational Culture, Developmental Culture, Brand Vision, Brand Perception

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1 Introduction

Indonesia is a nation that consists of thousands of ethnic groups. These ethnic groups of course influence the ways and behaviors of the individuals of Indonesian society very much. Meanwhile, a business or company of course consists of people or individuals who are called employees. Employees come from the various ethnic groups, so they have different cultures; so finally the different brand perception will also be created (Foscht et al,2008). Every individual or employee in a company must have different background; this difference will create variety in the behavioral culture in that company. Of course this behavior will occur the company culture. This culture becomes very important in forming the business characters, in which include the culture creation as the company management hierarchy; but this culture characters' formation becomes problem because of many employees with different ethnic groups (such as sunda, jawa, Madura, bali, padang, batak ethnic groups, etc.). On the other hand, those differences can be the special quality to compete of the company to create the unique and different characters from the other companies. One of them is the unique brand perception; the company can create the goods and services' brands that are different from others. Of course this principle becomes stronger if the company's brand vision is also inserted in that company's culture. As what we know, the brand vision has an important role in creating and strengthening the brand perception of the company's products (Hatch, 2003).

Based on the above background, the problem formulation proposed in this research can be concluded as follows:

a. Does Culture influence Brand Perception?

b. Does the moderation variable of Brand Vision strengthen the culture influence on Brand Perception?

2 Literature review

2.1 Previous theory

The Research Result Review shows that there is inconsistency between Culture and Brand Perception in the research result. That condition is obviously showed in table 1 Inconsistency of Research Result about Culture on Brand Perception.

The research results that state culture influences Brand Perception are the research results of Foscht *et al*. (2008); Lim and Aron (2001); Stéphane (2005); Meulenbroek *et al*. (2010); Scaramanga (2012); Hamann (2007); Yasin *et al*. (2007).

Meanwhile the research results that state culture does not influence Brand Perception are the research results of Srivastava (2011); Chernatony and Susan (2008).

Even there is statement that culture influences negatively Brand Perception by Arslan and Oylum (2010); Built *et al*. (2009).

Table 1. Inconsistency Results of Research: Culture on Brand Perception

Conclusion	Researcher
Effect	Foscht *et al*. (2008); Lim and Aron (2001); Stéphane (2005); Meulenbroek *et al*. (2010); Scaramanga (2012); Hamann (2007); Yasin *et al* (2007).
No Effect	Srivastava (2011); Chernatony and Susan (2008).
Negative Effect	Arslan and Oylum (2010); Built *et al*. (2009).

The inconsistency problem is showed in table 1 that states there is still a chance to do this research to strengthen the culture theory on Brand Perception.

The culture review on Brand Perception is caused by the inconsistency of the former research in which the researchers also have studied how far the review can strenghten theory by applying attribute to the variable indicator both for mediation and moderation, such as in table 2 as follows:

Table 2. Mediation and Moderation on Culture and Brand Perception

Researcher	Mediation/Moderation	Conslusion
Koubaa (2008)	Structure of Brand Image	Significant
Guo *et al.* (2011)	Brand Function	Significant, Weak
Wu *et al.* (2009)	Main of Brand Image	Significant
Wu *et al.* (2009)	Association of Brand and Product	Significant
Chanavat and Bodet (2009)	Customers' Perception	Significant
Anchor (2009)	Income and Age	Significant

Considering the research result in table 2, apparently the research results are various, of course this research gap indicates that there is a chance in this research.

According to Hatch (2003) in his research, The Brand Vision Developmental will improve the products' Brand Perception. The statement strenghtens the researcher to put the indicator into mediation or moderator variable in this research.

2.2 Corporate Culture

Since the organization was found, conscious or not the founders have put the organization's base. The organization culture represents the common perceptions of the company members. This condition is clearly formed if defined as a collective system. The relation of culture and organization culture is "organization culture is a belief and values that become the main philosophy held tightly by the organization members in operating the organization activities".

Several definitions of organization culture or organization culture proposed by several experts as follows: McKenna and Beech (2000, p.18) defined that "Organization culture is the values, trust, attitude, and behaviors of the members."

2.3 Brand Perception

The research of conventional market depends on the subjective consumers' reports very much. It means the information for the marketers, advertisers, and producers who learn about the consumers is based on what are wanted by the consumers. Consumers make known what they think, feel, and do related with the brands. But consumers may not realize all what they think and feel of the brands. And commonly consumers are not absolutely honest of what they do (those are buying or the intention to buy) in its relation with the brands. It is fair to say that most reports about the consumers for the market research needs are closed enough with the realities or facts. But, as revealed by neuromarketing , attitudes and behaviors are not always firmly related with the humans' minds. Several market research models have been developed to overcome the different ways that a consumer's mind influences the brand affinity and the consumer's buying decision.

2.4 Brand Vision

The brand vision or business is one of the most strong encouragement for growth. Having the vision of what

is wanted to achieve and where is wanted to get the message is very interesting either for the consumers, team, or each investor applicant.

As the company leader, the greatest challenge is not only determining vision by reflecting the brands (in the future), but also ensuring that each individual has the responsibility to give understanding and finally consumers buy. The company team who works full time has to have the full passion appreciation of what is wanted to achieve by the business strategies.

2.5 Hypothesis

The meant Company Cultures are Hierarchical Culture, Group Culture, Rational Culture, and Developmental Culture.

The Company Culture is very important in the process of company ideology formulation includes brand. The products' brand becomes meaningful when the Company Culture supports the trust creation of the staff, even the consumers. Hierarchical Culture, Group Culture, Rational Culture, and Developmental Culture influence much the Company performance (Noar, M. *et al*., 2008). So the hypotheses in this research are as follows:

H_1: Hierarchical Culture influences positively Brand Perception

H_2: Group Culture influences positively Brand Perception

H_3: Rational Culture influences positively Brand Perception

H_4: Developmental Culture influences positively Brand Perception

Company Culture is on Hierarchical Culture, Group Culture, Rational Culture, and Developmental Culture with Brand Vision as the moderation variable.

Brand Vision or business is one of the most strong encouragement for growth. This vision will strengthen Brand Perception attached to Company Culture. Vision will create the more unique products (Anonim, 2011). The Company Culture itself influences the Brand Perception. So the hypotheses in this research are as follows:

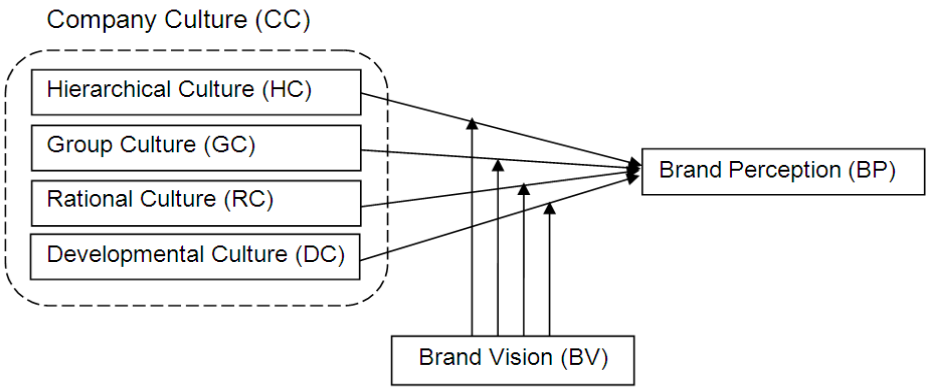
H_5: Brand Vision will strengthen Hierarchical Culture on Brand Perception

H_6: Brand Vision will strengthen Group Culture on Brand Perception

H_7: Brand Vision will strengthen Rational Culture on Brand Perception

H_8: Brand Vision will strengthen Developmental Culture on Brand Perception

Figure 1. The Conceptual Framework of the Research



3 Methodology

3.1 The Research Design

This research location was in the Province of Special Area of Yogyakarta. The Province of Special Area of Yogyakarta consisted of 4 regency and 1 municipality. Sample in this research was as many as 226 manufacture companies.

Research variables: Dependent Variable (Brand Perception) is adopted from Ing. W.S. and Chen, L.L. (2009) with nine (9) indicators. Moderation Variable (Brand Vision) is adopted from Rahimnia, F. *et al*. (2011). with nine (9) indicators. Independent Variable (Company Culture) is adopted from Noar, M. *et al*. (2008) with four (4) indicators. All variables use likert scale 7 points and reliability and validity testing, and the classic assumption in those variable indicators have been done before.

3.2 Statistical Analysis

The analysis tool used is Multiple Regression Analysis (MRA) to test hypothesis 1 until 4. In this research, test was done between dependent variable that is Brand Perception (BP) and four (4) Independent Variables those are Hierarchical Culture (HC), Group Culture (GC), Rational Culture (RC) and Developmental Culture (DC).

This complete model testing is as follows:

$$BP = a + \beta_1 HC + \beta_2 GC + \beta_3 RC + \beta_4 DC + e_1 \quad (3.1)$$

To answer hypothesis 2 until 8, this research testing uses Moderated Multiple Regression (MMR); testing with this method is done with 2 phases. First, interact Brand Vision with each independent variable. Second, regressed to the dependent variable that is Brand Perception. The testing of Brand Vision (BV) as the moderator of Company Culture influence on Brand Perception is modelled with the equation as follows:

$$BP = a + \beta_1 HC + \beta_2 HC*BV + e_2 \quad (3.2)$$

$$BP = a + \beta_1 GC + \beta_2 GC*BV + e_3 \quad (3.3)$$

$$BP = a + \beta_1 RC + \beta_2 RC*BV + e_4 \quad (3.4)$$

$$BP = a + \beta_1 DC + \beta_2 DC*BV + e_5 \quad (3.5)$$

4 Results

4.1 Validity and reliability testings

The researchers use Corrected *Item-Total Correlation* and *Cronbach's Alpha if Item Deleted*, in which it is said this indicator is valid if it is >0,5 (Peter Allen & Kellie Bennett, 204, 2010). Reliability testing done in this research is the analysis technique by using Alpha Cronbach indicator. A variable is reliable if the Internal Consistency has the lowest Cronbach Alpha coefficient 0,7 and between 0,6 and 0,7 are possible for exploratory (Hair *et al.*, 2006). The reliability and validity testing results are in table 3.

Table 3. Validity testing

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HC	23.3354	4.020	.572	.904
GC	23.2016	3.487	.848	.860
RC	23.2403	3.571	.828	.864
DC	23.2292	3.373	.838	.862
BP	22.1075	4.157	.653	.892
BV	22.0608	4.213	.642	.893

4.2 The testing of brand vision variable as the moderator variable

To know that Brand Vision (BV) is the environment variable that strenghtens or weakens the other indicator or variable as the moderator variable, and also to know the right model to produce mathematics function, the testing of the variable type determination needs to be done, whether it is moderation, mediation, or just only independent variable.

Table 4. Determination Test Type of Brand Vision Variable

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.570	.213		16.755	.000
	HC	.109	.056	.138	1.953	.052
	GC	.227	.105	.304	2.169	.031
	RC	-.039	.103	-.050	-.375	.708
	DC	.132	.112	.190	1.185	.237

a. Dependent Variable: Brand Vision

Based in Table 4, it is showed that if BV is the dependent variable, apparently it causes insignificancy in variable HC that is differenciation (D) β=0,138; t=1,953; p>10,00. It indicates that BV is the moderated quasi moderated variable.

4.3 Summary of results

Table 5. Summary of results: testing hypotheses

Independent Variable	Model of Direct Effect		Moderation Model of Brand Vision							
			H C		GC		RC		DC	
	β	t	β	t	β	t	β	t	β	t
Hierarchical Culture (HC)		3,993	6,507							
Group Culture (GC)	3,547	8,942								
Rational Culture (RC)	3,751	7,986								
Developmental Culture (DC)	3,810	8,670								
HCxBV	0,721	15,591								
GCxBV					0,767	17,868				
RCxBV							0,755	17,207		
DCxBV									0,750	16,986
F test	22,515		243,007		319,270		296,085		228,507	
R^2	0,290		0,518		0,586		0,569		0,563	
Adj R^2	0,277		0,520		0,588		0,567		0,561	

Variable Dependent = Brand Perception (BP)
***p < 0,01

4.3.1. The Influence of Hierarchical Culture (HC) Variable on Brand Perception (BP)

Variable Coefficient of Hierarchical Culture (HC) is β=3,993 (positive) and t-counting is significant 6,507 with the probability value p<0,01. It means that Hierarchical Culture (HC) variable influences positively and significantly Brand Perception (BP), so hypothesis that states Hierarchical Culture (HC) influences positively Brand Perception (BP) can be accepted.

4.3.2. The Influence of Group Culture (GC) Variable on Brand Perception (BP)

The variable coefficient of Group Culture (GC) is β = 3,547 (positive) and t-counting is significant 8,942 with the probability value p < 0,01. It means that Group Culture (GC) variable influences positively and significantly Brand Perception (BP), so the hypothesis that states Group Culture (GC) influences positively Brand Perception (BP) can be accepted.

4.3.3. The Influence of Rational Culture (RC) Variable on Brand Perception (BP)

Variable coefficient of Rational Culture (RC) is β = 3,751 (positive) and t-counting is significant 7,986 with the probability value p < 0,01. It means that Rational Culture (RC) variable influences positively and significantly Brand Perception (BP), so the hypothesis that states Rational Culture (RC) influences positively Brand Perception (BP) can be accepted.

4.3.4. The Influence of Developmental Culture (DC) Variable on Brand Perception (BP)

The variable coefficient of Developmental Culture (DC) is β = 3,810 (positive) and t-counting is significant 8,670 with the probaility value p < 0,01. It means that Developmental Culture (DC) variable influences positively and significantly Brand Perception (BP), so hypothesis that states Developmental Culture (DC) influences positively Brand Perception (BP) can be accepted.

4.3.5. The Moderation Regression Results of Brand Vision (BV) and Hierarchical Culture (HC)

The interaction between the Hierarchical Culture (HC) and Brand Vision (BV) variables is Centering HC x BV that has β = 0,721 and t = 15,591 is in α = 1 %; it means it supports H5, that is Brand Vision (BV) strengthens Hierarchical Culture (HC) influence on Brand Vision (BV).

4.3.6. The Moderation Regression Results of Brand Vision (BV) and Group Culture (GC)

The interaction between Group Culture (GC) and Brand Vision (BV) variables is Centering GC x BV that has β = 0,767 and t = 17,868 is in α = 1 %; it means it supports H6, that is Brand Vision (BV) strengthens the influence of Group Culture (GC) on Brand Vision (BV).

4.3.7. The Moderation Regression Results of Brand Vision (BV) and Rational Culture (RC)

The interaction between Rational Culture (RC) and Brand Vision (BV) variables is Centering RC x BV that has β = 0,755 and t = 15,207 is in α = 1 %; it means it supports H7, that is Brand Vision (BV) strengthens the influence of Rational Culture (RC) on Brand Vision (BV).

4.3.8. The Moderation Regression Results of Brand Vision (BV) and Developmental Culture (DC)

The interaction between Developmental Culture (DC) and Brand Vision (BV) variables is Centering DC x BV that has β = 0,750 and t = 16,986 is in α = 1 %; it means it supports H8, that is Brand Vision (BV) strengthens the influence of Developmental Culture (DC) on Brand Vision (BV).

5 Conclusion and discussions

5.1 Conclusion

c. Hierarchical Culture (HC) influences positively Brand Perception (BP)

d. Group Culture(GC) influences positively Brand Perception (BP)

e. Rational Culture (RC) influences positively Brand Perception (BP)

f. Developmental Culture (DC) influences positively Brand Perception (BP)

g. Brand Vision (BV) strengthens the influence of Hierarchical Culture (HC) on Brand Perception (BP)

h. Brand Vision (BV) strengthens the influence of Group Culture(GC) on Brand Perception (BP)

i. Brand Vision (BV) strengthens the influence of Rational Culture (RC) on Brand Perception (BP)

j. Brand Vision (BV) strenghtens the influence of Developmental Culture (DC) on Brand Perception (BP)

5.2 Discussions

5.2.1. Hierarchical Culture influences positively Brand Perception

This research result shows that Hierarchical Culture influences positively and significantly Brand Perception. The more the growth and positiveness of the Hierarchical Culture is, the more the growth of the Brand Perception is.

The Hierarchical Culture in a company is indeed and obliged to pour into company regulation. This regulation will be the guideline in doing an activity. The smallest activity also always and must refer to the higher importance and that is continuously done until the company mission or purpose is achieved. The company purpose whether in the short, medium, or long time will be influenced by this culture very much. This culture must always be done continuously because it will cause company's regularity or discipline, finally forms culture. Brand Perception as the part of the company's purpose also has to be done continuously, because directly this Hierarchical Culture will influence Brand Perception for consumers in medium and long time, remembering the Brand Perception will always be brought by products, prices, promotion especially services. It is important for all staff to understand what will be delivered to the consumers through this Brand Perception. Because it is so important, even this Brand Perception in the long time will create goodwill, because it is believed goodwill makes the marketing function more efficient.

Improving this hierarchy culture indeed must be clear and can be manifested for each staff individual. The main message conveyed by the experts and specialists in the company must also be paid attention, so finally the achievement process of Brand Perception for the staff and consumers will be faster.

5.2.2. Group Culture influences positively Brand Perception

This research result shows that group culture influences positively and significantly Brand Perception. The more advance and positive the group culture is, the more advance the Brand Perception is.

This Group Culture has important role in building staff's prestation and work productivity, so direct the company to success. Job specialization becomes the acceleration spear point toward the company's purpose includes Brand Perception. Inter-workers encouragement in a work team will be able to encourage significantly that group's productivity. The inter-groups function is also important, makes the organization structure effective. Supervision will be able to give positive impact toward performance. The Brand Perception strenghtening will also be stronger when specifically the brand description is translated in the company organization groups.

Building group culture or collaboration among the company sub structure in a main Company Group is very determined by policy aspect, procedure, system, performance, technology, efficiency, values, interaction, commitment, motivation, loyalty, perception, integrity, ethiques, leadership, workers, and communication. If all aspects above can be fulfilled perfectly by the main organization of the highest until the lowest level, so the inter-individuals Group Culture in group can be implemented through the organization best practice to produce the whole optimal exertion of group performance.

5.2.3. Rational Culture influences positively Brand Perception

This research result shows that rational culture influences positively and significantly Brand Perception. The more advance and positive the

rational culture is, the more advance the Brand Perception is.

The information source of the company culture that is not less important is the rational culture. Financial system becomes one of the workers' zest encouragement to achieve the company purpose. The incentive system that is performed well and continuously will create the positive culture for the company itself and the workers inside. Of course this contribution will be different among others, depends on the workers' position and company financial condition very much, but it is very important contribution.

5.2.4. Developmental Culture influences positively Brand Perception

This research result shows that Developmental Culture influences positively and significantly Brand Perception. The more advance and positive the Developmental Culture is, the more advance the Brand Perception is.

Research and company internal development that is continuous becomes important to create Company Culture. The competitors' anticipation toward the new products and their differentiation will be easier to do if research and development are done well. Even the company is not always in follower position, but gradually becomes the leader. Technology also strengthens this culture.

5.3. Discussion of Research Results of Moderation Influence Model

5.3.1 Brand Vision strengthens the influence of Hierarchy Culture on Brand Perception

This research result shows that Brand Vision strengthens hierarchy culture and significant on Brand Perception. The more advance the Company Brand Vision is, the stronger the Hierarchical Culture is, finally the more advance the Brand Perception is.

Every position in organization structure or company will be more understood by each company individual if the organization vision can also be understood by that individual. Of course this understanding must be easy, clear, concise, remembering the job performed everyday is collaborated with the vision. The future orientation and clear direction in the vision will be able to create condusive situation and motivation for this Hierarchical Culture.

5.3.2 Brand Vision strengthens the influence of Group Culture on Brand Perception

This research result shows that Brand Vision strengthens Group Culture and significancy on Brand Perception. The more advance the company's Brand Vision is, the stronger the Group Culture is, finally the more advance the Brand Perception is.

Brand vision will be stronger when entering and understood in the group scale or sub structure even the smaller company division. This understanding is admitted to be more effective, because in the smaller group level, fewer personnels in the group are easier in manifesting this Brand Vision. The supervision role is also not less important; knowledge, belief, and motivation from supervisor will accelerate and strengthen this Group Culture process in the Brand Perception.

5.3.3 Brand Vision strengthens the influence of Rational Culture on Brand Perception

This research result shows that the Brand Vision strengthens the Rational Culture and significancy on the Brand Perception. The more advance the company Brand Vision is, the stronger the Rational Culture is, finally the more advance the Brand Perception is.

The Rational Culture is also helped very much by the leader and individual's ability in the company. The Brand Vision will be easier to apply to the company's leader or individual if has enough knowledge and experience that finally will strengthen the Brand Perception in the company. The higher the Rational Culture that is collaborated with the Brand Vision is, of course will create the higher Brand Perception; the higher the Brand Perception is, hopefully the higher the marketing is; finally will also create the incentive system that is on the company's individual side.

5.3.4 Brand Vision strengthens the influence of Developmental Culture on Brand Perception

This research result shows that Brand Vision strengthens Developmental culture and significancy on Brand Perception. The more advance the Company's Brand Vision is, the stronger the Developmental Culture is, finally the more advance the Brand Perception is.

The Continous Developmental Culture that interacts with the Brand Vision will direct the company to help and act to fulfil the company's purposes. The Brand Perception as the part of the company's purposes will influence more when the products and Company's Brand Vision comes to the company's individual even to the final consumers.

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RESOURCE ALLOCATION SPECIALIZATION, MARKET RECOGNITION SPECIALIZATION AND AUDIT FEES: EVIDENCE FROM THE CHINESE AUDIT MARKET

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Abstract

Existing literature on audit industry specialization in Anglo-American countries often measures industry specialization using firms' market share in specific industries from market recognition perspective. This paper contributes to the audit industry specialization research by distinguishing between market recognition specialization and resource allocation specialization, and tests their different effects on audit fees in the Chinese audit market. The results support the hypotheses that market recognition specialization is likely to lead to higher audit fees in the whole audit market, resource allocation specialization is likely to lead to lower audit fees in 'top–ten' audit firms, and there is likely to be no effect of resource allocation specialization on audit fees in 'non–top–ten' audit firms. The findings have implications for the regulators both in China and globally in designing strategies to enhance the functioning of audit firms. Importantly, the findings suggest that economic, political and social contexts of a country cannot be ignored in examining audit industry specialization

Keywords: Auditing, Chinese Audit Market, Audit Industry Specialization, Audit Fees, Competitive Strategies of Audit Firms

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1 Introduction

As the world's second largest economy, China is beginning to play a dominant role in the global economy. China's global importance is attracting an increasing number of accounting and auditing researchers to examine whether the empirical evidence from Anglo-American countries are applicable to China. Understanding the unique features of Chinese financial market is very important for any direct or indirect market participants all over the world. Specifically, there have been calls in the literature for examining various aspects of the unique audit market in China (DeFond et al. 2000; Wang et al. 2009). However, very few researchers have examined Chinese audit market by focusing on its unique features. This paper provides insights into the structure of Chinese audit market and its effect on accounting firms' strategies and behaviour by examining the relationships between industry specialization and audit fees from two specific perspectives, resource allocation and market recognition. We argue that this distinction is important because of the features of audit market formed by Chinese economic and politic environment.

The importance of examining industry specialization has long been established in the existing literature. Adam Smith (1776) puts forward the idea that the division of labour leading to specialization can boost productivity. Auditing practitioners also believe that industry specialization can make contributions to improving the auditing efficiency and quality (McMeeking et al. 2006; Solomon et al. 1999; Simnett et al. 2000). Based on these ideas, researchers, auditing practitioners and policy–makers have been concerned with the issues on audit industry specialization. Since Zeff and Fossum (1967) examined audit industry specialization in the USA, extensive research has been carried out to examine issues, such as the effect of industry specialization on audit quality (Balsam et al. 2003; Romanus et al. 2008; Mascarenhas et al. 2010) and audit fees (Craswell et al. 1995; Ferguson et al. 2003; Francis et al. 2005; Carson 2009).

Importantly, existing literature on audit industry specialization has largely failed to distinguish industry specialization from resource allocation and market recognition perspectives. Specifically, prior research, which has mainly been conducted in Anglo-American countries, often measures industry specialization using the audit firms' market share in specific industries and defines industry specialization as having the dominant market share in a specific industry by an audit firm. Industry market share has

been measured based on number of clients (DeFond et al. 2000; Mayhew and Wilkins 2003; Balsam et al. 2003; Ferguson et al. 2012), client's total assets (Hogan and Jeter 1999; Wang et al. 2009; Mayhew and Wilkins 2003; Carson 2009) and audit fees (DeFond et al. 2000; Cahan et al. 2011; Habib 2011). Criterion of domination is diversified and arbitrary, such as top 1 to top 3, over the 20 percent or 30 percent of the market share (Pearson and Trompeter 1994; Craswell et al. 1995; Cahan et al. 2011; Ferguson and Stokes 2002). These measures mainly focus on comparison of market share among different audit firms. Specifically, these measures reflect audit firms' reputation of industry specialization recognized by market participants, which tends to be related to market recognition perspective of specialization. However, this perspective mainly focuses on factors which are external to audit firms and ignores those factors which are internal to audit firms, such as resource allocation within specific audit firms. We argue that internal factors are important because these factors result in the formation of specialization and show the strategic significance of specialization within audit firms. These internal factors tend to be related to resource allocation perspective of specialization which reflects the audit firm's investment behaviour in specialization. We therefore suggest that to gain deeper insights into its formation process, industry specialization may be viewed from two perspectives, namely, *market recognition specialization* (MRS) and *resource allocation specialization* (RAS). *Market recognition specialization* (MRS) refers to firm's specialization level in a specific industry compared to other audit firms in the same industry, which reflects the market reputation of audit firm. *Resource allocation specialization* (RAS) refers to firm's specialization level in a specific industry compared to other industries in the same audit firm, which reflects the investment input and resource allocation of the audit firm for strategic purposes.

This paper contributes to the audit industry specialization research by distinguishing between MRS and RAS, and examines their different effects on audit fees. With respect to the effect of industry specialization on audit fees, the results provided by prior research have been mixed. Some findings show that industry specialization leads to audit fee discount (O'Keefe et al. 1994; Mayhew and Wilkins 2003), while other results show that it leads to audit fee premium (DeFond et al. 2000; Craswell et al. 1995; Mayhew and Wilkins 2003; Ferguson et al. 2003). Given the differences in emphases and methods of these studies, the lack of consistent findings is not surprising. Importantly, these studies in Anglo-American countries have largely failed to examine industry specialization from firm's resource allocation perspective by only focusing on market recognition perspective. Their failure to capture RAS, an important force of pricing related to industry specialization, may be a possible explanation for the inconclusive results. Indeed, this differentiation between *market recognition* and *resource allocation* perspectives is important to capture two different forces on audit fee from industry specialization. RAS, which focuses on firm's strategy of resource allocation in specific industry, may reduce audit fee as a result of improved operating efficiency and reduced cost beneficial from the economies of scale in gathering resource allocation. However, MRS, which focuses on firm's leading industry market share, may lead to audit fee premium as a result of the firm's reputation of expert in specific industry. Consistent with the research of DeFond et al. (1999) and Wang et al. (2008) in China, we classify Chinese firms as 'top–ten' vs. 'non–top–ten' based on audit fees[3] for each year in 2009 and 2010. This classification of Chinese firms is because the Chinese government encourages 'top–ten' firms to compete with international firms (DeFond et al. 1999). By analysing the MRS and RAS effects simultaneously, the results of the current study show that in the Chinese audit market of listed companies the negative relationship between RAS and audit fees is significant in the 'top–ten' firms while it is not significant in the 'non–top–ten' firms. Also we find evidence that higher MRS of audit firms is likely to lead to higher audit fees in the Chinese audit market of listed companies.

Indeed, to distinguish MRS and RAS is particularly important in Chinese context. Competition in Chinese audit market is very intense. Audit firms not only compete for clients, but also compete for qualified staff. On the one side, the audit market concentration in China is much lower than in Anglo-American countries. In the American audit market of listed companies, market share of the Big–five was 87 percent[4] in 1996. Comparably, in the Chinese audit market of listed companies the market share of the top–20 audit firms was much lower with only 64.24 percent in 2000. In the Chinese statutory audit market, the average market share of the then Big–five between 1995 and 2003 was 26 precent (Chen et al. 2007). These facts suggest that Chinese audit market with many small and medium size firms are different from the oligopolistic audit markets of Anglo-American countries which are dominated by Big–four. Low audit market concentration increases competition for audit clients. This leads to the price war among audit firms in Chinese audit market, which force the audit firms to think how to reduce the cost by allocating the resource strategically. Specialization bringing economies of scale may be a good way to reduce the cost (Mayhew and Wilkins 2003; Cahan et al. 2011). As such, RAS may be an important strategic consideration for audit firms in China.

[3] This data is taken from the Chinese Institute of Certified Public Accountants (CICPA).

[4] 'Bigger Pieces of the Audit Pie', Journal of Accountancy, January,1998

On the other side, compared with the demand for independent audit service, the supply of professional qualified staff is relatively scarce. While the accounting profession has experienced rapid growth following the economic reforms, the size of professional accountants in China is still relatively small compared to Anglo-American countries. For example, the proportion of professional accountants per million populations is 1116 in USA and 116 in China in 2009 (details in Appendix 1A). Additionally, the number of CPA per audit firm in China was 13.2 in 2004 and decreased to 11.99 in 2009 (details in Appendix 1B). Furthermore, very low pass rate in CPA examination may also contribute to the small size of CPA. CPA examination is currently blooming because of the high demand of professional accountants which is evidenced by high remuneration package offered by audit firms compared with the other industries. However, CPA examination is considered as one of the hardest professional examinations in China due to its very low pass rate. The pass rate of CPA examination in China from 2004 to 2008[5] ranged from 10.3% to 18.4% (details in Appendix 1C). Given the shortage of qualified professional accountants, it is useful to examine the effect of *RAS* on audit fees in Chinese context.

If studies on industry specialization only focus on firms with leading industry market position, the strategic significance of industry specialization for small and medium size firms would be overlooked. It is argued that small and medium size firms, that may not gain the leading industry market position in specific industry, may still adopt industry specialization strategies. Compared with the Big–four, the Chinese audit firms are still considered as the small and medium size audit firms (details in appendix 1D). In order to examine industry specialization of small and medium size firms, Big–four audit firms have been excluded from the current study.

The remainder of the paper is organized as follows. Section 2 reviews the prior literature and develops the measurement methods used in this paper. Section 3 develops the hypotheses and Section 4 provides the results of study. Section 5 is the conclusions of the paper.

2 Specialization measurement development

2.1 Measurement methods of the industry specialization in the existing literature

There are three main methods to measure auditor industry specialization in the existing literature, namely, industry market share, clients' portfolio share and self-advocacy. Each of these is discussed next.

Industry market share was first developed by Zeff and Fossum (1967) and is defined as the percentage of an industry's total assets that are audited by a particular firm over this specific industry's total assets that are audited by all firms. In the existing literature most researchers have used the industry market share to measure industry specialization (Balsam et al. 2003; Low 2004; A.Dunn and Mayhew. 2004; Palmrose 1986; Pearson and Trompeter 1994; Casterella 2004; Francis et al. 2005). However, higher market share may be resulted from a number of factors including firm size, brand name and industry specialization. Industry specialization is only one of several reasons which may lead to higher market share. It is argued that higher market share is influenced by firm size (Neal and Riley 2004). This leadership industry market share method implies that if the audit firms are small or medium, they may not form industry specialization because of their lack of capability in obtaining the dominant industry market share. As such, this method ignores the strategic meaning of industry specialization for the small and medium size audit firms.

Yardley et al. (1992) introduced the clients' portfolio share method, which measures the auditor industry specialization by the percentage of audit fees in specific industries over the total income of the audit firm. This approach focuses on the audit firm itself to measure its industry specialization. However, very few researchers have used this method to measure industry specialization largely because the size of the industry affects the results of the measurement. By using this method, a large number of audit firms may be identified as specializing in the largest industry and very few may be identified as the specializing in the smallest industry (Neal and Riley 2004).

Hogan and Jeter (1999) developed 'self-advocacy' as the third measurement method for industry specialization. This method is based on the claims by the firms that they are specialist in certain specific industries. However, this approach is subjective and relies on audit firms' advertisements. As such, very few researchers have used this method to measure industry specialization. Additionally, Neil and Riley (2004) proposed a combined measure for industry specialization which is results of clients' portfolio share multiplied by industry market share. However, this method lacks economic meanings and has not been further applied in the literature.

2.2 The economic meaning of market recognition specialization (MRS) and its measurement

Different measurement methods reveal different underlying concepts of specialization. As discussed earlier, industry specialization can be categorized as MRS and RAS. MRS compares firm's specialization

[5] We collected the pass rate of CPA examination in China from 2004 to 2008 because the new examination system was adopted in 2009, which separated the examination into two stages, professional stage and comprehensive stage, and added one new subject in professional stage, corporate strategy and risk management.

level among different audit firms within the same industry, while RAS compares firm's specialization level among different industries within the same audit firm.

Although industry market share method ignores the strategic meaning of industry specialization for the small and medium size audit firms, we argue that this method can measure the level of industry specialization recognized by the market, namely, MRS. That is because industry market share can be recognized by stakeholders outside of audit firms and enables the comparison among different firms in the same industry. As the industry market share method compares the market share of different firms within the same industry, the size of firm will have an impact on this indicator. Because of the size impact, big firms are likely to have more industry market shares compared to small or medium firms. Therefore, using the industry market share method, big firms are likely to have higher level of industry specialisation compared to small or medium firms.

A number of indicators that measure market share of firms are available in existing literature, such as total asset of clients (Hogan and Jeter 1999; Wang et al. 2009; Mayhew and Wilkins 2003; Carson 2009), square root of total asset size (Sun and Liu 2011; Behn et al. 2008), audit fees (DeFond et al. 2000; Habib 2011; Cahan et al. 2011) and the number of clients (DeFond et al. 2000; Mayhew and Wilkins 2003; Balsam et al. 2003; Ferguson et al. 2012). Since this paper is examining the influence of MRS on audit fees, it is not logical to calculate market share based on audit fees. Because it is important to differentiate impacts between large and small clients, we calculate the industry market share based on total assets of clients. The formula of MRS is as follows :

$$MRS_{ik} = \frac{\sum_{j=1}^{J_{ik}} CA_{ikj}}{\sum_{i=1}^{I_k} \sum_{j=1}^{J_{ik}} CA_{ikj}}$$

MRS_{ik} = *MRS* of audit firm i in industry k

CA_{ikj} = assets of client j served by audit firm i in industry k

i = 1,2,…,I = an index for audit firms

j = 1,2,…,J = an index for client companies

k = 1,2,…,K = an index for client industries

I_k = the number of audit firms in industry k

J_{ik} = the number of clients served by audit firm i in industry k

2.3 The economic meaning of resource allocation specialization (RAS) and its measurement

Recall that, RAS is defined as firm's specialization level in a specific industry compared to other industries in the same audit firm. It is related to firm's strategy of allocating resource. It is a comparison of the different resources inputs level within the firm itself rather than a comparison with other firms. If a firm has allocated relatively more resources to a specific industry, then it is obvious that the firm will have more clients in this industry than in the others. This will results in richer accumulated audit experience in this specific industry. This richer accumulated audit experience will create a competitive advantage for the audit firm. It is difficult for small and medium firms to occupy dominant position in any industry based on MRS. However, if most clients of the small firm are in one specific industry, it may form RAS even if this small firm has no MRS. Therefore, RAS reveals the strategic meaning of industry specialization for small and medium size firms.

Although clients' portfolio share method has the limitation that the size of the industry affects the results of the measurement as we mentioned before, we argue that this method can be used to measure the level of RAS. In the process of investing and allocating resource, audit firms need to estimate both client factors and firm factors. If a firm wants to adopt RAS as its strategy, it may prefer clients in some specific industries and develop the special competence in these industries. This may lead the firm to form the specific clients' portfolio share. As such, the clients' portfolio share is the result of firms' resource allocation decision and it can be used to measure the level of RAS. By examining the effects of MRS and RAS simultaneously, we can distinguish their different effects on audit fees.

In this paper we select the number of clients to calculate the clients' portfolio share as the measurement of RAS in order to examine the effect of knowledge spillover from specialization (McMeeking et al. 2006). More clients and experience in a specific industry may lead to greater professional knowledge and skills that the firm acquires in this specific industry. This is not dependent on the assets or revenues of the clients. Therefore, the basis of calculating clients' portfolio share should be the number of clients rather than clients' total assets and revenues.

The traditional clients' portfolio share method will be influenced by scales of different industries (Neal and Riley 2004). For example, the number of listed companies in manufacturing industry greatly exceeds the number of listed companies in extractive industry in China. Accordingly, for every audit firm, the number of clients in manufacturing industry may be higher than in other industries. In this paper we address this main limitation of the traditional clients' portfolio share method. To avoid the influence of industry scale, we standardized the number of clients in different industries using Standardized Coefficient to calculate clients' portfolio share of an audit firm in a specific industry. The standardized clients' portfolio share removes the impact of industry scale differences. To simplify the calculation, we select the industry with the largest clients number as the benchmark industry to calculate the Standardized

Coefficient. Therefore, the formula of *RAS* is as follows:

$$\mathrm{RAS_{ik}} = \frac{\mathrm{CN_{ik}} \times \mathrm{SC_k}}{\sum_{k=1}^{K}(\mathrm{CN_{ik}} \times \mathrm{SC_k})}$$

$$\mathrm{SC_k} = \frac{\text{Clients numeber in benchmark industry}}{\text{Clients number in industry k}}$$

RAS_{ik} = *RAS* of audit firm i in industry k

CN_{ik} = the number of clients served by audit firm i in industry k

SC_k = Standardized Coefficient in industry k

i = 1,2,…,I = an index for audit firms

k = 1,2,…,K = an index for client industries

3 Hypotheses formulation

The structural economics approach suggests that there are three dimensions of the audit market, namely, market structure, market strategy and market performance (Gramling and Stone 2001). Market structure reflects the status of a market such as the intensity of competition among suppliers and customers, barriers to entry, the differentiation or homogeneity of products. Market strategy is the process by which organizations allocate theirs limited resources and how they achieve sustainable competitive advantages. Market performance is the extent to which a market efficiently and equitably allocates resources. While the topics on audit market structure and audit market performance have been examined extensively in the literature, very few researchers have examined market strategy of audit firm specialization (Habib 2011). Market strategy relates to human resource policies and portfolio diversification within audit firm. Furthermore, Porter (1985) identified two basic market competitive strategies: product differentiation and cost minimization. As discussed earlier, we classify industry specialization from two different perspectives, namely, MRS and RAS. From the market strategy, industry specialization is a mixed strategy which includes both product differentiation and cost minimization competitive strategies. MRS is related to product differentiation strategy, while RAS is related to cost minimization strategy.

Cahan et al. (2011) argue that some audit firms may pursue product differentiation, others may pursue cost minimization in developing of their industry specialization strategy. We suggest that the industry specialization is a mixed strategy, which may include both these two competitive strategies. However, the existing literature has not differentiated between these two aspects of specialization strategy, which may explain the reasons for the contradictory empirical findings. For example, some findings show that industry specialization leads to audit fee discount (O'Keefe et al. 1994; Mayhew and Wilkins 2003), while other results show that it leads to audit fee premium (DeFond et al. 2000; Craswell et al. 1995; Ferguson et al. 2003; Mayhew and Wilkins 2003). Indeed, audit firms adopting industry specialization strategy may benefit from both product differentiation and cost minimization. It is likely that industry specialization leads to either fee premium or fee discount depending on the dominant effects of MRS or RAS. It is the specific contexts that may determine which aspect of specialization is likely to be dominant, such as the audit market structure, audit firm size and client's bargaining power. This paper only examines the influences of two kinds of industry specialization on audit fees.

3.1 Market recognition specialization (MRS) and audit fees

Since the users of audited financial statements cannot judge the audit quality directly, they may use indirect observable signal such as firm reputation (Moizer 1997). A number of researchers have provided the evidence that industry specialization can increase clients' financial reporting quality (Owhoso et al. 2002; Hammersley 2006; Stanley and DeZoort 2007; Romanus et al. 2008). If the specialist identity of the audit firm is recognized by the market, then the reputation of this firm can make its audit product different from other audit firms (Cahan et al. 2011). This differentiation may result in an audit fee premium. As such, MRS related to product differentiation strategy is likely to lead to higher audit fees. Furthermore, evidence shows that companies with higher proportion of independent directors on the board are more likely to select audit firms with higher industry market share to enhance financial reporting quality (Beasley and Petroni 2001; Abbott and Parker 2000). This means that independent directors may recognize the value of audit firm's MRS. When clients demand reputational value which comes from MRS, then they are likely to pay premium for this reputation. Therefore, we propose the following hypothesis:

H1 : Higher level of *market recognition specialization* (MRS) is likely to lead to higher audit fees.

3.2 Resource allocation specialization (RAS) and audit fees

The size of audit firm may also influence the forming of *MRS*. Compared to small and medium size firms, larger size firms are more likely to gain *MRS*. However, *RAS* reveals the strategic meaning of industry specialization for small and medium size firms. *RAS* is related to firms' strategy about the investment input and resource allocation within audit firms, which includes the acceptance of clients, recruitment policy and other human resource policies. If a firm forms *RAS* in one specific industry, then it is likely to realize the economies of scale, and therefore

may cost-efficiently implement the audit by utilizing its accumulated knowledge in this specific industry. This is further supported by the argument of McMeeking et al. (2006, p.209) that "the specialist knowledge could introduce production economies of scale into the audit process…, transforming the auditors involved into more efficient, lower-cost producers of audit". Evidence also shows that industry specialization enables firms to build and maintain their competitive advantage in price competition (Cahan et al. 2011; Eichenseher and Danos 1981; Danos et al. 1989). Therefore, it is suggested that *RAS* is related to the strategy of cost minimization and creates competitive advantage on cost.

Whether this competitive advantage on cost leads to audit fees discount largely depends on the features of audit market and firms. From audit market perspective, more intense competition pressure is more likely to transfer cost reduction to audit fees discount. Our earlier discussion suggests that competition in Chinese audit market is very intense. When a firm gains the competitive advantage on cost, it may then reduce audit fees to attract clients. From the firm's perspective, effect of *RAS* may be observed only after the firm has the increase in number of clients which may then lead to economies of scale. As discussed earlier, we classify Chinese firms as 'top–ten' versus 'non–top–ten'. In 2009 there were 1996 listed companies in China, of which 951 companies were audited by 'top-ten' firms and 924 companies were audited by 'non-top-ten' firms. The mean of number of clients in 'top-ten' firms is significantly larger than in 'non-top-ten' firms ($p < 0.01$). As such, 'top-ten' firms may have accumulated enough clients to achieve economies of scale from RAS and may reduce audit fees to attract and maintain the clients as competition intensifies. 'Non-top-ten' firms may not have capacity of using RAS to reduce audit fees. Therefore, we propose the following hypotheses:

H2a : Higher level of *resource allocation specialization* (RAS) is likely to lead to lower audit fees in 'top–ten' audit firms.

H2b : There is likely to be no effect of *resource allocation specialization* (RAS) on level of audit fees in 'non–top–ten' audit firms.

4 Hypotheses testing

4.1 *Testing model and variables*

Audit fees are regressed on the model consistent with the prior studies (Ferguson et al. 2003; Carson 2009; Cahan et al. 2011; Simunic 1980).

$$Ln\ (\ fee\ ) = \partial + b_0 + \sum_{j=1}^{n} b_i X_i$$

We use the method developed in Part 2 of this paper to measure RAS and MRS. We add RAS and MRA to the model to distinguish the different effects between RAS and MRS on audit fees. All variables in the model are listed in Table 1 (details in Appendix 2). The control variables Location1 and Location2 measure the location features of clients and audit firms respectively. When clients are located in Beijing, Shanghai, Tianjin and Guangzhou, the value of Location1 is 1, otherwise it is 0. When audit firms are located in Beijing, Shanghai, Tianjin and Guangzhou, the value of Location2 is 1, otherwise it is 0. The choice of these control variable is based on the context that there is a significant regional difference in Chinese audit market (Yu 2001). The choice of the other control variables, such as natural log of client's total assets (LTA), Square of subsidiaries number (SUBS), is consistent with prior studies (Craswell et al. 1995; Ferguson et al. 2003; Francis et al. 2005; Simon and Francis 1988). The OLS regression model is specified as follows:

Add RAS to the model:

$$LAF = b_0 + b_1 RAS + b_2 LTA + b_3 SUBS + b_4 FOREIGN + b_5 QUICK + b_6 ROI + b_7 LOSS + b_8 AUDITCHA + b_9 LOCATION\ 1 + b_{10} LOCATION\ 2 + b_{11} BIG\ 10 + \varepsilon$$

Add MRS to the model:

$$LAF = b_0 + b_1 MR\ S + b_2 LTA + b_3 SUBS + b_4 FOREIGN + b_5 QUICK + b_6 ROI + b_7 LOSS + b_8 AUDITCHA + b_9 LOCATION\ 1 + b_{10} LOCATION\ 2 + b_{11} BIG\ 10 + \varepsilon$$

Add both RAS and MRA to the model to distinguish the different effects between *RAS* and *MRS* and this model is our key model:

$$LAF = b_0 + b_1 RAS + b_2 MR\ S + b_3 LTA + b_4 SUBS + b_5 FOREIGN + b_6 QUICK + b_7 ROI + b_8 LOSS + b_9 AUDITCHA + b_{10} LOCATION\ 1 + b_{11} LOCATION\ 2 + b_{12} BIG\ 10 + \varepsilon$$

Most of the existing literature arbitrarily set up a threshold criterion and use the binary variables to measure industry specialization. We do not use the binary judgment method because there is no consistent criterion in the existing literature and this method may fail to capture the effect of industry

specialization on audit fees. As such, we use the continuous variable and do not set up the any specific criterion to measure MRS and RAS in our paper.

4.2 Sample and data collection

We collected relevant financial information of companies listed on the Shanghai and Shenzhen Stock Exchange between 2009 and 2010 from GTA's China Stock Market and Accounting Research Database (GTA's CSMAR database). The number of subsidiaries was collected from annual financial statements of companies in 2009 and 2010. Additionally, only A-shares[6] market data is used in this study because A-shares are offered only to domestic investors and capture the main features of Chinese market. The classification of industries is according to "Listed Company Industry for Classification" issued by the China Securities Regulatory Commission (CSRC). According to the primary industry classification 59% of the listed companies belong to manufacturing industry in 2009 and 60% of the listed companies belong to manufacturing industry in 2010. As such we use the secondary classification in manufacturing industry. Therefore, there are a total of 22 industries. We have applied the following filter to the data:

(1) Exclude observations of financial and insurance companies because their accounts are special and lack of comparability with other industries.

(2) Exclude observations of listed companies that did not disclose their annual audit fees.

(3) Exclude listed companies audited by the Big–four.

(4) Exclude observations of listed companies whose relevant financial information is missing.

This provides a total of 1129 companies in 2009 and 1103 companies in 2010. Of these companies, 49% in 2009 and 2010 were audited by 'top–ten' firms. The others companies were audited by 'non–top–ten' firms. The detailed number of usable observations is listed in Table 2 (details in Appendix 2).

4.3 Descriptive statistics

In this section we report descriptive statistics using data in 2009 and 2010. Table 3 is the descriptive statistics of sample variable. Table 4 is the group descriptive statistics of 'top–ten' and 'non–top–ten' and *t-test* results. Table 4 shows that most of the variables in the 'top–ten' and 'non–top–ten' are significantly different. Thus, it is necessary to examine by group.

4.4 Regression results

In order to examine the different influence between MRS and RAS on audit fees, we carry out regression of three models. Models 1 and 2 test the effects of MRS and RAS respectively. Model 3 tests their effects simultaneously.

Tables 5 and 6 respectively show the regression results based on overall samples of models 1, 2 and 3 in 2009–2010. Regression results of model 1 show that MRS and audit fees are positively correlated ($p < 0.05$). Regression results of model 2 show that there is no significant correlation between RAS and audit fees. In model 3, the results show that MRS and audit fees are positively correlated, but there is no significant correlation between RAS and audit fees. The results support the hypothesis H1 that higher level of MRS leads to higher audit fees. It is suggested that the insignificant results about RAS may be because of the overall low level of RAS in the Chinese audit market. In the following section we further distinguish between 'top–ten' and 'non–top–ten' to test the effect of RAS on audit fees.

The descriptive statistics in Table 4 show that mean differences between 'top–ten' and 'non–top–ten' are significantly different between MRS and RAS. Therefore, we examine hypotheses H2a and hypotheses H2b separately between 'top–ten' and 'non–top–ten'.

Tables 7 and 8 respectively show the regression results of the three models based on the 'top–ten' in 2009–2010. In model 1, relationship of MRS and audit fees are positively correlated ($p < 0.05$) in 2009, while the data of 2010 shows no significant correlation. In model 2, there is no significant correlation between RAS and audit fees in 2009, while in 2010 there is negative correlation ($p < 0.01$). The model 3 shows MRS and audit fees are positively correlated ($p < 0.01$) in 2009 and 2010, while RAS and audit fees are negatively correlated ($p < 0.01$). The results in Tables 7 and 8 support the hypothesis H2a that higher level of RAS leads to lower audit fees in 'top–ten' audit firms.

Tables 9 and 10 show that in the sample of 'non–top–ten' there is no correlation between RAS and audit fees in 2009 and 2010. Thus, the results support the hypothesis H2b that there is no effect of RAS on level of audit fees in 'non–top–ten' firms. A possible reason of this finding may be that the number of clients in 'non–top–ten' firms may not lead to economies of scale. An alternative explanation may be that 'non–top–ten' firms in China may not have accumulated enough industry specialized knowledge to reduce audit cost. As such, the audit fees discount effect of RAS may not be seen. It is also worth noting that MRS of 'non–top–ten' shows no significant positive correlation with audit fees in 2009. A

[6] There are two types of shares traded on the Chinese Stock Exchanges: A-share and B-share. A-shares are offered only to domestic investors and transacted in Chinese currency (RMB). B-shares are offered to foreign investors and transacted using U.S. dollars in Shanghai Stock Exchange or Hong Kong dollars in Shenzhen Stock Exchange.

possible reason for this may be because of the fierce competition among 'non–top–ten' firms. These differences between 'top–ten' and 'non–top–ten' show the dualistic character of Chinese audit market.

5 Conclusions

Existing literature on auditor industry specialization in Anglo-American countries often measures industry specialization using the firms' market share in specific industries. This perspective focuses on factors which are external to firms and ignores those factors which are internal to firms, such as resource allocation within specific firms. We suggest that it is important to take into account this aspect of resource allocation. This paper contributes to the industry specialization research by distinguishing between MRS and RAS.

The objective of this paper is to examine the influence of RAS and MRS on audit fees in the Chinese audit market. RAS focuses on firm's strategy of resource allocation in specific industry, while MRS focuses on firm's market reputation about industry market share. The results show that in 'top–ten' firms, RAS and audit fees are negatively correlated, which support the hypothesis that higher level of RAS is likely to lead to lower audit fees in 'top–ten' firms. This result implies that 'top–ten' firms can achieve competitive advantage to reduce audit fees by RAS. In 'non–top–ten' firms, the negative correlation between RAS and audit fees is not significant, which support the hypothesis that there is likely to be no effect of RAS on level of audit fees in 'non–top–ten' firms. This result implies that RAS level of 'non–top–ten' firms is not high enough to reduce audit fees. These firms have not benefited from RAS strategy because of the size limitation. The evidence partially supports hypothesis that higher level of MRS is likely to lead to higher audit fees. The results in the total sample and 'top–ten' firms show that MRS shows significant positive correlations with audit fees, while this result is not applicable to the 'non–top–ten' audit firms. These different results also show that it is important to distinguish between 'top–ten' and 'non–top–ten' in the Chinese audit market.

The results of the study have implications for the Chinese government, regulators, audit firms, accounting information users and researchers. By understanding industry specialization and audit fees in the Chinese audit market, national regulators, such as Ministry of Finance (MOF), China Securities Regulatory Commission (CSRC), Chinese Institution of Certified Public Accountants (CICPA), may design strategies to improve the functioning of audit market. The findings suggest that Chinese government may provide additional guidance to the 'non–top–ten' audit firms in order to enhance the functioning of audit firms using industry specialization strategies. Additionally, the findings may interest Big–four firms and global standard setters, such as International Federation of Accountants (IFAC) and International Auditing and Assurance Standards Board (IAASB), in understanding the importance of economic, political and social contexts in which auditing functions. Moreover, by understanding the unique features of the Chinese audit market, accounting information users may have better insights into the Chinese capital market characteristics. Furthermore, the theoretical and methodological enhancement in this paper is useful for future researchers examining industry specialization and audit fees in various countries. It is important to understand that Anglo-American measures of industry specialization are not likely to provide adequate insights into the Chinese audit market. This paper also shows that it is important for researchers to question whether the findings of Anglo-American countries are applicable to other audit markets. Importantly, economic, political and social contexts of countries cannot be ignored in researching industry specialization.

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Appendices

Appendix 1

A:Comparison of the Size of Professional Accountants in China and USA in 2009

Country	Population	Number of Professional Accountants[7]	Proportion of Professional Accountants per Million Population
China	1.3345 billion-(1)	155 000-(2)	116
USA	0.307 billion-(3)	342 562-(4)	1116

Source:

(1) http://www.stats.gov.cn/english/newsandcomingevents/t20120120_402780233.htm

(2) http://www.gov.cn/jrzg/2009-10/03/content_1432214.htm

(3) http://en.wikipedia.org/wiki/Demographics_of_the_United_States

(4) 2010-2011 AICPA Annual Report http://www.aicpa.org/About/AnnualReports/Pages/ 2010-2011AICPAAnnualReport.aspx

B: 2005-2008 Number of CPA in Audit firm in China

Year	CPA in Audit Firm	Audit Firm	CPA per Audit Firm
2009	91 149	7 605	11.99
2008	85 855	7 284	11.79
2007	77 345	7 012	11.03
2006	72 048	6 458	11.16
2005	69 283	5 355	12.94
2004	65 456	4 958	13.2

Source: http://baike.esnai.com/view.aspx?CThesaurus=t&w=%bb%e1%bc%c6%ca%a6%ca%c2%ce%f1%cb%f9

C: 2005-2008 Pass Rate of CPA Examination in China

Year	Accounting	Auditing	Financial and Cost Management	Economic Law	Tax Law
2008	10.79%	15.06%	15.26%	17.98%	13.56%
2007	12.66%	13.95%	18.41%	17.09%	11.08%
2006	12.87%	13.22%	14.50%	16.69%	17.34%
2005	11.22%	10.93%	13.92%	12.47%	18.19%
2004	10.32%	10.04%	12.61%	12.68%	11.66%

Source: collected according to the statistic data provided by Chinese Institute of Certified Public Accountants (CICPA)

[7] Professional accountants refer to members of professional accounting bodies.

D: 2009-2010 Audit Revenues of Big-four Firms and 'Top–ten' Firms in China

Name of Auditing Firm	Year's Revenues in 2010 (thousand RMB¥)	Year's Revenues in 2009 (thousand RMB¥)
Big-four Firms in China		
PricewaterhouseCoopers China	2 960 650	2 578 433
Deloitte China	2 600 071	2 370 252
Ernst & Young China	2 094 125	2 221 099
KPMG China	1 862 027	1 960 636
'Top–ten' Firms in China		
RSM China Certified Public Accountants	1 039 294	872 051
BDO China Shu Lun Pan Certified Public Accountants LLP	817 250	662 664
Crowe Horwath China	702 447	532 255
Pan-China Certified Public Accountants	650 344	502 660
Shinewing Certified Public Accountants	563 954	518 600
PKF Daxin Certified Public Accountants LLP	639 561	516 761
Da Hua Certified Public Accountants	559 962	510 857
Vocation International Certified Public Accountant Co., Ltd.	516 563	413 161
China Audit Asia Pacific Certified Public AccountantsCo.,Ltd.	487 323	400 654
Ascenda Certified Public Accountants	442 262	387 579

Source: collected according to the statistic data provided by Chinese Institute of Certified Public Accountants (CICPA)

Appendix 2

Table 1. Variable definition

Variables	Definition	Expected Symbols
Dependent Variable		
LAF	Natural log of audit fees paid by listed company	
Independent Variables		
RAS	Standardized clients' portfolio share of audit firm i in j industry based on the number of clients	-
MRS	Market share audit firm i in j industry based on the client's total assets	+
Control Variable		
LTA	Natural log of client's total assets	+
SUBS	Square root of subsidiaries number	+
FOREIGN	Square root of overseas subsidiaries number	+
QUICK	liquidity ratio	-
ROI	Return on Total assets	-
LOSS	Whether there is a loss of clients in recent 3 years. If yes ,LOSS=1,or LOSS=0;	+
AUDITCHA	Whether client changes audit firms ,if yes, AUDTICHA=1, or, AUDTICHA =0;	+/-
LOCATION1	Location features of clients. If they are in Beijing,Shanghai,Tianjin,Guangdong and Zhejiang, LOCATION1 =1, or, LOCATION1=0	+
LOCATION2	Location features of audit firms. If they are in Beijing,Shanghai,Tianjin,Guangdong and Zhejiang, LOCATION2 =1, or, LOCATION2=0	+
BIG10	The reputation and size of audit firms. If the firm rank 'Top–ten', BIG10=1,or, BIG10=0	+

Table 2. Effective samples

Year	The Company Number Audited by 'Top–ten'	The Company Number Audited by 'Non–top–ten'	Total
2009	552	577	1129
2010	546	557	1103

Table 3. The descriptive statistics of variables（2009 and 2010）

2009				
	N	**Mean**	**Median**	**Standard Deviation**
LAF	1129	13.217	13.122	0.545
LTA	1129	21.583	21.620	1.306
SUBS	1129	2.969	2.828	1.660
FOREIGN	1129	0.284	0.000	0.675
QUICK	1129	1.038	0.755	1.243
ROI	1129	0.043	0.047	0.151
LOSS	1129	0.310	0.000	0.463
AUDITORCHA	1129	0.178	0.000	0.383
LOCATION#1	1129	0.349	0.000	0.477
LOCATION#2	1129	0.743	1.000	0.437
Big10	1129	0.489	0.000	0.500
RAS	1129	0.089	0.070	0.080
MRS	1129	0.055	0.045	0.035
2010				
	N	**Mean**	**Median**	**Standard Deviation**
LAF	1103	13.302	13.218	0.599
LTA	1103	21.762	21.793	1.367
SUBS	1103	3.101	2.828	1.835
FOREIGN	1103	0.267	0.000	0.653
QUICK	1103	1.595	1.253	1.562
ROI	1103	0.043	0.035	0.123
LOSS	1103	0.259	0.000	0.438
AUDITORCHA	1103	0.077	0.000	0.267
LOCATION#1	1103	0.345	0.000	0.475
LOCATION#2	1103	0.748	1.000	0.434
Big10	1103	0.495	0.000	0.500
RAS	1103	0.092	0.075	0.073
MRS	1103	0.066	0.033	0.080

Table 4. Descriptive statistics of 'Top–ten' and 'Non–top–ten' and the test results of mean differences (2009 and 2010)

2009							
	Samples of 'Top–ten' (N=552)			Samples of 'Non–top–ten' (N=577)			The Mean Difference
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	T value
LAF	13.303	13.234	0.590	13.134	13.122	0.485	5.259***
LTA	21.726	21.658	1.373	21.446	21.557	1.224	3.621***
SUBS	3.108	3.000	1.753	2.836	2.646	1.556	2.759***
FOREIGN	0.327	0.000	0.718	0.243	0.000	0.629	2.095**
QUICK	0.980	0.785	0.906	1.094	0.728	1.495	-1.550
ROI	0.041	0.048	0.153	0.045	0.045	0.149	-0.417
LOSS	0.312	0.000	0.464	0.308	0.000	0.462	0.113
AUDITORCHA	0.248	0.000	0.432	0.111	0.000	0.314	6.079***
LOCATION1	0.389	0.000	0.488	0.310	0.000	0.463	2.797***
LOCATION2	0.861	1.000	0.347	0.631	1.000	0.483	9.207***
RAS	0.068	0.065	0.030	0.109	0.079	0.104	-8.891***
MRS	0.073	0.072	0.033	0.038	0.034	0.028	19.167***
2010							
	Samples of 'Top–ten' (N=546)			Samples of 'Non–top–ten' (N=557)			The Mean Difference
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	T value
LAF	13.406	13.305	0.660	13.201	13.162	0.513	5.733***
LTA	21.926	21.861	1.446	21.602	21.751	1.265	3.961***
SUBS	3.145	3.000	1.716	3.058	2.828	1.945	0.790
FOREIGN	0.319	0.000	0.726	0.216	0.000	0.569	2.621**
QUICK	1.586	1.260	1.376	1.605	1.250	1.726	-0.203
ROI	0.045	0.036	0.128	0.041	0.034	0.117	0.544
LOSS	0.255	0.000	0.436	0.264	0.000	0.441	-0.353
AUDITORCHA	0.073	0.000	0.261	0.081	0.000	0.273	-0.469
LOCATION1	0.388	0.000	0.488	0.302	0.000	0.459	3.036**
LOCATION2	0.861	1.000	0.346	0.637	1.000	0.481	8.864***
RAS	0.073	0.065	0.040	0.111	0.088	0.091	-9.017***
MRS	0.102	0.079	0.092	0.031	0.018	0.044	16.445***

***、**、*respectively means the significance level "1%"、"5%"、"10%"

Table 5. Regression results of overall samples in three models (2009)

	Model 1		Model 2		Model 3	
Variables	Coefficient	T value	Coefficient	T value	Coefficient	T value
LTA	0.475***	18.480	0.473***	18.079	0.474***	18.452
SUBS	0.239***	8.877	0.239***	8.831	0.239***	8.876
FOREIGN	0.057**	2.328	0.057**	2.308	0.058**	2.330
QUICK	-0.025	-1.134	-0.024	-1.089	-0.025	-1.147
ROI	0.036	1.586	0.034	1.530	0.036	1.594
LOSS	0.060**	2.496	0.058**	2.431	0.059**	2.479
AUDITORCHA	-0.106***	-4.718	-0.112***	-4.994	-0.108***	-4.751
LOCATION1	0.089***	3.689	0.089***	3.664	0.089***	3.683
LOCATION2	0.038	1.597	0.044*	1.813	0.040*	1.667
Big10	0.050*	1.939	0.086***	3.720	0.056**	2.016
RAS			0.023	1.001	0.014	0.578
MRS	0.063**	2.526			0.058**	2.183
F-statistic	95.528（p<0.001）		94.584（p<0.001）		87.543（p<0.001）	
Adjusted R^2	0.480		0.477		0.479	
Sample size	1129		1129		1129	

***、**、*respectively means the significance level "1%"、"5%"、"10%"

Table 6. Regression Results of Overall Samples in Three Models (2010)

	Model 1		Model 2		Model 3	
Variables	**Coefficient**	**T value**	**Coefficient**	**T value**	**Coefficient**	**T value**
LTA	0.521***	20.838	0.535***	21.689	0.520***	20.776
SUBS	0.186***	7.408	0.192***	7.647	0.186***	7.415
FOREIGN	0.079***	3.261	0.084***	3.488	0.078***	3.246
QUICK	-0.013	-.583	-0.015	-.696	-0.012	-0.557
ROI	0.083***	3.682	0.079***	3.500	0.083***	3.664
LOSS	0.045*	1.900	0.043*	1.802	0.046*	1.923
AUDITORCHA	-0.022	-1.016	-0.021	-.951	-0.022	-0.978
LOCATION1	0.106***	4.501	0.106***	4.509	0.105***	4.468
LOCATION2	0.018	0.749	0.018	.752	0.016	0.654
Big10	0.050**	2.021	0.080***	3.451	0.041	1.533
RAS			0.000	0.007	-0.024	-1.002
MRS	0.072***	2.837			0.081***	3.009
F-statistic	94.681（p<0.001）		93.414（p<0.001）		86.875（p<0.001）	
Adjusted R2	0.483		0.480		0.483	
Sample size	1103		1103		1103	

***、**、*respectively means the significance level “1%”、“5%”、“10%”

Table 7. Regression Results of ‘Top–ten’ Samples in Three Models（2009）

	Model 1		Model 2		Model 3	
Variables	**Coefficient**	**T value**	**Coefficient**	**T value**	**Coefficient**	**T value**
LTA	0.498***	13.877	0.507***	14.113	0.496***	13.969
SUBS	0.225***	5.986	0.225***	5.965	0.232***	6.232
FOREIGN	0.072**	2.071	0.072**	2.076	0.071**	2.079
QUICK	-0.033	-1.102	-0.031	-1.018	-0.024	-0.790
ROI	0.048	1.562	0.046	1.473	0.059*	1.905
LOSS	0.087***	2.631	0.082**	2.488	0.101***	3.058
AUDITORCHA	-0.172***	-5.541	-0.180***	-5.804	-0.167***	-5.455
LOCATION1	0.083**	2.512	0.080**	2.402	0.074**	2.255
LOCATION2	0.026	0.830	0.026	0.841	0.005	0.150
RAS			-0.032	-1.054	-0.143***	-3.558
MRS	0.068**	2.269			0.165***	4.096
F-statistic	61.206（p<0.001）		60.353（p<0.001）		57.992（p<0.001）	
Adjusted R2	0.522		0.519		0.532	
Sample size	552		552		552	

***、**、* respectively means the significance level “1%”、“5%”、“10%”

Table 8. Regression Results of 'Top–ten' Samples in Three Models（2010）

	Model 1		Model 2		Model 3	
Variables	**Coefficient**	**T value**	**Coefficient**	**T value**	**Coefficient**	**T value**
LTA	0.548***	15.136	0.561***	15.785	0.545***	15.201
SUBS	0.206***	5.596	0.215***	5.896	0.209***	5.758
FOREIGN	0.094***	2.779	0.095***	2.824	0.085**	2.520
QUICK	-0.045	-1.490	-0.048	-1.584	-0.040	-1.329
ROI	0.063**	2.033	0.060*	1.934	0.069**	2.240
LOSS	0.071**	2.171	0.070**	2.162	0.075**	2.319
AUDITORCHA	0.012	0.380	0.023	0.754	0.021	0.690
LOCATION1	0.125***	4.012	0.124***	3.978	0.121***	3.921
LOCATION2	0.026	0.854	0.021	0.695	0.017	0.573
RAS			-0.078***	-2.620	-0.120***	-3.566
MRS	0.035	1.103			0.094***	2.649
F-statistic	60.293（p<0.001）		61.492（p<0.001）		57.169（p<0.001）	
Adjusted R2	0.521		0.526		0.531	
Sample size	546		546		546	

***、**、* respectively means the significance level "1%"、"5%"、"10%"

Table 9. Regression Results of 'Non–top–ten' Samples in Three Models（2009）

	Model 1		Model 2		Model 3	
Variables	**Coefficient**	**T value**	**Coefficient**	**T value**	**Coefficient**	**T value**
LTA	0.444***	11.777	0.443***	11.743	0.443***	11.726
SUBS	0.263***	6.630	0.265***	6.686	0.263***	6.649
FOREIGN	0.038	1.040	0.038	1.054	0.038	1.048
QUICK	-0.023	-0.687	-0.022	-0.656	-0.023	-0.696
ROI	0.022	0.646	0.023	0.677	0.023	0.689
LOSS	0.028	0.772	0.028	0.787	.028	0.765
AUDITORCHA	0.000	-0.026	-0.011	-0.321	-0.007	-0.220
LOCATION1	0.093**	2.558	0.092**	2.520	0.092**	2.537
LOCATION2	0.040	1.115	0.049	1.366	0.047	1.287
RAS			0.046	1.397	0.038	1.090
MRS	0.037	1.128			0.025	0.716
F-statistic	39.717（p<0.001）		39.832（p<0.001）		36.226（p<0.001）	
Adjusted R2	0.402		0.403		0.402	
Sample size	577		577		577	

***、**、* respectively means the significance level "1%"、"5%"、"10%"

Table 10. Regression Results of 'Non–top–ten' Samples in Three Models（2010）

	Model 1		Model 2		Model 3	
Variables	**Coefficient**	**T value**	**Coefficient**	**T value**	**Coefficient**	**T value**
LTA	0.487***	13.164	0.513***	14.176	0.488***	13.073
SUBS	0.183***	4.976	0.192***	5.195	0.183***	4.972
FOREIGN	0.031	0.880	0.032	0.902	0.031	0.876
QUICK	0.020	0.615	0.024	0.710	0.020	0.615
ROI	0.108***	3.041	0.114***	3.196	0.108***	3.033
LOSS	0.017	0.469	0.018	0.475	0.017	0.468
AUDITORCHA	-0.050	-1.480	-0.057*	-1.698	-0.050	-1.481
LOCATION1	0.090**	2.463	0.094**	2.547	0.090**	2.462
LOCATION2	0.023	0.645	0.028	0.771	0.024	0.649
RAS			0.044	1.320	0.003	0.079
MRS	0.099***	2.866			0.098**	2.539
F-statistic	38.813（p<0.001）		37.722（p<0.001）		35.221（p<0.001）	
Adjusted R2	0.405		0.398		0.404	
Sample size	557		557		557	

***、**、* respectively means the significance level "1%"、"5%"、"10%"

THE IMPACT OF CORPORATE GOVERNANCE ON FIRM PERFORMANCE IN THE ZIMBABWEAN MANUFACTURING SECTOR

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Abstract

Corporate governance studies in Zimbabwe have concentrated on existence of frameworks that control firms. This study focused on the corporate governance factors that are associated with firm performance in the Zimbabwean manufacturing sector. We investigated a sample of 88 companies which were operating at least 80% capacity from 2009 to 2012.Using Return on Assetst (ROA) as a measure of performance and the dependent variable, and 14 corporate governance proxies encompassing board structure, board composition and board procedures as the independent variables, a bivariate and multivariate regression analysis was performed. The results indicated that shareholder concentration, proportion of independent directors, board tenure and access to financial statements are positive and significant to firm performance in the bivariate analysis. On the multivariate regression analysis however, independent directors was positive but not significant. Researchers have not been able to agree on these factors and since corporate governance is largely endogenously determined it can be concluded that factors are influenced by country effects. Thus further studies focusing on similar countries need to be undertaken.

Keywords: Corporate Governance, Firm Performance, Significant Factors

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1 Introduction

The paper examines the corporate governance factors that that have an impact on firm performance in the Zimbabwean manufacturing sector. This is in light of the attention corporate governance has receives fuelled internationally by corporate scandals like Enron and WorldCom in the United States of America and Marconi in the United Kingdom that made global headlines and equally in Zimbabwe where the financial sector has had its share of corporate scandals that saw the closure of several financial institutions which were focusing more on non-core business. In the absence of corporate governance framework and Zimbabwe being in the throes of recovery there is need to extrapolate what works for Zimbabwe. This follows onto the theory of Dynamic Managerial capabilities which postulate that the most competitive firms are those which can re-configuration existing resources and capabilities into new competencies in response to changes in the environment (Teece et al 1997). Globalization has ushered in such kind of dynamism and empirical evidence can be deemed necessary to guide the Zimbabwean manufacturing sector at this stage of its history given the fact that it has been earmarked by the government to spearhead economic recovery.

Research is continually revealing that corporate governance has an effect on company performance (Aluchna 2009).Corporate governance looks at the agent-principal nature of the relationship between shareholders and the board of directors to ensure that their interests are in sync. It follows then that the way an organization is directed and controlled can affect the performance of the organization. Thus ownership structure and concentration can affect quality of decisions as dominant shareholders' might thwart minority shareholders. On the positive however, independent directors positively influence corporate performance providing objectivity and professionalism Aluchna (2009). The presence of institutional investors might also attract investment and influence performance through experience and superior skill.

Research by (Bauer and Guenster 2003) indicates that companies with better corporate governance guarantee the payback to the shareholder and limit the risk of the investment. Further in a separate research by McKinsey, investors are willing to pay a special premium for shares of the companies, which comply with corporate governance rules ranging from 18 per cent for countries of strong institutional order (UK, USA) to as much as 27-28 per cent for countries

characterized by weak shareholder protection (Venezuela, Colombia).

Past studies are in consensus that corporate governance has a positive impact on firm performance and the majority of these have however concentrated on individual or a couple of corporate governance factors (Ntim and Osei 2011; Azim 2012;Black 2012; Grosfed 2006; Dahya et al 2006; Lopes et al 2011). Furthermore there has been a large contingent of studies focusing on the developed world perhaps ignoring idiosyncrasies of developing economies. The endogenous nature of corporate governance has not been fully examined.

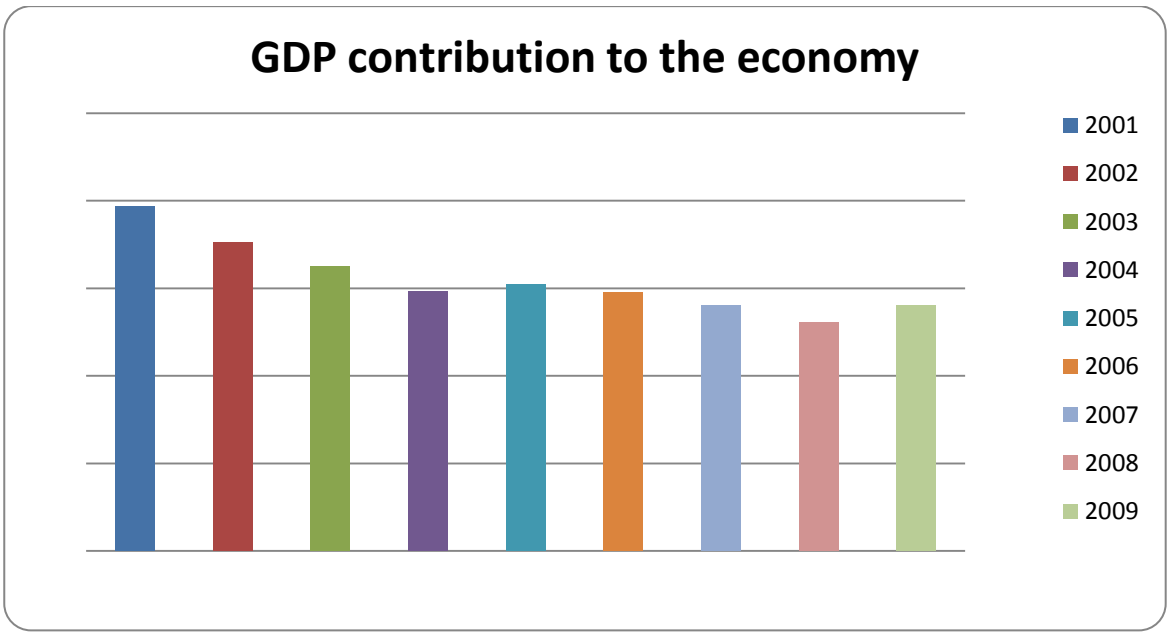
This paper contributes to the extant literature in the following ways. First, using a sample of 88 companies both private and public from 2009 to 2012 we provide evidence of the critical corporate governance factors affecting performance in the Zimbabwean manufacturing sector. To the best of our knowledge, this paper presents a first attempt at modelling corporate governance - firm performance association within the Sub-Saharan African context, with special reference to Zimbabwe thus significantly increasing the body of knowledge for a developing economy. Secondly, contrary to prior studies we use panel data because better results are obtained by pooling of cross-section and time-series company data. Panel data sets give more data points, more degrees of freedom, reduce co linearity among variables and therefore, produce more efficient estimates than pure cross-sectional or pure time-series data sets. Third, and distinct from most prior studies, we use an econometric model that sufficiently addresses firm heterogeneity (i.e. firm-specific variables) and time-specific variables which could bias estimates if omitted, as the case in pure cross sectional and time series studies as suggested by Ehikioya (2009).

The rest of the paper is organised as follows. Section 2 provides an overview of the Zimbabwean manufacturing sector; Section 3 reviews the Corporate governance environment in the Zimbabwean manufacturing sector. Section 4 reviews the prior literature on the impact of corporate governance on firm performance. Section 5 describes the research methodology. Section 6 reports empirical analyses, while section 7 concludes.

2 Zimbabwe manufacturing sector

This study focused on the manufacturing sector of Zimbabwe. The sector developed during the Federation days when Zimbabwe then Southern Rhodesia was the industrial hub of the three countries making up the federation namely Northern Rhodesia (Zambia),Nyasaland (Malawi) and Southern Rhodesia (Zimbabwe) (Chiripanhura 2010). When the unilateral declaration of independence was done in 1965, the sector adapted an import substitution strategy to cushion it against sanctions that resulted from the illegal stance. This strategy saw the proliferation of the manufacturing sector which was highly diversified manufacturing more than 6000 products with little or no integration(CZI 2011). The graph below shows the GDP contribution of the manufacturing sector from 2001 to 2009.

Figure 1.GDP contribution to the economy



Source: Zimstat 2010

Though the contribution to GDP has been declining, the sector still remains very important in the country as there are major correlations between agriculture, mining and manufacturing. The major subsectors are food and beverages, clothing and textiles, leather and leather products, fertilizer, chemicals and pharmaceuticals, timber and wood, motor industry, metal and non-metal products, plastic and packaging and rubber and tyre manufacturing. The Government through the Industrial Development framework has identified six priority sectors as the pillars for growth in the manufacturing sector namely Agro-processing (Food and beverages, Clothing and Textiles, Wood and Furniture), Fertilizer Industry, Pharmaceuticals and Metals industry (Industrial Development Framework 2011). This study focused on these subsectors as issues of corporate governance will remain at the fore in an effort of making the subsectors achieve superior performance in a bid for economic recovery. The sector however is facing a myriad of challenges in recovery and firm closures are the order of the day. Added to that, there is a dearth of investors to inject much needed capital to replace the largely antiquated machinery. The companies that are open are operating at below 40% capacity which affected sampling. The researcher worked with a sample of 88 firms operating at least 80% capacity.

3 Zimbabwe corporate governance context

The following is empirical literature on the corporate governance scenario in the Zimbabwe manufacturing sector. The majority of the firms in the manufacturing sector are privately owned (89%) with only 9 out of 78 companies listed on the Zimbabwean stock exchange in the manufacturing sector. Consequently, the majority of firms have very high shareholder concentration with 82% holding more than 30% of the shares. There is a low level of shareholder obscurity and therefore a high likelihood of knowing the person behind the corporate governance set up as noted by (Daily, Dalton & Cannella 2003) that the higher the concentration of shareholding in one person, the more likelihood the corporate governance issues to be spearheaded by that person. There are no hard and fast rules as to the level of allowable shareholder concentration in Zimbabwe except in the banking sector where one shareholder cannot hold more than 10%. This is in sync with an observation made by (Ehikioya 2009) that ownership /shareholder concentration is high in developing countries because of the poor legal system to protect shareholders and interests of investors. Further to that ownership is hardly shrouded in mystery as the majority of the firms are locally owned and with the indigenization drive which is an effort by the government to increase local ownership of individual firms to a ratio of 51% local and 49% foreign, transparency of ownership has come to the fore.

Board composition and board tenure are significant aspects of the corporate governance scenario of Zimbabwe. At least 50% of the board members in the manufacturing sector are independent. The issue of board independence has been revered in corporate governance literature as critical as it encourages accountability and minority shareholder protection (Black et al 2011). There is no specified tenure period for the board members some having served in excess of 10 years. Shareholder selection is by en large independent probably following onto the fact that the majority of companies are privately owned and have a free reign in board selection. At least 36% of the organizations' CEOs chair their boards. Literature points out that there is a danger in is this dual relationship, where the CEO can exert undue influence and to some extent even override board decisions (Muranda 2006). Local firms which are privately owned have a prevalence of this relationship. Public firms on the other hand are more inclined towards the agency theory than privately owned firms as 90% of them have a separation of CEO roles. Interestingly, through a chi square test, a close relationship was found between firm ownership and CEO duality, X^2 (2, N = 62) = 23.64, p = 0.001.

The board of directors is a major decision making body and its size has an influence on the quality of decisions made and the adherence to corporate governance issues (Kumar & Singh 2013. The majority (93%) of the boards do not exceed 10 in membership. It should be noted that board size has a bearing on the amount of money spent by the organization on board remuneration. Research has indicated that a board size of more than 10 members become counter-productive and does not add value to the firm (Dahya et al 2006). Membership of 10 was viewed as optimum (Kumar & Singh 2013). Out of these boards, comes the committees that run the business of the firm. Corporate governance is seen in better light if there are a number of board committees such that decisions are not vested in individuals. The level of accountability is higher in such situations. The most important committee as postulated in literature is the audit committee (Azim 2012). The majority of the firms (88%) have at least 4 board committees including the audit committee which demonstrates a level of trust in the committees system. Literature does not indicate the number of committees rather the types of committees.

The results indicate that the auditor selection is not independent as the majority (97%) indicated that there is some relationship with the company.

Corporate governance also involves the quality of and access to financial statements. Ideally financial statements should be prepared in accordance to prevailing financial standards, should also adhere to the laws of the land and be certified by independent auditors. They should disclose enough for a would-be shareholder and even board members to make informed decisions. The selection of auditors however

was not independent in the majority of the cases. There is however a positive demeanour as far as access, quality and timeous disclosure. Zimbabwean firms are mandated to report every year in tandem with the tax laws which are very stringent to the point of instituting heavy penalties for late reports from companies.

4 Prior literature on corporate governance and firm performance

4.1 Corporate governance theories

Corporate governance is underpinned by the agency and stewardship theories. Agency theory also known as the shareholder theory is a relationship between a principal and the agent where the shareholders are seen as the principals and the management as the agents. The theory as put forward by Jensen (1976), argues that agents act with self-interest which may not be in tandem with what is necessary to maximize the principals' return. The theory advocates for incentives and financial reward for the agents to motivate them to maximize shareholder interests. The stewardship theory also known as the stakeholder theory, as postulated by Donaldson (1985) departs from the idea of a manager being an opportunistic, but rather that essentially a manager wants to do a good job, that is to be a good steward of the corporate assets. Thus, stewardship theory holds that the performance of the manager is influenced by the structures under which he has to facilitate the achievement of goals. The issue then becomes whether the organizational structure is conducive to formulate and implement plans for high corporate performance (Donaldson & Davis 1991). Corporate governance is then viewed as a necessary anecdote for the problem of greed and as a catalyst for the creation of adequate organizational structures. Thus the definitions point to the fact that corporate governance upholds the protection of the stakeholders taking cognizance of the fact that shareholders run the risk of financial loss as opposed to management who can easily jump ship and move on to greener pastures and that corporate governance compliance is necessary to create the requisite structures for better performance.

4.2 Importance of corporate governance

In the last 20 years the importance of corporate governance has been championed by government's regulators and researchers. This can be attributed to the liberalization and internationalization of economies which has brought with it the growth of institutional investors, privatization, and rising shareholder activism and the integration of capital markets (Aguilera and Cuervo-Cazurra 2004). These developments in the ownership structure have increased attention towards the monitoring of overall corporate governance structures, financial controls and financial performance (Azim 2012). Research has shown that good corporate governance can serve as a tool for attracting better quality investors as well as influencing stock prices (Korac-Kakabadse, Kakabadse and Alexander Kouzmin 2001) . In the same vein the McKinsey 'Global Investor Opinion Survey' (2002) shows that 15 per cent of European institutional investors consider corporate governance to be more important than a firm's financial issues, such as profit performance or growth potential in their investment decisions. Additionally, 22 per cent of European institutional investors are willing to pay an average premium of 19 per cent for a well-governed company (Bauer, Guenster and Otten 2004).

According to (Naidoo 2009), the major advantage of good corporate governance is better access to capital as such companies can attract foreign and institutional investors which aids in sustainable growth. Foreign ownership is one way of technologically upgrading organizations in emerging economies through import of new capital and new technologies (Haat et al 2008). (Naidoo 2009) further postulates that banks will most likely charge a lower interest rate to better governed firms thus enhancing access to capital. In agreement (Klapper and Love 2004) indicate that firms with better governance mechanisms can significantly lower their cost of capital. Companies which are properly governed, have the foresight to reduce risk as they are better able to attract top notch human resources which eventually translates into profit. Corporate governance also contributes towards creation of competitive advantage. By attracting better quality, larger and cheaper funding, a company can create trust, business confidence and indispensable social capital that affect performance (Naidoo 2009:22). In agreement, (Haat et al 2008) indicates that good corporate governance practices like better financial reporting and transparency improves investor confidence.

4.3 Firm type and corporate governance

Corporate governance though important to all companies it is noted that not all aspects of it matter to all firms as each entity will benefit from different corporate governance aspects. One determinant of this difference has been firm size. According to (Black 2012), larger firms could need more formal governance to respond to their more multifaceted operations. Such firms have a higher reliance on agency and therefore could have greater potential for agency costs due to greater financial resources or less concentrated ownership. Invariably, larger firms would have more investors who are likely to be more attentive to how governance affects the value of the firm .Smaller firms on the other hand have lower institutional ownership and thus pay less attention to governance issues (Black 2012) . In terms of profitability, highly profitable firms do not need outside capital and can afford to ignore corporate

governance aspects as they have less need to comply for the sake of attracting investors. Klapper & Love (2004) note that manufacturing firms which have substantial tangible assets are more acquiescent to external oversight, including creditor monitoring. They may therefore have less need for equity governance, and benefit less from governance than other firms. Faster growing firms need external capital to prolong growth, and therefore might choose better governance to continue to attract investors.

The question to be asked perhaps is that should there be universal corporate governance practices or corporate governance also depends on the country characteristics. Black et al (2011) posit that country characteristics strongly influence of corporate governance determinants and what matters in corporate governance from country to country may not be fully captured in popularly used indices. Differing laws, ownership patterns, political orientations have an influence on the corporate governance framework of countries and their companies. It is suggested to have an index that takes into account the country characters of that country (Black et al 2011)

4.4 Corporate governance and firm performance

Research from as far back as 1976 has indicated a positive relationship between corporate governance ratings and company performance (Jensen and Meckling 1976), as the ratings translate into improved operating performance and a higher market value. The role of corporate governance has generally been accepted as affecting performance but empirical research has remained inconclusive regarding the degree to which individual governance monitoring mechanisms enhance firm performance and shareholder value (Pham et al 2011). Although it is easier to show that adverse outcomes are associated with failures of corporate governance than higher standards of corporate governance contribute significantly to firm success, it is still arguable that entities collapse due to deficiencies in corporate governance (Chambers 2012). Firms with stronger governance structures are most likely to perform better than those with weaker structures. Corporate governance influences the ability of the firm to exploit opportunities, create effective strategies and develop technological capabilities (Chambers 2012). He further points out that in many cases when a firm has excellent results, the role of corporate governance is not applauded but it is good corporate governance that positions these entities for competitive advantage.

The norm to determine the relationship between corporate governance and firm performance seems to be an examination of a subset of governance elements which results in some provisions being linked to operating performance and others not. These provisions hover around board composition, board independence, presence of an audit committee and transparency in disclosure to name the most popular. Results indicate that better corporate governance is associated with higher operating performance (return on assets, ROA) and higher Tobin's Q (Haat et al 2008, Brown& Caylor 2009, Pham et al 2011). Tobin's q is generally used as the measure of firm valuation . 'Tobin's q is defined as the market value of assets divided by the replacement value of assets. Thus

$$\text{Tobi's Q} = \frac{Equity\ market\ value + Liabilities\ book\ value}{Equity\ book\ value + liabilities\ book\ value}$$

Using Tobin's Q, a research carried out in Malaysia has shown that practising good corporate governance is an important factor that influences firm market performance (Haat et al 2008:756).

It also implies that the greater the real return on investment, the greater the value of Q . For the US market, Gompers et al. (2003) in inquiring on the relationship between corporate governance and long-term equity returns, firm value and accounting measures of performance found out that well-governed companies outperform their poorly governed counterparts. Well-governed companies have higher equity returns, are valued more highly, and their accounting statements show a better operating performance. Thus the general consensus is that corporate governance has an impact on firm performance but results across the world differ as to the significance of each of the corporate governance determinants. Given below is a summary of findings over the years on the significance of corporate governance variables.

5 Research design

5.1 Data

A total of 88 questionnaires were administered, forming the sample from the population of all the registered manufacturing entities in operating above 80% capacity Harare Zimbabwe. A total of 62 questionnaires were usable giving a response rate of 45%. The respondents were wary of releasing data especially financial data given the collection period's proximity to the elections held in July 2013. The researcher used analytical software, STATA, for data analysis. Descriptive statistics concerning the variables were looked at and the results of the regression model came up with critical determinants for corporate governance.

In order to determine corporate governance factors influencing firm performance as suggested by (Brown & Caylor 2008:136) 16 determinants were regressed using a stepwise approach.

5.2 Variables

The table below gives a summary of the characteristics of the variables and the literature

support for the factors influencing corporate governance.

Table 1. Corporate governance variables

Variable	Description	Reference
Ownership structure	-Shareholder concentration -Shareholder identity -Transparency of ownership	Aluchna 2009:187 Pham & Zein 2011:375
Board structure	-Board composition -Board tenure -Proportion of independent directors -Is CEO chairman of the board	Aluchna 2009:187 Pham & Zein 2011:375
Board Size	Number of board members -Number of board committees	Black et al 2012:939
Board procedure and ethical conduct	-Presence of an audit committee -Tenure of auditors -Independence of auditors -Selection of auditors	
Disclosure	-Quality of financial statements -Availability of financial statements -Access to information -Scope of the information -Timeous disclosure	Black et al 2012: 939

5.3 Regression model

Given the panel nature of our data, and as suggested by prior research and random effects method, the following econometric model was used.

ROA= CG_{it}

Where

ROA= Performance measured by Return on assets

CG_{it} = Factors influencing corporate governance over time

i = the ith firm (i.e. the cross section dimension)

t = t -th year (the time series dimension)

These factors are elaborated in the expanded equation below.

$$\text{ROA} = \alpha + \beta_1 SC + \beta_2 SI + \beta_3 TO + \beta_4 BT + \beta_5 ID + \beta_6 CEO + \beta_7 BE + \beta_8 BS + \beta_9 BC + \beta_{10} AC + \beta_{11} SAC + \beta_{12} IA + \beta_{13} AS + \beta_{14} FS + \beta_{15} AFS + \beta_{16} TD$$

Where

α and β= the parameters to be estimated

SC= Shareholder concentration

SI= Shareholder identity

TO= Transparency of ownership

BT= Board Tenure

ID= Independent directors

CEO= CEO chairing the board or not

BE= Board of directors' educational level

BS= Board size

BC= Presence of board committees

AC= Presence of an audit committee

SAC= Selection of the audit committee

IA= Independence of the auditors

AS= Auditor selection

FS= Quality of financial statements

AFS= Access by the board to financial statements

TD= Timeous disclosure of financial statements

6 Results and discussion

6.1 Correlation Matrix

We conduct correlation analysis in order to ascertain the level of collinearity among the variables Table 2 below show that all the correlations are within the acceptable range of 0.01-0.775 as suggested by Kumar and Singh (2011). The degree of correlation between independent variables is either low or moderate, suggesting absence of multicolinearity between these variables.

Table 2. Correlation matrix

	Profit	Concen	Identity	Transp	Tenure	Ind D	CEO	B Edu	B/size	B/comm	Aud com/ sel	Ind/ aud	Aud/ sel	Quali /fin stats	Access	Discl
Profit	1.0000															
Concen	0.0746	1.0000														
Identity	0.0625	0.3668	1.0000													
Trans	0.0276	0.0938	0.4302	1.0000												
Tenure	0.0804	-0.0008	0.0743	0.0320	1.0000											
Ind/Dir	-0.0054	0.1480	0.1119	0.0739	-0.0971	1.0000										
CEO	-0.0666	0.1858	0.1177	0.1052	0.2870	-0.0921	1.0000									
B/Edu	0.0615	-0.1248	0.1515	0.0977	-0.2554	-0.1188	-0.4572	1.0000								
B/Size	-0.0409	0.0510	0.0585	-0.1191	0.0981	0.1895	0.0018	-0.0969	1.0000							
B/comm	0.0364	0.0004	0.1367	-0.0230	-0.9337	0.1264	0.0129	-0.0838	0.3361	1.0000						
Aud/comm	0.0703	-0.0722	0.2171	0.0934	-0.1777	0.2242	-0.1245	-0.5581	0.2536	0.1538						
Audi/comm sel	-0.0196	-0.2248	0.1739	0.1199	0.0711	0.1531	-0.0860	0.0386	0.2987	0.0652	1.0000					
Ind/aud	-0.0647	0.2340	-0.0469	-0.0883	-0.0088	-0.1466	-0.1422	0.1284	-0.1908	0.0209	-0.0836	1.0000				
Aud/sel	-0.0591	-0.3386	-0.0168	-0.0621	-0.1802	0.1876	-0.1496	0.0427	0.1493	0.0196	0.4486	-0.2035	1.0000			
Fin stat	0.0522	0.1383	0.1543	-0.0385	0.0023	0.1521	-0.3456	0.0338	0.1260	0.1348	0.1308	0.3442	0.0134	1.0000		
Access	-0.0371	-0.0592	-0.0216	-0.0093	-0.9329	0.1007	-0.2868	0.2099	-0.1785	0.0781	-0.1642	-0.0438	0.1508	-0.0191	1.0000	
Disclosure	0.0628	-0.1976	-0.1366	-0.0588	-0.1960	0.297	-0.4015	0.3221	-0.0855	0.1656	0.1686	0.1635	0.1599	0.2669	0.1579	1.0000

Source: Primary data

6.2 Regression analysis

Given in table 3 are the results of the stepwise regression approach to identifying which factors are positive and significantly related to operating performance. All regressions are estimated using the random effects method.

6.3 Variable findings and discussion

6.3.1 Shareholder concentration

The positive association between shareholder concentration and firm performance implies that as concentration increases, performance also improves. This is probably because if a majority shareholder has a high proportion of shares, they have more control over corporate governance influences and therefore performance. This concurs with a study carried out by (Kumar & Singh 2011) as ownership drives the promoter to seek more control of the company and gives the major shareholder an incentive to monitor and thus enhance firm value. Emerging markets generally have family owned businesses and corporate governance is greatly influenced by majority shareholders who are family members (Millar et al 2005, p. 166). However, these results were contradicted by the findings of Ongore and K'Obonyo (2011) in their study of Kenyan companies listed on the stock exchange who noted a negative and

significant relationship. This sample was a mixture of public and private companies and the results seem to be in tandem with the fact that Zimbabwean companies are privately owned and generally have high shareholder concentration and therefore control is likely to lie in one person.

Table 3. Bivariate and multivariate analysis

	Bivariate analysis			Multivariate		
Variable	**Coeff**	**Z**	**P**	**Coeff**	**Z value**	**P value**
Shareholder concentration	0.227116	2.31	0.021	0.4260	2.72	0.007
Shareholder identity	0.521468	1.11	0.916	-0.3653	0.52	0.606
Transparency of ownership	0.475324	0.07	0.948	0.9121	0.08	0.935
Board tenure	0.019681	0.35	0.730	0.4126	1.92	0.055
Proportion of independent directors	0.273544	2.41	0.016	0.1983	1.41	0.159
Role of the CEO	-0.04201	-0.32	0.745	0.0966	-0.56	0.579
Education levels of board members	-0.19787	-1.32	0.187	0.1068	-0.49	0.621
Board size	-0.00288	-0.01	0.990	-0.2724	-0.83	0.406
Board committees	0.023060	0.24	0.811	0.0889	0.74	0.460
Audit committee	0.276029	1.06	0.289	-0.1454	-0.36	0.716
Selection of the audit committee	0.118008	0.55	0.579	0.3986	1.27	0.204
Independence of auditors	0.032943	0.20	0.838	-0.1550	-0.70	0.418
Selection of auditors	0.021231	0.24	0.810	0.1052	0.89	0.375
Quality of financial statements	0.531834	1.10	0.270	0.0922	0.15	0.884
Access to financial statements	0.74081	0.04	0.968	0.4180	1.74	0.082
Timeous disclosure	0.211501	0.59	0.553	0.4180	0.94	0.347

Source: Primary data

6.3.2 Shareholder identity

An effort to identify corporate governance factors that affect firm performance also included an ability to of stakeholders to identify shareholders. Shareholders come from a variety of nationalities and beliefs which affect the decisions that are made and followed. In Zimbabwe shareholders can be private institutions like insurance companies, the government or individuals. The bivariate regression analysis indicated that shareholder identity is significantly related to firm performance therefore this variable (or shareholder identity) was not included in the multivariate analysis. Ongore and K'Obonyo (2011, p.111) also do not find a significant relationship between shareholder identity and firm performance. The most likely explanation for this difference was the focus on different types of company registration. This study focused on both private and public firms while most country studies focus on public companies (Black et al 2012).

6.3.3 Transparency of ownership

The issue at hand in this variable was whether the nationality of the owners could be identified, in a bid to understand the transparency of the nationality of the owners as nationality of owners has affects the way they do business and therefore affecting performance. Both the bivariate and multivariate regression (analyses) show that this variable does not significantly explain firm performance in Zimbabwe which result was also noted by (Ongore and K'Obonyo 2011, p.111) that there was no positive relationship between transparency of ownership and firm performance. For the Zimbabwean scenario the issue of transparency is very topical given the indigenization agenda and (98%) of the respondents were well aware of the nationality of the owners and thus the variable did not affect firm performance.

6.3.4 Board tenure

This variable captured the effect of the length of time a board member can stay on the board. Board tenure has an impact on experience for the members with the premise that probably the more experienced the board members the more robust the decisions they are likely to make and therefore it is hypothesised that there is a positive relationship between board tenure and firm performance (Aluchna 2009). The results show that the variable board tenure has a positive and significant coefficient, implying that experienced board members are an asset to the company. Brown and Caylor, (2008) also reached the same conclusion.

6.3.5 Proportion of independent directors

A preference for independent directors is largely grounded in the agency theory which posits that agents act with self-interest which may not be in tandem with maximizing the principal's return (Jensen 1976). Independent directors protect the shareholder interests better and are therefore more trusted for this mandate than executive directors. The results show that board independence significantly influence firm performance. Studies seem to find board independence having a positive and significant relationship with performance. Dahya et al (2006) and Ho (2005,)

both studying multiple companies in the developed world agree that independent directors is positive and significant to performance. The reason for this is probably that board members have experience as they may be CEOs of other companies in the developed countries. Added to that, firms in the developed economies attach a lot of weight to structures that increase the independence of the board. On the contrary however Azim (2011) on a research of Australian firms did not find the independence of the board affecting firm performance which is a rare feat in the studies across economies.

In the Zimbabwean scenario, the majority of the companies are privately owned, coupled with high shareholder concentration and no legislated method of selecting board members, independent directors may be the linchpin to firm performance as it might be viewed as providing shareholder protection. The disparity of countries and companies might be an explanation for the difference in results.

6.3.6 Role of CEO

One of the mandates of the CEO is to spearhead the implementation of the organizational strategy and the board is responsible for monitoring progress and ensuring that the shareholders' expectations are met. For purposes of accountability and responsibility therefore it was critical to establish whether the CEO had a dual relationship as the head of the organization and also the head of the board. It is quite legal to have the CEO double up as the chairman of the board, meaning that he/she virtually monitors himself since that is one of the board of directors' mandate. The duality of the CEO role has had mixed results across many studies. The results of this study show a positive but not significant relationship between "role of CEO" variable and firm performance. The theoretical implication in the Zimbabwean context being that whether the CEO is the chairman of the board or not, has no association with the performance of the firm. Azim (2012) however found out to the contrary that the relationship was positive and significant. The probable reason for the difference being that Azim concentrated on listed firms while this research was on both private and public firms, the majority (89%) of which were privately owned.

6.3.7 Education levels of board members

Conventional wisdom suggests that the higher the level of education of the board of directors, the better they can comprehend corporate governance issues as it has a bearing on the ability of the members to read, understand and make decisions especially on financial statements. The question sought to determine the educational attainment of the board members. The results show that education levels of the members is not significantly related to firm performance. This was in tandem with Azim (2012) who found a similar result. This was probably because the majority of the firms are privately owned and the selection of board members can be largely subjective and not necessarily based on educational level. Furthermore this is a peripheral matter to corporate governance per se and significance would therefore be minimal.

6.3.8 Board size

The complexity of decision making and the quality of these decisions lies largely with the board constitution which stems from its size (Kumar & Singh 2011). There has been mixed results on the effect of board size on firm performance but popular sentiment has been that no one size fits all. There is merit in small boards for cohesiveness and productivity (Cole et al 2005). A board membership which was too small would not have the necessary resources to enhance firm performance and large boards, (8 to 10) was viewed as the optimum board size. Zimbabwean firms in the manufacturing sector fall within international contemporary board size given their size of not more than 10 members. The results show that board size has a negative but insignificant coefficient. A study of Indian firms by Kumar and Singh (2011) concurred with this result. However, a study of firms in the developed world by Ho (2005) contradicted this when he found board size positive and significant to performance. Azim (2011) having studied Australian firms found board size positive and significant to performance. The probable explanation for this difference is that developed countries have different country nuances to developing countries since similar results are reflected by that.

6.3.9 Board committees

The question sought to determine if firms had board committees and the number of such committees each board had set up. Boards can set up different committees for the execution of their mandate which indicate the level of accountability of the firm. They differ from board to board though some commonalities can be found. Ideally the committees should be staffed by independent directors (Cole et al 2005). The results show that presence of board committees was positive but not significant to performance. Contrary to this finding was that of Azim (2012,) that presence of board committees was negative and significant to performance. In the Zimbabwean scenario the majority of the firms (88%) have 4 or less board committees which is on the low side and this slow uptake of the committee system may have influenced this result.

6.3.10 Audit committee

The audit committee is revered in corporate governance literature as 'crucial' to maintaining investor confidence as independent financial reporting

and selection of independent auditors is central to investment decisions (Chambers 2012). The audit committee is ideally staffed by independent directors and should include a person conversant in auditing matters (Bouaziz 2012.) The results indicate that audit committee is negative and not significant to performance. Contrary to this Ho (2005) found that audit committees are positive and significant to performance. This significance may be explained by the fact that companies in the survey hail from those countries with historical corporate scandals thus the mandate to have audit committees which ideally should strengthen audit independence and the public views the companies with such a committee as having integrity thus building investor confidence. Added to this the audit committees' existence and composition has in some cases been enacted into law making it a prerequisite for listing (Useem 2006). In the Zimbabwean manufacturing sector only a small majority (58%) of the firms indicated that there was an audit committee showing a lack of belief in such a committee which factor probably contributed to this result.

6.3.11 Selection of auditors

The audit committee of the board goes beyond the general advisory stance but is a full-fledged organ with its duties and responsibilities one of which is to select company auditors (Bouaziz 2012). Selection of auditors has to be independent and take into consideration the size of the audit firm as this has a bearing on auditor performance as suggested by Haat et al (2008). Further to that an independent audit committee is associated with independent auditors who generally improve monitoring of the financial reporting process. In the Zimbabwean manufacturing sector however selection of the auditors is positive but not significant to firm performance. This is in sync with corporate governance literature which indicates that the selection has to be transparent but hardly relate this variable to firm performance.

6.3.12 Quality of financial statement, access and disclosure

The quality of financial reporting has become pivotal in the years following the demise of huge corporations worldwide. In the Zimbabwean manufacturing firms, the quality of the financial statements according to the bivariate and multivariate regression analyses is not associated with firm performance. A result in concurrence with (Lopes et al 2011) who noted that in as much accounting information guides investment and financial decisions; it has a negative impact on firm performance. This is probably because unless backed by strong and reputable audit firm, financial statements are by en large subjective and may not have full disclosure of the situation on the ground.

Access to financial statements helps investors to trust that they are not being manipulated and it gives them an assurance that they can get firm's inside information from public financial data (Healy 2007). The question sought to determine if investors have access to financial statements to enable them to understand where their money was going. The majority of the respondents (98%) confirmed that firm shareholders have access to the company financial statements so investors in the Zimbabwe manufacturing sector have information for decision making. The multivariate regression analysis found this variable positive and significant to firm performance. This was in tandem with Augustine (2012) who also found access to financial statements positive and significant to firm performance.

Improved and timeous disclosure have been noted to contribute to lowering transaction costs and has an impact on cost of capital. It is said to improve the demand for firm's stock and this mitigation of information asymmetry reduces the danger of periodic surprises in financial markets Haat et al (2008). Timeous disclosure contributes to firm's transparency which is important for corporate governance. This variable was included in an effort to determine what matters for corporate governance in the Zimbabwean manufacturing sector. The results noted that timeous disclosure of financial statements is not positively associated with firm performance by both the bivariate and multivariate regression analyses. Haat et al (2008) also found similar results. What matters in corporate governance is probably 'what' is disclosed rather than 'when' it is disclosed.

7 Concluding remarks

The purpose of the study was to isolate the corporate governance factors that affect firm performance in the Zimbabwean manufacturing sector. The research indicated that using a bivariate and multivariate regression analysis four corporate governance influences are significantly and positively linked to return on assets the proxy for operating performance in the Zimbabwean manufacturing sector. This concurred with a study done by Brown and Caylor (2009) who noted that out of 51 corporate governance provisions only 4 were positive and significant to firm performance.

The relationship between corporate governance and company performance has been documented across a myriad of economies. Though the combination of variables under scrutiny may differ from research to research and country to country, there is evidence of common variables which can be posited as the pillars of corporate governance determinants for firm performance. These variables hover around issues of ownership structure, board composition, board procedures, board decision making structures in the form of committees and financial disclosure. Research has noted that not all of them are significant to firm

performance and in that vein, this study also comes to a similar conclusion. Added to that it was noted that corporate governance is endogenously determined as there seem to be so many country effects associated with the significance of variables.

In this study four corporate governance aspects were noted as positive and significant to firm performance and these were shareholder concentration, proportion of independent directors on the board, board tenure and access to financial statements. Interestingly these determinants stem from the afore mentioned pillars of corporate governance. For instance, shareholder ownership hails from ownership structures, proportion of independent directors is in the context of board composition, board tenure from board procedures in terms of experience to make decisions and access to financial statements is in the context of disclosure. It can be concluded that the results brings out a seemingly natural selection in flagging an aspect of corporate governance pillar as significant to firm performance thus covering the whole corporate governance spectrum, that is providing a form of representation for all the corporate governance pillars. In essence therefore, in as much as not all variables are significant to firm performance, which is in tandem with research worldwide, for the Zimbabwean manufacturing sector there is a unique factor of corporate governance pillar representation.

Further to that, the majority of the companies in the Zimbabwe manufacturing sector are privately owned which factor would greatly influence the significance of the variables. Privately owned firms in general have high shareholder concentration more-so in the Zimbabwean scenario where one person can hold up to 99% of the shares. Thus the corporate governance initiatives would be spearheaded by a few people if not one person, who can motivate for corporate governance determinants that are in sync with high firm performance. This ownership structure also influences the board structures and board tenure as the shareholder has free reign in the selection of board members and the length of time they can serve. Under such circumstances issues of transparency comes to the fore thus the significance of access to financial statements.

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AN EXPERIMENTAL EXAMINATION OF JUDGMENTS OF CHINESE PROFESSIONAL AUDITORS IN EVALUATING INTERNAL CONTROL SYSTEMS

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Abstract

Researchers have tended to assume that Anglo-American theories and practices are equally applicable to other countries with their unique contextual environments. The aim of this research is to show that the theoretical model and empirical research findings in Anglo-American countries, with respect to evaluation of internal control systems, are not applicable to China. Specifically, there are two approaches to evaluate internal control systems: one is a risk-based audit approach, and the other is a control-based audit approach. Morrill, Morrill, and Kopp (2012) show that Canadian accountants who relied on a risk-first approach identified significantly more internal control deficiencies than accountants who relied on a control-first approach. Contrary to the research findings in Canada, this study provides experimental evidence that Chinese auditors who relied on a control-first approach identified significantly more internal control deficiencies than auditors who relied on a risk-first approach. The findings have implications for global convergence of auditing practices.

Keywords: Auditor Judgments, Internal Control Evaluation, Internal Auditing, Risk-Based Audit Approach, Control-Based Audit Approach, Chinese Culture, Confucianism, Legalism, "Face"

Data Availability: Data are available from the authors upon request

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1 Introduction

Findings from prior studies in international convergence of accounting and auditing standards and practices suggest an Anglo-American bias (Chand, Cummings and Patel, 2012; Chand and Patel, 2011; Heinz, Patel and Hellmann, 2013; Patel, Harrison and McKinnon, 2002). Researchers have tended to assume that Anglo-American auditing theories, models and practices are equally applicable to other countries that have their own unique social, political and economic environment (Chand et al., 2012; Heidhues and Patel, 2011; Patel, 2006). These are simplistic assumptions, and the purpose of this research is to contest them by examining an important topic in auditing, namely, the influence of cultural values on the evaluation of internal control systems. China has been selected because there are significant cultural differences between China and Anglo-American countries. Specifically, this paper aims to show that the theoretical model and empirical research findings in Anglo-American countries, with respect to evaluation of internal control systems, may not apply to China. Our study investigates the following research question: are Chinese professional auditors who rely on a control-first approach more likely to identify significantly more internal control deficiencies than auditors who rely on a risk-first approach.

An internal control system is a communication system from the top of the organization to the bottom, and a response system from the bottom of the organization to the top (Gay and Simnett, 2006, p. 354). Internal control is defined by International Standards on Auditing (ISA) 315.4 as, "the process designed and implemented by those charged with governance, management and other personnel to provide reasonable assurance regarding the achievement of the entity's objectives concerning financial reporting, the effectiveness and efficiency of operations, and compliance with laws and regulations." Additionally, this standard indicates that internal control is designed and implemented to address business risks that threaten the reliability of the entity's financial reporting, effectiveness and efficiency of the entity's operations, and compliance with applicable laws and regulations. Further, in the aftermath of corporate scandals and the global financial crisis, internal control systems have been increasingly recognized as an important research topic to enhance corporate governance and accountability (Kim, Song and Zhang, 2011; Lloyd and Goldschmidt, 2003; Pridgen and Wang, 2012). In response to these corporate scandals and the global financial crisis,

global and national standards setters and regulators have focused on designing and evaluating effective and efficient internal control systems across countries (Pridgen and Wang, 2012).

Specifically, there are two approaches to evaluate internal control systems: one is a risk-based audit approach, and the other is a control-based audit approach (Bierstaker et al., 2012; Morrill, Morrill and Kopp, 2012). The risk-based approach requires the auditor first to understand the entity and its environment to identify risks that may result in material misstatements in the financial report. In other words, when auditors evaluate internal control systems, they first identify appropriate risk and then analyze the control weakness in the internal control system (Akresh, 2010; Coetzee and Lubbe, 2014; Piercey, 2011). This assessment involves considering factors such as the nature of the risks, relevant internal controls and the required level of audit evidence. In order to identify risks that are relevant to the audit of the financial report, the auditor needs to obtain an appropriate understanding of the entity and the environment in which it operates (Akresh, 2010; Allegrini and D'Onza, 2003; Fukukawa and Mock, 2011; Lloyd and Goldschmidt, 2003). Auditors exercise professional judgment in evaluating specific risks in the internal control system (Coetzee and Lubbe, 2014; Piercey, 2011). A risk-based audit approach is designed for use throughout the audit to efficiently and effectively focus on the nature, timing and extent of audit procedures in those areas that have the most potential for causing material misstatements in the financial report (Mock et al., 2009; Morrill et al., 2012).

In contrast, the control-based audit approach first analyzes the controls in the internal control system and then examines what risks have been detected by those controls. Controls should always be designed, implemented, and applied as a response to specific risks (Bierstaker et al., 2012; Morrill et al., 2012). Appropriate controls should be put in place to modify risks so that the level becomes acceptable. The effort to design, plan, execute, and monitor controls must be properly balanced with the effort to plan, execute, and monitor the organizational business plan (Akresh, 2010; Allegrini and D'Onza, 2003; Coetzee and Lubbe, 2014). With too little attention on controls, business objectives will not be achieved. On the other hand, overly stringent control requirements are likely to lead to ineffective and inefficient internal control systems (Gramling, O'Donnell and Vandervelde, 2013; Piercey, 2011; Smith, Tiras and Vichitlekarn, 2000). Therefore, organizations must consider the balance between risk and control, avoid over-control, and not become overly bureaucratic.

The ISA advocates a risk-based theoretical model for all countries. ISA 315 states that ''all the risk assessment procedures are performed by the auditor in the course of obtaining the required understanding'' (paragraph 7). Researchers also have relied on a risk-based theoretical model in their evaluation of internal control systems (Akresh, 2010; Bierstaker et al., 2012; Hoitash, Hoitash and Bedard, 2008). Of particular relevance to our research is a recent study by Morrill et al., (2012), who examined the influence of a risk-based audit approach and a control-based audit approach in evaluating internal control systems. They provided experimental evidence that Canadian accountants, who relied on a risk-first approach, identified significantly more internal control deficiencies than accountants who relied on a control-first approach. This risk-based theoretical model is based on research findings from Anglo-American models, with little discussion that takes into account country-specific contextual factors. We suggest that evidence from Anglo-American countries is not likely to apply to other countries that have their unique contextual factors. Further, we argue that the risk-based theoretical model used by researchers, and advocated by global standard setters, may not apply to China because of its unique social, political and economic environment. Therefore, this study extends Morrill et al.'s (2012) Canadian experimental study by providing a more holistic insight into various factors that may influence auditors' professional judgments in China when evaluating internal control systems.

China is the focus of our study because evidence shows that Chinese organizations emphasize "control", "submission", "subordination", "obedience" and "hierarchical orders" (Li et al., 2013; Liu and Wang, 2013; Wang and Fulop, 2007). Prior research has shown that, as a result of being submissive to the hierarchical order, decisions in China tend to be passed to higher levels, and the organizational hierarchy is overloaded (Boisot and Liang, 1992; Javidan et al., 2006; Lockett, 1988). Higher level managers feel that their authority and power is challenged if they do not endorse anything before implementation. As a result, higher level managers are quickly overloaded with routine decisions, signatures and relatively minor disputes between departments (Chow, Chau and Gray, 1995; Li et al., 2013; Lockett, 1988; Lu, Ji and Aiken, 2009; Wei et al., 2010; Westwood, 1997; Zhang and Spicer, 2014). This focus on control, checks and balances in Chinese organizations is likely to influence the design and evaluation of internal control systems. We suggest that when evaluating internal control systems, auditors in Chinese organizations are more likely to suggest placing additional internal control measures than may be appropriate.

Contrary to the research findings by Morrill et al., (2012), our findings show that Chinese auditors who relied on a control-first approach identified significantly more internal control deficiencies than auditors who relied on a risk-first approach. Despite the importance of a risk-first approach, Chinese auditors continue to focus on a control-first approach

in evaluating internal control systems. We suggest that auditing research will be enhanced by a critical examination of contextual environments of countries rather than simply assuming that evidence from Anglo-American countries is equally applicable to other countries such as China.

The remainder of the paper is organized as follows. The next section formulates the hypothesis concerning the influence of culture on Chinese auditors' judgments by drawing on the philosophies of Confucianism and Legalism and relevant aspects of Chinese core cultural values. The third section outlines the research method and explains the strategies employed to enhance the reliability and validity of the results. The fourth section presents the results while the fifth section summarizes the conclusions and implications of the study. Finally, this paper acknowledges the limitations and provides suggestions for further research.

2 Theory development and hypothesis formulation

2.1 Confucianism

Confucianism, which is derived from the teachings of the Chinese philosopher Confucius (551-479 B.C.E.), is seen as the traditional root of Chinese culture (Hofstede and Bond, 1988; Hwang, 2015; Wang, 2013). Confucianism is a complex system of moral, social, political and philosophical thought that has a profound influence on Chinese culture (Hwang, 2015). Confucianism was formally adopted as the "official moral and political ideology" of the state during the Han Dynasty (Yee, 2012, p. 431). Confucianism advocates benevolence (仁), righteousness (义), wisdom (智), loyalty (信), self-sacrifice (牺牲), filial piety (孝) and rites (礼). These core Confucian moral teachings constitute the fundamental social values and norms that have been shared by society in ancient China for over two thousand years (Fu and Chiu, 2007; Lin and Ho, 2009). The Confucian "way of thinking" has captured self-understanding and ideology of the Chinese people and remains dominant in contemporary Chinese Society (Hwang et al., 2008; Hwang, 2013; Lin and Ho, 2009; Yee, 2009, 2012; Yeh et al., 2013).

One of the most important aspects of Confucianism is the focus on complete subordination by expressing "love and piety towards superiors, as well as observance of rites and rules of propriety" (Lang, 1968, p. 9). Complete subordination and control are expected not only from public officials but ordinary people as well. It has been particularly emphasized by Confucian scholars throughout Chinese history as regulating interpersonal, especially intergenerational, relationships among Chinese people. Also, Confucianism emphasizes filial piety, which requires, "subordination of personal desires to a hierarchy of deference that reaches up to the father, back to the ancestors, and up to heaven" (Cornberg, 1994, p. 138). Filial piety is one of the paramount guiding ethics, which govern social behavior in Chinese societies. Filial piety surpasses all other cultural ethics with respect to its historical continuity (Zhang and Bond, 1998). Filial piety prescribes how children should behave towards their parents, living or dead, as well as towards their ancestors. It justifies not only absolute parental authority over children, but also by extension, the authority of those senior in generational rank over those junior in rank (Zhang and Bond, 1998). Filial piety also shows the importance of obedience, submission, and subordination in regulation Chinese society (Hsiao et al., 2006; Yeh et al., 2013).

Confucianism advocates hierarchical relationships to achieve harmony (Lam, 2003). The focus is on people accepting a hierarchical order in which everybody has a rightful place (Patel, 2004). Furthermore, the fundamental assumption of Confucianism is that an individual, as a social or relational being, exists in relation to others. A person is seen, "as a relational being, socially situated and defined within an interactive context" (Bond and Hwang, 1986, p. 215). Confucianism emphasizes that an individual is an integrated part of a submissive and controlling society to which he or she belongs (Bond and Hwang, 1986). Chinese societies often regard themselves as being interdependent rather than being independent of their surrounding social context (Hamamura, Xu and Du, 2013). As such, Chinese culture mostly emphasizes the interdependent view of self in social interactions. This perspective stems from a Confucian belief about the interdependence of events in the universe; that all things can be described only in relation to each other (Chen et al., 2013). In other words, any event or individual does not stand alone and must be explained in relation to others. This fundamental concept of interdependence in Confucianism has a profound influence on how Chinese view themselves and interact with others. Confucianism shows that the ruler needs to identify a proper hierarchical order and to be managed through benevolence (Fung, Chan and Chien, 2013; Lu et al., 2009). To respect a hierarchical order is important and needs no justification (Liu, 2015; Matsumoto, 2007; Schwartz, 1990). As such, individual perceptions and judgments are discouraged and replaced by collective consensus and submission to judgments of powerful leaders.

Hierarchy in an organization is seen as reflecting inherent inequalities, centralization is popular, subordinates expect to be told what to do, and communication is patriarchal and driven from the top-down (Fang, 2012; Fang and Faure, 2011). One of the functions of hierarchies is to identify and confer status and power to individuals. Individuals with higher status often have more power (Matsumoto, 2007). As a result of being submissive to a hierarchical order, decisions tend to be passed to higher levels, and the organizational hierarchy is overloaded (Boisot and Liang, 1992; Javidan et al., 2006; Lockett, 1988). In the system, to exercise any rule it must be checked by higher level managers. If anything is not endorsed by the leaders before implementation, they will feel that their authority and power is challenged. As a

result, higher level managers are quickly overloaded with routine decisions, signatures and relatively minor disputes between departments (Chow et al., 1995; Li et al., 2013; Lockett, 1988; Lu et al., 2009; Wei et al., 2010; Westwood, 1997; Zhang and Spicer, 2014). For example, Lockett (1988) provides evidence to show that there are too many bureaucratic and hierarchical levels in organizations, procedures are very complex, excessive numbers of people are involved, the work drags on, and productivity may be affected. Finally, there is an inability to resolve the smallest concrete problem by low hierarchical level members. To achieve anything, it is necessary to have a written agreement and approval of a dozen people and units, the procedures can drag on for several months, sometimes even for a year or two, without reaching a solution (Beh and Kennan, 2013, p. 25; Lockett, 1988). Also, leaders are more likely to make decisions autocratically and paternalistically, and subordinates usually show a preference for this type of managerial decision-making style. Subordinates are further expected to be told what to do and not to question authority figures. As a result, employees are fearful of authority figures and not likely to disagree with them. This pattern is particularly applicable to Chinese-based organizations with their emphasis on higher degrees of authoritarianism and rigid hierarchies (Bond, 1991; Bu, McKeen and Shen, 2011; Liu and Wang, 2013; Sinha and Sinha, 1990).

The ultimate goal of Confucianism is familial, social and political stability and "hexie" (harmony) (Huang and Wang, 2011; Mahoney, 2008, p. 120). For a collectivist culture the maintenance of social harmony within hierarchical order and relationships is paramount (Kwan, Bond and Singelis, 1997; Lai, Lam and Lam, 2013; Triandis, 1995). In Chinese culture, "hexie" (harmony) refers to a state of being in which there is no conflict or friction, and everything is balanced and at peace (Schaefer-Faix, 2008). Interpersonal disagreements and clashes frequently occur in daily life and, in the West, are typically analyzed through a conflict framework (Patel et al., 2002). Evidence shows that Chinese reported a higher level of conflict avoidance in interpersonal disagreements and clashes than did Anglo-Americans (Fang and Faure, 2011; Li and Thurston, 1994, p. 127).

Chinese Communist discipline further compounds this traditional Chinese "listening-centered" propensity. In the words of Mao Tse-Tung (1966, p. 255), "We must affirm anew the discipline of the Party, namely: (1) the individual is subordinate to the organization; (2) the minority is subordinate to the majority; (3) the lower level is subordinate to the higher level; and (4) the entire membership is subordinate to the Central Committee. Whoever violates these articles of discipline disrupts Party unity." In China, the tendency to avoid conflict is typically attributed to the influence of the Confucian value of harmony, which encourages people to tolerate interpersonal disagreement and transgression (Chen and Tjosvold, 2013; Huang, 2012; Leung et al., 2011). In order to achieve harmony, people must follow the correct behavior, or "li", which is behavior appropriate to one's role (Fang, 2012; Friedman, Chi and Liu, 2006; Patel et al., 2002). Correct behavior includes controlling overt expressions of thoughts and emotions, so that the cultivated person strives to maintain self-control regardless of the situation and thus conforms to the ideal of "xinpinqihe" (心平气和) – "being perfectly calm'' (Fang, 2012; Friedman et al., 2006; Shenkar and Ronen, 1987). As such, the importance of harmony within hierarchy in Chinese society and organizations discourages individual judgments and focuses more on submission and control.

One of the core Confucian moral values that constitute the fundamental social values and norms is "tinghua" (listening-centered communication) (Fang and Faure, 2011; Gao and Ting-Toomey, 1998, p. 41). "Tinghua" translates literally as, "listen talks." Chinese culture encourages listening not speaking, "To Chinese, there are conditions associated with speaking, and not everyone is entitled to speak. Thus, a spoken 'voice' is equated with seniority, authority, age, experience, knowledge, and expertise. As a result, listening becomes a predominant mode of communication" (Gao and Ting-Toomey, 1998, p. 42). This study argues that traditional Chinese culture is a "listening-centered" ("tinghua") communication where not everyone is entitled to speak. Speaking is associated with seniority, leadership, hierarchy, and expertise. Chinese culture typically encourages respect and obedience and places more importance on submissive norms as determinants of behavior than do Western cultures. Therefore, divergence from familial expectations and expression of personal goals over in-group goals is actively discouraged (Stipek, 1998). In Chinese society and organizations, "tinghua" reinforces that individual judgments are discouraged, and the focus is more on submission and control.

2.2 Philosophy of Legalism

The essence of the philosophy of Legalism is using the law (法), authority or power (势), and mechanism (术) to ensure that leaders are in complete and absolute control of subjects and subordinates (Chang, 1976; Schneider, 2011). Legalism has permeated the Chinese mind from the time of the Qin Dynasty since 221 B.C.E. and has continued to influence contemporary Chinese society in politics, business and social domains (Faure and Fang, 2008; Lu et al., 2009; Redding and Witt, 2009). Historically, the philosophy of Legalism overtime merged with mainstream Confucianism and continued to have a strong influence on Chinese society (Nielsen, 2014; Pan, Rowney and Peterson, 2012). Both philosophies emphasize the importance of control in managing political and economic affairs (Lu et al., 2009). In contrast to Confucianism, which suggests ruling a state with humaneness, Legalism advocates to rule a state with serious penal law and strong punishment (Wu and Vander, 2012). Legalists believe that all divided powers should be consolidated under "one power" in order to

establish a centralized powerful and wealthy state where one person is the ruling authority (Moise, 2013, p. 13). This "one power" has to design an effective government with strong control to assist in maintaining power (Wu and Vander, 2012; Yu, 2014). Indeed, the purpose of the legal system and the effective control system is to maintain power and punish those who do not show complete obedience to the authority.

Philosophy of Legalism still remains powerful in contemporary Chinese organizations (Goldin, 2011; Greif and Tabellini, 2010; Moise, 2013, p. 31; Yu, 2014). Consistent with Confucianism, Legalism advocates hierarchical relationships, and the focus is on subordinates' complete obedience in order to maintain power and authority (Faure and Fang, 2008; Hwang, 2013, p. 1021). Legalism has resulted in higher level managers in organizations often making decisions autocratically, and subordinates are expected to follow strictly the orders. Subordinates generally do not question superiors' decisions. Control systems and hierarchical levels in organizations are designed to force subordinates in lower levels to maintain and unconditionally follow the orders from superiors in higher levels (Busch et al., 2013; Hwang, 2013, p. 1021). The philosophy of Legalism in Chinese society and organizations strongly focuses on control, subordination, obedience, and hierarchical orders are likely to influence the design and evaluation of internal control systems (Faure and Fang, 2008; Yu, 2014). It is suggested that auditors in Chinese organizations are more likely to be guided by detailed, bureaucratic, prescriptive rules and regulations in evaluating internal control systems.

2.3 "Face"

The concept of "face" has two aspects. The first is "mien-tzu", which stands for a reputation achieved in life through success and ostentation. For this type of recognition, one's ego is dependent at all times on one's external environment (Hu, 1944, p. 45; Patel, 2006; Qi, 2011; Wan, 2013). The second is the concept of "lien", which is the respect of a group for the integrity of a person's moral character (Hu, 1944; Patel, 2006; Wan, 2013). "Face" is at the centre of Chinese social psychology (Bond, 1991; Qi, 2011, 2013). Chinese communication is "face-directed" communication (Liao and Bond, 2011; Patel, 2004; Qi, 2011). Evidence shows that "losing face" is more important to a Chinese manager than to a Western one, and it is felt much more deeply (Cardon and Scott, 2003; Li and Su, 2007; Patel et al., 2002).

For example, subordinates who fail to carry out successfully the orders of their superiors feel "they have no lien" (Hu, 1944, p. 45). Also, a higher social standing of a person is associated with maintaining greater dignity, and, as a result, his or her "lien" is more vulnerable (Ho, 1976, p. 867). Therefore, protecting "mien-tzu" ("saving face") is important for Chinese (Ho, 1976) and means "face" can be lost either due to one's own actions or the treatment received from others. People in Chinese society are discouraged from saying a direct "no" and being negative which would be perceived as "face-losing" in communication (Fang and Faure, 2011). Therefore, subordinates in organizations are expected to follow exactly the orders from higher level managers to save "face".

"Face" permeates every aspect of interpersonal relationships in Chinese communication because of Chinese culture's overarching relational orientation (Cardon and Scott, 2003; Li and Su, 2007; Qi, 2011). As a result, individuals learn from an early age that the infringement of this social code will bring shame not only to the individuals concerned, but also to the extended families, including those who educated and promoted the individual (Bond and Hwang, 1986; Lu et al., 2009; Patel, 2003). From an early age, children are admonished, "don't lose 'lien' for us" (Hu, 1944, p. 46). This admonition not only implants in the mind of a young person the concept of "lien", but also gives him or her consciousness of the collective responsibility, which the family bears in regard to his or her behavior. An individual is taught that his or her character should befit the standing of the family (Spector et al., 2004; Yang et al., 2000). "Loss of face" results when an individual's behavior shames his or her reference group. "Loss of face" functions to guide individual behavior to maintain group harmony (Eap et al., 2008).

Given the higher level of respect for authority and "face" in Chinese culture, hierarchical control in Chinese organizations is much stronger than in Anglo-American organizations (Li and Su, 2007; Walder, 1995; Zhang and Spicer, 2014). Bosses are likely to punish these who do not respect authority or "face". Vollbrecht, Roloff, and Paulson (1997) suggest that confrontations would be even more threatening if the person who did the confronting was at a higher status level. Chinese experience greater status differentiation and a greater sense that others are authority and "face" figures (Friedman et al., 2006). Therefore, in actual practice, they are likely to build more control processes, not because they are useful or necessary but to protect a leader's authority and "face". As a result of respecting authority and "face", if an explicit rule has been set in the system, the exercise of that rule must be agreed by higher level managers to protect their "face" and to respect their authority and power. As a result, higher level managers are quickly overloaded with routine decisions, signatures and relatively minor disputes between departments (Lu et al., 2009; Zhang and Spicer, 2014). Therefore, excessive focus is placed on control measures.

2.4 Trust

Trust is the essential element in social relations (Bachmann and Inkpen, 2011; Evans and Krueger, 2011; Lewicki, McAllister and Bies, 1998). Chinese society is considered to be a low-trust society (Fang, 2011; Fukuyama, 1995; Kim and Wright, 2011). Because of the

centrality of the family embedded in Chinese culture, which prioritizes family relations over all the other social obligations, the level of trust within families and extended kinship groups is high (Fukuyama, 1995), while trust among people who are unrelated is low (Fukuyama, 1995; Kim and Wright, 2011). In other words, the high level of trust within kinship groups comes at the expense of trust between people who are unrelated. This low level of trust among non-kinship relationships in Chinese society has implications for organizational interactions and has implications for designing control systems.

In many Chinese organizations, there is a particularly low level of interpersonal trust between management and employees (Chen, Chen, and Xin, 2004; Huff and Kelley, 2003; Muethel and Bond, 2013). Such low-trust relationships encourage organizations to adopt tight controls such as contracts, bureaucratic procedures, or legal requirements as a way to restore trust (Searle et al., 2011; Simons and Peterson, 2000). For example, because of the low trust in out-group members, there is always a fear that employees will steal assets that belong to the organization. Therefore, organizations are likely to increase controls to monitor and guard assets, to discourage stealing by employees. As the level of distrust increases, management is likely to implement tighter control. Such stringent and legalistic actions are typically adopted not only to facilitate coordination in the organization, but also used to restore trust that is necessary for business activities to continue (Atuahene-Gima and Li, 2002; Muethel and Bond, 2013; Pearce, Branyiczki and Bigley, 2000).

2.5 Hypothesis formulation

Our evaluation of Confucianism, Legalism, "face" and trust show the importance of "control", "submission", "subordination", "obedience" and "hierarchical orders" in Chinese cultural values (Bhappu, 2000; Chen and Chung, 1994; Liu and Wang, 2013; Tweed and Lehman, 2002). We show that "harmony within hierarchy" is one of the core Chinese cultural values. Our earlier discussions show that there are excessive bureaucratic and hierarchical levels, work drags on, and productivity may be affected. Low hierarchical level members are not allowed to resolve even the smallest problem, and often it is necessary to have written agreement and approval of a dozen people and units from high hierarchical level members to get anything done. Procedures can drag on for several months, sometimes even for a year or two, without reaching a solution (Beh and Kennan, 2013, p. 25; Chen and Chung, 1994; Lockett, 1988). Leaders are also more likely to make decisions autocratically and paternalistically, and subordinates usually show a preference for this type of managerial decision-making style. As a result, employees are fearful of authority figures and not likely to disagree with them. Emphasis on higher degrees of authoritarianism, rigid hierarchies and a strong focus on control are essential features of Chinese organizations (Liu and Wang, 2013).

Additionally, avoidance of conflict is typically attributed to the influence of the Confucian value of harmony, which encourages people to tolerate interpersonal disagreement and transgression (Chen et al., 2013; Hamamura et al., 2013; Liu, 2015). To achieve harmony, people must follow correct behavior, or "li", which is behavior appropriate to one's role (Fang, 2012; Patel et al., 2002). As such, the importance of harmony within hierarchy in Chinese society and organizations discourages individual judgments and focuses more on submission and control. Also, "tinghua" reinforces that, in Chinese society and organizations, individual judgments are discouraged, and the focus is more on submission and control. Employees are likely to abide firmly by the control measures imposed by top managers to protect a manager's "face" and respect his/her authority and power. Furthermore, because of a low level of trust between management and employees, it is likely that more controls such as bureaucratic procedures and legal requirements are put in place, to restore trust back to the level that is necessary for a business to continue.

In addition, evidence shows that Chinese culture, which values "social harmony", "integration", "collectivism" and "face" has a higher desire for social approval when compared with Anglo-American countries, where there is a low need for social approval (Adams et al., 2005; Crowl, 2001; Sosik and Dinger, 2007). Social approval means desirability to seek approval from relevant others (Crowne and Marlowe, 1960). We suggest that people in a cultural context characterized by a higher desire for social approval, are more concerned with securing acceptance from others, and they are likely to act in a manner that will secure approval of relevant others. That is, people who rank higher on the need for social approval scale indicate a stronger desire to conform, a higher concern with others' opinions, and the urge to be socially acceptable (Izuma, Saito and Sadato, 2010; Lemay Jr and Ashmore, 2006; Sosik and Dinger, 2007). As such, Chinese are more likely to adopt a socially acceptable and compliant position (Izuma et al., 2010; Qi, 2011; Singh, Huang and Thompson, 1962).

Therefore, when Chinese auditors are asked to evaluate internal control systems, we suggest that they are likely to adopt simplistic approaches, such as designing a "check-list" of controls to secure acceptance from others, rather than exercising professional judgment. This focus on control, checks, and balances in Chinese organizations is likely to influence the design and evaluation of internal control systems. It is suggested that when evaluating internal control systems, auditors in Chinese organizations are more likely to suggest placing more additional internal

control measures than may be appropriate, which leads to the formulation of our hypothesis:

Hypothesis: Chinese auditors who rely on a control-first approach are likely to identify significantly more internal control deficiencies than auditors who rely on a risk-first approach.

3 Research method

3.1 Research instrument and measurement of variables

The research instrument was extensively pilot tested and refined as a result of testing (See Appendix A for details). The instrument is comprised three sections. The first section contained answer sheets where participants were asked to provide their judgments on a scenario, which was initially developed by Kopp and Bierstaker (2006), and pilot tested and used by Morrill et al., (2012). The scenario involved the evaluation of internal controls of the purchases/ payables/ payments cycle of a medical supply company. The second and third sections of the research instrument collected participants' feedback and demographic information.

An important step in the research instrument design was to develop an equivalent version of the research instrument in the simplified Chinese language. The English version was translated first into Simplified Chinese by one of the authors. The Simplified Chinese version was then translated back into English by an independent auditing academic who is expert in both English and Simplified Chinese. The discrepancies between different versions of the instrument were discussed and modified, and this process was repeated until all discrepancies were eliminated. Also, the translation was also reviewed by two auditing bilingual experts who were given both the English and Chinese versions of the instrument. They further confirmed that the scenario was realistic and appropriate for China. They also confirmed that the research instrument scored high on measures of understandability, and the semantic equivalence. These procedures were important to enhance the validity of the research instrument in China.

The independent variables in this study are risk-first and control-first groups (presented in Figure 1). The dependent variable is measured by counting the number of internal control deficiencies identified in the risk-first group and control-first group.

3.2 Data collection

The data to test the hypothesis were collected using a research instrument administered to 120 auditors who attended a training program at Nanjing Auditing University (NAU) in China. NAU holds a high reputation for the academic quality of its auditing degrees and is directly supervised by China National Audit Office (CNAO, 2014; NAU, 2014). All participants in our study are professional auditors, who are members of the Chinese Institute of Certified Public Accountants (CICPA).

Figure 1. Order of steps in experimental tasks

Risk-First Group	**Control-First Group**
1. Read sample task	1. Read sample task
2. Read preliminary description of business	2. Read preliminary description of business
3. Generate transaction risks	3. Read control description and identify controls
4. Read control description and identify controls	4. Determine risks addressed
5. Determine risks addressed	5. Generate transaction risks
6. Assess deficiencies	6. Assess deficiencies

Source: Morrill et al., (2012)

Our study followed the same experiment steps as Morrill et al., (2012) (presented in Figure 1) with participants in both groups being provided first with an example of experimental task (Mai He Noodle Restaurant example) before completing the main experimental task (Lucky Medical Supplies Internal Control Evaluation). Participants were told to read carefully the example of Mai He Noodle Restaurant. This example outlines the risk-first and control-first procedures for performing an internal control evaluation for the two groups. After studying the example of Mai He Noodle Restaurant, participants proceeded to the main experimental task.

Participants were assigned randomly to one of two groups. Participants in the risk-first group were required first to identify the risks in the internal control system, which may result in material misstatements in the financial report. Then they received the detailed description of the internal control system (Lucky Medical Supplies Internal Control Evaluation). Finally, they were required to identify the controls in the system and identify any deficiencies.

Participants in the control-first group first received a detailed description of the internal control system. Then they were asked to analyse the controls in the internal control system. Finally, they were required to examine what risks those controls had detected, and to identify any internal control deficiencies in the system. See Appendix B for details of the procedures to ensure adherence to the proper

order of the experimental task to be completed by the subjects.

4 Results and discussion

4.1 Participants' profiles

One hundred and six valid questionnaires were received, which represents a response rate of 88 percent. Fifty-one completed respondents are from risk-first group and 55 from the control-first group. The demographic details of respondents are reported in Table 1. In the risk-first group, 57 percent of the respondents were females, 80 percent were between the ages of 30-49, 63 percent had over four years' professional experience in auditing and 49 percent were staff. In the control-first group, 44 percent of the respondents were females, 75 percent were between the ages of 30-49, 64 percent had over four years' professional experience in auditing and 33 percent were staff. Statistical tests show that the demographic variables of gender, age, years of professional work experience, and organizational position are no statistically significant differences between the two experimental groups

.

Table 1. Demographic data

	Auditor in Risk-first Group		Auditor in Control-first Group		Total	
	N	**Percentage**	**N**	**Percentage**	**N**	**Percentage**
Gender						
Males	22	43.14%	31	56.36%	53	50.00%
Females	29	56.86%	24	43.64%	53	50.00%
Total	51	100.00%	55	100.00%	106	100.00%
Age						
20-24	0	0.00%	0	0.00%	0	0.00%
25-29	7	13.73%	12	21.82%	19	17.92%
30-34	15	29.41%	13	23.64%	28	26.42%
35-39	11	21.57%	15	27.27%	26	24.53%
40-49	15	29.41%	13	23.64%	28	26.42%
50-59	3	5.88%	2	3.64%	5	4.72%
Over 60	0	0.00%	0	0.00%	0	0.00%
Total	51	100.00%	55	100.00%	106	100.00%
Professional Work Experience						
Less than 1 year	4	7.84%	6	10.91%	10	9.43%
1-3	15	29.41%	14	25.45%	29	27.36%
4-6	17	33.33%	16	29.09%	33	31.13%
7-9	4	7.84%	6	10.91%	10	9.43%
10-12	5	9.80%	3	5.45%	8	7.55%
over 12	6	11.76%	10	18.18%	16	15.09%
Total	51	100.00%	55	100.00%	106	100.00%
Organisational Position						
Staff	25	49.02%	18	32.73%	43	40.57%
Supervisor	13	25.49%	20	36.36%	33	31.13%
Senior	1	1.96%	3	5.45%	4	3.77%
Manager	10	19.61%	12	21.82%	22	20.75%
Partner	2	3.92%	2	3.64%	4	3.77%
Total	51	100.00%	55	100.00%	106	100.00%

Participants were asked about the difficulty of the task; how realistic they found the task; how difficult they found the ordering of the task; and how different they found the performance of the task compared to the way they usually performed equivalent tasks. Further, they were asked about the difference between the internal control questionnaire included with the case material and the questionnaires they usually used in evaluating internal control systems. Table 2 Feedback on the Task provides the results of the above variables.

Table 2. Feedback on the Task

	Auditor in Risk-first Group	**Auditor in Control-first Group**	**Total**
	N=51	N=55	N=106
Panel A: Difficulty of task (1=not, 11=very)			
Mean	7	7	7
Standard Deviation	2	2	2
Mann-Whitney U P value			*0.676*
Panel B: Realism of task (1=not, 11=very)			
Mean	8	7	8
Standard Deviation	3	2	3
Mann-Whitney U P value			*0.059*
Panel C: Difficulty of ordering of task steps (1=not, 11=very)			
Mean	7	7	7
Standard Deviation	3	2	2
Mann-Whitney U P value			*0.814*
Panel D: Difference between performance of the task and how they usually perform it (1=not,11=very)			
Mean	6	6	6
Standard Deviation	3	2	2
Mann-Whitney U P value			*0.766*
Panel E: Different between the internal control questionnaire included with the case material and the questionnaires they usually used (1=not,11=very)			
Mean	6	7	7
Standard Deviation	3	2	3
Mann-Whitney U P value			*0.071*

Table 2 shows that there are no statistically significant differences between the two experimental groups. These results indicate that random assignment of participants into two groups was effective in controlling for potentially confounding variables.

4.2 Results of the hypothesis

A one-way Analysis of Variance (ANOVA) test was used to examine whether the number of internal control deficiencies identified by Chinese auditors is influenced by control-first or risk-first conditions. Data to examine the hypothesis were obtained by comparing the number of internal control deficiencies identified by each group.

Results in Table 3 show that there are significant differences in the number of internal control deficiencies identified between the control-first and risk-first groups (p =0.000). Descriptive statistics in Table 3 show that the number of internal control deficiencies identified by the risk-first condition, with a mean of 2.08, are significantly lower than the number of internal control deficiencies identified by a control-first condition with a mean of 6.25.

Table 3. Hypothesis results

Descriptive statistics for the number of deficiencies identified by each group

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Risk- first	51	**2.08**	2.415	0.338	1.4	2.76	0	9
Control- first	55	**6.25**	4.781	0.645	4.96	7.55	0	20
Total	106	4.25	4.351	0.423	3.41	5.08	0	20

Results of one-way ANOVA for number of deficiencies identified by each group

		Sum of Squares	df.	Mean square	F	Sig.
Parametric one-way ANOVA	Between Groups	461.5	1	461.5	31.45	**0.000**
	Within Groups	1526.123	104	14.674		
	Total	1987.623	105			
Nonparametric KruskalWallis one-way ANOVA						**0.000**

To confirm the results, a nonparametric KruskalWallis one-way ANOVA was also used. Results from this test also confirm that the number of internal control deficiencies identified by Chinese auditors in the control-first group and the risk-first group is significantly different (p =0.000). Therefore, these results show that Chinese auditors who rely on a control-first approach identified significantly more internal control deficiencies than auditors who rely on a risk-first approach.

5 Conclusions, implications, and limitations

Researchers have relied mainly on the risk-based theoretical model in their evaluation of internal control systems. Morrill et al., (2012) provided experimental evidence that Canadian accountants who relied on a risk-first approach identified significantly more internal control deficiencies than accountants who relied on a control-first approach. Contrary to their findings, our results show that Chinese auditors who relied on a control-first approach identified significantly more internal control deficiencies than auditors who relied on a risk-first approach. Furthermore, these findings support the premise that Chinese auditors focus on control measures when evaluating internal control systems, and they are likely to concentrate on including more internal control measures than may be appropriate. This focus on control is likely to lead Chinese auditors to find more problems and, therefore, develop more control measures. Therefore, we argue that the empirical evidence on the evaluation of internal controls from Anglo-American countries may not apply to the Chinese context. Importantly, the findings of this study suggest that cultural factors cannot be ignored in research on audit judgments.

The findings of this study have implications for global standard setters and national regulators. The International Standards on Auditing (ISA) have advocated the risk-based theoretical model for all countries. The move towards convergence is driven largely by the assumptions and assertions based on claims of enhancing international comparability of auditing information. However, this risk-based theoretical model is based primarily on research findings from Anglo-American models, with little discussion that takes into account country-specific contextual factors. Importantly, ISA and the International Auditing and Assurance Board provide no discussion of cultural influences on interpreting auditing standards in various countries. Our study provides evidence that the adoption of ISA may not ensure consistency in auditors' judgments across countries. Accordingly, standard setters and regulators may consider placing greater emphasis on various national contextual factors that may influence auditors' professional judgments.

Also, our findings have particular implications for multinational enterprises in designing and evaluating appropriate internal control systems. Their focus has largely been on technical aspects rather than on cultural factors that may influence the evaluation of internal control systems. Overly stringent control requirements are likely to lead to ineffective and inefficient systems. Therefore, we suggest that organizations in countries, such as China, may also consider the balance between risk and control, and not be overly bureaucratic.

Our findings also have implications for the auditing profession. Greater insights into the

various factors that may influence professional judgment across countries may improve audit quality and consistency of practices. Furthermore, audit firms may benefit from these insights that may be used to enhance auditors' abilities to exercise their professional judgment. Also, the growing pace of internationalisation of audit firms' operations has a growing influence on audit teams that are increasingly composed of auditors from different cultural backgrounds. Thus, understanding the cultural background of auditors is necessary to understand differences in their judgments.

Our findings are also likely to benefit auditing educators in China because almost all the auditing textbooks focus strongly on technical aspects of evaluation of internal controls. However, detailed technical auditing knowledge alone is of limited use. The results of our study suggest that educators need to ensure that auditors' judgments in its appropriate cultural contexts are communicated effectively to students. Case studies, which incorporate our findings, will be useful for enhancing students' understanding of professional judgments across countries.

6 Limitations and suggestions for further research

The results and findings of this study must be considered in light of its limitations. As in most experimental studies, a limited number of factors have been examined without consideration of other aspects during an audit. We acknowledge that in actual auditing practice, professional judgment will be influenced by a combination of numerous interrelating factors. Indeed, it should be emphasised that professional judgment, which is influenced by a variety of situational and personality variables, is a complex and dynamic feature in designing internal control systems. Consequently, future studies may focus on examining other contextual factors such as personality values and organizational culture, which may influence auditors' professional judgments.

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Appendices

Appendix A Pilot testing

To ensure the appropriateness of the research instrument design, a pilot study was conducted in five stages before data collection. The first stage involved testing the research instrument among auditing academics with expertise in the area of the study at a university in Australia. After incorporating their suggestions, the next stage was the administration of the revised research instrument among three professors who had extensive experience in professional auditing firms. During this stage, we changed the name from "Hefty Hamburger Inc." to "Mai He Noodle Restaurant", and changed "Wittim Medical Supplies Internal Control Evaluation" to "Lucky Medical Supplies Internal Control Evaluation" respectively, in order to make sure that internal control scenarios used in the case study were realistic example of such names in China. The third stage involved gaining feedback on the research instrument from a Chinese professor visiting a university in Sydney. During the fourth stage, a revised version of the Chinese research instruments was tested among six Chinese final year Ph.D. students from five top universities in China who had expertise in the area of auditing. After incorporating their suggestions, the fifth and final stage was the administration of the revised research instrument among five professors at a university in China who had expertise in the area of auditing. They confirmed that the case scenario would be realistic in the Chinese context. They further confirmed readability and understandability of the instrument.

Appendix B . Ordering of the experimental task completion

To ensure that the groups adhered to the proper order of the experimental task completion, three procedures were implemented. First, before the tasks, the professor strongly advised participants that they must follow the steps given in the tasks: they should not skip any steps. Second, during the tasks, participants had to complete their case on the answer sheets consisting of a three-column table, with columns for risks, controls, and deficiencies. The order varied according to the groups. Each row of the table contained a risk and a control that addressed that risk; or a deficiency if no control existed. That first column was entitled ''Risks'' for the risk-first group, and was entitled ''Controls'' for the control-first group. The introduction part of the research instrument requested that, "It is **CRITICAL** that you proceed through the steps in the Lucky Medical Supplies task in the order given (directions are provided in the tasks), even if you would prefer to do it another way. **DO NOT SKIP STEPS**." These instructions were a means of assuring that participants did not skip steps. As an additional control, participants in the risk-first group

were told to request the detailed narrative description part way through the tasks, and there was a check that they had attempted to identify risks if they were in the risk-first group before distributing the narrative section of the research instrument. Hence, there was an assurance that all participants completed the tasks in the order prescribed. Importantly, both methods of collection of completed research instruments assured respondents of the guarantee of anonymity and confidentiality.