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DO CROSS LISTED FIRMS THRIVE BETTER UNDER CRISIS? NON PARAMETRIC EVIDENCE FROM ZIMBABWE.

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ABSTRACT

This study sought to empirically examine whether cross listed firms perform better than non- cross listed firms in periods of economic crisis. The study reviewed several theories of the motivations for cross listing including the liquidity hypothesis, the market segmentation hypothesis, investor recognition hypothesis and the growth opportunities hypothesis. The study utilised secondary data from companies' published financial statements. A sample of sixteen (16) companies were studied, eight were cross listed, and eight were purely domestically listed. The study period was 2010-2014, and the data for analysis was in form of financial ratios. Data analysis was done using SPSS 16.0. Non-parametric methods; the Mann Whitney U test was used verify if there are differences in the performance of cross listed and non-cross listed firms. The study found that cross listed firms are more efficient, better governed and have higher market value compared to non-cross listed firm. There was however no statistical evidence of differences in the total assets and ability to pay interest obligations between the cross listed and non-cross listed firms.

INTRODUCTION

Since the end of World War II the world's economies have become highly interconnected and mutual interdependent. Innovations and inventions in transport and communication drastically reduced and eliminated barriers to the international flow of goods, services, people, capital, money and information in a process called globalisation. Stiglitz (2002) defined globalisation as the closer integration of the countries and peoples of the world which has been brought about by the enormous reduction of costs of transportation and communication, and the breaking down of artificial barriers to the flows of goods, services, capital, knowledge, and (to a lesser extent) people across borders. Globalisation erodes national boundaries, integrates national economies, governance and produce complex relations of mutual interdependence.

Financial transactions and capital flows across international borders have increased significantly in the postwar period due to financial globalisation. As global financial markets become increasingly integrated, companies look beyond national borders to raise capital. Firms from both emerging and developed economies employ regional and/ or overseas equity offering methods in raising capital, through cross listing. Equity financing because of its permanent nature is a popular way of raising capital, equity may be raised within national boundaries through listing or beyond national boundaries through cross listing. Onyuma *et al.* (2012) defined listing as the admission of a company into a stock market after meeting certain regulatory requirements set by the regulatory authority of that particular country. Cross-listing on the other hand refers to the listing of ordinary shares of a firm on a different exchange other than its home stock exchange.

Cross listing can be in the form of ordinary listing or through depository receipts. Ordinary listing is more stringent and prestigious, while depository receipts are negotiable bank issued financial securities representing publicly traded securities (like equity in this case) of a company listed in one market which is traded on another market (Onyuma *et al.* 2012). Theoretically there are many potential benefits of foreign or cross border listing such as increased liquidity of shares, lower cost of capital, increased visibility and profile of company abroad. Cross listing is not without costs, potential costs include listing fees and increased financial disclosure requirements.

BACKGROUND

Zimbabwe since the turn of the century has been struggling economically and isolated from the global economic and financial system due to sanctions. The negative publicity and destabilization effect of the year 2000 fast track land reform program resulted in significant deterioration of Zimbabwe's macro-economic environment. The country experienced perhaps the worst hyperinflation episodes of the post war period, multiple company closures and financial crisis. The galloping inflation culminated into the currency competition and asset substitution and subsequently in the adoption of the multi-currency system in 2009. Capacity utilization in



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Zimbabwe's industries deteriorated to record lows of around 20% by 2009, due to a shrinkage of domestic markets (due to loss of real income), loss of export markets and shortage of long term capital for recapitalization. Even after the adoption of the multicurrency system, Zimbabwe has been crippled by a serious liquidity crisis hampering any serious attempts to recapitalize Zimbabwe's firms. Zimbabwe's capital markets including the Zimbabwe Stock Exchange (ZSE) have not been very liquid to raise capital needed to help firms recapitalize. Even under such conditions, Zimbabwe's cross listed firms have better chances to raise funds in foreign capital markets; moreover because of their better reputation (because of their increased visibility on the international scene) they can secure international credit lines. Moreso, because of the increased visibility, products of cross listed firms are likely to be better accepted in the export market than of domestically listed firms. It would therefore be expected that cross listed firms are likely to perform better in sales, liquidity, gearing and profitability compared to their counter parts listed on the ZSE only. This study therefore seeks to verify empirically if cross listed firms are outperforming non cross listed firms. We seek to establish if cross listed firms are more liquid than non-cross listed firms under liquidity crisis (2009-2014), to verify if cross listed firms are more efficient and more valuable than non-cross listed firms.

LITERATURE

Theories of Cross listing

In theoretical literature there are five traditional motivation theories of why firms cross list namely market segmentation hypothesis, liquidity hypothesis, bonding hypothesis, investor recognition hypothesis, and business strategy hypothesis. The motivation theories were reviewed because they reveal the benefits and gains of cross listing. This study will review the theories to explain why firms engage in cross listing.

Market segmentation Hypothesis

Capital markets can be completely segmented, partially segmented or completely integrated. In segmented markets investors in one country are unable or unwilling to invest in securities in another country. Capital markets are segmented when there are barriers to the capital flows, such as government foreign exchange controls, language and cultural barriers, knowledge and information barriers, and legal barriers (Bhana 2000). In incidences where markets are segmented, investors would require high risk premiums, raising the cost of capital. Cross listing (regionally and abroad) reduces market segmentation and allows the firms to tap a new pool of investors. Such access to a pool of investors decreases the extent to which the risk is borne exclusively by domestic investors, in fact risk can be shared by investors from different countries and therefore reduce the cost of capital (Karoilyi 2006). Financial theory suggests that such a decrease in market segmentation would lead to an increase in share prices, thus increasing shareholder wealth.

Liquidity hypothesis

Perhaps the most important motivation for cross listing from a financial perspective is that it increases the firm's liquidity. Cross listing increases the depth and thickness of market for the firms' shares; it promotes trading volumes and increases the competitiveness of the listing market (Smith and Sofianos 1997). Improved liquidity drives down the bid ask spread in the home market and improve firm performance and efficiency. Tinic and West (1974) found that 112 Canadian stocks cross-listed on US exchanges had lower bid-ask spreads than their purely domestically traded counterparts. Amihud and Mendelson (1988) theorized that narrower spreads following cross-listing generated improved liquidity which increased share value. The cost of capital tends to be high in markets that are small and relatively thin. According to Errunza and Elosq (1985) cross listing is likely to result in lower cost of capital since pricing of the issue will be integrated rather than segmented. Moreso cost of capital may be lower if foreign markets are more liquid with lower transactions costs than the domestic market. Mittoo (1992) presents a market survey, which shows that managers of foreign companies cite increased trading liquidity (28% of respondents) as a primary factor in their decision to cross-list.

Bonding hypothesis

The bonding hypothesis as a motivation to cross list was advanced by Coffee (1999, 2002). He postulated that foreign firms from jurisdictions with potentially weaker investor protection could increase their valuation by bonding themselves to the US securities regime through cross-listing. In fact the abnormal returns of foreign listed companies can be explained by legal bonding and reputational bonding (Stulz 1999). In legal bonding cross listed firms are bound by higher requirements of security law and regulation in the destination market. Reputational bonding bind the cross listed firms to stricter scrutiny of underwriters, security analysts and rating agencies. O'Connor and Phylaktis (2010) found that firms usually bond to exchanges of common law countries, namely the United States and the United Kingdom which offer better investor protection. Largely as an effect of

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the legal bonding, corporate governance of a company improves as its minority shareholders become better protected against managerial private benefits of control and self-dealing (Karolyi, 2006; Coffee, 1999; Stulz 1999). Bonding to more rigorous governance standards improves access to capital, which, in turn, lowers capital costs and increases firm value.

Investor recognition Hypothesis

The hypothesis is based on Merton's (1987) modified Capital Asset Pricing Model, which incorporates information symmetry and hypothesizes that investors are more willing to invest if they have information symmetry. The model demonstrates that the number of investors is negatively related to the required rate of return and positively associated with market value. Cross border listing increases the publicity and name recognition of the company. Such increased visibility may create interest in the company and its products creating demand for the company's product and securities (Bhana 2000). Cross listing also tends to signal the company's prospects of becoming a major player international markets which enhances the firm's international corporate prestige.

Growth opportunities hypothesis

Another motivation for firm cross border listing advanced by Doidge, Karolyi, and Stulz (2004), is the growth opportunities hypothesis. This hypothesis posited that the main incentive for cross-listing was the desire to exploit growth opportunities. According to this hypothesis, firms with higher prospects of growth were more likely to cross list, and that high growth firms were likely to have positive valuation effects on both pre- and post-cross-listing. This view was supported by empirical studies by Tolmunen and Torstila (2005).

Potential gains of cross listing

Cross listing can offer various benefits to firms from emerging economies. The potential benefits include improved reputation, depth and liquidity, improved corporate governance, lower cost of capital, expanded markets. The potential benefits are more likely to be more pronounced in the long-term than in the short term.

Cross listing according to Pagano *et al.* (2002) could consolidate the "soft power" of companies from emerging markets like improving their reputation or corporate governance. Companies listed in developed markets are under close scrutiny of market analysts, forcing them to be more responsible in business conduct and even socially. Such close scrutiny will according to Chuang and Lee (2011), promote a good company reputation which is a good foundation for long term growth of the firm. Cross listing in developed markets will force firms from emerging markets to adopt a code of corporate governance which is beneficial for companies which may be coming from countries with no approved code like Zimbabwe.

Cross boarder listing also helps in foreign market expansion, through increasing firm visibility abroad. In most cases investors and consumers may not be familiar with firms and their products from emerging economies; cross listing makes the companies better known in market destinations abroad. Sarkissian and Schill (2009) further noted that cross listing helps not only provide an opportunity for a company to understand foreign customers' customs and culture but also provide the customers with an opportunity to know the company. Such mutual opportunity to learn each other facilitate long run company development. Increased visibility also have positive valuation effects, Coffee (1999) asserted that the valuation of a stock is higher if it was recognised by more investors which could be obtained by attracting increased number of analysts and media attention through cross listing.

Cross listing also tends to boost liquidity for firms from emerging markets, by narrowing down the bid ask spread. According to Vaihekoski (2004) securities in emerging economies are often thinly traded, with a wide bid ask spread, such that stock prices deviate significantly from their intrinsic value. All things equal, greater liquidity should translate into lower cost of equity, since liquidity is valued by shareholders. In fact the required rate of return for a securities have been found to be an increasing and concave function of the spread between the quotes of interested buyers and sellers (Amihud and Mendelson 1986).

Another potential direct benefit of cross border listing is that it can drive down the cost of capital. The reduction in cost of capital could be after cross listing can be interpreted as an increase in local market risk premium relative to global markets (Arauner, 1996). The reduction in cost of capital implies that the firm value will increase and that the firm would be able to access capital at lower cost.

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Cross listing is not without costs, the direct costs associated with cross listing include legislation and administration costs, especially charges and fees for investment banking services. Indirect costs associated with cross listing especially substantial disclosure costs and the risk of potential lawsuits for defaults.

MATERIALS AND METHODS

This study is based on secondary data obtained from the published financial statements of companies obtained from company websites and the Zimbabwe Stock Exchange. The data for the study is mainly in form of financial ratios. The study is based on 16 companies. Eight cross listed companies trading on the Zimbabwe Stock Exchange were paired with comparable non cross listed companies trading on the Zimbabwe Stock Exchange. The pairing was done considering the sector of the company and its line of business. The pairing resulted in two independent samples of which we seek to find if there is evidence that cross listed companies perform better under crisis.

To analyse the data non parametric methods were used. The term *nonparametric* is not meant to imply that such models completely lack parameters but that the number and nature of the parameters are flexible and not fixed in advance. The Mann-Whitney U test will be used to determine whether there is a difference in performance between cross listed and non-cross listed firms in times of crisis. The Mann Whitney test has the advantage of possibly being used for small samples of subjects. The Mann-Whitney test is based on the comparison of each observation from the first group with each observation from the second group.

The Mann-Whitney U test null hypothesis (H_0) stipulates that the two groups come from the same population, i.e. the two independent groups are homogeneous and have the same distribution. According to Nachar (2008) if the two groups are homogenous as stipulated by the null hypothesis, each datum of the first group will have an equal chance of being larger or smaller than each datum of the second group. If we combine the two samples and then assign ranks to each of the observations, in ascending order, we shall expect, under the null hypothesis, that the scores from the two samples will be randomly spread in rank ordering, so that the sum of ranks for each sample will be similar. If there are fundamental differences between the samples, the sum of ranks will be difference leading to the rejection of the null hypothesis.

RESULTS AND DISCUSSION

The data analysis was done using SPSS 16.0. The data analysed in this study was a mixture of ratio and interval level data which if normally distributed can be analysed using parametric methods. The Kolmogorov-Smirnoff and Shapiro-Wilks tests for normality were done to check if the data followed normal probability distribution. These tests compare the set of scores in a sample to a normally distributed set of scores with the same mean and standard deviation. If the test is non-significant (i.e. $p > 0.1$) then this shows that the data set is not significantly different from a normal distribution i.e. the data is normally distributed. If however the test statistic is significant (i.e. $p < 0.1$) then the data is not normally distributed.

Table 1 below shows the results of the normality tests:

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total Assets	.286	10	.020	.789	10	.011
Revenue	.252	10	.071	.791	10	.011
Market Value	.138	10	.200*	.936	10	.507
Interest cover	.143	10	.200*	.961	10	.801
ROCE	.190	10	.200*	.898	10	.208

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

The results using both the Kolmogorov-Smirnov and Shapiro-Wilk tests, show that Total Assets and Revenue are not normally distributed while, Market Value, Interest cover and Return on Capital employed (ROCE) are



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normally distributed. This study will employ non-parametric methods since some variables are significantly different from normal distribution. The Mann Whitney U test will be used to analyse if there are significant differences between the performances of cross listed and non-cross listed firms.

The Mann-Whitney test relies on scores being ranked from lowest to highest, therefore, the group with the lowest mean rank is the group with the greatest number of lower scores in it. Similarly, the group with the highest mean rank should have greater number of high scores within it. The Mean rank in Table 2A below indicates that cross listed firms have a higher market value compared to the non-cross listed firms. The results suggest that cross listed firms perform better and have higher market value. The Mann Whitney test is done to verify if the observable differences in rank are statistically significant.

Table 2A: Ranks

Category		N	Mean Rank	Sum of Ranks
Market Value	Crosslisted	5	7.20	36.00
	Non crosslisted	5	3.80	19.00
Total		10		

The Mann Whitney test in Table 2B indicates that there are differences in the market value of cross listed firms and non-cross listed firms (U=4.00, p=0.076).The null hypothesis that cross listed and non-cross listed firms are equally ranked is rejected. This possibly indicates that cross listed firms because of their better access to capital and better access to markets outside Zimbabwe (because of their increased visibility) perform better and have a higher market value than non-cross listed firms

Table 2B :Test Statistics^b

	Market Value
Mann-Whitney U	4.000
Wilcoxon W	19.000
Z	-1.776
Asymp. Sig. (2-tailed)	.076
Exact Sig. [2*(1-tailed Sig.)]	.095 ^a

a. Not corrected for ties.

b. Grouping Variable: Category

The research also compared the Return on Capital Employed (ROCE) between listed and non-listed companies. Table 3A below shows that cross listed firm have a higher mean rank than non-cross listed firms. It means that on overage cross listed firms tend to generate a higher return per dollar capital employed compared to their non-cross listed firms.

Table 3A: Ranks

Category		N	Mean Rank	Sum of Ranks
ROCE	Cross listed	20	20.65	413.00
	Noncrosslisted	15	14.47	217.00
Total		35		

To test if the observed differences are significant the Mann Whitney test in Table 3B below was used. The test show that there are significant differences in the ROCE of cross listed and non-cross listed firms (U=97.00, p=0.077). It was therefore concluded that cross listed firms are more efficiently run than no-cross listed firms.

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Cross listing in more developed markets (like the London Stock Exchange and Johannesburg Securities Exchange) forces firms from Zimbabwe to adopt a code of corporate governance which is beneficial for companies which may be coming from countries with no approved code like Zimbabwe.

Table 3 B: Test Statistics^b

	ROCE
Mann-Whitney U	97.000
Wilcoxon W	217.000
Z	-1.767
Asymp. Sig. (2-tailed)	.077
Exact Sig. [2*(1-tailed Sig.)]	.080 ^a

a. Not corrected for ties.

b. Grouping Variable: Category

The research also analysed whether there are differences in the Assets levels of cross listed and non-cross listed firms. Table 4A below show that non cross listed firms have higher levels of assets than no-cross listed firms. This possibly indicates that because of their better access to both equity and credit, cross listed firm tend to accumulate more assets compared to their non-cross listed counterparts.

Table 4A Ranks

Category		N	Mean Rank	Sum of Ranks
Total Assets	Crosslisted	20	18.65	373.00
	Non crosslisted	20	22.35	447.00
	Total	40		

To check if the observed differences are significant or not the Mann Whitney U test was used. The test in Table 4B show that there are no statistically significant differences in the Total Assets of cross listed and non-cross listed firms (U=163, p=0.317).

Table 4B Test Statistics^b

	Total Assets
Mann-Whitney U	163.000
Wilcoxon W	373.000
Z	-1.001
Asymp. Sig. (2-tailed)	.317
Exact Sig. [2*(1-tailed Sig.)]	.327 ^a

a. Not corrected for ties.

b. Grouping Variable: Category

On the ability of firms to honour interest obligations, the research compared if there are differences between interest cover of the cross listed and non-cross listed firms. Table 5A below, shows that cross listed firms have a better ability to cover interest expenses from their earnings before interest and tax (as indicated by a higher mean rank). This would suggest that cross listed firms are more liquid can have a better ability to pay their obligations compared to their non-cross listed counterparts.

Table 5A Ranks

Category	N	Mean Rank	Sum of Ranks
Interest Crosslisted	16	18.25	292.00
Cover Non crosslisted	15	13.60	204.00
Total	31		

The Mann Whitney U test however showed that there are no statistically significant differences in the interest cover of cross listed and non-cross listed firms ($U=84.00, p=0.155$). The firms have approximately the same ability to honour interest expenses from their earnings before interest and tax.

Table 5B Test Statistics^b

	Interest Cover
Mann-Whitney U	84.000
Wilcoxon W	204.000
Z	-1.423
Asymp. Sig. (2-tailed)	.155
Exact Sig. [2*(1-tailed Sig.)]	.163 ^a

a. Not corrected for ties.

b. Grouping Variable: Category

CONCLUSION

The study showed cross listed tend to thrive better compared to their non-cross listed counterparts. The study proved that cross listed firm are better governed and more efficiently run compared to non-cross listed firms. The study also found that cross listed firms tend to have a higher market value than non-cross listed firm. There were however, no evidence of statistically significant differences in the ability to pay interest obligations and total assets of cross listed and non-cross listed firms.

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