DERIVATIVE MARKET: AN INTEGRAL PART OF THE ZIMBABWE STOCK EXCHANGE

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ABSTRACT: *The study assesses the need for a derivative market as an integral of Zimbabwe Stock Exchange. It also aims to evaluate the feasibility of establishing a derivative market as an essential element of Zimbabwe Stock Exchange. The research identifies factors that need to be addressed to facilitate such a market. Views of various fund managers, financial analysts and dealers drawn from asset management firms were used. Changes in market trends are influenced by hyper inflation and acute financial policies increase the level of unpredictability in fund growth and return. Asset managers need to be in a market where they are able to actively manage and devise mechanisms that promote fund growth and managing the risks they are exposed to. The study revealed that there are many institutional arrangements lacking to facilitate this financial innovation. A thorough analysis of the research findings was made and it concluded that there is need for a derivative market as it can be an efficient vehicle for improving investment performance.*

KEY WORDS: *Zimbabwe Stock Exchange; derivative market; fund management*

JEL CLASSIFICATION: *G10, G11, G15*

1. BACKGROUND

Financial services sector in Zimbabwe grew out of the liberalization of the financial sector following the economic reforms of the early 1990s. This was one of the major changes of the financial sector as many financial institutions came aboard during this period. Financial services business continues to grow in Zimbabwe due to increased awareness and the realization by the public of the need to effectively manage their wealth so as to keep ahead of the macro-economic condition in Zimbabwe. As at 31 July 2008 there were seventeen licensed asset management firms in Zimbabwe regulated by the Reserve Bank of Zimbabwe (RBZ). Asset management firms administer pension funds, equity funds, money market funds and property funds as well as offering investments advice.

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Asset and fund management firms have designed a number of different equity funds (financial products) to appeal to different investors in which they invest in different kinds of stocks on the Zimbabwe Stock Exchange (ZSE). Notably the ZSE being the only registered exchange that trades in financial instruments has grown phenomenally as shown by the industrial index and mining index reaching the all time high levels (Kingdom Stockbrokers Equities Report, 2008) indicating an increase in market volumes traded on the exchange. This however, has transpired on the backbone of recurrent bubbles which have hit the financial sector. With such an environment, financial organizations are being exposed to high portfolio management risks which are inhibiting growth and sophistication. Portfolios managed under asset management and fund management which are mainly made up of equity investments are not realizing their potential growth because of restrictive policies. A case is the closure of all derivative trading desks in 2003 by the RBZ. This is despite the fact that internationally the level of sophistication and participation in such instruments has developed bringing stabilization and growth (breath and depth) in the financial sector.

Furthermore annual inflation of 12 000 000% for the month June 2008 up from 66 212.3% in December 2007 and being estimated at 11 200 000% for the month of February 2008 rampaged the economy (First Quarter RBZ Monetary Policy, 2008). Price distortions have made forecasting of price movements on the ZSE difficult leading to poorly crafted portfolios. A futures derivative market for equities seems to be a missing ingredient for fund management firms. Generally equity price efficiency will be facilitated in a stock market where there are derivatives instruments like put options, call options and futures.

Operating in such a macro economic environment, investors with surplus amounts of money tend to seek higher returns on their surplus funds and on the other hand those investors with deficits hardly carry the cost of borrowing rendering financial institutions failure to fulfil their intermediary role. The risk sharing characteristic of derivatives seems also to be the missing link in the Zimbabwean financial markets. Fund management firms and banks therefore need to engage in more aggressive active dynamic portfolio management strategies so as to limit the level of risk they are being exposed to, thus the advent of derivatives and other innovative products in capital markets will bring about stable and sound operating environment which will play an integral role in portfolio growth and economic development.

Financial institutions in this environment are seeking consolidation of their portfolio management strategies so as to realize the real growth of funds under management. There is a conviction that there is need to make the derivatives market an integral part of the ZSE. Some fear that derivatives will be counterproductive; others believe that they will establish safer and healthier portfolio management techniques. In light of this background and divergent views expressed, it is of paramount importance to investigate the need of derivative market as an integral part of ZSE.

The study seeks to identify the need of a derivative market to fund management and evaluate the types of derivatives instruments that can be traded in Zimbabwe. It also seeks to establish the capacity of the regulatory framework in adopting derivative instruments and the conditions necessary for a derivative market to kick off.

2. RESEARCH QUESTIONS

The paper therefore seeks to answer the following research questions:

a) Will the derivative market improve investment portfolio management?
b) Is there enough regulation in place to monitor and control derivative transactions?
c) What can be done to sustain and facilitate a vibrant derivative market in Zimbabwe?

3. METHODOLOGY

The study aims to bring to light the importance of derivative instruments to asset management firms and will take into consideration derivative market regulation, types that can be offered by ZSE and establish conditions necessary for adopting. The research was primarily based in Harare where most head offices of asset management firms are located. From these firms the researcher targeted fund managers, financial analysts and dealers as they are constantly involved in trading of shares on the ZSE thus undoubtedly give relevant information on the subject. A total of seventeen questionnaires and seven interviews were used to obtain data from respondents from seventeen asset management firms. Documentary review was also used to complement primary data.

4. LITERATURE REVIEW

Derivative is a financial asset whose value is derived from that of an underlying asset (Elton and Gruber, 1995). Its value is determined by the value of another asset. Hull (2001) states that there are different types of derivatives that's include Forwards, Futures, Options, Swaps (Interest Rate Swaps and Currency Swaps), Warrants, LEAPS, Baskets and Swaptions.

4.1. Characteristics of Derivative Market

Hawkesby (2000) explained the characteristics that attract market participants such as commercial banks, finance houses, discount houses, merchant banks and asset management firms to the different products of derivative markets. These include liquidity, low transaction costs, ability to achieve leverage, arbitrage opportunities and transparency.

Liquidity in a financial market is the ability to buy or sell without moving the price too far, transactions being done easily at the quoted market price. As activity increases, the liquidity of some derivative markets overtakes that of the physical markets themselves. This is especially evident in exchange-traded futures where contracts are standardized and the rules are clear.

Low Transaction Costs With greater liquidity in some futures markets, transaction costs fall below those in the physical market. The bid-offer spread which is the difference between the price at which a buyer can be found (the bid) and the price at which a seller can be found (the offer) thought as type of transaction cost with no

change in the asset price, to buy and sell an investor must 'cross the spread' directly incurring the cost of the spread only and no extra costs.

Ability to Achieve Leverage Higher leverage enables a greater gain (or loss) to be made for a given amount of initial capital employed-higher risk for higher returns. In this sense, derivatives can be used as an efficient avenue to obtain leverage in financial markets. The leverage that can be acquired in derivatives markets is also a highly attractive feature to those looking to hedge, as it allows a smaller amount of money to be put upfront in order to gain protection against changes in the asset price.

Arbitrage opportunity offers risk free profit. Such a transaction presumes a degree of market inefficiency-buyers and sellers willing to transact away the 'true' price. Derivative markets create links between different underlying asset markets, and hence provide an avenue by which arbitrage opportunities can be exploited if prices in different markets move out of line from each other.

Transparency Investors value having access to accurate market prices. In many physical markets 'prices' are actually quotes, indicating only the general level at which transactions are expected to take place. By contrast futures markets typically have a high degree of 'post-trade transparency'; the price and quantity of trades executed can be seen immediately. In addition, firm prices can usually be seen by those using the market. This tends to increase the willingness of investors to use exchange-traded derivatives.

4.2. Uses of Derivatives Instruments

There are four main uses of derivative instruments which are Hedging, Speculation, Arbitrage and Leverage (Chisholm, 2004). Chisholm outlined the importance of derivative instruments through their application in asset management firms.

Hedging refers to the action taken to protect an existing market position or asset from an adverse market move for example a stock market crush that could erode the value of a portfolio. The hedge is a position that would react in an opposite manner, if the adverse market movement occurs. The idea will be to offset the loss of value in the position being hedged. Chisholm postulates that Asset Management Firms could hedge a share portfolio by selling Futures that represent the portfolio held. He further asserts that not only investing institutions like asset management firms, but also corporations, banks and governments can use derivative products to hedge or reduce their exposures to market variables such as, share values, bond prices, currency exchange rates, interest rates and commodity prices.

Speculation was defined by Hull (2001) as entering a contract with the express purpose of making a profit. Portfolio managers in the form of speculators can take a future position if they believe that they could make a profit. If they are bullish on the price of the underlying asset for example stock, they would buy the future and then sell again once the price of the underlying asset had increased sufficiently, making the future price rise. Similarly, if they feel that the underlying asset is overpriced, they can sell the future and then buy back the price once the price has fallen. Chisholm (2004) asserts that derivatives instruments are very well suited to speculating on the prices of

commodities and financial assets and on key market variables such as interest rates, stock market indices and currency exchange rates. It is much less expensive to create a speculative position using derivatives than by actually trading the underlying commodity or asset. As a result, the potential returns are that much greater.

An **arbitrage** is a deal that produces risk free profits by exploiting a mispricing in the market. A simple example occurs when a trader can purchase an asset like Old Mutual shares which are dual listed both on ZSE and Johannesburg Stock Exchange. The Old Mutual share is cheaper in one exchange and the purchaser simultaneously arranges to sell it in another at a higher price. Such opportunities are unlikely to persist for very long, since arbitrageurs would rush in to buy the asset in the 'cheap' location, thus closing the pricing gap.

Leverage enables a greater gain (loss) to be made for a given amount of initial capital employed-higher risk for higher returns. In this sense, derivatives can be used as an efficient avenue to obtain leverage in financial markets. For example, if a speculator in the form of asset mangers thinks a stock will rise, they can purchase a call option on the stock. They use less capital than buying the stock outright, since less money is required on the initiation of the contract. In the case of the forward contract no money changes hands, while with the option only the premium is paid. The leverage that can be acquired in derivatives markets is also a highly attractive feature to those looking to hedge, as it allows a smaller amount of money to be put up front in order to gain protection against changes in the asset price.

4.3. Importance of a Derivative Market

Effenberger (2004) asserts that the volatility of financial markets can affect firm value thus managers should seek to avoid it. Initially many asset management firms tried to build better forecasting models so that if they could predict price changes, they could avoid the risk. Hamilton (1998) postulated that derivatives can be used to combat the adverse effects of volatile commodity prices on the economies of developing countries because forward prices tend to be less volatile than spot prices, giving commodity producers an opportunity to reduce the volatility of the price of their output through hedging.

The Deustche Bundesbank report (2006) states that an active derivatives exchange plays an important role in facilitating an efficient determination of prices in the underlying cash (or spot) market by providing improved and transparent information on both current and future prices for an asset. For example, in commodity markets spot prices are often pegged to futures prices because the futures market provides excellent pricing information for the underlying product. Prices on derivatives markets reflect anticipated supply and demand, and derivatives markets thus enhance the ability of market participants to make decisions about future production processing, and trade.

Derivatives can be used to generate and deliver abnormal performance that can be packaged within a core-satellite approach to portfolio management, that option portfolios can be used to enhance the performance of tactical asset allocation programmes and that fixed-income derivatives offer significant risk reduction benefits

in an asset-liability management context (Gibson, 1991). Hull (2001) concurs with Gibson as he postulated that derivatives can be more efficient and cheaper than trading in physical securities, but cost was not the main advantage. It was further argued that the big benefit is the ability to make investment decisions that are not contingent on a benchmark. As a result, the number and variety of investment decisions expands exponentially. This exercise serves as an illustration of the benefits that asset managers engaged in tactical asset allocation strategies can gain from suitably designed derivatives portfolios. Other possible applications involve the customization of risk return profiles of actively managed portfolios to help align their risk return characteristics with respect to investors' needs and expectations (Elton and Gruber, 1995).

Derivatives allow risk-averse market participants (such as banks, farmers, processors and traders) to offset risk among themselves or transfer it to other market participants willing to accept the risk-return ratio (Abken, 1994). In the process, derivatives attract additional participants who in turn increase the volume of transactions, thus contributing to the creation of a liquid market. Hanson (2003) asserts that derivatives markets contribute to the integration of global capital markets, hence improving the global allocation of savings and fostering higher investment levels. Merton (1976) propose some of the benefits that can be derived from the use of swaps in taxation and regulatory arbitrage. The introduction of swaps market allows an unbundling in effect of currency and interest rate exposure from the regulation and tax rules in some creative way. Thus with the introduction of swaps, an Australian firm could make a Pound-denominated issue, structure the issue so as to receive favorable treatment under the British tax code, avoid much of the Australian securities regulation and yet still manage its currency exposure by swapping the transaction back into Australian dollars.

Derivative markets contribute to the integration of global capital markets, hence improving the global allocation of savings and fostering higher investment levels (Chisholm, 2004). A United States based investor, for instance, considering the availability of risk management tools such as futures, forwards and options can invest in a British fund with minimal risk available, as she will be hedging her investment.

Hull (2001) stated that the fact that derivatives contracts especially organized exchange traded instruments should meet certain standards prompts regulators to require that quality of underlying asset in the case of commodity based instruments be standard to enable smooth trade.

4.4. Conditions for a Derivative Market

Gibson (1991) included market size, price volatility, standardization requirements and the degree of market liberalization as key parameters for introducing stock futures and options on various underlying spot securities of financial markets fro the successful implementation and facilitation of a vibrant derivative market. Emerging markets require well functioning cash markets, a large number of traders and speculators, legal structures that include property rights and enforceable contracts, well functioning credit institutions, the support of government and policymakers, adequate

financial resources and the absence of competing derivative products and exchanges (Tsetskos and Varangis, 1997). Bodie *et al* (2005) in the study of heterogeneity of derivative market development level in different countries in the context of Latin American markets with particular emphasis on Chilean derivative market, proposed that institutional and legal factors should be flexible to allow the development of derivative market, as this was shown by the findings that legal constraints on institutional investors have been a major obstacle in the development of derivative markets in Chile. Chisholm (2004) noted that the degree of market capitalization of a stock market is important because the larger the market the lower there will be the information gathering and transaction costs due to economies of scale effects. It was argued that larger markets are more likely efficient. He further explains that the more frequent the trade the more opportunity for prices to change in response to new information as it becomes available. Hawkesky (2000) stated that lack of liquidity is a critical impediment to investment since both local and foreign investors can not acquire or sell their holdings in reasonable volumes.

5. RESULTS

The analysis takes stock of the positions taken in literature review and the extent to which the results confirm or establish a new trend. The data that is subject to analysis was gathered through questionnaires and interviews while that from desk research was for complimentary purposes. Questionnaires from eight Fund Managers; four Financial Analyst and five Dealers from different financial institutions and mainly asset management firms were used in this study. In addition to questionnaires four fund managers and three Financial Analysts were interviewed.

5.1. Types of Derivative Instruments

All respondents indicated that through the ZSE stock options can be offered on the derivative market. Fund managers and financial analysts also indicated that option contracts have built-in flexibility because the holder is not obliged to exercise or take up the option. The research found that investors may favour options as they participate in the market without trading or holding large stock portfolios; with strong market views and its future movement; and want to take advantage of the situation or opportunities that may arise. It was found that investors who follow the equity market closely and those who want to protect the value of their diversified equity portfolio may be attracted by options trade in Zimbabwe. All asset managers emphasized the issue of hedging against risk in options trading as they manage pension funds and other equity funds that are heavily invested on the Stock Exchange thus allows enough speculators to provide additional liquidity. The study found that call options were more popular than put options and the major reason was to do with stability of the economy. The more volatile the underlying asset, all things being equal, the greater the expected payout from an option on that asset, and the greater the premium charged by the writer. The research found out that due to the buoyant nature of the ZSE index, fund managers tend to favour hedging with options. Futures contracts were indicated by 75% of the

respondents with the rest remaining skeptical about them. The study found out that traders of these instruments tend to rely on some variation of fundamental or technical analysis to predict prices. Traders spend considerable time and energy attempting to identify new measurements or signals that provide the edge in predicting prices. Respondents also highlighted that Forwards which are most common and Swaps can also be traded on the derivative market in Zimbabwe.

5.2. Derivative Market Importance

When asked about the readiness and importance of the derivative market in the economy all fund managers and dealers strongly agreed that it was long over due. However a minority (30%) of the financial analysts argued that it was too early as the market had to be deep with many tradable assets on offer and players in the market**.** It was affirmed that derivatives are of great importance as they provide a new avenue of risk management through the effective use of hedging, arbitrage, speculation and leverage techniques, thus enabling tactical investment decision making. Respondents highlighted that derivatives trading improves market transparency and liquidity since the instruments are flexible. About 12% of the fund managers indicated that though derivatives can be said to be a new phenomena of risk management and effective price discovery, its not the wholesome answer to the need of realizing real portfolio returns. Their argument was tactful decision in allocating shares in a portfolio may proffer equal or more advantages than the use of derivatives. On the issue of improvement of portfolio management strategies more than 89% of the respondents agreed that the adoption of derivative instruments can help in achieving this. Those who agreed believed that derivatives provide a new avenue of managing portfolios and a new way of effectively hedging portfolios. Those who disagreed argued that improvement can be done without indulging in such instruments but through construction of models which can be used to effectively manage portfolios.

5.3. Regulatory Framework

Financial analysts (71%) cited irregularities that are in the current framework for just the trading ordinary shares on the local bourse. It was indicated that insider trading is continuing unabated and this is a clear manifestation of shortcomings since other brokers' trade with an edge of price-sensitive information that has a material effect on the price or value of an instrument if it is made public. About 50% and 44% of fund managers and dealers respectively also highlighted the same issue of insider trading. There was further indication of cases of inadequate institutional arrangements that see the regulatory framework of ZSE being worry some. The highly noted case was the merger of Renaissance and First Mutual Life (to form Afre) which was termed by some dealers as shoddy handling; it went in and out of courts without proper referendum till its completion. However 29% of Financial Analyst, 50% of Fund Managers and 56% of dealers believed that ZSE has the capacity and that it can accommodate trade of derivatives. The study found out that there should be some adjustments in the framework so as to limit by all chance loopholes that might lead to

resistance by asset management firms if there is to be adoption of derivative instruments.

5.4. Conditions for Derivative Market

The research found out that market capitalization and market liquidity, are important for adopting a derivative market as rising market capitalization means there is increase in trade and volumes traded which implies guaranteed trade. The respondents also hinted the following preconditions as necessary for a successful implementation of a derivatives market:

i) Continuous electronic trading system or at least three call overs,
ii) Firm security measures,
iii) Properly set up regulatory controls,
iv) IT infrastructure that is robust and secure,
v) Support from authorities, and
vi) Well performing financial sector.

All respondents brought up the issue of electronic trading system to be set first on the ZSE and enable the trading period to have three to four call overs so that many investors participate as the current two call overs is very limiting. It was also outlined that there should be will power by regulating authorities so that a number of initiatives from various stakeholders can be made to open up a forum of discussion as to ho these financial instruments can be adopted.

There is need for complementary efforts from all corners of the industry like production and processing so as to have excess liquidity which in turn influence transaction costs level that is a major factor in the derivative market trading. Responses clearly show that the ZSE is still developing towards the attainment of standards which allow for an easy integration of the derivative market into the system. Adoption of derivatives can be described as a long journey rather than a destination itself. Undoubtedly, it would require commitment of substantial capital and human resources on the part of ZSE and other regulators if it is to yield any results.

6. DISCUSSION

For the derivative market to be a success there has to be many financial assets and commodities to be traded. The market has to be deep with many players in the market and well capitalized for liquidity purposes. As Tsetsekos and Varangis (1997) observed that the type of instruments should have many traders and significant amount of money at risk. Futures, forwards, swaps and options are types of derivatives that can be traded on the market. As for conditions necessary for the establishment of this market the study confirms the argument put forward by Tsetskos and Varangis (1997) that the degree of market capitalization of a stock market is important because the larger the market, the lower the information gathering and transaction costs due to economies of scale effects.

Potsiwa (2005) referring to the Zimbabwe situation outlined that there is need for concerted effort on the part of bankers and financiers to lobby regulators to put in

place legislation that enable them to trade derivatives instruments. This is in line with Rutter (2006), who for the adoption of derivative instruments included such things as market size, price volatility and market liberalization as the key parameters for introducing stock futures and options.

The research revealed that it is important to introduce derivatives in the economy of Zimbabwe as it opens different opportunities. This confirms Brealey and Myers (2002) assertion that derivatives assist in the standardization of commodity or financial instrument contracts in the cash markets because derivative contracts are highly standardized themselves. Derivatives respond more quickly to new information than the cash markets and allow people who do not participate in derivative trading to forecast accurately this information to make better consumption, pricing and investment decisions what is termed price discovery role of derivatives. The fact that derivatives contracts especially organized exchange traded instruments should meet certain standards prompts regulators to require that quality of underlying asset in the case of commodity based instruments be standard to enable smooth trade.

A country's financial infrastructure is enhanced by the links among hedgers, speculators, and cash markets. A derivatives exchange can improve the allocation of resources, maintain efficient pricing and information flows, and act as a conduit for the transfer of risk within a country and even across countries. It was also found out that derivatives encourage greater international investment. This confirms a study by Geske and Roll (1984) where they postulated that derivatives promote greater international investment since they improve asset pricing and facilitate effective risk management strategies. As international investors constantly sought markets offering higher returns on investment across the globe, this would result in the integration of capital markets. Sometimes securities, loans and other assets are traded in markets that are characterized by transparent trading or centralized pricing or benchmark pricing. In these circumstances derivatives markets can improve upon the efficiency of the price determination process.

The key benefits from establishing a domestic derivatives exchange are improved price discovery and a higher correlation between the prices of derivatives products and cash prices. These benefits should be compared with the risks and benefits of using already established derivatives exchanges that are more liquid and that stress prudential regulation. Higher transaction volumes usually lower transaction costs, which can outweigh the benefit of having a derivatives contract closely associated with local market conditions. The major risks when using established exchanges are the lower correlation between exchange contract prices and local cash prices, and the risk associated with fluctuating exchange rates.

The authorities have to put in place legislation to enable the market to be established. Barbican Bank (in Zimbabwe) before it was placed under curatorship was trading call options which some quarters believe it was the source of its financial demise. The failure of the financial institutions was attributed mainly to lack of proper regulatory structures guiding the trade of derivatives. This is in line with Potsiwa (2005) who examined the case from an industry perspective and stressed the need for concerted effort from bankers and financiers to give a serious look at the importance of derivatives as hedging instruments for themselves and their clients. He called for

industry players to lobby regulators to put in place legislation to enable them to practice. He further explained that there is need of a derivative society to be established thus this will have the contributions from academic institutions working together with industry. Stringent regulation of a derivative market is a cornerstone for success and stability of the market. There is also need to train staff so that they are effective and efficient in delivering in different regulatory bodies.

The inclusion of derivatives in a portfolio improves portfolio management strategies. Assertions by majority of respondents concur with Gibson (1991) which concluded that derivatives improve tactical asset allocation techniques. Trading in an environment characterized by high uncertainty which is influenced by severe macro-economic policies, funds under asset management firms mainly pension funds, institutional and private portfolios have a significant investment portion invested in equities.

These have generally been not well managed by traditional portfolio management techniques such as diversification through use of physical securities alone. Demand for investing techniques better tailored for their risk profiles leads inevitably to the need for derivative based strategies. The investment decision will be matched to long dated obligations through absolute return products (derivatives) that aim to preserve capital and deliver steady returns rather than more volatile market driven performances.

The issue of regulatory sufficiency, based on the findings above remains inconclusive. Insider trading which most respondents highlighted is difficult to manage since most of the information which is sensitive emanates from the companies not from ZSE offices though they have access to information such as financial year end results before they are published. Rutter (2006) asserted that regardless of legal and regulatory environment available regulatory bodies should set broad parameters to monitor all operations in order to foster a sound trading environment.

7. CONCLUSION

It can be concluded that there is need for derivative instruments for the improvement in ZSE operations and investment portfolio management. Derivatives are important in that they improve overall market scenario through improved price determination processes, information dissemination and portfolio management strategies.

The volatile nature of ZSE makes options the most suitable instruments to start trading as they favour bearish or bullish approaches. The volatile nature also makes stock options most suitable instruments as they offer hedging techniques to asset management. The regulatory framework of ZSE lacks sufficiency to regulate, control and monitor the trading of derivative instruments. The ZSE lacks the infrastructure that permits the adoption of derivatives as alluded to in the literature review.

Also the current manual trading system with one call over inhibits trading by many investors thus compromising the breath and liquidity of the market. The research recommends ZSE to implement an electronic trading as it favours more trading time and thus improving market liquidity.

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