

Diversification in a Small Market: Some Evidences from Namibia

Udai Lal Paliwal¹

¹ Faculty of Economics and Management Sciences, University of Namibia, Namibia

Correspondence: Udai Lal Paliwal, Faculty of Economics and Management Sciences, University of Namibia, Namibia. E-mail: ulpaliwal@unam.na

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Abstract

Maximizing returns and minimizing risk through diversification has been a popular topic in economics and finance research. Studies have shown that correlation among international portfolio returns increases during periods of turbulence in capital markets, meaning that benefits from international diversification are lost exactly when they are needed most (Bodie, Kane & Marcus, 2008). This and other similar findings pave the way for nontraditional diversification strategies. The present paper is an attempt to analyse portfolio returns and diversification benefits of including gold, bonds, real estate and stock in portfolio of a Namibian investor.

Keywords: Namibia, portfolio diversification, overall index, local index

1. Introduction

Despite a plethora of research supporting the notion of international diversification, recent studies have shown that correlation among international portfolio returns increases during periods of turbulence in capital markets, meaning that benefits from international diversification are lost exactly when they are needed most (Bodie, Kane & Marcus, 2008). This and other similar findings pave the way for nontraditional diversification strategies. Inspired from this the current paper is an attempt to identify innovative diversification opportunities and to identify the effect of including direct investment in gold and real estate as one of the diversification strategies. Several studies (Chua, 1999; Goetzmann, 1993; Lee, 2008) have shown that including housing investment in asset portfolio increases portfolio returns and decreases portfolio risk. Although many researchers have studied the effect of real estate in multi-asset portfolio in several countries, little research has been done in Namibia on diversification in general and the diversification effect of non-traditional asset classes such as gold and real estate in particular. The remaining of this article is organized as follows. In the section two, literature review, earlier research on portfolio diversification is discussed while the section three briefly explains the objectives of the present study. The section four succinctly describes the methodology used while the section five presents discussion and analysis of findings. The section six presents conclusion of the research.

2. Literature Review

Diversification for maximizing returns and minimizing risk is an important economic task for individual investors and portfolio managers. Modern portfolio theory, dating back to the seminal work of Markowitz (1952), says that an investor should optimize her portfolio's return-risk-exposure trade-off by carefully spreading out her scarce resources over various assets. Unfortunately, this task is quite demanding, as infinitely many possible combinations have to be considered (Baltussen & Post; 2011). Investors and researchers have long debated over the two popular maxims, "put all your eggs in one basket and then watch the basket" and "do not put all your eggs in one basket"; however, the later appears to be the belief of many (Olaleye & Aluko, 2007). Based on several research studies, they further conclude that diversification benefits may be captured by combining different classes of real estate assets in different locations or by acquiring different property types or using both strategies (Olaleye & Aluko, 2007).

Over the last two decades, the international financial markets have experienced a series of financial crises and turbulences in different parts of the world, which resulted in drastic drop and excessive volatility in the stock markets of the crisis-originating countries as well as markets of other economies through the "contagion" effect. The recurring heightened volatility in the stock markets imposes substantial risk to stock investment (Ibrahim & Baharom, 2011). Existing studies on stock market risk have a predominant focus on characterizing the risk using GARCH-type models and whether the risk can be diversified through international diversification. Studies on the

benefits of international diversification tend to suggest increasing interactions among national markets and their interactions are more intense during crisis episodes and accordingly limit the benefits of diversifying away financial risks originating from a specific market, thus highlighting the need to identify other types of financial assets as a protection against this risk (Ibrahim & Baharom, 2011).

A large body of recent literature exists on the benefits of international equity diversification, which emanates from the Markowitz's theory, "the less the assets are correlated, the greater the benefit of risk diversification". However, in today's volatile global environment, with increasing interdependence among world stock markets, especially after the global financial crisis of 2008-2009, it has been questioned by many "whether it still makes sense to diversify globally" or "can the investments in global equity portfolios be protected in today's volatile and interdependent markets?" (Hsu, 2011).

Traditionally, investment managers in direct real estate have focused on a single geographical region. To achieve diversification, they have invested across different property types, in assets with different characteristics, or by selecting assets in targeted areas within that region. Achieving diversification through international investment, common in other asset classes, has not been considered as attractive for direct real estate because real estate markets are less transparent and there are higher risks and costs involved (Wit I de, 2010).

Liow (2010), in an analysis of integration among securitized real estate markets found that conditional correlations are (substantially) weaker than the broader stock market correlations; implying the existence of potential benefits in international portfolio diversification that includes real estate. Liow, (2010), also found stronger return linkages between some pairs of real estate securities markets as well as between the securitised real estate markets and the global stock market over the past decades, implying that international linkages have been increasing over time, although their integration process has been much slower than that among the corresponding broader stock markets and from the world stock market. This further implies the potentialities of portfolio diversification benefits across the major real estate securities markets and the world stock markets might reduce/diminish in the long run. Masron & Fereidouni, (2010) in their study of performance and diversification benefits of housing investment in Iran concluded that housing is not only an effective asset for investment but also a good vehicle of diversification if included in a mixed-asset portfolio. They further concluded that investment in housing sector produces the real investment returns as the housing returns exceed the rate of growth in the CPI (inflation rate). Gold has proven to be a solid investment choice, stable in times of global geopolitical instability and economic uncertainty, recession and depression. Used correctly, gold and silver can be effective components of a properly diversified investment portfolio (O'Byrne, 2007).

3. Objectives of the Paper

The objectives of this paper are:

- To identify trend of returns offered by various asset classes in Namibia
- To analyse whether direct investment in gold and real estate provided diversification benefits to Namibian investors

4. Methodology

The present study is based on secondary data collected from variety of sources. Data for overall index and local index were collected from Namibia Stock Exchange Limited (NSX). Both index prices were then converted into monthly returns. Rate of return on risk free assets is interest rate on treasury bonds and was collected from the publications of Bank of Namibia (BON). Since monthly interest rates were not available, the annual interest rates for treasury bonds were converted into monthly rates. Monthly gold prices were obtained from the website of the World Gold Council and monthly returns on investment in gold were determined. Monthly real estate price data were obtained from the First National Bank of Namibia (FNB), which published this data since October, 2007. Using the FNB data the rates of return on investment in physical real estate were computed. It should be noted that real estate data were not available for the whole period of study; as prior to October 2007 no reliable data were available on housing prices.

The first part of discussion and analysis thus explains the portfolio returns on three assets and diversification potential of these assets viz.; bonds, overall index and local index. This is followed by discussion on portfolio returns and diversification including gold as fourth asset class. Further, since about half the study period, from third quarter of 2007 represents more volatile returns on stock market investments, the data was divided into two parts and the first part was used to analyse the diversification effect of these assets during the period before the start of global financial crisis and the second sub sample was used to analyse the contribution of these four assets to portfolio returns as well as their diversification potential during the period of volatility (second half of the

study period). Incidentally, as the data for housing prices was also available for this period; the effect of including real estate in portfolio was also analyzed for the second part of the study period.

5. Discussion and Analysis

5.1 Namibian Stock Exchange (NSX) – A Brief Profile

Namibian Stock Exchange (NSX) is a small stock exchange with 24 securities listed on overall index and 7 securities listed on local index, which means that 17 of the companies listed on overall index are dual listed elsewhere in the world and are multinational companies operating in Namibia. The year to date volume traded at the beginning of April 2012 was 19,989,577 shares on local index and 40,481,113 shares on overall index respectively. The year to date value traded on the same date for both indexes amounted to N\$ 247.91 Million on local index and N\$ 1150.59 Million on overall index (1USD = N\$ 7.8 on the same date).

5.2 Analysis

First of all the portfolio returns were calculated assuming that an investor takes equal position in local index, overall index and bonds. Table 1 presents the average monthly returns, standard deviation and risk to return profile of the three assets for the period September 2003 – December 2011.

Table 1. Average monthly returns, standard deviation and return to risk ratio

| | <i>Overall index</i> | <i>Local index</i> | <i>Bonds</i> |
|-------------------------|----------------------|--------------------|--------------|
| Mean (Monthly return %) | 1.18 | 1.38 | 0.65 |
| Standard Deviation | 6.36 | 2.52 | 0.15 |
| Mean / SD | 0.19 | 0.55 | 4.42 |
| Sharpe ratio | 0.0908 | 0.3090 | 0.3329 |

It is evident from the above table that investment in bonds during this period proved to be nearly risk free (SD = 0.15) with an average monthly return of 0.65% and highest Sharpe ratio of 0.3329 among the three assets classes available. Investment in local index also proved to be worthwhile with monthly average returns of 1.38% with standard deviation of 2.52%. Based on the following correlation matrix (Table 2) it is clear that overall index and local index have no correlation at all and overall index is negatively correlated with bonds ($r = -0.18$), which means that mixing these assets provided good diversification benefits. It is clear that a position in local index together with bonds provided good returns, while lowering the portfolio risk.

Table 2. Correlations: average monthly returns on overall index, local index and bonds

| | <i>Overall index</i> | <i>Local index</i> | <i>Bonds</i> |
|---------------|----------------------|--------------------|--------------|
| Overall index | 1 | | |
| Local index | 0.00 | 1.00 | |
| Bonds | -0.18 | 0.13 | 1.00 |

Table 3 indicates average monthly returns of the minimum variance portfolio invested in three assets:

Table 3. Average monthly returns and Sharpe measure for minimum variance portfolio

| <i>Portfolio weights</i> | | | SD | Return | Ret/SD | Sharpe |
|--------------------------|--------------------|--------------|------|--------|--------|--------|
| <i>Overall index</i> | <i>Local index</i> | <i>Bonds</i> | | | | |
| 0.07 | 0.57 | 0.36 | 1.49 | 1.10 | 0.74 | 0.33 |

As concluded by many researchers (AlKulaib & Almudhaf, 2012; Ibrahim & Baharom, 2011; Kristof, 2011; McCormick, 2010) adding gold into ones investment basket has provided both diversification as well as hedging benefits. Following from such empirical findings it was tested whether gold does shine in portfolio of Namibian Investor. Since Namibia is a small market, there is no option for securitized investment in gold locally, therefore, direct investment in gold was considered as an option. Following section presents the effect of including direct investment in gold in one's portfolio. Figure 1 presents an overview of average monthly returns on gold, overall index, local index and bonds. As can be observed from the Figure 1, the overall index returns have been most volatile during this period. As most of the companies included in overall index are dual listed multinational companies; they were less resilient to the shocks of global economic meltdown. Table 4 shows the portfolio returns including gold for the period from September 2003 to December 2011.

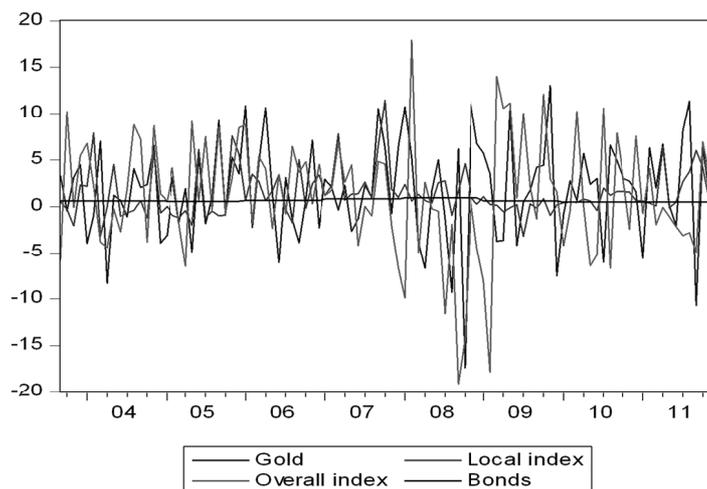


Figure 1. Trend of average monthly returns (%) September 2003 to December 2011

Table 4. Average monthly returns and sharpe measure including direct investment in gold

| <i>Portfolio weights</i> | | | | SD | Return | Ret/SD | Sharpe |
|--------------------------|----------------------|--------------------|--------------|--------|--------|--------|--------|
| <i>Gold</i> | <i>Overall index</i> | <i>Local index</i> | <i>Bonds</i> | | | | |
| 0.1295 | 0.0591 | 0.5505 | 0.2609 | 1.6502 | 1.2000 | 0.7272 | 0.3636 |

It is clearly evident that including gold in the portfolio pushed monthly returns upward from 1.1% to 1.2%. At the same time Sharpe ratio has also increased from 0.33 to 0.36 after including gold into portfolio.

As it may be noted from Figure 1, the study period witnessed one of the worst volatile movements in security returns; it was felt necessary to divide the study period into two parts; viz., September 2003 to October, 2007 and November 2007 to December 2011, each covering 50 months; to study the trend of asset as well as portfolio returns to draw some meaningful conclusions. The following part presents the relevant statistics for two periods respectively.

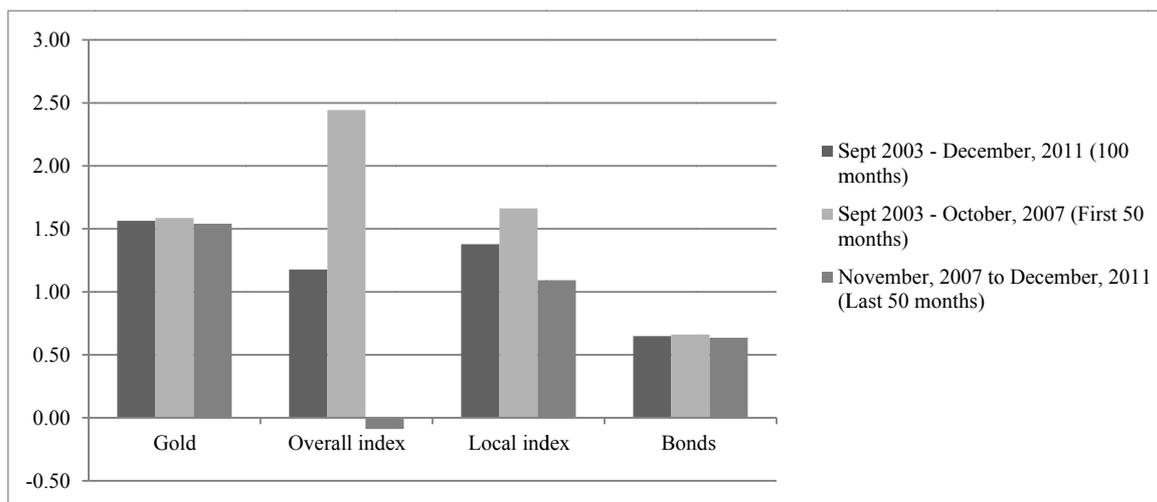


Figure 2. Average monthly returns over different investment horizons

It may be noted from Figure 2 that during the study period gold returns were most stable and attractive followed by returns on bonds, local index and overall index respectively. During the second half of the study period investment in overall index resulted in negative monthly returns of 0.09% due to its exposure to capital markets

around the globe and resulting shocks. It may be observed from Table 4 and the following Table 5 showing correlation matrix that investment in gold proved to be a good diversification option to minimize risk as it had very low correlation with other assets especially during the second half of the study period, when it was most needed.

Table 5. Correlation between monthly returns on gold and other assets during two periods

| | <i>Sept 2003 - Oct 2007</i> | <i>Nov 2007 - Dec 2011</i> |
|---------------|-----------------------------|----------------------------|
| Gold | 1 | 1 |
| Overall index | 0.156 | 0.037 |
| Local index | 0.175 | -0.029 |
| Bonds | 0.088 | -0.049 |

Table 6 presents the portfolio returns with and without gold for the second half of the study period.

Table 6. Average monthly returns and sharpe measure (November 2007 – December 2011)

| Portfolio | <i>Portfolio weights</i> | | | | SD | Return | Ret/SD | Sharpe |
|--------------|--------------------------|----------------------|--------------------|--------------|------|--------|--------|--------|
| | <i>Gold</i> | <i>Overall index</i> | <i>Local index</i> | <i>Bonds</i> | | | | |
| Without gold | N.A. | 0.00 | 0.15 | 0.85 | 0.28 | 0.70 | 2.47 | 0.35 |
| With gold | 0.04 | 0.00 | 0.28 | 0.68 | 0.54 | 0.80 | 1.48 | 0.37 |

As observed earlier, overall index returns have been negative during the second half of the study period; an appropriate strategy would have been no investment in overall index during this period. It may be further concluded that a small position in gold would increase portfolio's monthly returns from 0.7% to 0.8% and push Sharpe ratio from 0.35 to 0.37.

Having observed the effect of investment in gold on portfolio returns and diversification, the next step was to study the effect of direct investment in real estate. Since housing price data was available from October 2007, its effect could be analyzed for the second half of the study period only. As depicted in Figure 3, housing returns have outperformed returns from bonds and that from overall index.

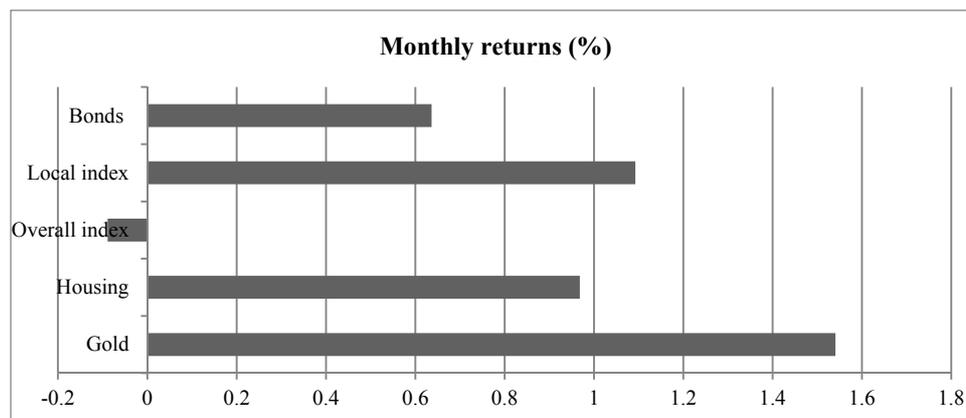


Figure 3. Average monthly returns during November 2007 – December 2011

Table 7. Diversification effect of real estate investment on portfolio returns

| Portfolio | <i>Portfolio weights</i> | | | | | SD | Return | Ret/SD | Sharpe |
|-----------------|--------------------------|-------------|----------------------|--------------------|--------------|------|--------|--------|--------|
| | <i>Real estate</i> | <i>Gold</i> | <i>Overall index</i> | <i>Local index</i> | <i>Bonds</i> | | | | |
| Without housing | N.A. | 0.04 | 0.00 | 0.28 | 0.68 | 0.54 | 0.80 | 1.48 | 0.37 |
| With housing | 0.01 | 0.05 | 0.00 | 0.36 | 0.58 | 0.68 | 0.85 | 1.24 | 0.37 |

Table 7 shows a small position in real estate increased monthly return from 0.8% to 0.85%, however, a corresponding increase in portfolio risk (standard deviation) kept the Sharpe measure unchanged. It is interesting to note that effect of real estate investment in the portfolio of Namibian investor is less attractive when compared

with real estate returns elsewhere as found by empirical research (Chua, 1999; Goetzmann, 1993; Lee, 2008; Masron & Fereidouni, 2010).

6. Conclusion

As evident from the foregoing discussion, the Namibian overall index was affected by the global economic crisis to a large extent. As may be noted from the preceding section, including gold into portfolio resulted in much needed diversification benefit for Namibian investors (monthly returns increased from 1.1% to 1.2% and Sharpe ratio increased from 0.33 to 0.36). Direct investment in real estate was also found to provide diversification benefit. However, real estate returns as well as its contribution to diversification was not very impressive when compared to the findings from other countries (Chua, 1999; Goetzmann, 1993; Lee, 2008; Masron & Fereidouni, 2010). As a conclusion it may be noted that though the historical evidence supports the diversification benefits provided by gold and real estate, it may not continue to be so in future, therefore, investors have to continuously monitor their investment strategies and keep changing their position in various assets to achieve desired outcomes from their investment.

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