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What is the optimal offshore equity allocation?

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With the recent increase in the regulatory limit allowing South African investors to maximise their offshore investment exposure to 45%, many investors are wondering whether they should use the maximum limit. There is a great deal to consider before making that decision.

If you believe that South Africa will denigrate into another Zimbabwe, then the choice is simple: move as much capital offshore as possible. However, if we believe that our great country will, as it has in the past, withstand the many economic and political challenges that we've faced, with the determination we've historically portrayed and with the strength of our financial institutions and legal system then, the pressure to go to the maximum offshore limit (in equities) is less obvious.

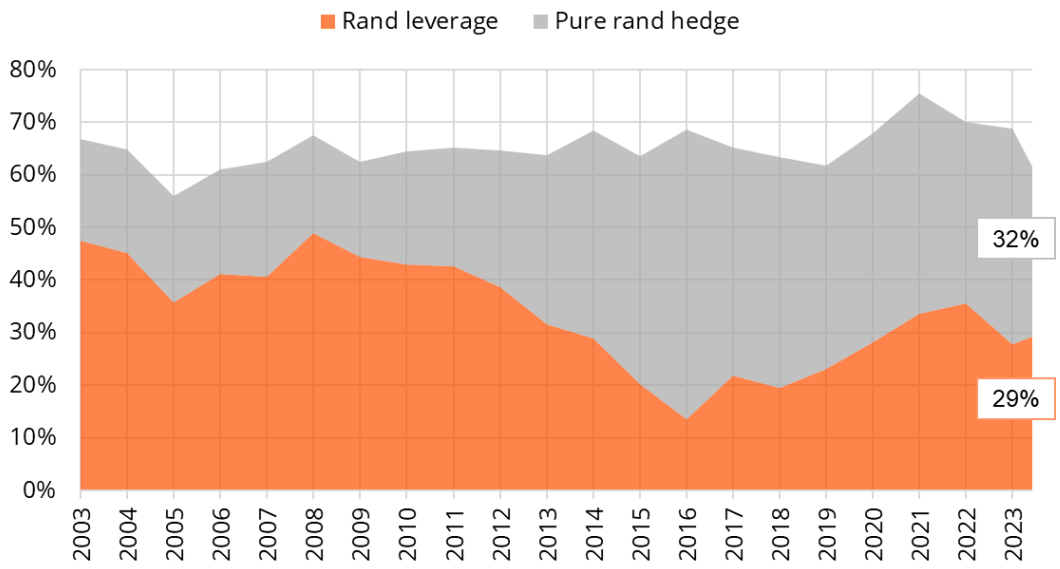
To determine the most optimal allocation in the past, we conducted a comprehensive analysis of data spanning 50 years. We utilised both the FTSE/JSE All Share Index (ALSI) and the MSCI World Index, restricting the selection of these two indices as potential investment options for illustrative purposes. While investors have a broader range of choices, most equity benchmarks permitted to allocate offshore would incorporate these two indices as part of their benchmarks in differing proportions. The results of our analysis are included below.

The first point to note is that the ALSI already has large rand hedge and rand leverage components to its market capitalisation.

Rand hedge companies generate the majority of their revenue and profits in global markets (e.g., AB Inbev, Richemont, British American Tobacco). Rand leveraged companies, have costs in rand but mainly generate revenue in dollars (e.g., SA gold, platinum and general resource companies).

According to our classifications and research, the current ALSI composition reveals that 61.5% falls under either rand hedge (32.2%) or rand leveraged (29.3%) companies. Figure 1 illustrates that South African investors in the ALSI already have significant level of offshore diversification.

Figure 1: A large portion of the ALSI made up of rand hedge or rand leveraged stocks



Source: FactSet, Denker Capital. 27 June 2023

Over the last 50 years, investors have not had a dramatically different return vs. risk experience regardless of whether they were invested in the ALSI or the MSCI World.

This is highlighted by the statistics in Figure 2. If your investment was 100% allocated to the ALSI, your annualised return of 16.5% would have outperformed that of the MSCI World return (measured in ZAR) - despite a 7% annualised depreciation of the rand. Your maximum annual drawdown would also have been reduced. However, you would have experienced slightly higher levels of volatility in returns. The Sharpe ratios (which show performance in excess of the risk-free rate relative to risk) are similar.

Figure 2: Statistics for the last 50 years (ZAR)

	FTSE/JSE All Share Index	MSCI World Index
Annualised performance	16.5%	16.2%
Annualised volatility	20.6%	17.3%
Sharpe ratio	0.3	0.3
Max annual drawdown	-42.6%	-50.0%

Source: JSE, MSCI, Bloomberg, Denker Capital. Measured from 1 June 1973 to 31 May 2023.

There are obvious benefits to having an offshore equity allocation in a portfolio.

Returns are not the only consideration in an optimal portfolio; diversification and correlations of returns matter too.

The benefits of offshore diversification are:

- Improved potential annualised return and risk (volatility and maximum annualised drawdown) outcomes, as the two asset classes are not perfectly correlated. This means that there will be times where South African companies perform well when global companies don't, and vice versa.
- An additional hedge against substantial weakness in the rand.
- Exposure to global developed and developing markets, offering investors greater choice and, importantly, shielding them from an uncertain and potentially fragile South African economy.

As illustrated below, introducing global equity exposure can improve risk adjusted returns and, hence, Sharpe ratios. The Sharpe ratio measures alpha (excess returns over the risk-free rate) relative to the standard deviation (risk) of the excess returns. The higher the ratio, the better - it indicates that investors are getting a higher excess return per unit of volatility of the excess return.

An optimal offshore allocation has shown mixed results over time.

Some of the findings from our research are depicted in Figure 3 below.

Over short periods, such as the past year, higher offshore exposure has proven more beneficial.

This benefit has extended over the previous five, ten and fifteen years. This is evident from the annualised returns and the volatility of returns across these periods, varying allocations between the ALSI and MSCI World. These highlighted periods are marked in blue within the table below.

However, this is less obvious over a three-year timeframe and over longer periods, such as twenty- and thirty-five years (highlighted in orange),despite the depreciation in the rand.

Over a three-year span, a larger weighting in the ALSI would have produced higher performance. Similarly, over the much longer durations of twenty and thirty-five years, annualised returns would have been higher (although accompanied by slightly higher volatility).

Interestingly, across a three-, twenty- and thirty-five-year time span, Sharpe ratios have relatively consistent patterns, irrespective of local vs. global equity allocation.

Figure 3: Annualised performance, volatility and Sharpe ratio comparison (ZAR)

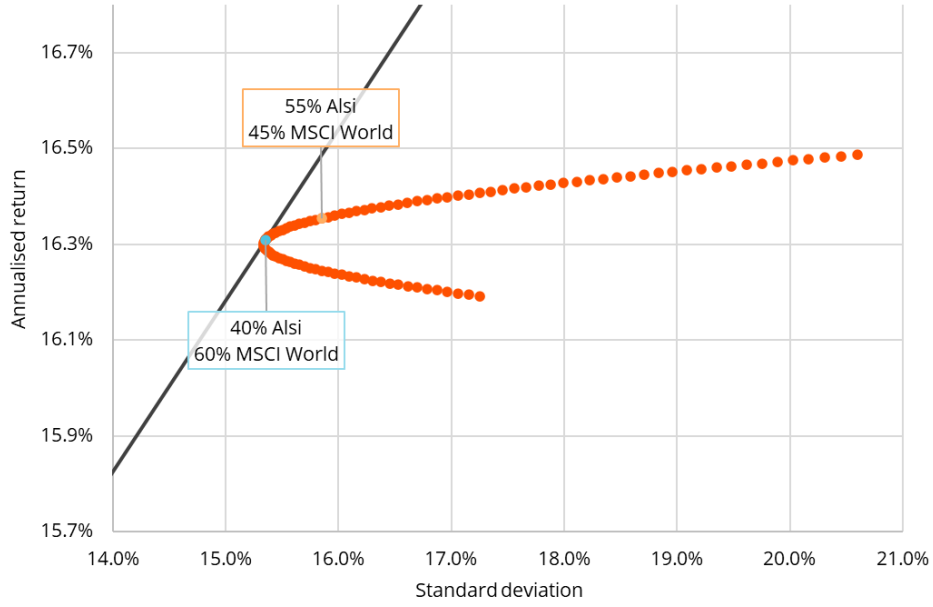
Ratio (%): FTSE/JSE All Share Index / MSCI World Index	**55 / 45**	**65 / 35**	**75 / 25**	**85 / 15**
Annualised performance				
1 year	18.2%	16.0%	13.9%	11.8%
3 years	17.5%	17.8%	18.0%	18.2%
5 years	13.8%	13.0%	12.1%	11.3%
10 years	12.8%	12.1%	11.4%	10.7%
15 years	11.3%	10.9%	10.5%	10.0%
20 years	14.5%	14.6%	14.8%	14.9%
35 years	15.0%	15.1%	15.1%	15.0%
Annualised volatility				
1 year	17.5%	17.8%	18.3%	19.1%
3 years	13.6%	13.8%	14.2%	14.7%
5 years	14.8%	14.9%	15.3%	15.8%
10 years	12.5%	12.6%	12.8%	13.2%
15 years	13.4%	13.6%	13.9%	14.4%
20 years	13.1%	13.3%	13.7%	14.3%
35 years	14.5%	14.9%	15.5%	16.3%
Sharpe ratio				
1 year	0.7	0.5	0.4	0.3
3 years	0.9	0.9	0.9	0.9
5 years	0.5	0.5	0.4	0.3
10 years	0.5	0.5	0.4	0.3
15 years	0.4	0.3	0.3	0.2
20 years	0.6	0.6	0.6	0.5
35 years	0.3	0.3	0.3	0.3

Source: JSE, MSCI, Bloomberg, Denker Capital. 31 May 2023.

Expanding on the long-term statistics shown in Figure 2 (50-year data), and conducting 10 000 random combinations, the combination of the ALSI and MSCI World that maximised the Sharpe ratio (the point where the black capital allocation line intersects the efficient frontier curve in Figure 4) was an allocation of 40% to the ALSI and 60% to the MSCI World Index. This would have resulted in an annualised return of 16.3% with a standard deviation of 15.4%.

The annualised returns and standard deviation at the maximum allowable allocation of 45% offshore are relatively similar. The portfolio's annualised return would've been slightly higher at 16.4%, but also with a slightly higher standard deviation of 15.9%.

Figure 4: Efficient frontier over 50 years

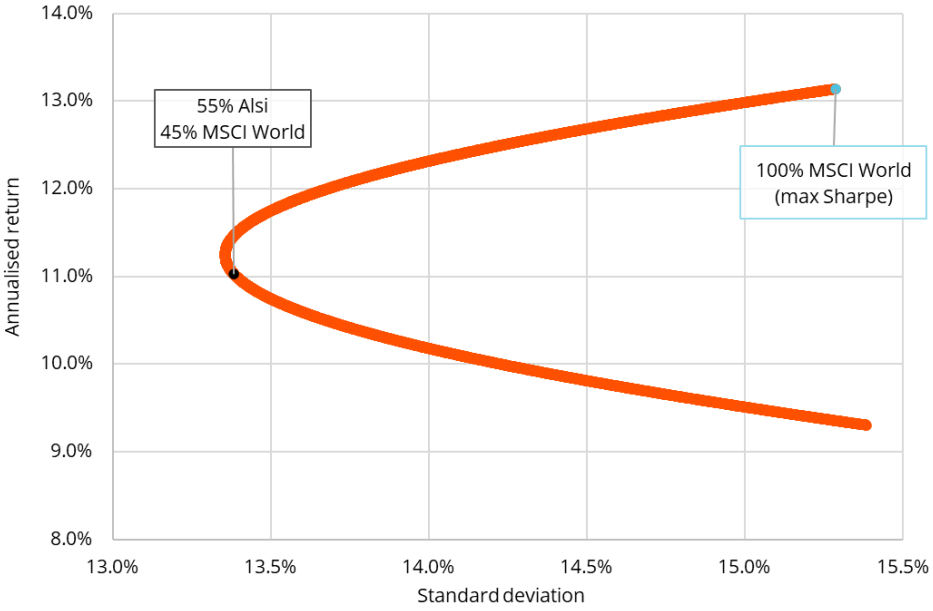


Source: JSE, MSCI, Denker Capital. Measured from 1 June 1973 to 31 May 2023.

Academics argue that any combination of the two asset classes that lie on the efficient frontier would be 'optimal'. In other words, at any given point the highest expected return for the defined level of risk (as defined by the standard deviation of returns) or the lowest risk for a given level of return would be optimal. To put it differently, if history were to repeat itself, investors seeking to 'maximise' returns by increasing their exposure to the ALSI should be comfortable to take on the increased level of risk.

The data varies across different time span (as highlighted in the above tables). In particular, over the past fifteen years investors would have been substantially better off with the maximum offshore allocation. This is demonstrated in the chart below.

Figure 5: Efficient frontier over 15 years



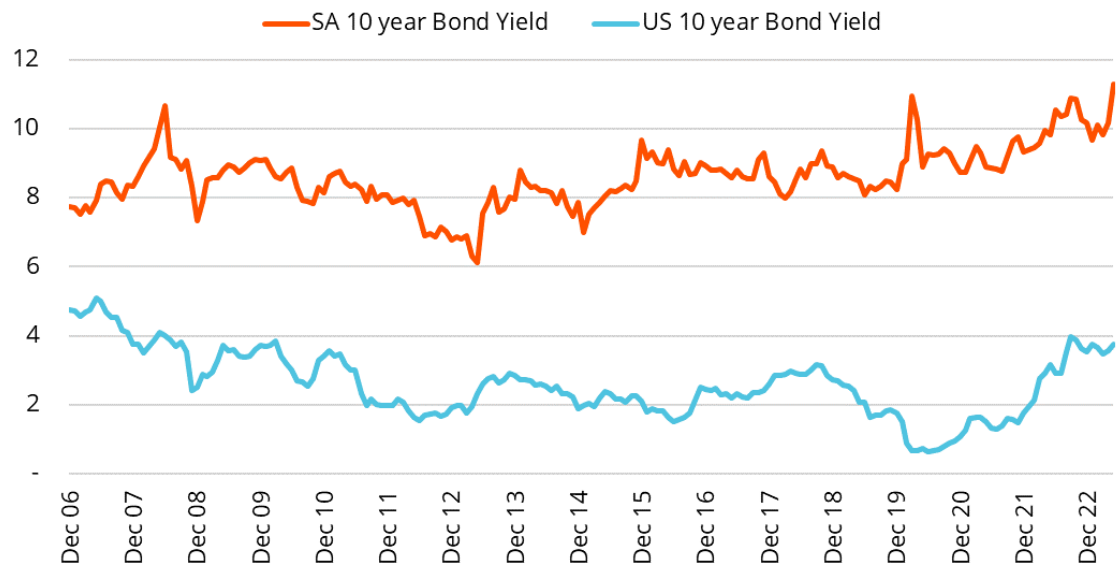
Source: JSE, MSCI, Denker Capital. Measured from 1 June 2008 to 31 May 2023.

However, long term returns are dependent on the price you pay.

The perceived risk of investing in South Africa, compared to global markets, is partly reflected in the PE ratios that investors pay. On average, the PE ratio of the ALSI is lower than that of the MSCI World. The lower the PE ratio, the higher the subsequent returns you should expect over time.

This risk is also embedded in the higher risk-free rate (10-year bonds) and the implied equity risk premium for SA equities relative to the MSCI World (depicted in the chart below, depicting the SA 10-year bonds relative to the US 10-year bond (used as a proxy for the MSCI World).

Figure 6: SA vs. US 10-year bond yields (%)



Source: Refinitiv, Denker Capital. 31 May 2023

This is a key reason why the long-term annualised returns for SA equities don't differ significantly from the annualised returns for the MSCI World Index (as reflected in figure 2). The risks are largely embedded in the higher risk-free rate and the implied equity risk premium.

Long-term returns are dependent on the initial price paid for assets. The lower the PE ratio, the higher the returns and vice versa. This is illustrated by the data below, which displays the subsequent five-year annualised returns from the ALSI based on the 'paid' PE ratio.

The current PE ratio of the ALSI stands at 9.6x. The scatter chart below illustrates the five-year subsequent annualised total return depending on the PE ratio at which you would have entered the market. The lower the PE ratio at the time of investment in the ALSI, the higher the probability of improved annualised returns. Throughout the period since January 1960, the probability of achieving exceptional returns when paying less than a 10x PE multiple for the ALSI was extremely high. The current PE ratio of the ALSI (at 9.6x) is less than half the PE ratio of the MSCI World Index (at 20.3x).

Figure 7: FTSE/JSE All Share Index, annualised five-year subsequent returns vs. PE ratio (1 January 1960 to 31 May 2023)

Source: JSE, Denker Capital. Measured from 1 January 1960 to 31 May 2023.

Considering the current low valuation of the ALSI compared to the MSCI World, coupled with the recent weakness in the rand relative to most developed market currencies, if you are contemplating increasing your offshore exposure, now might not be the time to do it.

In summary, the optimal offshore equity allocation depends on the investor's time horizon as well as the investor's desire to manage risk.

When we refer to risk (in the context of this article) we mean volatility, maximum drawdowns as well as political and country risk.

Over a three-year span, greater annualised returns have been more beneficial when holding a larger weighting in the ALSI. Similarly, over significantly longer periods of twenty and thirty-five years, higher annualised returns have been observed (although accompanied by slight increase in volatility).

Over most other periods, it has clearly been more beneficial to have a higher offshore exposure in a portfolio.

Diversification benefits enables investors to enhance their annualised returns, manage volatility and maximum drawdowns. This is especially evident over the past fifteen years (given the poor SA macro and political backdrop) where it has been more beneficial for investors to have maximised their global allocation.

As illustrated in Figure 4, over the full 50-year analysis, the equity portfolio (considering our two illustrative equity portfolio options) that maximised return per unit of risk (the point of tangency on the efficient frontier) was at an allocation of 40% to the ALSI and 60% to the MSCI World Index. This allocation yielded a 16.3% annualised return

with a standard deviation of 15.4%. The annualised returns and standard deviation at the maximum allowable offshore allocation of 45% showed minimal disparity. At an allocation of 55% to the ALSI and 45% to the MSCI World, the annualised return of the portfolio would've been slightly higher at 16.4%, accompanied with a slightly higher standard deviation of 15.9%.

Price is what you pay, value is what you get.

The million-dollar question is how this will play out in the future. We don't have the answers. Nevertheless, we understand that longer-term returns are highly dependent on the initial asset price. Presently, you are paying considerably less for the ALSI compared to the MSCI World (using the PE ratio as a proxy for value), implying that a lot of macro and political risk is already factored into the South African index. This has also been priced into the weak rand.

Having some level of flexibility in your SA vs. global equity allocation makes sense - depending on your assessment of the relative value of assets, but this does bring in timing risks.

Nevertheless, even though I may not advocate going to the maximum 45% offshore allowable limit right now, I would certainly recommend a substantial portion of my assets to be held offshore. If you anticipate South Africa's descent into a pariah state, then the answer is simple. But local is still 'lekker', so don't write off SA just yet!

Denker Capital uses the FTSE/JSE All Share as it has a long history for the purposes of analysis. The FTSE/JSE SWIX Index is also used by many investors as an alternative benchmark. Returns are annualised for periods exceeding one year. An annualised return is the average compound growth rate over the performance period measured. Returns use total returns (including dividends). All returns are in rand terms. Volatility is defined as the standard deviation of returns over the period referenced. The Sharpe ratios equal alpha (excess returns above the risk-free rate) divided by the standard deviation of the excess returns. We use the STeFI as the reference for the risk-free rate.

Glacier Research would like to thank Claude van Cuyck for his contribution to this week's *Funds on Friday*

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Claude manages the Denker SCI Equity Fund and Denker SCI SA Equity Fund. His career started in 1993 at Karlein Investments, a private client investment company. In 1994, he joined Sanlam Asset Management and worked as an equity analyst for five years. Thereafter, he moved to Gryphon Asset Management as an analyst and portfolio manager, where he was responsible for running unit trusts and pension fund portfolios. He returned to Sanlam Investments in 2002, where he became Head of Equities. In 2011 Claude co-founded Sanlam Investment Management (SIM) Unconstrained Capital Partners, which later merged with SIM Global to form Denker Capital. Additionally, he became a manager of the SIM Value Fund (now the Denker SCI Equity Fund). Under Claude's management, the SIM Industrial Fund received both a Standard & Poor's and a Raging Bull award. He also managed the SIM General Equity Fund for five years, achieving consistent top-quartile performance for each of the five years.