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INVESTMENT RESEARCH

THE APPROPRIATENESS OF EQUITY INVESTMENTS IN PROVIDING REAL INCOME WITHIN A LIVING ANNUITY CONCEPT: A HISTORICAL PERSPECTIVE

By

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1. Introduction

Most investment analysts and advisors proclaim that equity investments should be the dominant asset class in one's investment portfolio as it is perceived to be the most effective wealth creator in the long run[1]. Generally, this is well accepted among pre-retirement investors, especially younger generations, who are quite willing to adopt aggressive strategies in their investment portfolios. However, for retirees or near-retirees we find a quite different approach, in fact a strategy of avoiding risky assets.

Generally, the conventional advice for retirees is to limit the equity exposure in one's retirement portfolio, simply because one has not time to make up losses. Hence, many investors opt for a portfolio which consist of 75% plus fixed interest (cash and bonds) or alternatively, to buy a guaranteed annuity from an insurance company. Obviously, the argument is that no capital risk

[1] See also my findings in "Asset Allocation: An Evaluation of Investment Portfolios" (April 2006). Available at www.indexinvestor.co.za

should be borne and that surety about the current income level is preferred above the prospects for further capital gains.

Is this a rational approach? Intuitively, it seems so, but two very important remarks should be made and (as far as I am concerned) never be underestimated. First, it may be that one's retirement income initially is more than enough to cover one's basic needs. In fact, it may seem so for a considerable period (5 to 10 years), but thereafter one may start to feel the impact of the loss of purchasing power – the dreaded inflation beast. It is one thing to use the official inflation figures for comparative reasons, but quite a different prospect to experience one's *individual* inflation rate, which invariably will be heavily weighted towards high spiralling expense items such as healthcare and security services. A second factor to consider is pure demographic and brought about by medical innovations and advances. We are simply getting much older than we ever would have thought or what our original retirement capital could afford.

Thus, if one considers the impact of these two factors on your retirement capital and effectively how it should be invested, it is no longer such a formality that one should invest "risk-free" only. We know that cash and bonds yields slightly more than the *official inflation* rate, but unlikely enough for a *retiree's inflation* rate. Therefore, one has to consider the other two asset classes in your portfolio, namely properties and equities, to generate inflation-beating returns over time. Properties, especially commercial, might be a good alternative bet, given that you have not overpaid in the first place or it is easily tradable, like listed property shares. Equities too, given that one's investment is diversified among blue chip companies with a long track record of dividend payouts.

However, there is one major caveat: stock markets from time to time experience huge negative return periods (both for ordinary shares and property shares); in many cases probably more severe than it could have been predicted or explained rationally. Nonetheless, we have seen from

previous research[2] that equity investors experiencing even these sharp downturns would still have done reasonably well by beating inflation comprehensively in the long run (twenty to thirty years). However, this argument may only be valid if one has capitalised the equity growth over time, not if one made regular withdrawals (drawdowns). In the latter case: while one is making regular redemptions in a prolonged bear market phase, one is exaggerating the drawdown effect (negative compounding), thereby reducing the lifespan of one's annuity considerably.

Therefore, the advice to invest in equities post-retirement should not be given untested or unconditionally. For example, can equities still deliver inflation-beating returns over the long term while regular redemptions are made, including phases of sharp downturns? Furthermore, at which withdrawal rates (5%, 7.5%, or 10%) do equity investments have some realistic chance that it will fulfil the primary objective of maintaining the purchasing power of one's retirement plan?

Hence, the purpose of this study is to establish some empirical evidence of whether historically equities as an asset class was able to provide investors with a continued income stream (made up by capital redemptions and dividends) over very long-term periods, growing annually by the prevailing inflation rate.

[2] See my study titled: "Capital Losses on the JSE: Implications for Long-Term Equity Investors" (July 2006). Available at: www.indexinvestor.co.za

2. Methodology

The living annuity (retirement income) concept, where one is allowed to withdraw between 5% and 20% of the capital amount per annum, was used to illustrate the appropriateness of equity investments to preserve the purchasing power of one's retirement capital. Three different net drawdown rates, namely 5%, 7.5% and 10% respectively, were selected. Thereafter, each year the drawdown rate was escalated by the prevailing annual inflation rate.

Furthermore, administration, fund management and advisor fees are normally charged on a living annuity retirement plan, which on average could add up to 2% per annum. Thus, a 5% net drawdown resembles a gross 7% withdrawal rate, 7.5% net drawdown is equal to 9.5% gross withdrawal, and the 10% drawdown is equal to a 12% gross withdrawal rate.

A database with the JSE ALSI monthly total returns from 1960 to March 2006 were used in the analyses. (Total returns include dividend payouts). One hundred different investment dates were randomly selected for two investment period targets (lifespans), twenty years and thirty years respectively. For the twenty-year lifespan it meant that the starting date of the investment could have been any month from January 1960 to March 1986; for the thirty-year lifespan it could have been any month from January 1960 to March 1976. Thus, 100 different investment plans, each starting at different time intervals for each scenario were simulated.

The results of the different analyses are graphically displayed and summarized in the following section.

3. Results of the Analyses

3.1 Target Period 240 months (20 years)

Tables 1, 2 and 3 indicate the percentage of equity investment plans not meeting the primary objective of delivering real income over a twenty-year period at various withdrawal rates (5%, 7.5% and 10%). For example, a high failure rate (percentage of investments depleted before reaching the twenty-year period) indicates that equities were not the appropriate investment class to deliver income on a real basis.

Figures 1, 2 and 3 illustrate the longevity of the 100 investment plans at the three different withdrawal rates. To illustrate the sensitivity of market timing in determining the eventual outcome of the plan, the market PE multiple is plotted on the different investment dates.

Figures 4, 5 and 6 show the annualised 20-year return of the equity investment plan versus the inflation rate for the 100 different investment dates at the three withdrawal rates.

Table 1: Percentage of investment plans failing at a 5% net drawdown

Period (months)	Percentage of Plans Depleted
60	0%
90	0%
120	0%
150	0%
180	2%
210	3%
240	4%

Table 2: Percentage of investment plans failing at a 7.5% net drawdown

Period (months)	Percentage of Plans Depleted
60	0%
90	0%
120	5%
150	6%
180	7%
210	12%
240	25%

Table 3: Percentage of investment plans failing at a 10% net drawdown

Period (months)	Percentage of Plans Depleted
60	0%
90	5%
120	10%
150	22%
180	53%
210	68%
240	73%

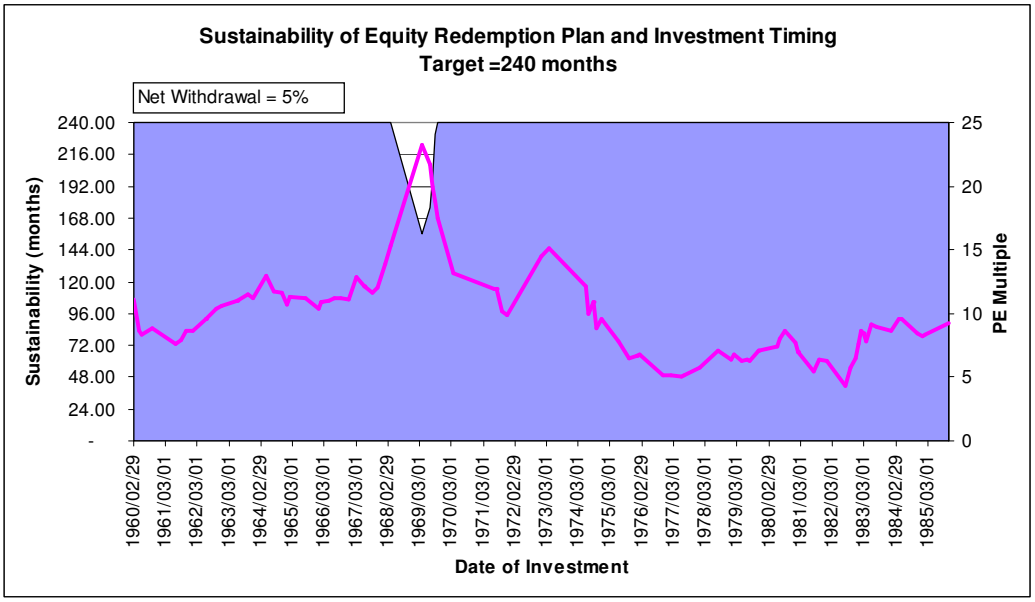

Figure 1: Sustainability of the equity investment plan and the starting date of the investment at 5% net withdrawal

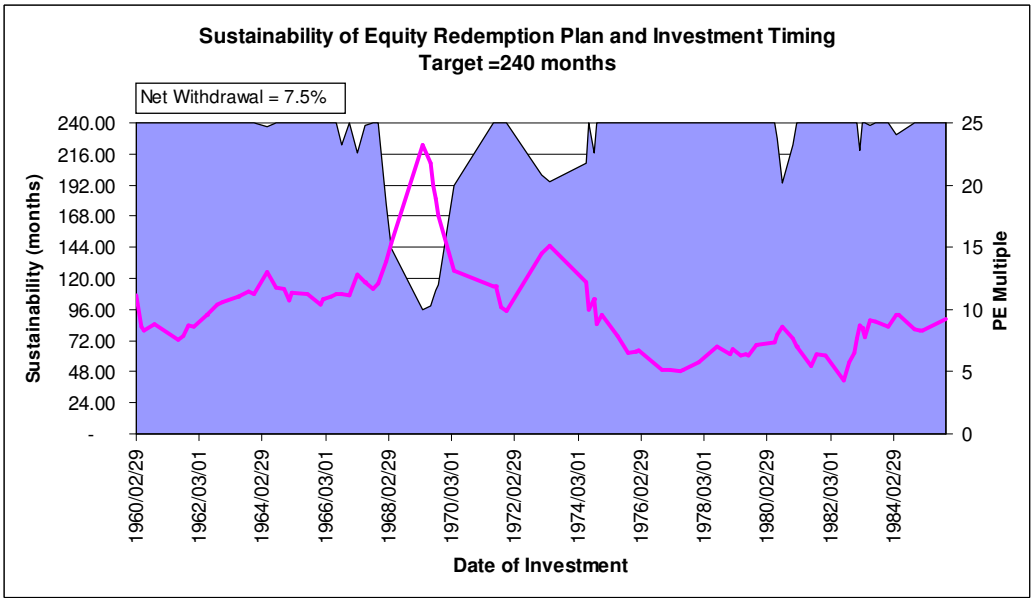

Figure 2: Sustainability of the equity investment plan and the starting date of the investment at 7.5% net withdrawal

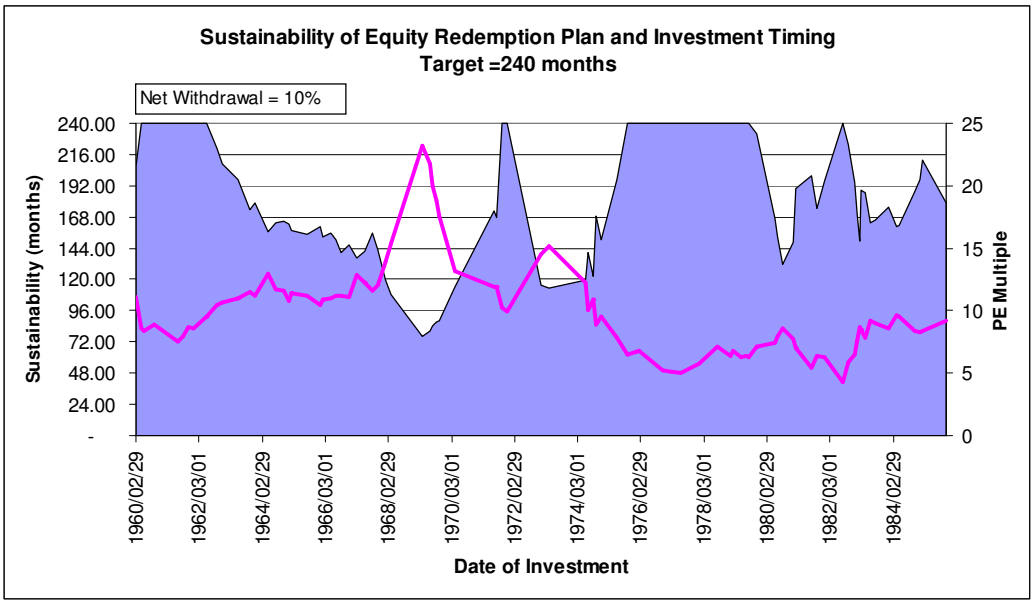

Figure 3: Sustainability of the equity investment plan and the starting date of the investment at 10% net withdrawal

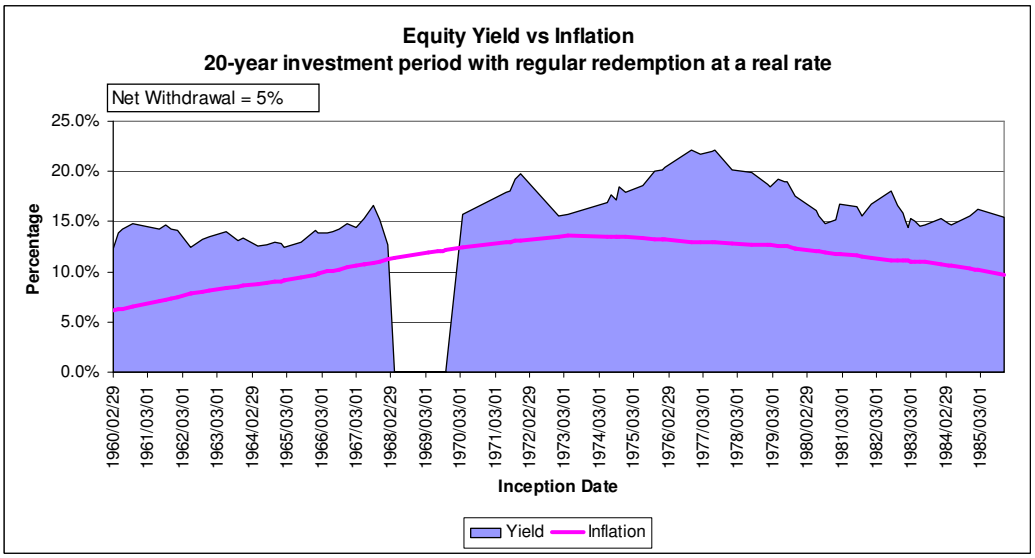

Figure 4: The ability of the equity investment plan to outperform inflation at 5% net withdrawal

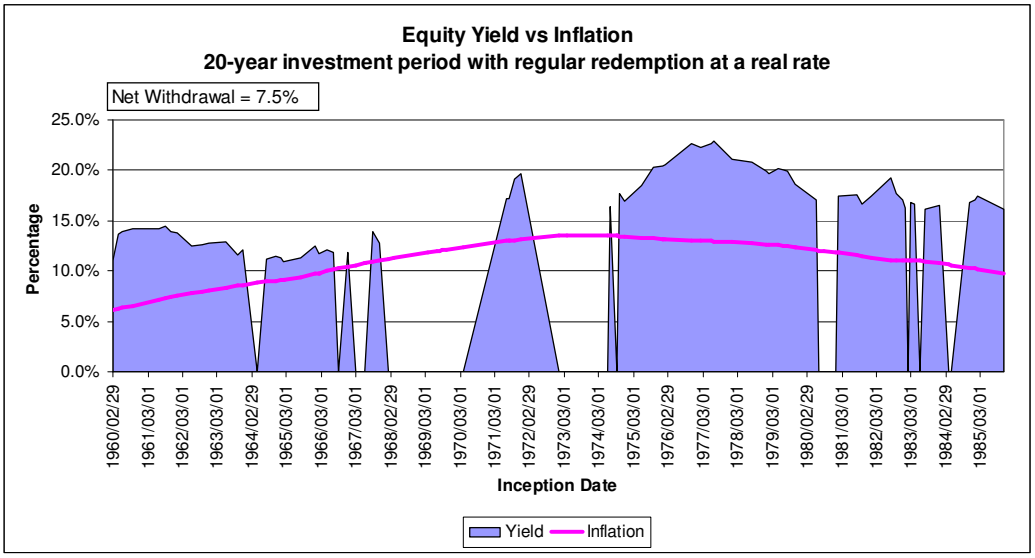

Figure 5: The ability of the equity investment plan to outperform inflation at 7.5% net withdrawal

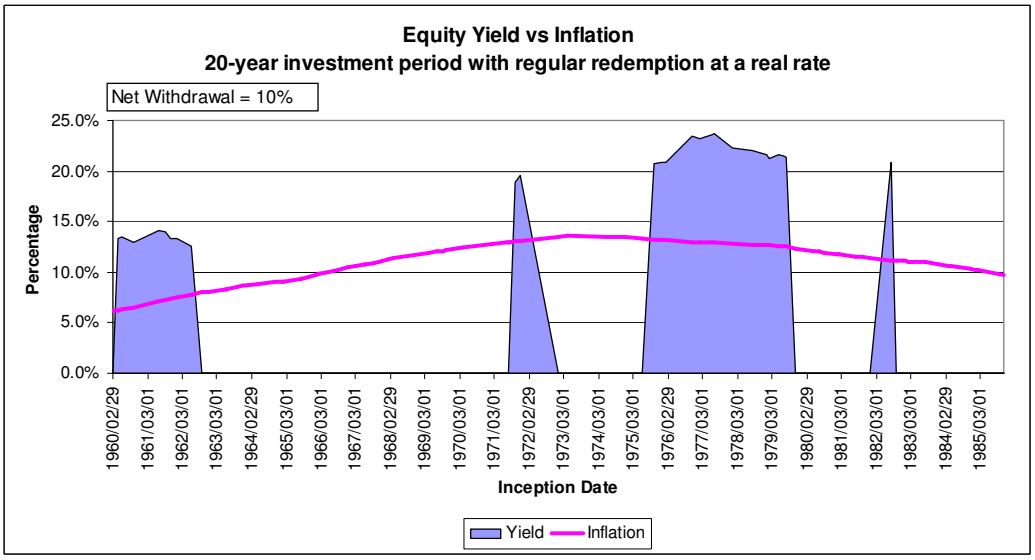

Figure 6: The ability of the equity investment plan to outperform inflation at 10% net withdrawal

3.2 Target Period 360 months (30 years)

Tables 4, 5 and 6 indicate the percentage of equity investment plans not meeting the primary objective of delivering real income over a thirty-year period at various withdrawal rates (5%, 7.5% and 10%).

Figures 7, 8 and 9 illustrate the longevity of the 100 investment plans at the three different withdrawal rates. To illustrate the sensitivity of market timing in determining the eventual outcome of the plan, the market PE multiple is plotted on the different investment dates.

Figures 10, 11 and 12 show the annualised 30-year return of the equity investment plan versus the inflation rate for the 100 different investment dates at the three withdrawal rates.

Table 4: Percentage of investment plans failing at a 5% net drawdown

Period (months)	Percentage of Plans Depleted
60	0%
90	0%
120	0%
150	1%
180	1%
210	2%
240	5%
270	6%
300	7%
330	11%
360	13%

Table 5: Percentage of investment plans failing at a 7.5% net drawdown

Period (months)	Percentage of Plans Depleted
60	0%
90	1%
120	5%
150	12%
180	19%
210	30%
240	44%
270	50%
300	61%
330	66%
360	73%

Table 6: Percentage of investment plans failing at a 10% net drawdown

Period (months)	Percentage of Plans Depleted
60	0%
90	5%
120	28%
150	43%
180	67%
210	79%
240	83%
270	90%
300	96%
330	96%
360	98%

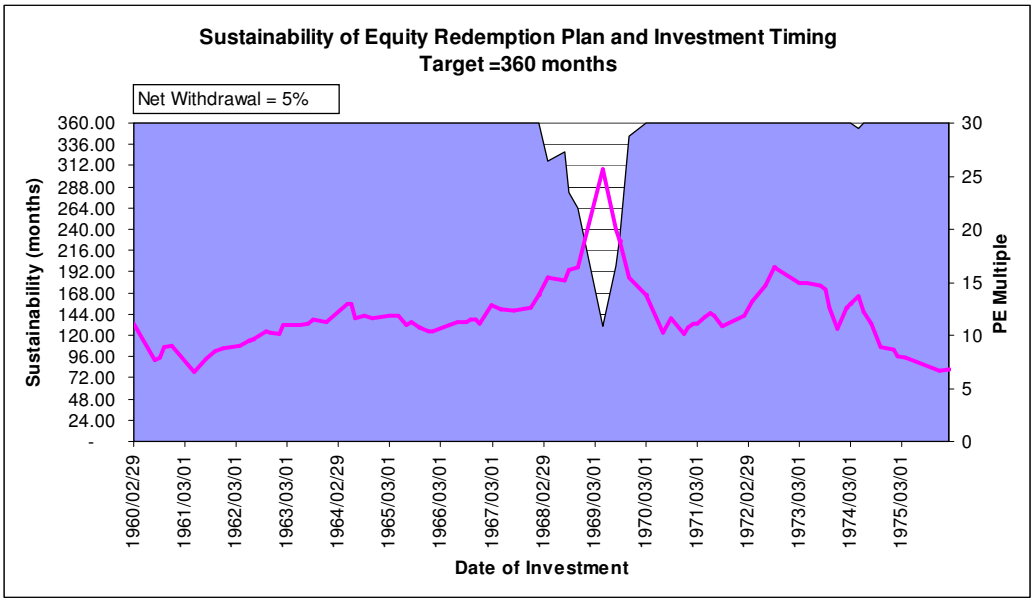

Figure 7: Sustainability of the equity investment plan and the starting date of the investment at 5% net withdrawal

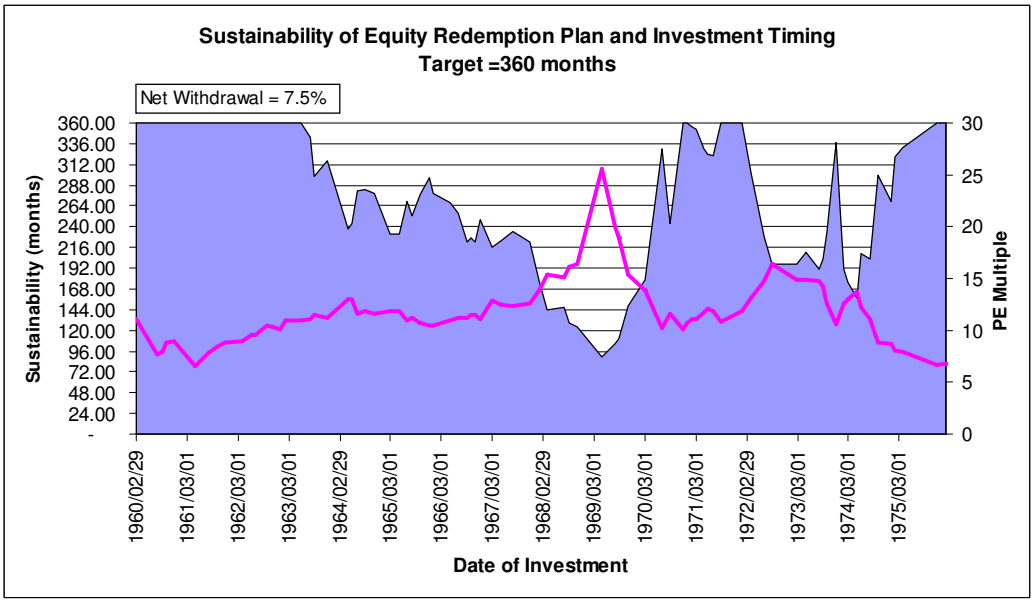

Figure 8: Sustainability of the equity investment plan and the starting date of the investment at 7.5% net withdrawal

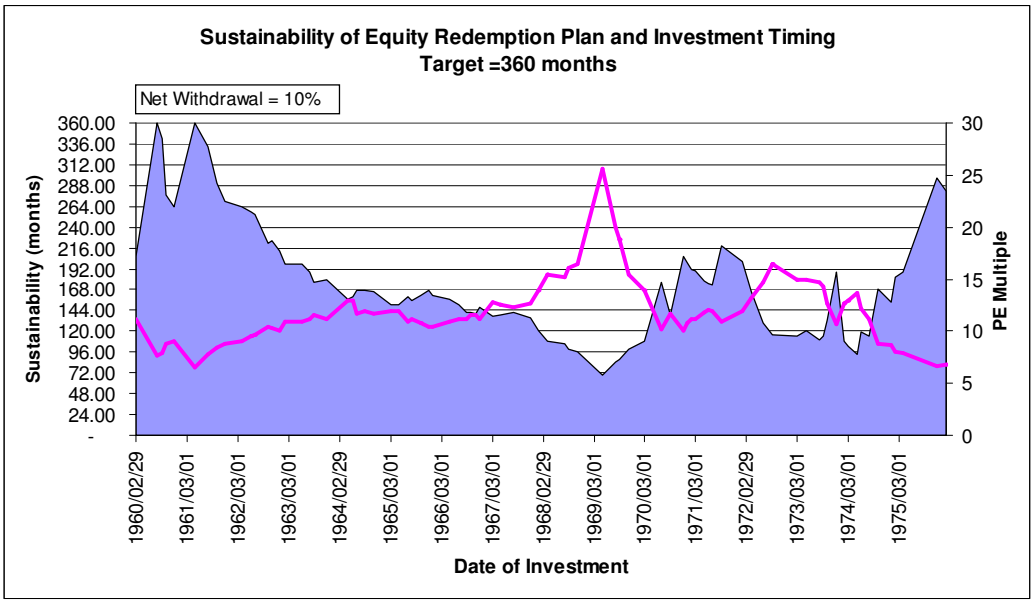

Figure 9: Sustainability of the equity investment plan and the starting date of the investment at 10% net withdrawal

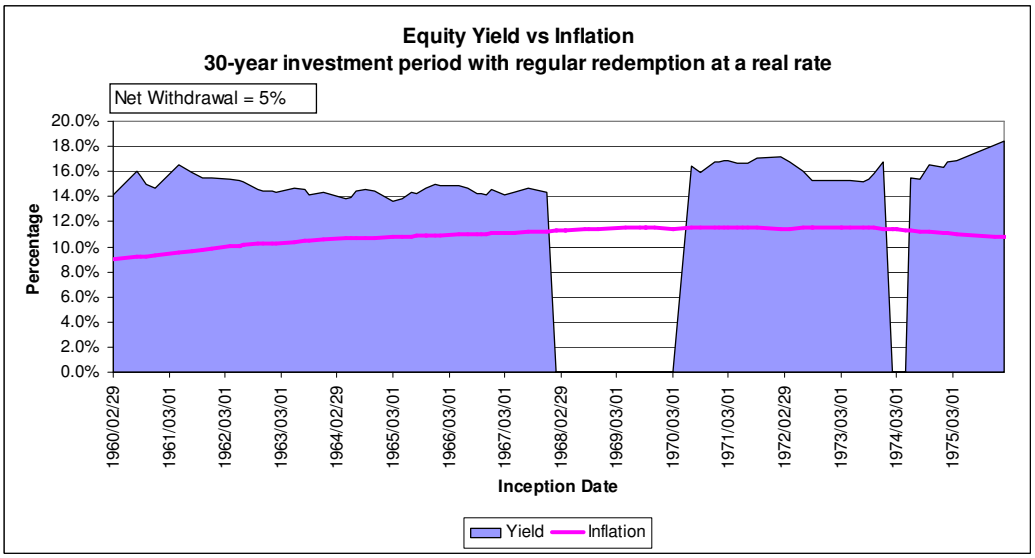

Figure 10: The ability of the equity investment plan to outperform inflation at 5% net withdrawal

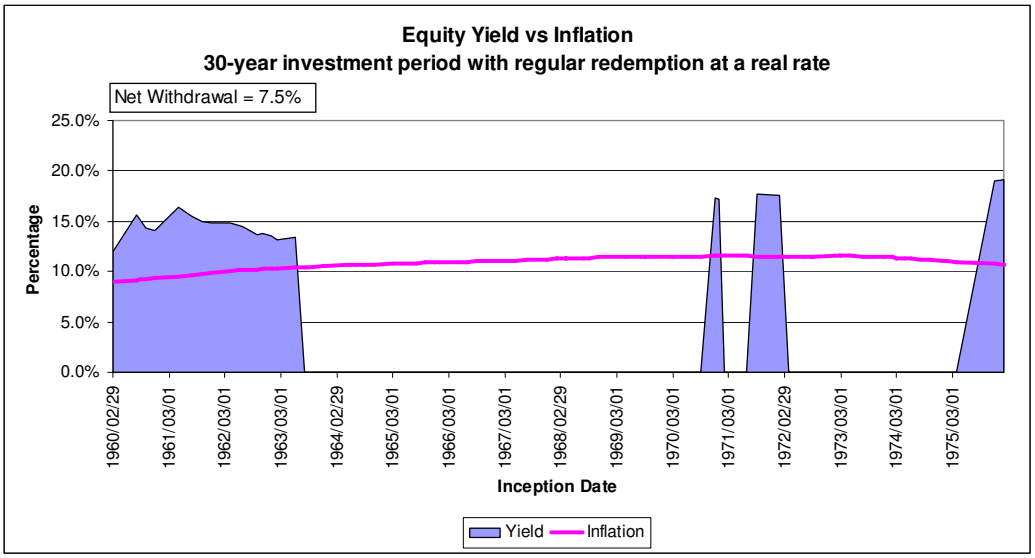

Figure 11: The ability of the equity investment plan to outperform inflation at 7.5% net withdrawal

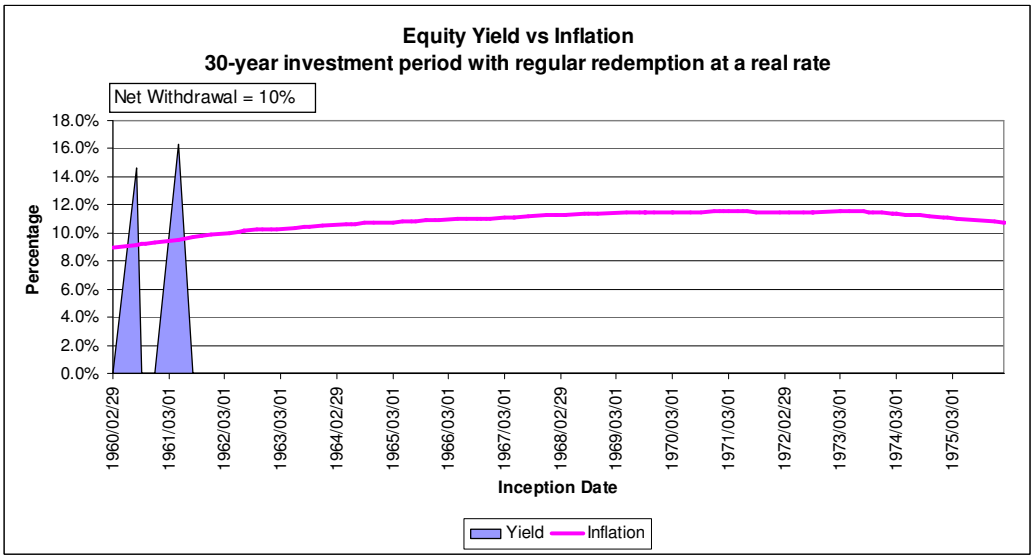

Figure 12: The ability of the equity investment plan to outperform inflation at 10% net withdrawal

3.3 Synopsis

- Low failure rates (not maintaining the purchasing power of the original retirement capital) were observed when the equity investment plan started off with a net drawdown rate of 5% per annum (tables 1 and 4 and figures 1 and 7). Therefore, such a rate could have been considered appropriate for both the twenty- and thirty-year lifespan scenarios.

- A net withdrawal rate of 10% was clearly not a rational choice for regular redemptions over the long term (both twenty- and thirty-year lifespan scenarios). Figure 3 and especially figure 9 illustrate the high failure rates investors would have experienced. Furthermore, note the relative high percentage of failures within 10-15 years after inception (table 3 and 6).

- The appropriateness of the 7.5% net withdrawal rate is contentious. For the twenty-year lifespan scenario it may have been considered an appropriate drawdown rate as the majority of plans (75%) would have survived. However, most plans failed at this withdrawal rate when considering the thirty-year lifespan scenario (table 5).

- A strong inverse relationship was found between the lifespan of the investment and the relative expensiveness of the market at the time of the initial investment, as indicated by the PE multiples. Invariably, whenever the market was trading at above-average PE multiples the investment failed to survive the targeted lifespan (figures 1-3 and 7-9).

4. Conclusions and Recommendations

Equity investments are recommended for its ability to outperform inflation and historically it is found that this outperformance hovers around 6% per annum in the long run. But equity performances are quite volatile in the short term and when making regular withdrawals from one's investment plan, this volatility does matter.

In this study, where we tested the appropriateness of equity investments in a retirement income portfolio, we have seen this inflation-beating trend sustainable only at relative low drawdown rates; less so at moderate levels and very unlikely at double digit withdrawal rates.

Unfortunately, stock markets are characterised by phases of large negative growth periods (bear markets). While making regular redemptions in such periods, the power of negative compounding is severe, as much as positive compounding is beneficial for long-term investors.

Furthermore, we identified a very clear inverse relationship between the relative expensiveness of the market at the time of investment and the actual lifespan of the investment. However, a word of caution: *ex ante* it is not undoubtedly clear whether markets are expensive or not, *ex post* it is obviously much easier to make such an assessment.

Hence, one should not recommend the use of equity portfolios in one's retirement portfolio unconditionally. I propose three possible prerequisites upon which the extensive use of equities in a retirement income portfolio should be considered, namely the characteristics of the equity portfolio, protective measures that can be used to safeguard your equity investment against major downturns in the market, and the drawdown rate selected.

First, I would propose that broadly diversified, blue-chip equity portfolios with proven long-term track records of dividend payments are predominantly used, for example the FTSE/JSE Top 40 companies. Dividend payments, especially

during depressed market conditions are vital to stem the sharp reduction that may occur in portfolio valuations while regular withdrawals are being made. Arguably, blue-chip companies are better equipped to pay dividends during economic recessions than start-ups or mid-size companies.

Second, equity portfolios can be insured against major losses on the stock market by making use of derivative instruments, such as the JSE Top 40 put options traded on SAFEX. Some equity investment funds are making use of these derivative overlays to offer their investors constant, absolute returns. However, there are some direct and opportunity costs to these instruments. The effective management of the derivative overlay is very important in the relative success of these funds; first to keep up with the general market performance during upswings, and second to prevent large-scale drawdowns in bear market phases.

Third, the drawdown rate should ideally be at 5%, with a maximum perhaps at 7%. If annuity investors are targeting especially the latter category of drawdown levels it is imperative to make use of protected equity portfolios, as described above. Beyond these rates it is in any event unrealistic to expect one's retirement plan to preserve its purchasing power in the long run.

Given the adherence to the above conditions I have little doubt but to recommend the use of equity portfolios in retirement plans. Yet, how much should one allocate to equities in one's retirement portfolio? A follow-up study will investigate the appropriate investment portfolios (asset allocation mixes) to sustain real income in the long run at various withdrawal rates.

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