

Research paper

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Abstract:

*'Buying the Index may enable investors to mitigate manager-selection risk, but in the process it ignores all fundamental risks (such as balance sheet, earnings and valuation risk) and by doing so, inadvertently sacrifices the key attributes of what a core portfolio represents'.*

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**I. Introduction**

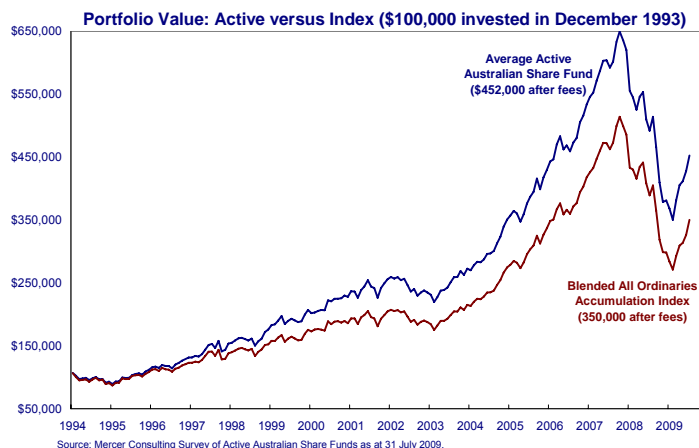
Modern portfolio theory (MPT) was developed in the late 1960s and early 1970s and presents a methodology of how investors can maximize return and minimize risk within a single portfolio. The foundations for MPT were laid decades earlier by Harry Markowitz<sup>1</sup> who established a formal risk/return framework for investment decision-making by using a mathematical approach to asset-allocation and portfolio management. His theory was based on the concept of diversification, where investors have a portfolio of several securities which can potentially increase overall return or reduce risk, or both. Although MPT has evolved the goal remains the same - to maximise returns for a given level of risk. One way investors have attempted to receive sufficient diversification and minimise risk while at the same time receiving excess return has been to separate a portfolio into two sections, a stable 'core' component and a higher-risk 'satellite' component.

Index managers have actively promoted the 'core-satellite' investment approach and claim that low-cost index funds should constitute the low-risk 'core' component. This paper presents an alternative view and finds that a core portfolio consisting of quality industrial shares and a high-alpha satellite (of the average active Australian share fund) has provided a higher return (9.8% per annum (after fees) between December 1993 and July 2009) and lower risk (a standard deviation of 9.3% per annum) than a portfolio with an index manager and the identical high-alpha satellite (9.2% (after fees) and 9.9%, respectively). For all investors the impact of the core portfolio's composition can have a sizable impact of the final retirement nest egg of Australians. The annual performance difference seems small but when compounded over an individual's working life it becomes significant. Such a difference could produce a retirement nest-egg worth an additional \$1.3 million for a young professional, \$0.8 million for an accumulator and \$0.5 million for a mass affluent client.

**II. The active manager debate has been resolved**

Perpetual Investments wrote in a recent research paper that the average active Australian retail share fund outperformed the Index (after fees) between end-1993 and April 2009.<sup>2</sup> Updating the numbers to July 2009 the return for the average actively managed Australian share fund averaged 9.8% per annum (after fees), relative to 8.0% per annum for the index (after fees – see Chart 1). Since this initial date an investment of \$100,000 with the average active Australian share Fund would have provided investors with a return of around \$453,000 (after fees), which is well above the index return of around \$350,000 (after fees).

**Chart 1: The average active managers has outperformed after fees**



**III. What about tax?**

Much is also made of the impact of tax on investment returns. JPMorgan researched this issue and assumed:

<sup>1</sup> Markowitz Harry, 'Portfolio Selection', 1952, Journal of Finance.

<sup>2</sup> Perpetual Investments, 'A Review of Active Australian Share Investing', July 2009, page 6.

- superannuation investors (which receive favourable tax treatment) receive a return of 6% (excluding dividends, which is the historical average for Australian shares since 1875);
- index funds turnover is 5% of their portfolio, whereas active managers turnover is 50% or 100%; and
- the investment is redeemed in 10 years.

The additional return that is required by the active manager to overcome tax drag is just 0.11% per annum. If investors have non-superannuation investments and are on the top marginal tax rate, the additional tax paid is just 0.3% per annum (see Table 1). Consequently, the tax advantage of passive management is quite marginal and not enough to compensate investors for underperforming active managers by 1.8% per annum since end-1993. When investors take into account the benefit of franking credits, the tax drag is even less. Notwithstanding this outperformance, there is scope for both active and passive funds in all portfolios depending on individual preferences, but investors need to understand what the 'core/satellite' approach is and what investments should be used in the two components.

**Table 1: The tax advantage of passive investments is negligible**

Investor type	Capital gains tax rate	Extra return required	
		Turnover of 50%	Turnover of 100%
Individual on top marginal rate	23.25%	0.21%	0.28%
Second highest marginal tax rate	19.75%	0.18%	0.23%
Superannuation fund	10.0%	0.08%	0.11%
Worst case scenario	46.5%	0.45%	0.60%

Source: JPMorgan as at 31 August 2009.

#### IV. What is the core/satellite approach?

The core /satellite approach simply splits a portfolio into two parts; a lower risk 'core' portfolio and a higher-risk higher return 'satellite' component. The approach of combining 'core' holdings with 'satellite' investments has grown in popularity as investors pursue more specific goals and expect more from their investments. The core/satellite investment approach has become popular because it increases diversification and has the potential to reduce portfolio volatility without reducing potential return. This approach can be considered at a portfolio level and/or at an asset class level and this paper will concentrate on the Australian shares component of a portfolio.

##### a. What is in the core?

The core portion of the portfolio should be comprised of securities or assets with a stable and reliable performance history that are held for a long time. The function of the core component is to control risks and to improve the efficiency of the overall portfolio by delivering cost-effective investment returns. The composition of assets in this section of the portfolio should be aligned with the investor's major financial goals, such as monthly income or long-term capital growth. Core holdings can have a style bias, such as value investing, but it typically focuses on stable long-term performance.

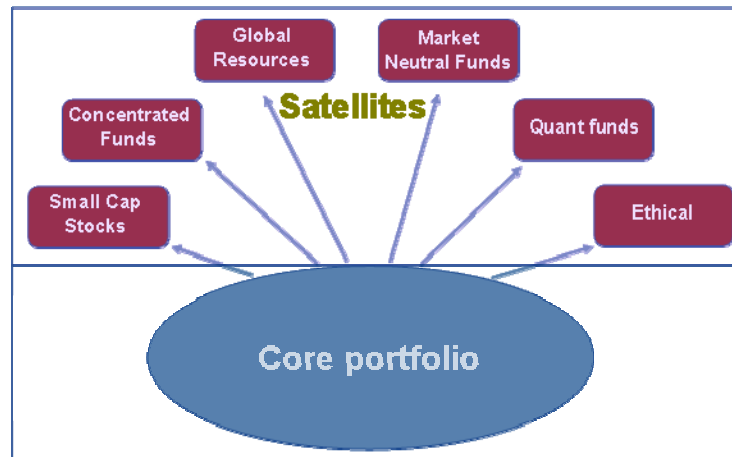
##### b. What is in the satellite?

The satellite portion is comprised of holdings that the investor or his advisor expects will add significant return in excess of the core portfolio, but with higher risk and volatility. This may involve portfolios with lower-than normal stock numbers (such as a concentrated equity fund) or sectors (global resources, small caps, healthcare and so on). The satellite portfolio is designed to have a large tracking error and to boost capital growth in excess of the core portfolio through time. Put simply, the satellite is characterised by higher risk and higher expected return.

**c. Asset allocation**

The US Investment Management Association suggests that investors will, on average, hold 50% to 60% of their portfolio in core holdings in normal economic times. However, exposure to satellite investments depends on the economic and investment cycle and may comprise 40% of a fund in normal economic times and as little as 0% in recessionary times. During these times, the satellite funds be allocated back to the core to reduce risk and protect capital (see Chart 2). In this way, implementing a core-satellite approach is similar to the decision-making dynamics in active asset allocation.

**Chart 2: The Core/satellite Investment Approach**



Source: Perpetual Investments as at 29 September 2009.

**V. What should the core deliver to investors?**

The core is the most important part of an investor’s portfolio. Like the foundations to any house, the core needs to be strong, reliable and able to absorb shocks and it is what investors rely on for sustainable long-term performance.

**a. Reduce overall portfolio risk**

The word ‘core’ is indicative of stability and rigidity and as such the core portfolio must hold together in difficult times. Accordingly, one function of the core portfolio is to be uncompromising in its strength and thereby reduce overall portfolio risk and provide protection in times of prolonged market turbulence. This does not mean that the ‘core’ portfolio will never experience a negative absolute return, but rather its objective should be to outperform the satellite component during times of market turbulence and thereby reduce overall portfolio risk. This point cannot be forgotten, particularly in a bull market, because market euphoria is usually driven by high-risk stocks and there is a fundamental conflict between risk and investment resilience.

**b. Capture the equity risk premium**

The focus in every portfolio should be return and the price investors pay (in terms of fees at the investor level and risk at the stock level) to get that return. The return of share investments in excess of the risk-free interest rate is termed the equity risk-premium (or the extra reward for bearing risk) and the core portfolio should deliver this to investors after fees and ideally with low risk. When times are good the core should deliver the equity risk premium, but it is most valuable when markets are stressed.

**VI. What stocks should be included in the portfolio’s ‘core’?**

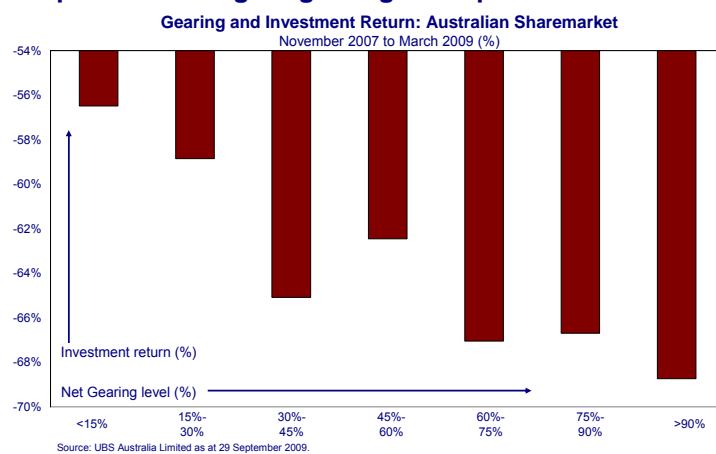
The combination of capturing the equity risk premium and managing risk underpins why investors should question what sort of companies can deliver stable investment performance with reduced volatility and hence should be included in the core. All investments are undertaken to earn a return for bearing risk and in relation to the core component, investors’ need to focus on returns (after-fees) and

risk, not just fees. There are three characteristics which have been consistent in reducing risk and delivering strong risk-adjusted long-term returns in nearly all international sharemarkets throughout history and investors may look for these in every investment, irrespective of whether these stocks are part of the core or satellite portfolios.

**a. Strong balance sheets**

The biggest share losses in periods of market turbulence come from companies with weak balance sheets. The one thing that the well publicised corporate failures such as Bond Corporation, (Christopher Skase’s) Quintex, ABC Learning and Allco Finance all had in common was a debt-laden balance sheet. Accordingly, investor’s should always examine a firm’s balance sheet as it is the easiest and perhaps the best form of risk management. Debt-equity ratio is the most common and simplest ratio used for measuring financial health and it indicates the relative proportion of equity and debt used to finance a company’s assets. Companies with low debt/equity ratios are more in charge of their own destiny and during the 2007/09 Global Financial Crisis, stocks with lower debt/equity ratios outperformed their highly-g geared peers (see Chart 3).

**Chart 3: Companies with higher gearing underperform in market turbulence**



By investing in every company in the index, investors are indirectly saying that debt and balance sheet don’t matter – it is market capitalisation that matters even if that value is driven by debt. Investors are also saying that weak highly-g geared companies are as deserving of investment as strong lowly-g geared companies in the core portfolio. However, market performance in difficult times indicates this is not the case and never has been. Having a strong balance sheet means that a company is in a much better position to weather any cyclical downturn and avoid getting into financial distress and eventual bankruptcy.

**b. Attractive valuations - the index is backward looking**

Valuations should be a key determinants of every security in a core portfolio. Investors would want to invest in a company because its value is more attractive, not because its price and market capitalisation has increased and constitutes a higher share of the Index. Unsustainable increases in valuations are dangerous for investors as was evident in the wake of the tech wreck in 2000/02 and Australia’s second mining boom between 2006 and 2008.

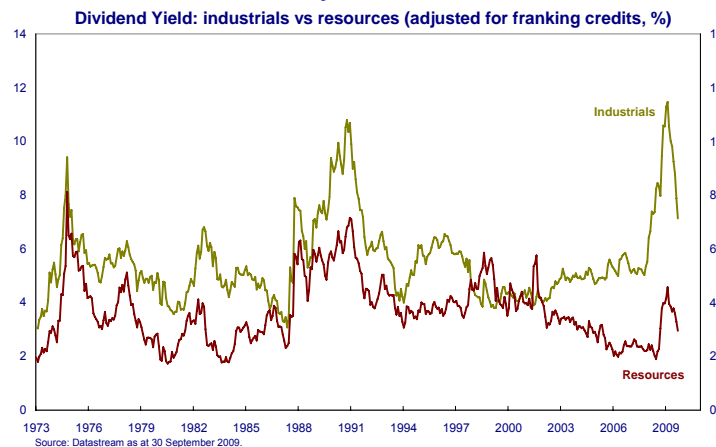
In a boom some market prices rise too much and rebalancing in actively managed portfolios can mitigate this risk, however this is not an option for investors who buy the Index. In fact, as stock prices rise, and a company potentially becomes more and more expensive, the weight in an index portfolio will increase. Similarly, valuations in a bear market need to be managed as prices can decline too much during turbulence and this may represent a generational-low buying opportunity. At these times it is important that investors understand the difference between a stock’s price (and its capitalisation) and its value (relative to its earnings). Warren Buffet has said that *‘price is what you pay and value is what you get’*.

Just as individuals would not want to pay too much for an asset like a house, they should not want to pay too much for an asset like shares. By investing in the Index, investors are saying that price doesn't matter and every expensive company is as deserving of investment as extremely cheap stocks in the core portfolio. History has demonstrated conclusively that this is not the case and expensively valued stocks should not be included in any portfolio, especially the core.

**c. Firms with sustainable earnings and dividend growth**

Firms typically need to produce surplus cash flow (or earnings) to pay dividends. Since 1882, the Australian sharemarket has averaged an annual total return of 12% and around half of that return has come from its annual dividend yield. Although the contribution of dividends to 20-year average total return had moderated since 1983 (to 38%) in the wake of the global financial crisis it has subsequently rebounded to around 50%. Given that resources are capital intensive industries, a large portion of profits fund future investments, whereas the majority of industrial shares are serviced-based companies, which are less capital intensive. Consequently, industrial shares have nearly always paid a higher dividend yield than resource companies (see Chart 4).

**Chart 4: Dividends are likely to contribute more to total return**



In the next decade governments (and households) in advanced economies with large budget imbalances will need to reduce their debt burden in preparation for the impact of the ageing population and this is likely to negatively impact the pace of global economic growth. Such conditions will have flow-on effects to sharemarket returns. In line with a lower return environment, risk in portfolios will need to be lower to ensure that all risk is compensated for and dividends are likely to make a larger contribution to total return than in the past 20 years.

The average listed company will find it more challenging to continually increase dividends when top line revenue growth is more subdued. In the new environment, investors will need to ensure that the core portfolio has a large exposure to dividend-paying companies as these stocks typically provide investors with capital stability and greater predictability of returns. In contrast, investing in the Index would mean that investors don't think that dividends and earnings matter even though this forms the basis of each company's market price and is the ultimate driver of investment returns.

**VII. Constructing a superior Core portfolio**

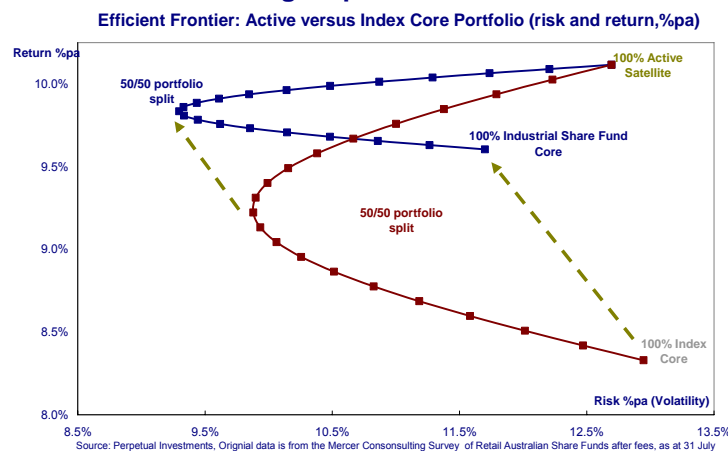
As the core portfolio is all about investment stability and returns, investors should construct this section of their portfolio with the most steadfast and resilient share investments. Buying the Index may enable investors to mitigate manager-selection risk, but in the process it ignores all fundamental risks (such as balance sheet, earnings and valuation risk) in the investment decision process and by doing so, inadvertently sacrifices the key attributes of what a core portfolio represents.

In contrast, investments managed for valuation, balance sheet and earnings/dividend risk should be able to provide superior returns than the index and should form the basis of the core portfolio. To demonstrate this point Perpetual's Wholesale Industrial Share Fund has been used as the core

portfolio given its focus on balance sheets strength, recurring earnings and companies with solid operating models and combined with high alpha satellites.

Returns since end-1993 indicate that a portfolio with 50% exposure to attractively valued quality industrial companies and 50% exposure to actively managed Australian share funds (as represented by the average active Australian share fund)<sup>2</sup> has provided investors with a portfolio with a higher return (of 9.9% per annum after fees between December 1993 and July 2009) and lower risk (a standard deviation of 9.3% per annum). In contrast, an index-based core and the identical satellite funds have produced a lower return (of 9.2% after fees per annum) and higher risk (9.9% per annum – see Chart 5). That is, an investor with a pre-determined risk budget would have experienced a higher return over all possible asset allocations with industrial companies as the core relative to the market index. Similarly, the risk for every possible asset allocation is lower with a portfolio of industrial shares as a core and with actively managed satellites.

**Chart 5: An industrial core and high alpha satellites boosts return and lowers risk**



### VIII. Implication for investors

The impact of the choice of core can have a sizable impact of the final retirement nest egg of all Australians. A 25-year old Australian with a \$10,000 initial investment and who earns \$70,000 per annum (growing at 6% per annum) and who splits their portfolio 50%/50% between the core and satellite components, would have a net egg at retirement worth an extra \$1.3 million more with industrial shares as the core portfolio relative to the Index (see Table 2). Similarly, the difference for a 35 year old accumulator is slightly under \$1 million and a 45-year old mass affluent the difference is around \$500,000. All this is achieved with lower volatility along the way.

**Table 2: Long-term impact on portfolio nest-eggs is quite large (after fees)**

Data	Investor's age		
	25 years old	35 years old	45 years old
Investment duration	42 years	32 years	22 years
Initial investment	\$10,000	\$100,000	\$400,000
Salary	\$70,000	\$140,000	\$200,000
Salary growth	6%	6%	6%
Industrial core/alpha satellite	\$9.7 million	\$6.6 million	\$5.2 million
Index core/alpha satellite	\$8.4 million	\$5.8 million	\$4.7 million
<b>Difference</b>	<b>\$1.3 million</b>	<b>\$0.8 million</b>	<b>\$0.5 million</b>

The results in this table are based on historic returns between December 1993 and July 2009. Source: Perpetual Investments as at 21 October 2009. Past performance is not indicative of future performance.

**IX. Long term performance is a good indicator of a fund manager’s skill**

Fund managers are the custodians of our superannuation savings that will fund Australia’s standard of living in retirement over the next three decades and beyond. When making investment choices in any market conditions, a manager’s approach and philosophy to generate returns is critical, but no manager can escape their long-term investment performance. In making investment choices it is important that people understand what they are buying, as only then can they make informed choices to suit their individual needs. Clients need to be fully informed of what a product does and what to expect from that product and also how to identify fund managers with strong stock-picking ability. Importantly, fund managers need to deliver on investor’s return expectations over the long-term.

When investors seek active management, they need to select managers who pay significant attention to risk management (balance sheet, valuations and earnings/dividends) in their process and have a philosophy of long-term prudent investing and results that are indicative of successful investing. Investors also need to understand that active managers, in carrying out their trade, will endure some periods of underperformance, this is inevitable. It must be remembered that investing is a patience game.

**X. The role of index managers in a core/satellite portfolio**

The opportunity exists for all active managers to outperform, whether they do or not is a matter of their investment process, research capacity, team resourcing and stock picking skill.<sup>3</sup> Accordingly, managers lacking in these key attributes will have a higher probability of underperforming the Index. Table 3 indicates that there is a place for Index funds in a core/satellite portfolio. Index funds overcome manager-selection risk and this can form part of the satellite portfolio should the investors lack confidence in picking fund managers with a ‘quality’ focus. However, investors should question whether index funds are really suited to manage a core portfolio given their lack of attention to balance sheet risk, earnings risk and valuation risk.

**Table 3: What risks are explicitly managed in your fund?**

Risk	Active Fund	Index Fund
Balance Sheet Risk	✓	X
Valuation Risk	✓	X
Earnings/dividends Risk	✓	X
Manager-selection Risk	X	✓

Source: Perpetual Investments as at 30 October 2009.

**XI. Conclusion**

- The function of the core portfolio is to deliver the equity risk premium in normal economic conditions and to absorb prolonged market shocks and it must be uncompromising in its strength and thereby reduce overall portfolio risk.
- Any investment that does not consider balance sheet, valuations and earnings/dividends is not aligned with what the core portfolio represents and should not be included in the core.
- Buying the Index may enable investors to mitigate manager-selection risk, but in the process it ignores all fundamental risks (such as balance sheet, earnings and valuation risk) in the investment decision process and by doing so, inadvertently sacrifices the key attributes of what a core portfolio represents.

<sup>3</sup> See ‘A Review of Active Australian Share Investing’ July 2009, Perpetual Investments, pages 9-10.

- In contrast, a core portfolio consisting of quality industrial companies with strong balance sheets, attractive valuations and high dividends, combined with high-alpha satellites of the average active Australian share fund has proven to be a superior portfolio choice in terms of risk and return.
- The Industrials core portfolio has provided not only a high return (of 9.9% per annum after fees), but also lower risk (a standard deviation of 9.3% per annum) relative to the Index-satellite approach which has delivered lower returns and higher risk (9.2% and 9.9%, respectively between December 1993 and July 2009).
- The impact of the choice of core can have a sizable impact of the final retirement nest egg of all Australians. If historical returns are maintained, such a decision would produce a retirement nest-egg worth an additional \$1.3 million for a 25-year old professional, \$0.8 million for a 35-year old accumulator and \$0.5 million for a 45-year old mass affluent client.
- The tax drag from active investing is quite marginal (0.11% per annum) and is not enough to offset the superior returns generated by active managers since 1993. When investors consider the benefit of higher franking credits of industrial shares, the tax drag is even less.

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