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Institutional Homogeneity and Choice in Superannuation

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Abstract:

In this analysis of institutional investor performance, two questions are addressed. First, what degree of similarity is observed within the market place for retail superannuation funds? Second, what are the implications of homogenous behaviour for member choice policy? The answers from this study are as follows: as an industry, institutional investors destroyed value for superannuation investors for the period 1991 through 2003, under-performing passive portfolio returns by around 60 basis points per annum. Moreover, we find there is a great deal of clustering around this average underperformance. It also appears as though funds have similar risk characteristics which are, on average, defensive. The findings suggest that the products offered by those competing in this market are very similar in nature, hence limiting the potency of choice policy in Australia.

I. Introduction

Do superannuation fund returns ‘flock together’?¹ And, if so, what are the implications for the proposed policy of member choice in superannuation currently being debated?² The answers to these important questions are less than clear. Whilst a broad consensus has been reached in the literature that institutional investors are homogenous (from Friend, Blume and Crockett, 1970, through to Dennis and Strickland, 2002), the reasons why are more contested.

Prior to directly examining the implications of institutional investor homogeneity on choice of superannuation fund, a useful starting point comes from considering a definition of homogeneity or herding. While there are numerous definitions of in the literature, we rely on Davis and Steil’s (2001) characterisation of herding as the “*mimetic behaviour on the part of managers* [pp. 444]”. The Davis and Steil (2001) conception of herding is useful to this discussion as it allows us to initially consider the motives for mimicking by institutional investors, and then move to discussion on the impacts of such behaviour on proposals of member choice in superannuation.

Wermers (1999) neatly summarises that there are four popular theories for explaining why institutional investors might trade together. The first three of these explanations are premised on the role of private information, with the final explanation considering the role of institutional constraints that lead to herding behaviour. The contribution of Scharfstein and Stein (1990) represents the first group of papers that suggest clustering behaviour is

¹ We acknowledge Wermers (1999) for introducing the ‘flock together’ analogy to the literature on the homogeneity of institutional investor returns.

² See Bateman (2002), Brown, Gallery and Gallery (2002), and Drew and Stanford (2002) for discussion on the controversies surrounding member choice legislation.

the result of reputational risk, that is, private information is disregarded over concerns of acting differently from the cohort in which the fund is a member. Froot, Scharfstein and Stein (1992) and Hirshleifer, Subrahmanyam and Titman (1994) lead the second area of explanation, suggesting that it is the fundamental analysis approach to asset selection decisions used by the majority of institutional investors results that in the industry receiving correlated private information, thus leading to herding behaviour.

The third area of research that considers reasons for herding are related to the “looking-over-the-shoulder” hypothesis of Bikhchandani, Hirshleifer and Welch (1992). The hypothesis put forward by this group of researchers suggests that funds may infer private information from the trades of winning institutional investors and trade in a similar direction – hence the “looking over the shoulder” hypothesis. The final cluster of papers considering the source of herding behaviour is led by Falkenstein (1996), and places less onus on the role of private information, looking to institutional factors that explain herding. The central theme of this research is that the various rules and regulations imposed on institutional investors, such as risk management rules relating to the liquidity of stocks that can be held in the portfolio, are the cause of herding.

Such behaviour by institutional investors has particular relevance to Australia’s system of retirement income provision (termed superannuation) and the current debate surrounding member choice, as evidence of homogeneity (herding) of fund behaviour would erode the potential welfare benefits of any such policy. The Commonwealth Government announced a policy of choice of fund in 1996 and introduced a detailed proposal in the 1997 Budget. Specific proposals for choice of fund were introduced into Parliament in December 1997. Originally introduced as Schedule 5 to the Taxation Laws Amendment Bill 1997, the choice legislation was re-introduced on November 12, 1998 in revised form as the

Superannuation Legislation Amendment (Choice of Superannuation Funds) Bill 1998. This Bill passed in the House of Representatives in February 16, 1999, but debate on the Bill in the Senate was adjourned on February 1999; the Bill was defeated in the Senate in August 2001. At the time of writing, the Minister responsible, Senator the Hon. Helen Coonan, announced Government will reintroduce the Choice Bill for debate in Parliament's final sittings for the year.³

While it is difficult to foresee the final form that choice policy will take in Australia, this study considers the merits of a policy in which complete portability of superannuation assets for individuals will result. This allows us to invoke a presumption of consumer sovereignty, and permits an evaluation of possible welfare outcomes in light of the behaviour of institutional investors. To investigate the possible benefits of choice to investors, this study considers the heterogeneity (or otherwise) of the cohort of competing superannuation funds in the market place. While there are thousands of complying superannuation funds for investors to choose from, this study considers the largest asset exposure by superannuation funds (i.e. Australian equities) held in the most accessible investment vehicle (i.e. retail superannuation funds).

In Australia, retail superannuation funds currently manage around one-third of retirement savings, or AUD 155 billion (APRA 2001), the largest distribution to any single fund-type.⁴ The Productivity Commission (2001) defines retail funds as public offer superannuation funds that members join by purchasing investment units or policies that are sold through intermediaries such as financial planners. The definition is appropriate for this study,

³ For details see the transcript of the address "Building the National Nest Egg Challenges for a Greying Australia" by Senator the Hon. Helen Coonan, Minister for Revenue and Assistant Treasurer to the Investment and Financial Services Association, Sydney, 20th November 2003 (accessed on Saturday, 29th November 2003 at <http://assistant.treasurer.gov.au/atr/content/speeches/2003/018.asp>).

⁴ As at September 2001, APRA (2001) reports that the top five distribution of funds were as follows: Retail Sector (AUD 155bn); Public Sector (AUD 103bn); Small Funds (AUD 85bn); Corporate (AUD 69bn); and, Industry (44bn).

with one amendment. The retail fund market includes two sub-sets, funds for individual investors (retail funds), and, funds designed for the professional investors (wholesale funds). The distinction between the two markets can be found by the minimum investment requirement on a per fund basis and cost structure. A typical 'retail' fund has a minimum entry amount of AUD 2,000 and levies an average annual management expense ratio of around 1.95%. In addition, these funds may charge up to 5% of the contribution as an entry load, with a 3% exit load. This is in contrast to a wholesale fund with an initial investment amount of, say, AUD 250,000 with an annual management expense ratio of 0.75%. In addition, wholesale funds have no entry or exit loads. As the average superannuation balance per member in Australia is AUD 59,400 (APRA 2001), we focus our analysis in this study to the individual investor sub-set of the market. In a complete superannuation choice framework, retail funds for individual investors would be the market most accessible to Australians.

The Australian Prudential Regulation Authority (APRA) (2001) report that, as an asset class, domestic equities account for approximately 37 per cent of the assets held by all superannuation funds. As stocks are subject to income and capital fluctuations (the degree of risk of this type of asset class is higher than that associated with most other forms of investment) they have a relatively high expected return. Therefore, long-term investors (such as superannuation investors) hold stocks with the expectation of achieving real growth of retirement savings, with the objective of accumulating sufficient capital to privately fund consumption throughout retirement.

Given that choice is on the policy agenda, this paper addresses the question of whether superannuation fund members actually have a choice across the investment products in the market place. Specifically, we ask: does the herding behaviour of institutional investors limit the potential benefits of choice policy? This question is addressed in two

interlinked ways. Initially, from the return perspective, a number of received performance metrics are employed to evaluate the heterogeneity of the excess returns of institutional investors. Finally, from the risk perspective, a simple cross sectional analysis of the systematic risk profile of retail funds is undertaken to highlight the differences of the composition of fund portfolios.⁵

In doing so, a number of interesting patterns are revealed. First, we provide confirmatory evidence to the international experience that, as an industry, retail superannuation funds (specialising in the management of Australian equities) do not earn excess returns. In short, the industry earns less return per unit of risk than the market portfolio. Second, there is relatively little cross sectional variation in excess returns, with fund performance appearing to exhibit a pattern of herding. Third, not only are the systematic risk profiles similar within the cohort, the industry is found to be (on average) defensive in its portfolio construction approach with funds consistently holding portfolios less risky than the market (that is, systematic risk less than unity). Therefore, on average, the industry performs relatively poorly (well) in bull (bear) markets. Finally, it is our conjecture that regardless of the extent of portability and choice granted to investors by policy makers, there is, in reality, very little choice in this important segment of the market due to fund homogeneity.

The remainder of the paper is organised as follows. Section II describes the data used in this study for the period 1991 through 2003. Section III discusses the methodological approach, with an emphasis on the performance metrics applied to institutional investor returns. Section IV provides analysis of the performance of retail superannuation funds specialising in the management of Australian equities. The similarities of the funds from which members can select from are considered from both excess return and systematic

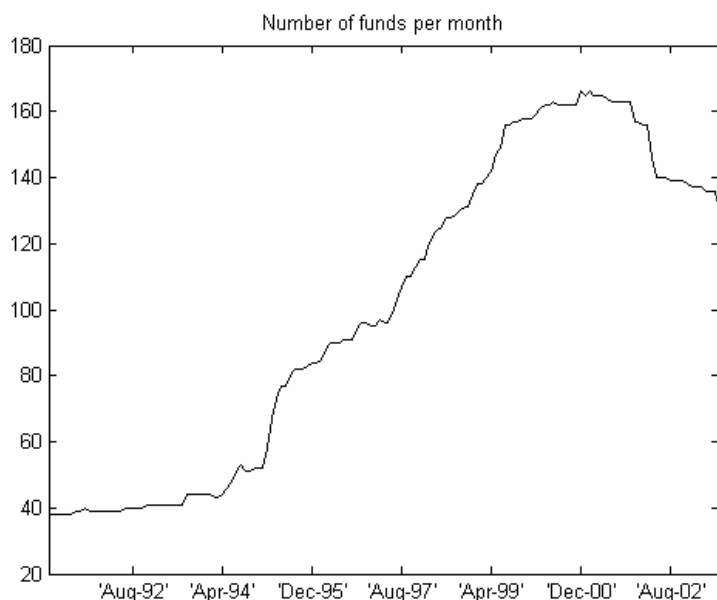
⁵ The risk and performance metrics used in this paper build on the work of Bird, Chin, and McCrae, (1982), for a critique of such metrics, see Okunev (1990).

risk perspectives. The central arguments proposed in the paper are considered in Section V, including policy alternatives and implications for member choice.

II. Data Collection

van Eyk Research (van Eyk), an independent measurement service in Australia, provided return data on retail 'Superannuation Funds Australian Equity – General' for the period January 1991 through July 2003, a total of 151 monthly observations.⁶ The data considered is net of management expenses but excludes entry and exit loads.⁷ To minimise the problem of survivorship bias, all funds in existence over the observation period were initially considered, including all terminated funds. The only funds excluded from the population were those with less than 30 monthly observations, resulting in a sample size of 161 funds. Figure 1 reports the number of funds in the monthly cross sectional samples.

Figure 1: Number of Funds



⁶ One of the motivating factors to commence the analysis from 1991 is that this is the year in which the government announced the introduction of the Superannuation Guarantee (SG) (implemented in 1992).

⁷ The study considers return data net of management fees for all funds (surviving and terminated). To avoid problems of survivorship bias, we do not consider entry loads as these are available for surviving funds only. For a discussion on the issue of funds management fees and individual fund performance see Klumpes, and McCrae (1999), for an industry-wide perspective, see Lakonishok, Shleifer and Vishny (1992).

The funds are separated into three categories by van Eyk: open-end; closed-end; and, non-surviving or terminated funds. Open-end funds, commonly referred to as unit trusts, may issue or redeem additional units of the fund at net asset value. The retail funds considered in this study require a minimum initial investment of AUD 2,000 with minimum contributions of AUD 100. Closed-end funds sell units to investors only once, at the time of offer. These funds do not issue additional units and may not redeem units on demand. A lack of liquidity may prevent an investor from exiting this fund. However, the effect of large capital inflows and outflows from contributors is minimal, giving managers some control over the assets under management. Finally, the non-surviving cohort includes funds that ceased operations over the observation period. These funds are included in the analysis as exclusion of this segment would result in an overestimation of historical returns.

Admati and Pfleiderer (1997) advocate the use of a benchmark proxy that reflects each fund's investment strategy to augment the precision of performance evaluations. One of the advantages of the sample investigated in this study is that the asset allocation parameters are known. To have membership in the category, funds are required to hold at least 80 percent of assets in a general portfolio of Australian equities, with a maximum of 20 percent in domestic fixed interest securities. After an investigation of the fund mandates, the S&P/ASX 200 Accumulation index has been selected as the market proxy.⁸

III. Methodology

In a similar manner to many previous studies of institutional investor performance (Malkiel 1995, Blake, Lehmann and Timmermann 1998) we employ a number of received

⁸ See Drew and Stanford (2003). For the period 1991 through 1999, Drew and Stanford (2003) find a large-capitalisation focus in the mandates of this cohort of funds.

risk-adjustment procedures. In achieving the research objective, the analysis commences with the excess return from a single index model.

$$R_{it} - R_{ft} = \alpha_i + \beta_i (R_{mt} - R_{ft}) + \varepsilon_i \quad (1)$$

where:

- α_i = risk adjusted abnormal return from the single index model;
- R_{ft} = return on the Reserve Bank of Australia 13 week T-note in month t ;
- R_{mt} = return on the S&P/ASX 200 accumulation index in month t ;
- β_i = factor sensitivity of difference in fund return and the risk free rate; and,
- ε_i = random error term.

Jensen's (1968) single index model (CAPM), posits that the security's return should be linearly related to its risk, as measured by beta. The intercept term detects whether managers have superior forecasting abilities, with alpha generated by selecting securities resulting in $\varepsilon_i > 0$.⁹ As Equation (1) is a single-period model, estimating the regression over time should allow investors to have heterogeneous investment horizons. Furthermore, returns are assumed to be independently and identically distributed (IID) through time and jointly multi-variate normal.

While general criticisms can be made of the CAPM, one specific criticism is that Equation (1) assumes that a fund's systematic risk is constant over time. The inability of such tests

⁹ Alpha generation will be significantly positive if the fund manager has the ability to forecast future security prices. Alpha will be zero if the manager mimics the composition of a reference benchmark. Finally, alpha will be significantly negative if the fund manager performs worse than a naive strategy of random selection.

to incorporate dynamic risk strategies by managers may result in a regression estimate of α_i that may be significantly biased downward (Grant 1977, and Lee and Rahman 1990).

Treynor and Mazuy (1966) (TM) addressed this concern with the development of a quadratic market model. Through the addition of a quadratic term to Equation (1), portfolio returns are a non-linear function of the market return. This provides a measure of the timing abilities of fund managers.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \gamma_i R_{mt}^2 + \varepsilon_i \quad (2)$$

where:

γ_i = risk adjusted measure of market timing ability of fund i .

Market timing ability will be reflected by greater market exposure when the excess market returns are higher and vice versa. A significantly positive value of gamma would indicate superior market timing ability. If gamma does not deviate significantly from zero, the manager cannot outguess the market. If gamma is significantly negative, there has been perverse market timing undertaken by the manager.

Chapman and Pearson (2000) demonstrated that the problem of multicollinearity resulting from a model taking a non-linear functional form is resolved by the technique of orthogonalised polynomials.¹⁰ This is achieved by transforming the squared excess market return variable and the excess market return variable with a dummy variable, resulting in a transformed TM model:

¹⁰ See Draper and Smith (1998) for a detailed discussion of orthogonalised polynomials.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \gamma_i p_i(R_{mt}) + \varepsilon_i \quad (3)$$

The new regressor, $p_i(R_{mt})$, is formed as the regression residual of R_{mt}^2 and DR_{mt} (under separate equations) onto a constant. This is then scaled to have a standard deviation equal to the standard deviation of the dependent variable, R_{it} . These orthogonalised and scaled monomials have the incremental effect of adding the original terms in Equation (2). The alpha parameter estimates from Equation (3) will be reported throughout the study.

One criticism of the first two evaluative techniques described previously is the time invariant nature of parameter estimates. We follow Ferson and Schadt (1996) (FS) in allowing for variation in systematic risk and hence benchmark returns.

$$R_{it} - R_{ft} = \alpha_i + \beta_{i,t}(R_{mt} - R_{ft}) + \varepsilon_i \quad (4)$$

where:

$\beta_{i,t}$ = where, $\beta_{i,t} = b_0 + b_1' Z_{t-1}$ and Z_{t-1} is a vector of instruments for the information variables available at time $t-1$. This includes the dividend yield on the S&P/ASX 200 index and one- and ten-year Commonwealth Government bond rates.

Given that institutional investors are often evaluated relative to peer performance, returns will also be compared to a rudimentary, risk-unadjusted, measure of fund return relative to an index of peer return (PEER). Preliminary estimates of average performance are obtained from:

$$R_{it} - R_{pt} \quad (5)$$

where:

R_{pt} = return on the Morningstar Australian Equity Superannuation index.

IV. Analysis

We commence our analysis from the perspective of excess returns using the aforementioned approaches. Table 1 provides summary statistics from the cross sectional distribution of the annualised alphas from each of these approaches. These measures of excess return will be considered initially at an aggregated level, followed by subsequent discussion of the full cross sectional behaviour of institutional investor returns, at a disaggregated level.¹¹

Table 1: Summary Measures of Cross Sectional Distribution of Alphas

Percentiles	CAPM	TM	FS	PEER
	-	-	-	
5	4.733	4.733	4.998	-4.830
	-	-	-	
10	3.746	3.746	3.958	-3.217
	-	-	-	
25	1.774	1.759	2.090	-1.557
	-	-	-	
50	0.565	0.568	0.659	0.102
75	0.815	0.813	0.446	1.259
90	2.489	2.491	2.036	2.851
95	3.666	3.673	3.281	3.878
($\alpha = 0$)	64	64	66	n.a.
	-	-	-	
t-stat	2.233	2.167	2.658	-1.539
IQ Range	2.589	2.572	2.536	2.815

At an aggregated level, irrespective of the risk adjustment procedure employed (CAPM, TM or FS), it appears as though the average retail superannuation fund, (specialising in the management of Australian equities) under-performed market indices (given that t-stats are significantly less than zero) for the period 1991 through 2003. In contrast to

¹¹ The results reported here focus on the cross-sectional distribution of alphas (in this section) and betas (in the upcoming section). The average coefficient of determination (R^2) for the models are: CAPM (0.65), TM (0.67), FS(0.71), with the average Durbin-Watson statistics of CAPM (2.01), TM (1.96), FS(1.99).

market or risk-based approaches to evaluation, relative to peer performance (PEER) there is no significant out- or under-performance.

The level of underperformance relative to the index benchmark ranges from 56 to 66 basis points per annum over the period 1991 through 2003. These findings are consistent with those from the United States by Malkiel (1995) and Gruber (1996), the United Kingdom by Bal and Leger (1996) and Leger (1997) and Australia by Sawicki (2000), Sawicki and Ong (2000) and Drew and Stanford (2003). In summary, these studies report that the average equity mutual fund under-performs index returns by a range of 50 to 100 basis points per annum.¹²

Such a level of underperformance has a direct impact on the final accumulated balance of superannuation savings in a defined contribution plan. For an individual who is 30 years of age, holds a starting balance of \$50,000, contributes \$5,000 per annum and will retire at age 65, underperformance of around 60 basis points per annum results in a 15 per cent reduction in the final accumulated balance. From the perspective of choice, the results show that the most likely outcome is for the member to select a fund that generates negative excess returns (see $\alpha=0$ percentile in Table 1). While this result in itself is received in the literature (see, for instance, Sharpe 1966 and the previous work cited), a more important question for the member is the degree with which funds cluster around this average negative outcome. It is this second question that provides us with a guide as to the potency, or otherwise, of any proposal relating to member choice.

Therefore, unlike the overwhelming majority of previous studies characterised by the aggregation of individual fund performance (Malkiel 1995, Gruber 1996, Drew and

¹² Recent evidence from Wermers (2000) finds that while gross returns from US equity mutual fund holdings outperform a broad market index by 130 basis points per year, the net fund returns under-perform the same index by 100 basis points per year.

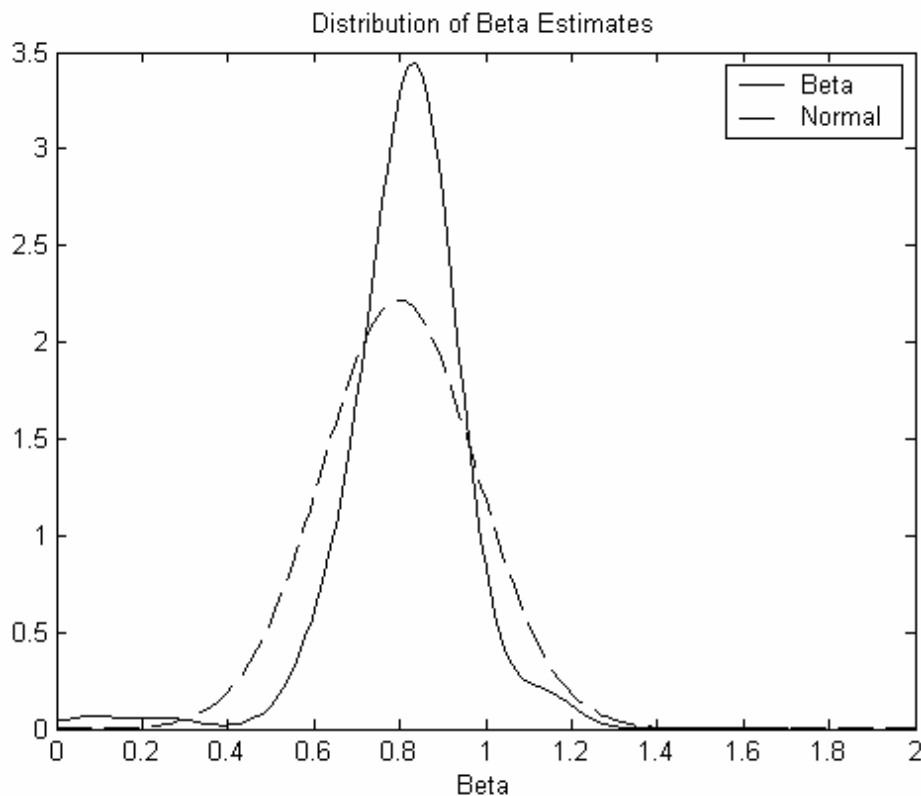
Stanford 2003), this study follows a disaggregated approach similar to that of Blake *et al.*, (1996) who considered the cross sectional variation of pension fund performance in the United Kingdom. In short, it is argued that measures of dispersion and shape of the distribution (at the disaggregated level) are useful for directly addressing the question of homogeneity.

Clearly, irrespective of the benchmarking procedure employed, the shape of the cross sectional distribution is invariant (only its position changes when considering the risk-adjusted peer benchmark). Given that each cross sectional distribution is highly leptokurtic (CAPM 70.225, TM 72.191, FS 73.296, PEER 58.203), it is argued that this reflects a high degree of homogeneity in fund returns. An alternate method is to examine the inter-quartile range of excess returns to provide an economic measure of homogeneity. It is apparent that the excess returns generated by funds are quite similar in that 50 per cent of the funds lie within a relatively narrow range of 250 basis points. Once again, these results have implications for members in that not only do funds on average underperform, but there is a great deal of clustering around this average underperformance. These results bring into question the potential welfare gains of choice policy given the high degree of fund homogeneity.

The first section of the analysis considered excess returns, that is, institutional investor performance was standardised for a given level of systematic risk (excluding PEER). It has been shown that members have little choice in selecting between managers that can outperform risk adjusted benchmarks. Attention will now be turned to the issue of the degree to which members can differentiate between funds on the basis of risk. Given the similarity of results from the four approaches used in the study, this discussion will focus

on systematic risk estimates from the CAPM (Equation 1). The analysis commences with an examination of an estimate of the distribution of betas, which is provided in Figure 2.

Figure 2 Cross Sectional Distribution of Beata Estimates



Upon examination of Figure 2, two general patterns emerge. It is immediately apparent that, on average, the risk profiles of funds are less than unity and lie within a relatively narrow range. Table 2 reports more detailed analysis of the degree of similarity in risk profiles.

Table 2: Summary Measures of Cross Sectional Distribution of Betas

Percentiles	CAPM
5	0.607
10	0.656
25	0.757
50	0.820
75	0.879
90	0.933
95	0.970
IQ Range	0.122
Kurtosis	16.597

Table 2 suggests that at least 95% of funds in this sample have made defensive asset selection decisions, meaning that the overwhelming majority of funds have betas of less than unity. It is also clear, that given the inter-quartile range of 0.122, there is little differentiation in terms of risk profiles across the sample of funds. Evidence of homogeneity is supported by the kurtosis measure reported in Table 2 (and is a pattern revealed in Figure 2). We can also extend this analysis to look at time varying betas (FS) to consider the question of whether institutional investors change their asset selection policy through various market conditions (Figure 3).

Figure 3 Conditional Betas and Market Conditions

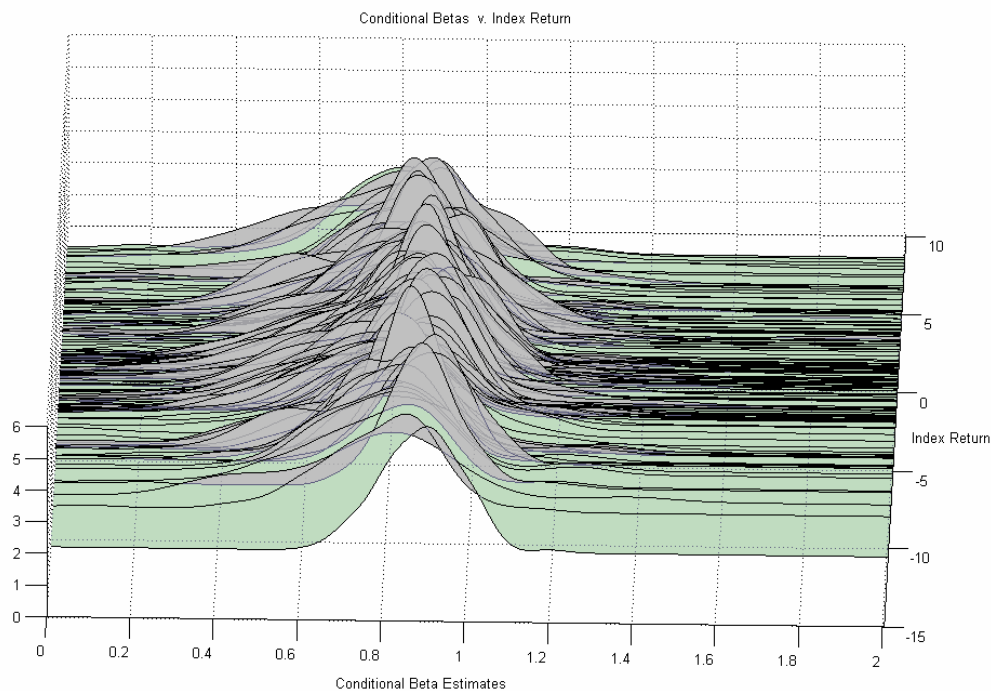


Figure 3 demonstrates that a great deal of homogeneity is evident regardless of market conditions. Beta estimates consistently cluster around the 0.80 to 0.85 level confirming an unconditional bias toward defensive asset selection strategies. While it is not within the scope of this paper to comment on the various strategic and business risk

considerations in institutional investors herding around this narrow systematic risk band, we are compelled to consider this result from the perspective of investment outcomes for members.¹³

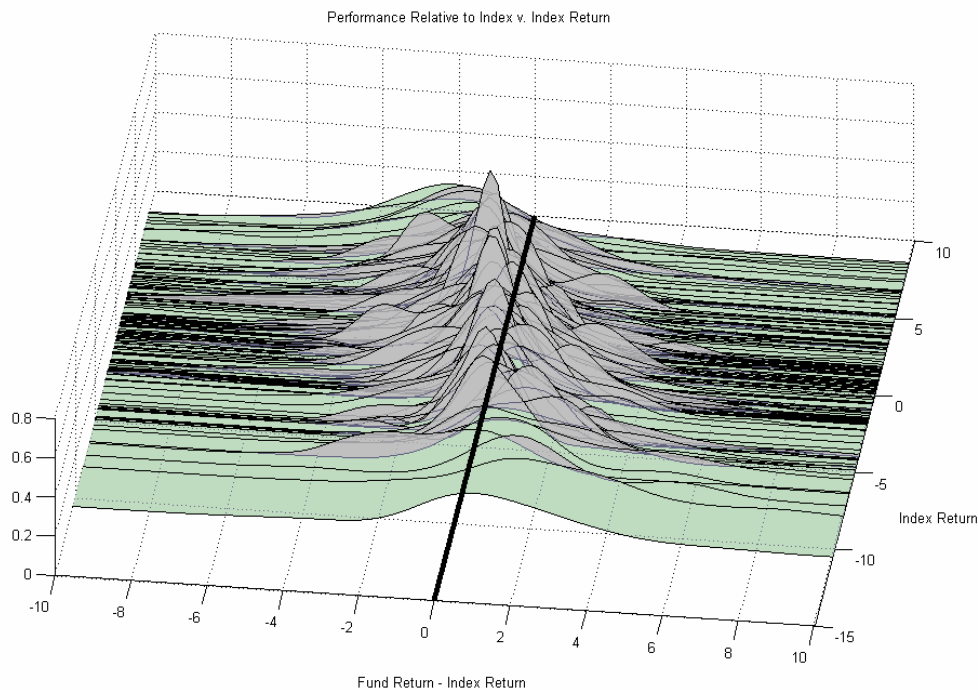
Australia, like most other OECD nations, has a home-bias in the equities asset class, with the domestic equities accounting for 44% of total superannuation assets compared to its international proportion of global market capitalisation at around 1.5% (APRA 2001). Given the long-term investment horizon of retirement savings, the performance of domestic equities is the central driver for wealth creation. It seems curious, from an investment perspective, that over the thirteen years to 2003, the industry has, on average, made defensive asset selection decisions in a growth asset class. Therefore, it is important to highlight that when members choose from the menu of options available in this market segment, they will only be partially exposed (at around 80 per cent) to the risk-reward characteristics of the Australian equities asset class. From the broader asset allocation perspective, the industry's decision to hold defensive portfolios somewhat alters the nature of the asset class. That is, if asset allocation decisions were based on index returns (beta of 1.00) a discrepancy between optimal weights across various asset classes would result.

A secondary issue that arises from the defensive nature of the industry relates to the performance of this cohort of funds in various market conditions. The results suggest that superannuation funds specialising in the management of Australian equities will, as an industry, perform relatively poorly (well) in bull (bear) markets. To confirm this idea, we examine the fund returns across varying market conditions. Figure 4 reports estimates of the cross sectional distribution of raw fund returns relative to market conditions. It shows

¹³ Arteaga, Ciccotello and Grant (1998) examine strategic and business risk considerations in institutional investor behaviour when marketing new funds.

that, on average, when market returns are good (poor) the majority of funds under (out) perform the broader market. Furthermore, there is a greater level of dispersion within the sample of fund returns as the broader market becomes more volatile. While this relationship conforms to standard finance theory, it would appear as though members have little ability to differentiate between funds from the risk perspective.

Figure 4 Relative Fund Performance and Market Conditions



V. Conclusion

Choice and portability of superannuation balances in Australia is currently being debated. It is our belief that the welfare benefits of choice are positively related to the heterogeneity of the investment funds from which members can select from. International evidence has suggested that institutional investors behave in a mimetic manner (see Wermers 1999). While the motives for such behaviour are contested, the mere presence of herding limits the potency of choice policy, in that members have little ability to differentiate between funds.

In considering the homogeneity of superannuation funds (in terms of both return and risk) a number of salient features have been revealed. From the excess return perspective, it appears difficult for members to differentiate between funds. It is estimated that around two-thirds of superannuation funds under-performed the market portfolio on a risk-adjusted basis. While this result is well accepted, the cross-sectional nature of these excess returns demonstrated that there was a strong degree of clustering around the average level of underperformance. From the perspective of systematic risk, differentiating between funds is again difficult. On average, funds are defensive in nature, and 'flock around' this risk profile.

It is our conjecture that the benefits of any model of choice policy will be inhibited by the mimetic behaviour of institutional investors. While this research makes no comment on the competitiveness of the industry, it appears that the products offered by those competing in this market are very similar in nature.¹⁴ Therefore, while the underlying tenants of choice policy are sound (particularly those relating to the welfare gains flowing from consumer sovereignty) we argue that the focus of the current debate is misplaced. In summary, the current fascination with the specificity of the policy framework should shift to ensuring that members can choose from clearly differentiated products when investing superannuation assets. While future research can address the issue of welfare gains in a post-choice environment, if the current market structure were to continue, little, if any, gains in welfare will accrue to the fund member.

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