

Investment manager characteristics, strategy, top management changes and fund performance

David R. Gallagher [†]

School of Banking and Finance, The University of New South Wales, Sydney, N.S.W. 2052,
Australia

Abstract

This study examines the performance of Australian investment management organisations with direct reference to their specific characteristics and strategies employed. Using a unique information source, performance is evaluated for actively managed institutional balanced funds, Australian share funds and Australian bond funds. For balanced mandates, performance is evaluated with respect to the investment strategy adopted, the experience and qualifications held by investment professionals, and the tenure of the key investment professionals. The study examines the performance of top management and the impact on returns when turnover arises. The research documents that a significant number of active Australian equity managers earned superior risk-adjusted returns in the period, however active managers perform in line with market indices for balanced funds and Australian bond funds. A number of manager characteristics are also found to predict risk-adjusted returns, systematic risk and investment expenses for balanced funds.

Keywords: Investment strategy; Managed fund performance; Manager characteristics

JEL classification: G23

1. Introduction

The extent to which performance is related to investment manager attributes or characteristics is a largely unknown empirical question. This is despite significant attention given to investment management organisations (and their products) by market regulators, the media,

[†] The author is grateful to Mercer Investment Consulting, Investment and Financial Services Association (IFSA) Ltd., ASSIRT, Rainmaker Information and the Securities Industry Research Centre of Asia-Pacific (SIRCA) for the use of data in this research. The author gratefully acknowledges financial support from the Mercer Investment Consulting Global Investment Forum and helpful comments from an anonymous referee, Greg Liddell (Mercer IC), Robert Faff (the Editor), Tim Brailsford, Stephen Brown, and Peter Swan. Helpful comments are also acknowledged from seminar participants at The University of Western Australia and Australian National University. Mail: P.O. Box H58 Australia Square, Sydney, NSW 1215, Australia. Telephone: (+61 2) 8296 7841. E-mail: david.gallagher@unsw.edu.au

institutional and retail investors, asset consultants and fund ratings agencies. While the literature has largely concentrated on the measurement of portfolio performance and the performance persistence phenomenon, research is sparse with respect to the determinants of investment performance and specific characteristics that differentiate manager returns. This study is motivated by the lack of empirical investigation, particularly in an Australian context, and evaluates performance differences on the basis of fund manager characteristics and strategy. In particular, this paper examines the predictability of performance, risk and management expenses given specific attributes of investment managers.

An examination of fund manager characteristics and performance can also be motivated across a number of institutional criteria. First, the size of assets delegated to professional fund managers by Australian investors is substantial. According to ASSIRT, aggregate funds under management was estimated at \$A688 billion at 30 March 2002, and these assets have grown substantially over the past decade. Second, the aggressive marketing activities by investment managers, particularly in the retail market, translates into significant advertising resources being expended to promote the investment manager's brand, track record, as well as educational propaganda highlighting the prospective advantages of future investments within their product offerings. This marketing effort attempts to clearly differentiate the institution's investment strategy and performance relative to competitors. The implication at the very least is that investment managers engage the public to believe that performance is indeed related to the 'quality' of the investment manager, including their staff and their past investment performance. Third, given the increasing complexity in our financial environment, both retail and institutional investors are increasingly relying on independent investment advice from financial planners and asset consulting firms. In terms of superannuation funds, trustees typically utilise the services of asset consultants in both the formulation and implementation of their investment strategy, including the selection and review of investment managers. Fourth, the financial media regularly provide investors with commentaries concerning managed funds, unit prices, quarterly performance, new product offerings and significant changes in personnel or investment approach.

This study makes three important contributions to the literature. First, the research fills an important gap in the literature concerning the extent to which fund performance can be explained by specific manager characteristics. Employing a unique data source, this is the

first Australian study to examine whether performance can be differentiated on the basis of investment manager attributes for balanced (multi-sector) mandates. The study considers the years of tertiary education of personnel within the organisation, investment management experience and loyalty exhibited by their staff, the predominant portfolio strategy adopted, expenses charged, and the size of assets under management. Second, the study examines the impact of top management changes on investment performance in Australian equities, Australian bonds and balanced sectors. The research also evaluates performance in light of the mismatch between the tenure period of top management and the actual life of managed funds. In cases where senior executives depart the firm, the study examines the extent to which senior individuals are responsible for the manager's performance and the extent to which an 'averaging' effect in performance arises due to such departures. Third, the performance of actively managed institutional funds within Australian equities, Australian bonds and Balanced (or multiple asset class) sectors are evaluated.

The remainder of this study is structured as follows. Section 2 provides a brief review of the literature. Section 3 outlines the methodology used in considering whether investment manager performance can be differentiated on the basis of investment strategy, institutional size, quality of the investment team, and years of funds management experience. Section 4 describes the institutional environment in the Australian investment management industry and the data employed in the analysis. Section 5 presents the empirical results, and the final section concludes the study and makes suggestions for future research.

2. Literature review

The literature review provides a brief discussion of research concerning (1) manager characteristics and investment strategy, (2) top management turnover and performance, and (3) performance evaluation.

2.1 Manager characteristics and investment strategy

There exist a number of criteria likely to be considered by equity investors including the corporate strategy adopted, the profitability of the organisation, the skills embodied by the firm's executives and the overall corporate governance structure. Indeed, the selection of investment managers should be similar, where the products offered to investors are

scrutinized on the basis of the past success of the manager, stability of personnel, skills and experience of the investment team, acceptance of the investment philosophy implemented, and costs involved in utilizing the manager's services. While there exists a large body of literature devoted to mutual fund performance measurement, empirical work investigating factors that differentiate investment returns remains an emerging area of research. In the U.S., Chevalier and Ellison (1997, 1999a, 1999b) have been significant contributors, specifically evaluating portfolio manager incentives, mutual fund risk, and the relationship between performance and the education and experience of investment personnel. They find cross-sectional evidence that investment managers attending more selective undergraduate universities exhibit higher risk-adjusted excess returns. In addition, Chevalier and Ellison (1999b) also find that younger managers outperform those with more years of experience.¹ Golec (1996) also evaluated mutual fund manager characteristics and performance, finding younger managers holding MBA degrees, and those with longer tenure, deliver investors with superior risk-adjusted excess returns.

The literature has also sought to disaggregate performance on the basis of the investment style (or investment objective) exhibited by mutual fund managers. These studies have been motivated by an attempt to identify whether managers implementing different investment approaches deliver clients with superior returns (including Grinblatt and Titman (1989, 1993), Elton *et al.* (1993), Gruber (1996), and Becker *et al.* (1999)). Daniel *et al.* (1997) also analyse performance with benchmarks that account for differences in characteristics across mutual fund managers. This research also extends beyond a manager's simplified, self-stated investment objective by considering the investment manager's underlying process and the implementation of their portfolio strategy.

2.2 Top management turnover and performance

Khorana (1996) examines the relationship between top management turnover for mutual fund managers and prior performance. The study finds evidence of an inverse relationship between manager replacements and performance (where performance is measured according to portfolio returns and the growth rate in assets). The research also reports that the replacement

¹ Chevalier and Ellison (1999b) suggest this phenomenon may be attributable to older managers being comparatively less educated than younger managers, younger managers showing a stronger work ethic as a means for rapid career advancement, or due to the successful older managers retiring earlier or moving across to institutional funds management.

of mutual fund managers can be predicted up to two years prior to the eventual management change, and that replaced managers tend to exhibit higher portfolio turnover rates, higher expenses and greater systematic risk than non-replaced managers. In a later study evaluating changes in management staff and their effects on fund performance and asset inflows, Khorana (2001) reports a significant improvement (deterioration) in post-replacement performance for underperforming (overperforming) managers in prior periods. However, these changes did not lead to managers deriving superior returns relative to market benchmarks. Khorana (2001) also documents that manager replacement is responsive to asset inflows, where poorly performing managers experience significantly lower asset inflows.

2.3 Performance evaluation

The literature evaluating the performance of actively managed funds is extensive and the overall conclusions are that the average active fund is unable to earn superior risk-adjusted returns relative to appropriate benchmark indices. These findings have been largely consistent over 70 years, originating with the early work of Cowles (1933). More recently, the empirical evidence over the last decade further supports the notion of capital market efficiency, including Elton *et al.* (1993), Malkiel (1995), Gruber (1996), Ferson and Schadt (1996), Cai *et al.* (1997), Blake and Timmermann (1998), Dalhquist *et al.* (2000) and Brown *et al.* (2001). The Australian evidence is broadly consistent with U.S., U.K., Japanese and Swedish markets (Robson (1986), Hallahan and Faff (1999), Sawicki and Ong (2000), Gallagher (2001)).

However more recently, Edelen (1999) and Wermers (2000) have both questioned the finding that active managers underperform the market. In the case of Edelen (1999), liquidity motivated trading by active mutual funds is documented as a significant explanation of why active funds underperform the benchmark. In particular, fund flow is shown to be an important determinant of poor market timing ability. Meanwhile, Wermers (2000) finds that active mutual funds operate in an environment consistent with Grossman and Stiglitz's (1980) informational efficiency hypothesis, where the average active fund selects stocks in a manner that delivers superior returns before costs; however net of transaction costs and expenses, funds underperform. Daniel *et al.* (1997) also present evidence consistent with the Grossman-Stiglitz hypothesis. They find that aggressive growth and growth funds are able to deliver superior returns to investors after expenses, even though their investment expenses are the

highest of all fund categories. Grinblatt and Titman (1993) also report aggressive growth funds earning significantly positive risk-adjusted returns. While Ippolito (1989) also reports mutual fund performance consistent with Grossman-Stiglitz information efficiency, Elton *et al.* (1993) demonstrate that this finding is entirely attributable to the performance of non-S&P 500 assets held by mutual funds, and that adjustments to the benchmark reverse Ippolito's (1989) findings. Recent research by Cesari and Panetta (2002) examining Italian equity funds raises further controversies concerning capital market efficiency in the managed funds literature.

3. Data

3.1 Investment manager performance data

This study employs a unique dataset of investment manager information and performance data spanning the 10-year period January 1991 to December 2000. The monthly performance data is provided by Mercer Investment Consulting (hereafter Mercer IC), and is evaluated for investment managers across three asset class categories – active Australian equities, active Australian bonds and balanced (or multi-sector) portfolios. Performance in the balanced portfolio sector is measured after expenses and tax, whereas other sector specialist returns are reported before expenses and tax.

The study employs performance data that are 'representative' of the investment performance of investment managers in Australian equities, Australian bonds and balanced (or diversified, multi-sector) portfolios. While the selection of funds is determined using Mercer IC surveys, Mercer IC consults each manager to determine the appropriateness of the performance data as being 'representative' of the institution by referencing the manager's flagship investment offering. The flagship fund is almost always the largest investment product offered to institutional clients, therefore the use of a flagship product ensures that the performance and attributes of the fund are representative of the manager's investment process. Employing the flagship selection approach is necessary given the number of funds that may be offered to investors by a single manager in any given asset class. The process is transparent and Mercer IC employs strict rules in the maintenance of the selection procedure. Accordingly, investment managers are unable to 'cherry-pick' what performance series is ultimately reported. In evaluating the institution's performance, the analysis avoids problems with

survivorship bias, as flagship funds that cease to exist have their performance histories retained in the Mercer database.

The study examines 28 investment managers in Australian equities, 24 managers in Australian fixed interest and 22 managers in the balanced sector. There are differences in the number of managers evaluated across each of the sectors given that not all 28 of the managers have institutional offerings in Australian fixed interest and balanced sectors. Only 22 managers offered balanced funds, and all of these managers were also evaluated in the Australian equities and fixed interest asset classes.

3.2 Benchmarks

The Mercer IC balanced fund performance data include each manager's strategic benchmark weight to each of the asset class sectors. This information permits the calculation of manager specific benchmark returns, as investment managers generally have unique strategic benchmark allocations across the asset class spectrum. For example, one manager may decide to allocate 30 percent to domestic equities, whereas another manager may use 40 percent to Australian equities as their strategic benchmark allocation. Hence, these managers must be evaluated relative to benchmarks that accurately reflect the asset allocation mix of their investment strategy.

The market indices used in calculating each manager's specific benchmark for balanced (or diversified) asset class investments are the standard indices cited in the industry: Australian Equities – ASX200 or ASX300 Accumulation Indices (dependent on manager's stated benchmark); International Equities – MSCI World (ex-Australia) Accumulation Index with net dividends reinvested (in \$AUD); Australian Direct and Listed Property – Mercer Direct Property Index and ASX 300 Listed Property Accumulation Index, respectively; Australian Bonds – UBS Warburg Composite Bond Index; International Bonds – Salomon Smith Barney World Government Bond Index; Australian Inflation-Linked Bonds - UBS Warburg Inflation-Linked Bond Index; Cash - UBS Warburg Bank Bill Index.²

3.3 Qualitative investment manager information

² The ASX All Ordinaries Accumulation Index and ASX Listed Property Accumulation Index were employed for Australian equities and listed property prior to 1 April 2000.

This research extends the literature by considering the qualitative information pertaining to individual investment management institutions, the processes and strategies implemented, and other characteristics directly relevant to the firm. Qualitative information was obtained directly from the investment managers via standard Investment and Financial Services Association Limited (IFSA) annual manager surveys. IFSA is the industry body representing the Australian investment management industry, and surveys are undertaken for the benefit of (and on behalf of) asset consulting and investment advisory companies servicing the institutional market. The annual questionnaire requires investment managers to provide detailed information on various aspects of their organisation. This includes information pertaining to the ownership and capital structure of the firm, the professional staff employed (including qualifications held, investment experience, the number of years service (tenure/loyalty) accumulated with the current firm), the manager's investment philosophy and style, the asset allocation strategy, investment charges, and products available to institutional clients.

The questionnaire permits the manager to disseminate both qualitative and quantitative information for the previous five-year period, and provides the analyst with an understanding of how the organisation functions, the operational and risk management procedures in place and any significant changes which have occurred over time. The questionnaire also captures information describing the significant changes that have occurred within management, investment style and strategy. In some cases the analysis is able to refer to successive yearly questionnaires to extend the manager's five-year observation window. In other cases, the study only has available one questionnaire, which limits the observation interval for such managers to five years. Where possible, information was also checked against public information reported in the financial media.

Due to the sensitive nature of the information contained in the questionnaires, this study does not disclose specific information for individual investment management organisations, or the individual personnel comprising these firms. Table 1a provides summary statistics based on the final questionnaires of 22 balanced managers evaluated, such that an aggregate description of the characteristics of these managers can be ascertained.

INSERT TABLE 1a

The institutional investment management companies comprising the study are not identified. The funds management companies comprising the study are domiciled in Australia and engage in active investment strategies. Rainmaker Information data indicates that the investment managers evaluated in the study controlled in excess of \$A495 billion or 71.4 percent of all assets professionally managed as at 31 December 2000.

Table 1b provides descriptive statistics of the variables used in the regressions to explain the predictability of performance, risk and management expenses given the attributes of the balanced investment managers.

INSERT TABLE 1b

4. Evaluating investment manager characteristics, strategy and performance

4.1 Manager characteristics and strategy

The methodology employed in this research, examining the relationship between performance, manager characteristics and strategy, considers those attributes cited by superannuation fund trustees, asset consultants and investment managers as important determinants of performance. Indeed, investment managers commonly cite these differences in characteristics as critical points of differentiation, and this provides researchers with a number of hypotheses which might explain investment performance. The methodology, rationale and variables employed in the empirical analysis are discussed below.

4.1.1 Management experience and loyalty

The dataset permits classification of individual staff members into two groups – ‘senior personnel’ and ‘other personnel’. Senior personnel represent individuals who have executive responsibilities in leadership of the investment team, either as the chief investment officer of the firm, the head of an individual asset class or members of the asset allocation team. The ‘other’ category accounts for the residual investment professionals who provide support to senior executives.

Investment managers arriving at the firm are included for the year in which they join and individuals leaving the firm are included up to the year prior to their departure date. This ensures that the measurement of manager attributes accounts for all professional staff at the firm at 31 December each year. While this study attempts to track changes in personnel between investment firms, in a small number of cases individual personnel characteristics are omitted. Where this occurs, and in order to minimize potential bias in the aggregated data, the analysis assumes the former employee exhibits both the same educational characteristics and experience as the new appointee. This approach has merit, as persons with similar qualities generally replace those who leave the firm.

4.1.2 Management educational characteristics

Classifying and measuring the extent to which performance is related to the individual educational qualities of staff is more problematic and requires specific assumptions. In this study, an individual's years of tertiary education is used as a proxy for aptitude and scholastic achievement. An individual's aptitude or ability is measured with respect to the educational years enrolled at tertiary institutions in light of the standard durations of full-time candidature required to successfully meet the University requirements. This study assumes a standard undergraduate degree requires 3 years of full-time study. Honours degrees are assumed to involve one-year of additional enrolment. Double degrees at undergraduate level are assumed to require 5 years of full-time candidature. Non-MBA masters degrees are assumed to be 1 year. For the purposes of this study, the minimum candidature for an MBA is assumed to be 1.5 years.³ Doctoral degrees are equivalent to a 3-year full-time minimum enrolment period. Using these standard duration periods according to degree type, an analysis may be performed to determine whether investment management firms can be differentiated from their competitors.

4.1.3 Investment manager strategy

The investment managers' self-stated investment approach is used to determine their investment strategy. The questionnaire includes information indicating whether the manager

³ Even where the minimum candidature for an MBA is assumed to be 2 years, the empirical findings are consistent with those reported in this research. The 1.5-year period was used to ensure conservatism with respect to minimum enrolment periods.

emphasizes a ‘top-down’ or ‘bottom-up’ approach to portfolio management. Overall, this classification relates to how the manager implements the actual asset allocation weights to each sector. Top-down portfolio management arises where an investment manager’s primary emphasis is asset allocation, whereas the bottom-up strategy identifies security selection as taking precedence. The top-down manager focuses more on the actual weights in the portfolio being reflective of economic and general market conditions (including general earnings forecasts and interest rate expectations). The individual securities are then traded to reflect the top down manager’s expectations. On the other hand, bottom-up managers arrive at their portfolio asset allocations based more on individual security fundamentals than macroeconomic considerations. An important point which should be observed is that the two classifications cannot be used to determine whether top-down or bottom-up managers engage in higher levels of trading or have significantly different research costs. The classification of ‘top-down’ or ‘bottom-up’ does not infer that managers focus exclusively on one approach only, however it is generally expected that investment managers would combine both aspects in their processes, with one taking precedence.

4.1.4 Empirical approach

This research examines the extent to which balanced fund performance is predictable using independent variables that account for investment manager characteristics and strategy. The study employs the same methodology as Chevalier and Ellison (1999b) by assessing the characteristics of managers at 31 December of year $t-1$. In their paper, Chevalier and Ellison (1999b) consider the extent to which manager characteristics predict the cross-sectional distribution of returns derived by U.S. mutual funds. Annual data is employed and the measurement of variables is at calendar year end (i.e. 31 December). The study incorporates similar variables to Chevalier and Ellison (1999b), however there are some differences which arise from data availability. The data covers yearly periods from January 1994 to December 2000 for which investment manager information was available. Yearly evaluations were performed to minimize the potential of bias arising from changes in risk profiles of investment manager organisations (see Chevalier and Ellison, 1999b).

The determinants of investment performance (α), systematic risk (β) and management fees (MF) are considered using the regression models below:

$$\alpha_{pt} = \gamma_0 + \gamma_{AST} AST_{t-1} + \gamma_{InsAge} INSAGE_{t-1} + \gamma_{Aeq} AEQ_{t-1} + D_{Port} PORT_{t-1} + \gamma_{Edu} EDU_{t-1} + \gamma_{Exp} EXP_{t-1} + \gamma_{Loy} LOY_{t-1} + \varepsilon_{pt-1} \quad (1)$$

$$\beta_{pt} = \eta_0 + \eta_{AST} AST_{t-1} + \eta_{InsAge} INSAGE_{t-1} + \eta_{Aeq} AEQ_{t-1} + D_{Port} PORT_{t-1} + \eta_{Edu} EDU_{t-1} + \eta_{Exp} EXP_{t-1} + \eta_{Loy} LOY_{t-1} + \varepsilon_{pt-1} \quad (2)$$

$$MF_{pt} = \pi_0 + \pi_{AST} AST_{t-1} + \pi_{InsAge} INSAGE_{t-1} + \pi_{Aeq} AEQ_{t-1} + D_{Port} PORT_{t-1} + \pi_{Edu} EDU_{t-1} + \pi_{Exp} EXP_{t-1} + \pi_{Loy} LOY_{t-1} + \varepsilon_{pt-1} \quad (3)$$

The independent variables in the model are the natural logarithm of the institution's total assets (AST), the natural logarithm of parent company's age (in years) (INSAGE), the benchmark weight of balanced funds invested in the largest asset class sector (Australian equities (AEQ)), a dummy variable taking on the value of 1 if the predominant portfolio strategy is bottom-up stock selection (PORT), educational years study at tertiary institutions (EDU), average years experience of senior and non-senior managers (EXPS and EXPO, respectively) and the average years of senior and other staff (LOYS and LOYO, respectively).⁴

4.2 Performance methodology employed in performance measurement

This study measures investment fund performance using a number of approaches. The first metric (equation 4) evaluates the return in excess of the benchmark (or active return) of an investment manager. This approach measures the return differential between the portfolio (R_p) and underlying benchmark index (R_b) in a manner that does not account for the risk exhibited by the fund. The excess return (ER) is expressed as:

$$ER_p = R_p - R_b \quad (4)$$

Risk-adjusted performance metrics commonly employed in the literature rely heavily on the theoretical Capital Asset Pricing Model (CAPM). Risk-adjusted abnormal performance in

markets explained by the CAPM can be measured using the Jensen's Alpha approach, which captures the abnormal excess return derived by active funds. The risk-adjusted excess return is estimated using ordinary least squares regression, where an active fund's return in excess of the risk-free rate is regressed on the excess return of the market proxy portfolio. The standard excess returns market model is expressed as:

$$R_{pt} = \alpha_{1p} + \beta_p R_{Mt} + \varepsilon_{pt} \quad (5)$$

where:

R_{pt} = the return of fund p in period t in excess of the risk-free rate;

α_{1p} = the unconditional risk-adjusted excess return of fund p in the period;

β_p = systematic risk of the fund, measuring the sensitivity of the excess return of fund p to the excess return on the Index;

R_{Mt} = the return on the market portfolio in period t in excess of the risk-free rate; and

ε_{pt} = the residual term of the model.

The market benchmarks applicable for the single index model for Australian equities and Australian bonds are the S&P/ASX 200 or 300 Accumulation index (dependent on the manager's self-reported investment universe) and UBS Warburg Composite Bond Index, respectively. For balanced funds, the applicable benchmark return for each manager is a weighted average of the strategic allocations to each sector multiplied by the performance in each respective sector over time. The benchmark definitions are presented in Section 3.2.

Australian equity manager performance is also examined using a three-index model to account for additional factors found to explain security returns. The three-index model is based on both the Elton *et al.* (1993) and Fama-French (1993) approaches. This three-index model controls for fund returns attributable to an active manager loading up on factors that explain cross-sectional patterns in equity returns. The model therefore excludes active returns that are attributed to active managers 'riding' known style factors in their attempts to earn superior risk-adjusted excess returns. Elton *et al.* (1993) and Elton *et al.* (1996a) also advocate an extension to the single index model due to the potential sensitivity of

⁴ The model specifications did not yield evidence of significant multicollinearity problems. The issue of multicollinearity might have been evident in the relationship between loyalty (or tenure) and investment experience of staff, as the variables might be assumed to be highly correlated.

performance to the choice of benchmark. In particular, Elton *et al.* (1993) show Ippolito's (1989) conclusions (where active mutual funds satisfy the Grossman and Stiglitz (1980) definition of market efficiency in an environment accounting for costly information acquisition), arises due to the benchmark proxy excluding securities held in mutual fund portfolios. The model is essentially the same as that employed by Elton *et al.* (1996b) (without the bond factor) and is specified as follows:

$$R_{pt} = \alpha_{3p} + \beta_M R_{Mt} + \beta_{GV} GV_t + \beta_{SL} SL_t + \varepsilon_{pt} \quad (6)$$

where α_3 measures a fund's risk-adjusted excess return with respect to the set of risk factors, defined as the broad market factor (β_M), and two style factors controlling for book-to-market equity (β_{GV}) (or growth-value strategies) and market capitalization (β_{SL}). This study employs the Salomon Smith Barney (SSB) All Growth and All Value style indices, which encapsulate seven style factors – four value factors and three growth factors – in the partitioning of Australian-listed stocks.⁵ The size factor is measured as the difference between the return on the ASX Small Ordinaries Accumulation Index (small-cap firms) and the ASX 20 Accumulation Index (large-cap firms). The model (6) can be considered a performance metric that accounts for investment managers exhibiting preferences for either high or low beta securities (systematic risk), small versus large-cap securities and growth versus value stocks. Overall, this approach improves the quantification of active Australian equity managers' portfolio risk.

5. Empirical results

5.1 Investment performance, strategy and manager characteristics – balanced mandates

This section evaluates risk-adjusted performance, systematic risk and management expenses with respect to a set of investment manager characteristics data. The results are presented in Table 2.

⁵ SSB style factors consider 4 value factors, namely earnings per share to stock price, book value to stock price, sales revenue to stock price and cash flow to share price. The three growth factors consider the past 5-year period of historical earnings per share growth, historical sales revenue growth and the average internal growth

5.1.1 *Risk-adjusted performance and manager characteristics*

With respect to risk-adjusted returns, the balanced portfolio performance of Australian investment managers is significant and negatively related to the institution's age (INSAGE), significant and positively related to bottom-up investment strategies (PORT), and significant and negatively dependent on the loyalty of money management staff who do not comprise senior executive roles in the organization's hierarchy (LOYO).

INSERT TABLE 2

The negative relation between performance and an institution's age (INSAGE) may be related to the ownership structure of the firm, where more recently formed boutique's with a higher degree of equity ownership exhibit higher incentives related to performance compared to older and potentially more bureaucratic firms. The culture exhibited by a younger firm may also be associated with smaller teams of individuals, a flatter hierarchical structure, improved efficiencies and an increased willingness to take on new challenges and refine existing processes with enthusiasm and drive. While investors may perceive a relationship between institutional size and age, the results indicate that a manager's asset size (AST) does not serve as a useful predictor of performance. This finding is also consistent when INSAGE is eliminated from the model. The negative relation between age and performance is consistent with Chevalier and Ellison (1997) and Sirri and Tufano (1998), however the results are not supported (statistically) with respect to size.

Table 2 shows that bottom-up portfolio strategies outperform top-down strategies (PORT), and this finding may arise given the very nature of the process first emphasising an examination of an individual stock's fundamentals. In determining the asset allocation, bottom-up managers first consider the security's balance sheet, profit and loss statement and cash flows, and strategic direction of the corporation over the medium to long term. In building the portfolio (firstly) at the micro-level, this approach avoids stock selection constraints (that might otherwise be imposed using a top-down approach). A bottom-up process focuses on selecting securities that represent the most attractive investment opportunities – rather than first determining the portfolio's allocation to each of the respective

rate per annum. SSB indices are reconstituted annually as at 31 May and re-balancing of the index occurs on a quarterly basis due to corporate actions etc.

sectors and requiring a sufficient number of securities to invest in order to meet the desired asset allocation weights.

In terms of the loyalty (tenure) of non-senior staff (LOYO) (who comprise the substantial majority of the firm's human capital – in terms of number of resources available), the results imply that performance is inversely related to loyalty. This may be explained in two ways. First, the more successful investment managers may be more willing to recruit talented individuals from competitor firms, which in turn causes the average loyalty of 'emerging' senior professionals to be relatively lower. In turn, the inclusion of new staff subsequently delivers superior performance in the following year. This may also be interpreted as new employees being pro-active and determined to succeed in their new roles. Second, fund managers exhibiting relatively higher levels of loyalty among non-senior personnel may indicate that senior staff are less willing to discipline poor performance, that career progression to senior levels is more difficult, or that the firm's recruitment at non-senior levels is less active. In this scenario, the firm may be forgoing the opportunity of integrating new staff, which in turn contribute new ideas to current processes and improve synergies.

The insignificant coefficients on educational years (EDU) and experience (EXPS and EXPO) suggest the measure of quality, aptitude or track record of staff cannot be used to distinguish between superior and inferior manager performance. In other words, education levels and experience are relatively homogenous across institutions. An alternative explanation for the insignificant coefficient on EDU is that educational years alone may not represent the most accurate proxy of a manager's intellectual aptitude. Risk-adjusted performance is also shown to be unrelated to the benchmark allocation of managers to the largest asset class component of balanced funds, namely Australian equities (AEQ). This is surprising, particularly in light of the relative success that a substantial number of actively domestic equity managers in earning superior risk-adjusted returns (see Section 5.3 and Table 5). In the end, it may well be that due to the cross-sectional strength of managers in this sector, and the sector's dominance over all other sector allocations, differential aggregate performance cannot be easily distinguished across the group of managers.

The empirical findings presented in this study are in some ways unique when comparing performance with the U.S. evidence of Golec (1996) and Chevalier and Ellison (1999b). This is mainly due to the differences in the analyses. This study involves slightly different

measurement methods for the variables, and in some cases unique variables, as well as the investment manager characteristics data being aggregated from across the company (i.e. compiled using all money management individuals employed by the asset management firm). This is in comparison to both U.S. studies, which analyse performance and characteristics at the more individualistic mutual fund level (where either one of a few individuals are responsible for an individual mutual fund). In terms of α , this study does not identify education (EDU) as being a useful predictor of superior performance across managers, whereas Golec (1996) and Chevalier and Ellison (1999b) both find strong evidence that younger managers with M.B.A.'s from higher SAT schools earn superior returns. While the analysis presented in this study does not allow for tests of individual's performances based on their educational qualifications, the study may not adequately capture educational quality in terms of the data being aggregated, as well as the inability of EDU to differentiate across the differences in quality for university institutions.

Interestingly, loyalty (tenure) is significantly negatively related to α for the non-senior manager category (LOYO). While LOYO and LOYS are controlled for separately, Golec (1996) finds tenure is significantly positively related to alpha, whereas Chevalier and Ellison (1999b) report a positive coefficient that is not significant at standard confidence intervals. While this difference at the first instance is perplexing, the contradiction is likely to be attributable to the variables' measurement.

5.1.2 Systematic risk and manager characteristics

Regressions are also performed to examine the predictability of systematic risk, based on manager characteristics and strategy information. The analysis employs Newey-West adjusted standard errors, as there is an expectation the residuals of the model will have serial correlation. This adjustment is also performed in the analysis presented in section 5.1.3.

Table 2 documents that older institutions exhibit significantly higher systematic risk than younger firms. This finding might be explained by the fact that older firms achieve lower performance, and such firms may take on higher systematic risk levels to improve poor past performance. Senior management loyalty (or tenure) is found to be negatively related to risk, and is more comparable to the U.S. results of Golec (1996). This suggests managers do not expose their portfolios to higher risk, perhaps due to the perceived difficulties in future

employment prospects or damage to their reputations. These findings are largely consistent with the evidence of Chevalier and Ellison (1999b) for the tenure variable.

Table 2 also reports systematic risk as being negatively related to bottom-up portfolio strategies. Bottom-up managers, by definition, achieve their desired asset allocation weights by emphasizing stock selection decisions based on the fundamentals of individual securities. The negative relationship between risk and strategy implies that bottom-up managers have a preference for lower beta stocks, and given the results in section 5.1.1, they achieve superior performance relative to top-down managers. In terms of education (EDU) as a predictor of systematic risk, the Australian findings do not corroborate the U.S. evidence. Golec (1996) and Chevalier and Ellison (1999b) find that educated managers with M.B.A. degrees exhibit significantly higher β risk. These authors argue that this is likely to arise due to their educational training re-inforcing that beta risk is the only type of risk compensated (and not residual, unsystematic risk). The results presented in Table 2 show that while managers with higher levels of educational exhibit higher systematic risk, the coefficient is not significantly different from zero at standard confidence levels.

5.1.3 Expenses and manager characteristics

In terms of investment charges, Chevalier and Ellison (1999b) report that managers from higher-SAT institutions have significantly lower expenses and turnover, as well as managing significantly larger funds. In this study, Table 2 identifies that expenses are not related to a manager's aggregate asset size. However, management fees are significantly higher for managers with larger Australian equities benchmark allocation exposures, managers whose investment in educational years is higher as well as being directly related to experience (senior and other) and loyalty (other). Mercer IC surveys of expenses (not reported directly) indicate that active equity mandates have the highest fees of all asset classes, so these findings pertaining to Australian equities benchmark allocations and expenses should be expected. Golec (1996) also finds a significant and positive relationship between expenses and years of education, which is consistent with human capital theory. The statistical significance of experienced professionals (EXPS and EXPO) suggests fund managers levy a premium on their management fees according to the stability of their investment team. The results also indicate that managers emphasising bottom-up portfolio strategies charge significantly lower

management expenses, as well as fees being directly related to the years of loyal service provided by non-senior staff (LOYO).

5.2 Top management performance and turnover

This section examines the performance of investment managers relating to the tenure periods of top management, and the impact on performance when there are top management changes.

5.2.1 Performance and tenure period

An outstanding issue in the literature is that performance is only evaluated at the aggregate investment management firm level. Accordingly, the literature generally ignores the fact that senior investment professionals serve shorter periods of time with their employers compared to the life of a managed fund. Therefore, the extent to which individuals driving the investment process (and managing the investment team) are capable of earning superior returns remains an empirical issue. While the literature widely confirms the inability of funds to outperform appropriate benchmark indices, the literature has seldom evaluated performance with respect to the tenure periods of key investment staff (for example, see Khorana (1996, 2001) and Golec (1996)). Where performance periods disregard key staff changes, improper performance inferences may be drawn – i.e. fund performance may be mean reverting. Analysis of performance in the 7.5-year period to 30 June 2001 is performed and the results are presented in Table 3.

INSERT TABLE 3

Panel A evaluates the performance of equity and bond sector heads and chief investment officers (CIOs) for the periods of service accrued within the 7.5-year observation window. This means that performance is only assessed for top management after January 1994, even though some managers might have commenced with their employer prior to 1994. Both the single and three-index models for Australian equities indicate that around one-quarter of all appointed sector heads were able to deliver investors with superior risk-adjusted returns before expenses. The conclusion for Australian shares suggests performance measurement is independent of whether a single or multi-index model is employed to adjust for risk. The average α_3 of the superior managers is 47.1 basis points per month (not directly reported),

outperforming the other sector heads by 36.2 basis points per month. This performance differential is statistically significant at the 0.01 level. An examination of the factor loadings of the successful appointments (not reported directly) indicated 11 out of 14 and 10 out of 14 managers exhibited positive loadings to the market capitalization (i.e. small-cap biased) and growth factors respectively. Of further note is the finding that the *remaining* Australian equities sector heads did not significantly underperform the index before expenses. However, the average equity manager's performance not deriving superior performance is equal to 10.9 basis points per month above the index. The findings for Australian bonds sector heads and CIOs indicates that very few individuals driving the investment process are able to deliver investors with superior risk-adjusted returns. In terms of balanced manager returns, it may be argued that the CIO is more reliant on key individuals driving the individual sectors, and that overall, the performance attributed to them is not entirely reliant on their own stewardship. Another insight may be that managers have better skills in only one or two sectors, and that inferior performance attributable to other investment classes detracts from overall value-added. Panel B of Table 3 also examines the performance of top management according to strict tenure periods – i.e. where the manager both arrives and departs within the 7.5-year observation window. The results are largely consistent with Panel A, with the exception of CIOs, where the mean is not statistically significant (most likely due to the small sample size). In short, the analysis of individual managers in domestic bonds and balanced sectors confirms the main findings in managed fund studies - that actively managed portfolios are unable to earn superior returns to appropriately specified market benchmarks.

5.2.2 *Turnover and performance*

This section provides an empirical analysis of senior staff departures and the performance of top management surrounding a change in executive personnel. The sectors and roles evaluated are heads of domestic equities, heads of domestic bonds and chief investment officers in the period January 1994 to June 2001. The literature concerning U.S. mutual funds finds performance is related to top management changes (Khorana (1996, 2001)). However, the extent to which the departure of a senior investment manager impacts on the institution's performance is an empirical question in the Australian literature. Top management changes may well occur in cases of both poor performance (prompted by significant cash outflows, ultimately affecting firm profitability) and superior performance (manager is 'poached' by a

competitor or occurs due to inadequate compensation offered by the incumbent manager).⁶ One of the problems when analysing performance surrounding a change in top management is that such changes are rarely accompanied with an accurate disclosure of the exact reasons for the departure.⁷ Indeed, these problems also arise in other studies, notably Jensen and Murphy (1990) examining the turnover in CEOs, and Khorana (1996) for changes in top mutual fund managers. While poor performance may well be the most likely factor contributing to a change in senior management (see Khorana (1996)), an analysis that decomposes performance between the pre- and post-periods on the basis of the real reasons underpinning the departure represents an arduous task.

The analysis presented in Table 4 examines the effect on performance coinciding with changes in top management for Australian equities, Australian bonds and Balanced sectors. This is evaluated by employing pre-and post-performance periods of six and twelve months surrounding the date of the departure, and excluding the month of the actual departure. The definition of performance employed in the analysis is excess returns (or differential returns to the benchmark) as outlined in equation 1. Hypothetically, in cases of poor performance leading to the termination of an investment executive, the new appointee would be expected to implement changes to the existing portfolio, and in the short-term, *ceteris paribus*, performance is likely to be negatively impacted due to the restructure. However, after the portfolio has been reconfigured, the expectation would be that performance should have improved from the prior period.

INSERT TABLE 4

The results presented in Table 4 show that while a change in Australian equities leadership increases performance in the subsequent 12-month period, this cannot be supported statistically. On the other hand, the departures of top management in Australian fixed interest reveals that performance further deteriorates in both six-and twelve-month periods after the

⁶ Staff movements may also occur through internal promotions or changes in existing roles.

⁷ The database compiled and used in this study included some cases where the company stated the reason behind the departure of key individuals and in others the departure was noted, however no explanation accompanied the disclosure. In all cases, the formally stated reason provided in the IFSA Questionnaires included politically sensitive descriptions such as ‘personal interests’, ‘career opportunities’, ‘resigned’, ‘confidential’, ‘joined competitor’, and ‘restructure of group’. Other changes may arise due to the retirement of a key member or due to the acquisition of another investment management entity. However, from the descriptions provided by managers, it is extremely difficult to accurately identify whether the change was effected on the basis of performance issues alone (good and bad) or due to a combination of issues.

new appointment, and both periods are statistically significant. The turnover of CIOs indicates that both the subsequent six and twelve month periods delivered investors with superior returns compared with the prior period.

5.3 Investment manager performance

This section presents the performance results of investment managers over the 10-year period to December 2000 in Australian equities, Australian bonds and portfolios diversified across the broad asset class spectrum (Balanced). For active Australian equities, Table 5 (Panel A) indicates that majority of managers in the sample beat the market before expenses in terms of excess returns and risk-adjusted returns ($ER = 27$ and $\alpha_3 = 17$). The average equity manager outperformed the index in the 10-year period by 20.2 (α_3) basis points per month, which is statistically significant at the 0.01 level. The risk-adjusted excess returns using either a one-factor or three-index model both support the finding that the majority of active Australian share managers derive superior returns to the market. These results indicate that controlling for additional risk factors explaining cross-sectional patterns in equity returns is unable to account for the superior returns delivered by institutional equity managers.

INSERT TABLE 5

These results for Australian equities are perplexing and somewhat controversial, particularly given the overwhelming majority of studies in the literature suggest active managers do not earn superior risk-adjusted returns. Ippolito's (1989) findings of superior performance for U.S. mutual funds were shown by Elton *et al.* (1993) to be attributable to the benchmark failing to account for non-S&P 500 securities. Misspecification would not be expected to drive the findings reported in Table 5, as appropriate benchmarks for the investment managers has been undertaken. Further, the conclusions for equity managers are not inconsistent with the recent findings of Daniel *et al.* (1997) and Wermers (2000). These studies document active U.S. mutual funds being able to earn back most of their expenses in the form of active returns, which is consistent with the Grossman and Stiglitz (1980) informational efficiency hypothesis. The Grossman-Stiglitz hypothesis is also supported empirically for Italian equity funds (Cesari and Panetta (2002)). While the analysis of performance is measured using gross returns, after expenses returns analysis is not possible as fund manager expenses are not available. Gallagher (2001) also suggests some active managers exhibit superior selectivity

skill in Australian equities before costs. The findings of outperformance in the Australian equities fund data require consideration of the reasons that might explain the results. At one end of the spectrum, it may well be that active managers in Australian equities exhibit superior investment skills, which have been captured appropriately in this study. Alternatively, questions may arise concerning the potential selection biases that might be inherent in the sample, the importance of deducting expenses, consideration other factors that also explain equity returns, and other issues related to how investment manager portfolios are constructed and managed relative to the benchmark.

In coming to terms with the estimated expenses incurred by these funds, the Mercer IC *Fee Survey* of managers (not reported directly) for 1999 and 2000 provides an estimate of the potential impact on performance.⁸ The average active equity manager in the past few years has levied management expenses around 5 basis points per month, compared with index equity managers of approximately 1 basis point per month. The results in Table 5 (Panel A) suggest that the average α_3 net of expenses is 15.2 basis points per month. Even if fee levels were levied at double the period-end observation window over the 10-year period, the average manager would still outperform in risk-adjusted terms by more than 1.8 percent per annum. These findings suggest that the average active manager in the Australian equities asset class has earned active returns that have exceeded their investment expenses.

The results reported for active Australian share managers may also be due to the sample exhibiting selection-bias issues. The sample is constructed so that each manager is represented once through the use of one performance series. While Mercer IC survey investment manager performance regularly, employing the firm's 'flagship' product, strict rules are maintained to ensure that self-selection of performance reporting cannot be manipulated by the investment managers. If the product used in the surveys ceases to exist, Mercer IC retains the past return records such that bias in their surveys is eliminated. Where managers reported more than one product, performance was evaluated for the other funds to determine the extent to which the inclusion of a single 'flagship' fund actually overstates the general performance of managers. These results (not reported) indicate that each manager's

⁸ Mercer's survey of fees indicates that over the past few years, fees have generally been declining, albeit gradually. Over the past 4 years, the average decline in fees per annum for larger mandates (greater than \$50 million) was reported by Mercers to be between 5 and 10 basis points per annum.

returns are highly correlated over time with the flagship fund, and the results reported earlier are generally consistent with those presented in Table 5 (Panel A).

The empirical results in the 10-year period suggest Australian equity managers are generally growth oriented, however in terms of statistical significance, only four of the coefficients on GV are positive and significant. In addition, the equity managers are almost equally divided between large and small capitalization stock-biased portfolios. Evidence (not directly reported) also indicates that outperformance of the index occurs in the overwhelming majority of months. Performance consistency, measured as the percentage of observations in excess of the Australian equities benchmark return, occurs between 65.3 and 94.2 percent of months in the 10-year period. This is even more surprising when consideration is given to balanced funds and bond funds which exhibit lower levels of performance consistency (ranging between 70.0 and 40.0 percent for bonds, and 61.7 and 42.6 percent for balanced managers). In terms of the performance of active Australian bond fund managers, Table 5 (Panel B) indicates that investors earn returns commensurate to the index, before expenses have been deducted. While only two managers demonstrate the ability to earn significantly positive α_1 , the majority of managers earn risk-adjusted returns insignificantly different from zero before costs. Similarly for balanced managers, Table 5 (Panel C) indicates that the majority of active managers are unable to deliver investors with superior returns, after consideration of their heterogeneous strategic benchmark asset allocations.

6. Summary and suggestions for future research

This study examines the performance of active Australian investment managers, the performance of senior investment personnel by tenure period, and the relationship between risk-adjusted returns and fund manager characteristics for institutional balanced (or diversified asset class) funds.

In terms of investment manager attributes, performance of balanced funds is negatively related to the institution's age and the loyalty of non-senior investment staff. Performance is also found to be significantly higher for managers that predominantly operate their portfolios using a bottom-up, stock selection approach. Interestingly, the human capital of managers, measured as the years of tertiary education undertaken, does not explain risk-adjusted excess returns. Systematic risk is found to be positively related to an institution's age while

negatively related to both senior manager loyalty and the implementation of bottom-up portfolio management strategies. In terms of management expenses, fees are directly related to the benchmark allocation to Australian equities, the years of tertiary education, the number of years service (loyalty) for non-senior investment professionals and the total years experience of senior money managers.

This study finds that changes in top management have significant performance effects. In the 12-month period after a change in fixed income director and chief investment officer, performance is significantly lower and significantly higher, respectively. There is no significant difference in performance where top management changes occur for Australian equities. In terms of performance evaluation measured according to the tenure periods of top management, more than one quarter of heads of Australian equities exhibit superior returns and the mean is both positive and significant. Chief Investment Officers exhibit significantly inferior performance based on tenure periods.

Perhaps the most perplexing issue identified in this study is the success of a large proportion of active Australian equity managers that earned superior risk-adjusted excess returns in the period. This finding is consistent with other U.S. studies, notably Daniel *et al.* (1997) and Wermers (2000), and Cesari and Panetta (2002) for Italian equity funds. Research is currently underway in terms of providing an explanation for this controversial finding, given the evidence reported by a majority of managed fund studies that funds on average do not outperform.

There are a number of avenues for future research. These include an analysis of additional factors beyond absolute or relative performance that influence the termination or resignation of senior investment staff using a larger sample of data over a longer time period. Khorana (1996) indicates that replacement of mutual fund managers is indeed predictable based on past performance, however Australian evidence is non-existent. Khorana (2001) also identifies asset inflows being an important determinant of manager replacement, representing the means by which investors exercise their role in the managerial decision process. Such analysis in an Australian context is therefore warranted.

The Australian literature should also consider the influence of compensation arrangements and their role in rewarding performance and retaining staff. While all managers in this study

exhibit various profit-sharing agreements and/or incentive structures (in addition to base-level remuneration), an analysis of the structure of remuneration agreements and the relationship to investment performance and risk is an important future research issue.

References

- Blake, D., Timmermann, A., 1998, Mutual fund performance: evidence from the UK, *European Finance Review* 2, 57-77
- Brown, S., Goetzmann, W., Hiraki, T., Otsuki, T., Shiraishi, N., 2001, The Japanese open-end fund puzzle, *Journal of Business* 74, 59-78
- Cai, J., Chan, K., Yamada, T., 1997 The performance of Japanese mutual funds, *Review of Financial Studies* 10, 237-273
- Cesari, R., Panetta, F. 2002, The performance of Italian equity funds, *Journal of Banking and Finance*, 26, 99-126
- Chevalier, J., Ellison, G., 1997, Risk taking by mutual funds as a response to incentives, *Journal of Political Economy* 105, 1167-1200
- Chevalier, J., Ellison, G., 1999a, Career concerns of mutual fund managers, *Quarterly Journal of Economics* 114, 389-432
- Chevalier, J., Ellison, G., 1999b, Are some mutual fund managers better than others? Cross-sectional patterns in behavior and performance, *Journal of Finance* 54, 875-899
- Cowles, A., 1933, Can stock market forecasters forecast? *Econometrica* 1, 309-324
- Daniel, K., Grinblatt, M., Titman, S., Wermers, R., 1997, Measuring mutual fund performance with characteristic-based benchmarks, *Journal of Finance* 52, 1035-1058
- Edelen, R., 1999, Investor flows and the assessed performance of open-end mutual funds, *Journal of Financial Economics* 53, 439-466
- Elton, E., Gruber, M., Das, S., Hlavka, M., 1993, Efficiency with costly information: a reinterpretation of evidence from managed portfolios, *Review of Financial Studies* 6, 1-22
- Elton, E., Gruber, M., Blake, C., 1996a, The persistence of risk-adjusted mutual fund performance, *Journal of Business* 69, 133-157
- Elton, E., Gruber, M., Blake C., 1996b, Survivorship bias and mutual fund performance, *Review of Financial Studies* 9, 1097-1120
- Ferson, W., Schadt, R., 1996, Measuring fund strategy and performance in changing economic conditions, *Journal of Finance* 51, 425-461
- Gallagher, D. 2001, Attribution of investment performance: An analysis of Australian pooled superannuation funds, *Accounting and Finance* 41, 41-62
- Golec, J., 1996, The effects of mutual fund managers' characteristics on their portfolio performance, risk and fees, *Financial Services Review* 5, 133-148
- Gruber, M., 1996, Another puzzle: The growth in actively managed mutual funds, *Journal of Finance* 55, 783-810
- Hallahan, T., Faff, R., 1999, An examination of Australian equity trusts for selectivity and market timing performance, *Journal of Multinational Financial Management* 9, 387-402
- Ippolito, R., 1989, Efficiency with costly information: A study of mutual fund performance, *Quarterly Journal of Economics* 104, 1-23
- Jensen, M., Murphy, K., 1990, Performance pay and top management incentives, *Journal of Political Economy* 98, 225-264
- Khorana, A., 1996, Top management turnover: An empirical investigation of mutual fund managers, *Journal of Financial Economics* 40, 403-427
- Khorana, A., 2001, Performance changes following top management turnover: Evidence from open-end mutual funds, *Journal of Financial and Quantitative Analysis* 36, 371-393
- Malkiel, B., 1995, Returns from investing in equity mutual funds 1971 to 1991, *Journal of Finance* 50, 549-572
- Mercer, W. M., *Institutional Fee Survey*, 2000 and 2001

- Robson, G., 1986, The investment performance of unit trusts and mutual funds in Australia for the period 1969 to 1978, *Accounting and Finance* 26, 55-79
- Sawicki, J., Ong, F., 2000, Evaluating managed fund performance using conditional measures: Australian evidence, *Pacific-Basin Finance Journal* 8, 505-528
- Sirri, E., Tufano, P. 1998, Costly search and mutual fund flows, *Journal of Finance* 53(5), 1589-1622
- Wermers, R., 2000, Mutual fund performance: An empirical decomposition into stock-picking talent, style, transactions costs and expenses, *Journal of Finance* 55, 1655-1695

Table 1a

Descriptive statistics based on last reported questionnaire for 22 active Australian investment managers

Senior Professionals are classified according to job description provided by the manager. Staff are defined as senior if they are Chief Investment Officers (CIOs), asset class sector heads, chief economists, Chief Executive Officers (CEOs) with direct involvement in money management, heads of asset allocation (where appropriate), or other participants involved in the asset allocation team. Due to different reporting dates of questionnaires, all questionnaire information relating to experience and loyalty was accrued to 31 December 2000 to ensure comparability between institutions.

	Average	Standard Deviation
Asset Size of Managers (\$A billion)	17.7	15.1
Per Capita Tertiary Years Education (years)	3.5	0.5
Manager Experience – Senior Managers	16.2	3.6
Manager Experience – Other Managers	9.2	2.2
Manager Loyalty – Senior Managers	8.0	2.8
Manager Loyalty – Other Managers	5.0	1.9

Table 1b

Descriptive statistics for 22 active (balanced) investment managers in the period January 1994 to December 2000

The data are aggregated at the firm level on a per annum basis, and is employed in order to evaluate the predictability of manager characteristics with respect to performance, risk and expenses for 22 balanced funds for the period. The definitions of the variables and their measurement are described in the section 4. The number of observations is determined based on the number of years of historical data available for the fund in the period and the characteristics data available across investment institutions.

	Number of Observations	Average	Standard Deviation
Alpha (α) (per month in %)	124	-0.059	0.173
Beta (β)	124	1.060	0.129
Expense Ratio (per annum in %)	124	0.624	0.110
R ²	124	0.941	0.068
Log Asset Size of Managers (\$A billion)	151	9.068	1.084
Log of Institution's Age (years)	168	4.059	1.115
Benchmark Allocation to Australian Equities (%)	156	37.942	2.956
Per Capita Tertiary Years Education (years)	155	3.550	0.474
Manager Experience – Senior Managers (years)	150	17.238	3.505
Manager Experience – Other Managers (years)	138	10.338	2.240
Manager Loyalty – Senior Managers (years)	156	9.079	2.913
Manager Loyalty – Other Managers (years)	156	6.066	2.040

Table 2

Aggregate manager characteristics, strategy and performance (balanced funds) in the period January 1994 – December 2000

The observations are in years. Performance is measured as the risk-adjusted excess return (α) per month evaluated using calendar year periods. Where alpha is the dependent variable, the statistical significance of the parameter estimates are determined using heteroskedastic adjusted standard errors. Beta and Management Fee models are evaluated using Newey-West consistent standard errors. Management fees are estimated with respect to the annual expense ratio applicable in the calendar year for a \$A50 million portfolio.

Variables	Alpha (α)		Beta (β)		Management Fees	
	Coefficient	<i>t</i> -stat	Coefficient	<i>t</i> -stat	Coefficient	<i>t</i> -stat
Constant	0.916	1.55	1.072	2.60 **	-0.158	-0.89
Log of Assets (AST)	-0.029	-1.05	0.022	1.56	-0.001	-0.13
Log of Institution's Age (INSAGE)	-0.040	-2.25 **	0.039	2.92 ***	0.008	1.54
Australian Equities Benchmark Allocation (AEQ)	0.005	0.65	-0.004	-0.64	0.009	3.25 ***
Portfolio Strategy Dummy (PORT)	0.096	2.88 ***	-0.105	-2.99 ***	-0.162	-10.01 ***
Educational Years (EDU)	-0.183	-1.43	0.016	0.36	0.100	4.27 ***
Senior Manager Experience (EXPS)	0.003	0.46	0.001	0.18	0.005	1.94 *
Other Manager Experience (EXPO)	0.010	0.95	-0.017	-1.59	0.008	1.72 *
Senior Manager Loyalty (LOYS)	-0.007	-0.86	-0.010	-1.70 *	-0.001	-0.40
Other Manager Loyalty (LOYO)	-0.029	-2.66 ***	0.006	0.64	0.005	2.07 **
R ² (Adjusted)	0.066	-	0.063	-	0.492	-
<i>F</i> -statistic	-	1.67 *	-	1.66 *	-	10.48 ***

*** Significant at 0.01 level, ** Significant at 0.05 level, * Significant at 0.10 level

Table 3

Performance of individual sector heads in the period 1 January 1994 – 30 June 2001

Panel A reports performance for all sector heads with respect to the time they served at investment institutions in the 7.5-year event window. For investment heads who arrived prior to January 1994, their performance is only measured since January 1994 and through to June 2001. Panel B reports the performance of top management only where the individual has commenced and departed the firm within the 7.5-year period. This means that managers who commenced with their employers prior to January 1994 are removed, as well as those sector heads that joined during the 7.5-year period and remain with their employer at June 2001. Therefore, Panel B examines performance relating to the manager's actual tenure period with the investment institution. Managers must also have served at least 12 months for reasonable regression estimates to be included in the analysis. Alpha is expressed in percentage terms per month before fees and tax for equities and bonds and after tax and fees for balanced. The number of sector heads with statistically significant alphas is measured using a 95 percent confidence interval.

	Model	Number	Mean α	Median α	# Sig $\alpha > 0$	# Sig $\alpha < 0$	# α Insig.
<i>Panel A: All Management Periods</i>							
Heads of Australian Equities	3 Factor	52	0.206 ***	0.125	14	0	38
Heads of Australian Equities	1 Factor	52	0.184 ***	0.147	12	0	40
Heads of Australian Bonds	1 Factor	34	0.012	0.013	3	0	31
Chief Investment Officers	1 Factor	43	-0.046 **	-0.048	2	10	31
<i>Panel B: Management According to Strict Tenure</i>							
Heads of Australian Equities	3 Factor	19	0.218 ***	0.140	5	0	14
Heads of Australian Equities	1 Factor	19	0.201 ***	0.187	5	0	14
Heads of Australian Bonds	1 Factor	2	-0.005	-0.005	0	0	2
Chief Investment Officers	1 Factor	13	-0.027	-0.016	0	0	13

** Significant at 0.05 level

*** Significant at 0.01 level

Table 4

Performance and the turnover of top management January 1994 to June 2001

Panel A of this table provides summary statistics of departures of top management in Australian equities, Australian bonds and chief investment officer levels. Panel B evaluates the pre and post performance using both 6 and 12-month evaluation periods. Performance is measured in excess of the benchmark return, in percentage terms.

	Head AEQ	Head AFI	CIO
<i>Panel A: Descriptive Statistics</i>			
Number of Departures in Period	44	16	39
Average Tenure to Departure (in years)	2.47	N/A [#]	2.01
Average Tenure in 7.5 Year Period (in years)	4.04	4.77	4.47
<i>Panel B: Pre/Post Performance Analysis</i>			
6 Month Pre/Post Period	-0.020	-0.059	0.121
<i>t</i> -statistic	-0.23	-1.88*	1.78*
12 Month Pre/Post Period	0.084	-0.049	0.093
<i>t</i> -statistic	0.82	-1.98**	1.92**

Small sample size of 2 top management personnel makes the average distorted, however the mean tenure of these fixed income senior managers is 6.33 years.
Significance levels evaluated at 0.10 (*) and 0.05 (**)

Table 5

Active Australian investment manager performance – 10 years to 31 December 2000

Before fees and tax returns are employed for the Australian Equities and Australian bonds sectors. The Balanced sector returns data is measured on an after fees and tax basis, given these funds are tax paying pooled superannuation trusts. Alpha (α) is reported in percentage terms per month.

	ER	α	β_M	β_{GV}	β_{SL}	R ²
<i>Panel A: Active Australian Equities</i>						
Mean	0.655	0.202	0.978	-0.001	0.009	0.928
Standard Deviation	0.160	0.155	0.051	0.118	0.065	0.070
Maximum	0.967	0.541	1.054	0.227	0.176	0.983
Minimum	0.263	-0.160	0.876	-0.400	-0.092	0.637
No. Positive	28	26	28	21	14	-
No. Negative	0	2	0	7	14	-
No. Significant and Positive	27	17	28	4	5	28
No. Significant and Negative	0	0	0	3	4	-
No. Managers in Sample	28	28	28	28	28	28
<i>Panel B: Active Australian Bonds</i>						
Mean	0.025	0.017	1.023	-	-	0.938
Standard Deviation	0.035	0.035	0.053	-	-	0.066
Maximum	0.100	0.115	1.118	-	-	0.989
Minimum	-0.061	-0.060	0.919	-	-	0.711
No. Positive	21	17	24	-	-	-
No. Negative	3	7	0	-	-	-
No. Significant and Positive	3	2	24	-	-	24
No. Significant and Negative	0	0	0	-	-	-
No. Managers in Sample	24	24	24	-	-	24
<i>Panel C: Active Balanced</i>						
Mean	0.020	0.031	1.043	-	-	0.895
Standard Deviation	0.076	0.104	0.062	-	-	0.081
Maximum	0.194	0.238	1.140	-	-	0.968
Minimum	-0.102	-0.118	0.912	-	-	0.695
No. Positive	11	13	22	-	-	-
No. Negative	11	9	0	-	-	-
No. Significant and Positive	3	4	22	-	-	22
No. Significant and Negative	0	1	0	-	-	-
No. Managers in Sample	22	22	22	-	-	22

Note: Statistical significance of ER and α is at the 95 percent confidence level F -statistics on all regressions are significant at 0.01 level. # Panel A for Australian equities reports risk-adjusted excess return for the three index model and the adjusted R².