

Determinants of Returns and Decision Making of Turkish Fund Managers: Survey Evidence from Four Banks

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Using original survey data collected by the authors in 2005 we investigate the determinants of Turkish fund managers' portfolio returns and use of judgement in investment decision making. Employing truncated regression we find that the primary determinant of return is holding a master's degree, with a positive correlation. Years of experience and holding a Business degree are also found to negatively influence return, if the results are fragile. Our finding that some fund managers are systematically better than others is consistent with Chevalier and Ellison's (1999) results for the USA and is consonant with their rationalization that this may reflect that managers operate in a nearly, rather than fully, efficient market. Using ordered probit models we find that the sole determinant of the use of judgement in making investment decisions is years of experience as a manager – this had the expected positive relationship. However, differences in the degree of judgement that fund managers use have no systematic impact upon returns.

Keywords: Turkish fund managers, returns, judgement, truncated regression and ordered choice models.

1. Introduction

There is a large and growing literature that links fund returns to the characteristics of fund managers. For example, Fama (1980), Lazear and Rosen (1981) and Holstrom (1982) emphasized agency conflicts and career concerns. Smith and Goudzwaard (1970) and Chevalier and Ellison (1999) looked at the relevance of education. Golec (1996) examined a wide range of characteristics including tenure, MBA qualification, performance, risk-taking and expenses. Other studies focus on the concept of herding borrowed from behavioural finance. Scharfstein and Stein (1990) focus on herding due to signal jamming between different types of managers, Banerjee (1992), Bikhchandani et al. (1992) and Welch (1992) on herding due to inefficient information transmission and King (1995) on herding due to free riding in information gathering. Trueman (1994) and Zwiebel (1995) suggest that herding among

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managers who are evaluated relative to their peers might be a result of reputational concerns.

Most of the related empirical studies focus on industrialized countries with developed financial systems, especially the US. However, the link between fund returns and the characteristics of fund managers has now become a relevant concern in emerging markets due to the recent growth of fund management in these markets. Furthermore, there is ongoing evidence that emerging market financial systems are more vulnerable to political interference, corruption and insider trading than those of developed countries.¹ Conditions like these could conceivably have a significant influence on fund manager characteristics and behaviour.

In this paper we make a first step towards studying the link between fund performance and fund manager characteristics in the context of an emerging market, Turkey. More specifically, we test the statistical significance between fund performance and fund manager characteristics such as education, job experience, use of financial information and quantitative techniques, portfolio size, incentives, and the like. Our study is similar in spirit to Chevalier and Ellison (1999) and Golec (1996) but differs in one important way. Rather than use aggregated, observable data, such as age, undergraduate and graduate degrees, tenure in the position, etc., across some fund industry or sub-industry, our analysis is based on the statistical information gathered by personal interviews with 110 fund managers in four of Turkey's largest banks. Thus, our data set contains unique information that is not publicly available. This made it possible for us to include characteristics such as age, highest level of education, number of years of experience, as well as fund managers' opinions with respect to management style, performance pressure, compensation and incentives, the quality of risk management techniques and financial models, and the accuracy of available data. Considerations such as these could be crucial in an environment where politics, corruption and insider trading are the rule. To our knowledge, there is no published research that uses variables describing the fund manager's opinions related to the investment decision process.

In addition, we also consider the determinants of how much personal judgement a fund manager uses in making their investment decisions. It would be interesting to know whether the use of personal judgement in making investment decisions varies systematically across managers and, if it does, what factors explain this variation.

The organization of the paper is as follows. We continue with a brief literature review in the next section. Section 3 describes the data and the methodology and discusses the principal empirical findings. The last section concludes.

2. Literature Review

Smith and Goudzwaard (1970) analyzed the relevance of education to investment management and found that education does not have a clear effect on the performance of graduates in their jobs as fund managers. Chevalier and Ellison (1999), however, using cross sectional data, find strong evidence between age and

education as explanatory variables for fund performance, measured as risk-adjusted excess returns, even after adjusting for behavioral differences and selection biases.

Fama (1980) and Lazear and Rosen (1981) show that a manager's investment decision can be influenced by career concerns. Holstrom (1982) confirms their conclusion but argues that it is only one of a number of other factors that influence the investment decision process. Following this line of reasoning, Scharfstein and Stein (1990), Zwiebel (1995), Morris (1997), and Avery and Chevalier (1999) argue that the career concern factor leads to herd behaviour in the fund manager community. Chevalier and Ellison (1997) emphasize that career issues of mutual fund managers play a significant role in their decisions about risk. Golec (1996) finds that the portfolio return is affected by the manager's tenure, age, and MBA status.

Starks (1987) studied the impact of performance incentive fees on portfolio investment management decisions and finds that the symmetric compensation contractⁱⁱ is better than the bonus contractⁱⁱⁱ and yields better results for the investor. In their study of the relationship between managers' compensation and the relative performance of the funds they manage, Brown, Harlow, and Starks (1996) find empirical evidence suggesting that mid-year "loser" managers^{iv} tend to increase the volatility of the funds they manage in the second part of the assessment year. Lemmon, Schallheim, and Zender (2000) conclude that financial contracts play an important role in providing incentives and the effects of the incentives affect, in turn, the performance of the fund.

3. Empirical Modelling

Using the survey of 110 Turkish fund managers from four banks (being the banks where data could be obtained) we have estimated models to provide the determinants for two dependent variables. The first dependent variable is the return on investment, denoted Return (question 24 from the survey – see the appendix) and the extent to which a manager's investment decisions are based upon personal judgement, Judgement (question 15) is the second.

Although the first variable, Return, is based upon interval/ratio data we do not simply employ Ordinary Least Squares (OLS) to estimate a model of its determinants. This is because there may be a sample selection bias such that fund managers who had low returns are excluded from the sample. To account for this we use truncated regression methods with the sample truncated on the left-hand side. In particular, we assume that managers with a return below 0% are no longer in post and have been excluded from the regression.^v

The truncated regression model is given by (see Greene 2003, pp 760 – 761):^{vi}

$$Y_i^* = \sum_{k=1}^K \gamma_k X_{ik} + \varepsilon_i \quad (3.1)$$

where $Y_i = Y_i^*$ is only observed if:

$$Y_i^* > \tau \quad (3.2)$$

with τ denoting the known truncation point.^{vii} X_{ik} are the explanatory variables, γ_k denote these variables' coefficients and ε_i is a stochastic error term.

The dependent variable, Judgement is ordinal. Five categories were available for Judgement, however, only four were selected by respondents (no fund manager suggested that they used no personal judgement at all in making investment decisions). Therefore, four ranked categories are assigned to this variable, 1, 2, 3 and 4, such that higher values indicate a greater level of personal judgement being used in decisions. We apply ordered choice estimation techniques to the model of this ordinal dependent variable as this is the appropriate method to use in this case. In particular, we used ordered probit models.

The ordered dependent variable model assumes the following latent variable form (see Greene 2003, pp 736 – 740).^{viii}

$$Y_i^{**} = \sum_{k=1}^K \beta_k X_{ik} + u_i \tag{3.3}$$

where, X_{ik} are the explanatory variables, u_i is a stochastic error term and Y_i^{**} is the unobserved dependent variable that is related to the observed dependent variable, Y_i , (assuming four categories) as follows:

$$\begin{aligned} Y_i &= 1 && \text{if } Y_i^{**} \leq \lambda_1 \\ Y_i &= J && \text{if } \lambda_{J-1} < Y_i^{**} \leq \lambda_J, \quad 2 \leq J \leq 3 \\ Y_i &= 4 && \text{if } \lambda_3 < Y_i^{**} \end{aligned} \tag{3.4}$$

where λ_1 , λ_2 and λ_3 are unknown parameters (limit points) to be estimated with the coefficients (the β_k s). The probit form of this model assumes that the error, u_i , is distributed as a standard normal random variable.^{ix}

3.1 Return Regression Results

The Return dependent variable is a measure of a fund manager's performance. Based on previous literature we consider the following eighteen factors as potential determinants of Return. Whether a fund manager is male denoted Male (question 1 from the survey),^x whether they are married, Married (question 2),^{xi} and whether they are single, Single (question 2).^{xii} The manager's years of experience in the organisation, YOE Organisation (question 3) and their years of experience as a fund manager, YOE Manager (question 4). Whether the manager has a Masters degree, Masters degree (question 5a),^{xiii} a business degree, Business degree (question 5b),^{xiv} a degree from a Turkish institution, Turkish degree (question 5c),^{xv} a degree from a UK institution, UK degree (question 5c),^{xvi} or a degree from a US institution, US degree (question 5c).^{xvii} The number of training courses a manager has attended, Training (question 6), their age, Age (question 21) as well as the accuracy *and* use of the data available to the fund manager, Data accuracy/use (question 12 and

13).^{xviii} Further explanatory factors considered are the extent to which a manager's decisions are based upon personal judgement,^{xix} and how often a manager uses mathematical projections and statistical models to make investment decisions, Model usage (question 16).^{xx} Also included is the importance of financial statements of other companies in making investment decisions, Statements (question 18),^{xxi} the importance attached to non-financial data in making decisions, Non-financial importance (question 19),^{xxii} and the fund manager's reliance on credit ratings, Credit ratings (question 20).^{xxiii}

The truncated regression results for a fund manager's return on investment (Return) are given in Table 1. We report a general model (including all variables listed above) and a small number of parsimonious specifications obtained using the general-to-specific methodology.^{xxiv}

In the general specification, Model 1, only one variable, holding a masters degree (Masters), is statistically significant at the 5% level. Application of the general-to-specific method suggests that, in addition to Masters, at least one of the two variables years of experience in the organisation (YOE Organisation) and holding a business degree (Business degree) are significant determinants of Return. Three parsimonious specifications, Model 2 to Model 4, with various combinations of these three variables are reported in Table 1. Model 2 includes all three variables with one being significant (Masters degree) and two being *just* insignificant at the 5% level (YOE Organisation and Business degree). A likelihood ratio test [denoted LR(YOE Organisation and Business degree)] indicates that these two variables are jointly significant despite being individually insignificant. This suggests that at least one of the two variables is significant. Model 3 includes the two variables YOE Organisation and Masters degree while Model 4 includes Masters degree and Business degree. In both models both variables are individually significant, supporting the view that at least one of YOE Organisation and Business degree is a significant determinant of Return. According to the model selection criteria \bar{R}^2 and regression standard error Model 2 is the favoured specification, however, Model 4 is preferred according to the SBC. This suggests that Business degree is likely to be a relevant explanatory factor. However, as the statistics are not unambiguous we cannot discount the YOE organisation variable and, therefore, favour Model 2 for inference, in spite of it incorporating two (*just*) insignificant variables.

Holding a Masters degree has the anticipated positive effect on Return while years of experience in the organisation and holding a business degree have an unexpected negative effect on Return. Holding a Masters degree will increase the return on a fund manager's investment by 13.024 percentage points, which is a very large premium to holding such a qualification. Whereas each year of experience in an organisation reduces the return by only 0.271 percentage points and holding a business degree lowers a fund manager's return by 2.699 percentage points.^{xxv} Hence, holding a Masters degree is the primary determinant of Return in terms of the size of its effect.

The results of the regression for the return on investment dependent variable may be compared to those of Chevalier and Ellison (1999) who estimate models of fund manager performance for the USA. They find that "... mutual fund managers who attended more selective undergraduate institutions have a higher performance than

mutual fund managers who attended less selective undergraduate institutions, after correcting for differences in risk characteristics, survivorship biases, differences in expense ratios, and differences in factor loadings in a four-factor model.” (Chevalier and Ellison, 1999, pp. 895 – 896). In particular, they found that fund managers with higher average SAT scores at their undergraduate institutions achieved higher returns (after accounting for various biases). With these SAT scores acting as a proxy for the manager’s ability, effort, connections or quality of training they suggest that “... this finding could reflect differences in inherent stock picking ability, direct benefits from better education, differences in the value of the social networks that different schools provide, or it could be related to characteristics of the fund companies that tend to hire managers from different types of school.” (Chevalier and Ellison, 1999, p. 896). This is consistent with our strong finding that manager’s who hold a Master’s degree achieve a higher return than those that do not. Further, our finding that the country from which a degree is obtained does not affect return may suggest that the stock picking ability comes more from innate ability or benefits from education rather than from factors associated with location.

In contrast to Chevalier and Ellison (1999) we do not find that older fund managers typically secure lower returns because age is not a significant variable in our regression for Return.^{xxvi} However, we do find that years of experience in the organisation (which may be related to age) has a possible negative effect on Return – Chevalier and Ellison (1999) did not consider years of experience in their model. This finding could be rationalised in terms of career concerns. That is, Turkish managers who have less experience in an organisation work harder because they need to prove themselves and they may be more likely to be fired for poor performance than those who have been working longer in a particular organisation.^{xxvii}

We also find that holding a business degree has a possible small negative impact on returns. However, because such a negative effect is difficult to rationalise, as well as being numerically small (relative to holding a Master’s degree) and statistically fragile, we interpret this result as suggesting that holding a business degree does not raise fund manager performance. Given that holding a Master’s degree does improve performance we conclude that it is benefits associated with high educational achievement in general that raise stock picking ability but that having taught expertise in the area of business does not.

Our finding that some fund managers are better than others is clearly consistent with Chevalier and Ellison (1999) and may, as they point out, reflect that managers analyse and gather information in a nearly, rather than fully, efficient market. Indeed, we might expect this argument to be more relevant for Turkish fund managers who may arguably operate in a less efficient (and more volatile) market than US fund managers (who were the focus of Chevalier and Ellison, 1999).

3.2 Non-Return Regression Results

The potential determinants for the dependent variable measuring how much personal judgement is employed in investment decisions (Judgement) are the same as for the dependent variable Return, except Data accuracy/use and Judgement are

excluded and the following are added. The manager's level of satisfaction with the quality of risk management techniques employed, Risk management techniques (question 11),^{xxviii} and the manager's assessment of the accuracy of the data available, Data accuracy (question 12).^{xxix}

Two ordered probit regressions for Judgement are reported in Table 2: the general model, Model 5, and the parsimonious specification, Model 6. Only one variable, YOE Manager, is significant in both models. Model 6, which contains only the single variable, YOE Manager, is favoured for inference because it has superior fit and the restrictions placed on Model 5 to obtain Model 6 cannot be rejected. The positive coefficient on this variable indicates that those with more years of experience as a fund manager will exercise more personal judgement in making investment decisions, which is plausible.^{xxx} None of the other variables are found to significantly influence the degree of personal judgement that a fund manager uses. These other factors may not be important because, for example, credit ratings, data, model usage and risk management techniques are underdeveloped in Turkey relative to countries like the USA. For example, in our interviews fund managers frequently suggested that they had little confidence in the information provided by credit rating agencies. This would explain why credit ratings do not affect managers use of judgement in the decision making process.

Our results suggest that the use of personal judgement in making investment decisions systematically varies across fund managers only to the extent that experience as a fund manager varies: specifically, more experienced fund managers exercise a greater use of judgement. However, from the results of Table 1 it is clear that this variation in the use of judgement has no significant effect on returns. In other words, the use of greater personal judgement is to be neither encouraged nor discouraged in the sense that it has no systematic impact upon returns. Further, the results of Table 1 and Table 2 suggest, directly and indirectly, that there is no benefit to employing more experienced fund managers over those with less experience (or vice-versa) in terms of raising returns.

4. Conclusions

Based on a series of interviews with 110 Turkish bank fund managers, we collected data describing their educational and experience profile, the size of their portfolio and the return on their investment, and their level of satisfaction with incentives and with risk management techniques. This dataset is relatively rare and valuable for understanding the collective behaviour of fund managers.

Using this data we have estimated models for the determinants of Turkish fund managers' return on investment and the degree of personal judgement used in investment decisions. We find that return on investment is positively correlated with holding a Masters degree and negatively determined by years of experience in the organisation and holding a Business degree. The main determinant of return, in terms of the size of its effect and its clear statistical significance, is holding a Masters degree. The positive correlation between these two variables may indicate that a manager with greater ability, better education/connections and who works harder will generate a higher return. We interpret the small fragile negative impact of holding a business degree on return as suggesting that while high educational attainment

enhances performance, expertise in the area of business does not. The (weak) negative relationship of years of experience on return may reflect career concerns with less experienced fund managers feeling the need to work harder than those with more experience. Further, our results imply that some fund managers can systematically achieve higher returns than others, which is consistent with Chevalier and Ellison's (1999) findings for the USA. Their argument that this may reflect that US fund managers operate in nearly, rather than fully, efficient markets seems relevant for Turkish managers too. Indeed, one might expect managers in Turkey to analyse and gather information in markets that are less efficient and more volatile than in the USA.

The dependent variable, personal judgement in making investment decisions, is found to be solely determined by years of experience as a manager. The positive coefficient on this variable is consistent with expectations: more experienced fund managers use more personal judgement in making decisions. However, from our return regression results it is clear that the differences in the use of judgement across fund managers have no impact upon the returns that they generate. It is also evident that differences in fund managers' experience have neither a direct nor indirect impact (via its effect on judgement) upon returns. It may be that any benefits, in terms of increased returns, from greater experience are either negligible or are offset by less experienced managers working harder. Regarding the former, it may be that older managers do not have the knowledge to effectively use financial statements and data streams to inform their judgements concerning investment decisions.

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Appendices

Appendix 1

Table 1: Return Regressions (Truncated at Zero with Standard Normal Errors)

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	23.418 (3.087)	21.287 (9.522)	21.552 (9.132)	17.695 (13.304)
Male	-0.691 (-0.318)			
Married	1.089 (0.823)			
Single	0.532 (0.370)			
YOE Organisation	-0.294 (-0.878)	-0.271 (-1.950)	-0.420 (-3.139)	
YOE Manager	-0.003 (-0.009)			
Masters degree	13.457 (8.771)	13.024 (9.080)	14.126 (12.269)	13.739 (9.675)
Business degree	-2.438 (-1.493)	-2.699 (-1.860)		-3.857 (-2.836)
Turkish degree	2.399 (0.855)			
UK degree	2.152 (0.728)			
US degree	2.866 (0.990)			
Training	0.058 (0.413)			
Age	-0.008 (-0.054)			
Data accuracy/use	-0.370 (-0.951)			
Judgement	-0.731 (-1.109)			
Model usage	-0.385 (-0.278)			
Statements	0.726 (0.857)			
Non-financial data importance	-0.892 (-0.844)			
Credit ratings	0.270 (0.266)			
Scale parameter				
σ	3.689 (16.818)	3.787 (18.524)	3.882 (17.337)	3.861 (18.764)
Fit				
\bar{R}^2	0.764	0.787	0.779	0.781
s	4.075	3.873	3.950	3.930
SBC	6.302	5.713	5.719	5.709
LR statistic	176.900 [0.000]	171.154 [0.000]	165.747 [0.000]	166.901 [0.000]
LR(1→*)	NA	5.745 [0.984]	11.153 [0.800]	9.999 [0.867]
LR(YOE Organisation and Business degree)	NA	17.645 [0.000]	NA	NA
Misspecification				
χ^2_N	0.991 [0.609]	2.674 [0.263]	3.459 [0.177]	2.777 [0.249]

The dependent variable is Return on Investment (capital employed), the number of observations in the sample is 110 and z-statistics are based upon Huber/White standard errors, which are reported in non-square parentheses. The regression is truncated at zero (on the left). σ is the scaling parameter, \bar{R}^2 is the coefficient of determination adjusted for degrees of freedom, s denotes the unbiased estimate of the regression standard error and SBC is Schwartz's information criterion. Also included is a chi-squared test for the model's explanatory power, LR Statistic, LR(1→*) is a Likelihood Ratio test for the deletion of variables from Model 1 to obtain each of the other restricted models and LR(YOE Organisation and Business degree) is a Likelihood Ratio test for the joint redundancy of the two variables YOE Organisation and Business degree. The chi-squared distributed Jarque-Bera test for non-normally distributed residuals (χ^2_N) is also reported. Figures in squared brackets are probability values. A normal distribution is assumed for the error term. All statistics are produced using EViews 5.0.

Table 2: The Extent to which Investment Decisions are based upon Personal Judgement (Ordered Probit Regressions)

Variables	Model 5	Model 6
Male	0.372 (0.953)	
Married	-0.024 (-0.060)	
Single	0.003 (0.006)	
YOE Organisation	0.077 (0.573)	
YOE Manager	0.518 (4.768)	0.461 (5.991)
Masters degree	0.414 (0.582)	
Business degree	0.668 (1.141)	
Turkish degree	0.853 (1.008)	
UK degree	0.573 (0.561)	
USA degree	0.945 (1.148)	
Training	-0.086 (-1.516)	
Risk management techniques	-0.459 (-1.212)	
Data accuracy	0.320 (0.502)	
Model usage	0.272 (0.419)	
Statements	-0.251 (-1.071)	
Non-financial data importance	0.116 (0.448)	
Credit ratings	0.125 (0.437)	
Age	-0.071 (-1.439)	
Limit Points		
λ_2	-0.291 (-0.100)	-0.343 (-0.629)
λ_3	4.313 (1.494)	3.807 (5.448)
λ_4	5.147 (1.767)	4.567 (5.698)
Fit Measures		
Pseudo R ²	0.482	0.434
SBC	1.968	1.341
LR statistic	109.712 [0.000]	98.785 (0.000)
LR(5→6)	NA	10.927 [0.860]

The dependent variable is the extent to which decisions are based upon personal judgement which takes on values 1, 2, 3 and 4, so there are three limit points, λ_i , $i=2,3,4$ – the intercept is not separately identified from the limit points. The number of observations in the sample is 110. The z-statistics (in parentheses) are based upon Huber-White standard errors which are robust to certain misspecifications of the underlying distribution of the dependant variable (see E-Views 5.0 User Guide). The reported fit measures are the Pseudo R² [$R^2 = 1 - (\ln L / \ln L_0)$], where $\ln L$ and $\ln L_0$ are the maximised values of the model's likelihood function including all variables and only incorporating an intercept, respectively – see Greene, 2003,] and Schwartz's information criterion, SBC. Also included are chi-squared tests for the model's explanatory power, LR Statistic, and the deletion of variables from Model 5 to obtain the restricted Model 6, LR(5→6) – probability values are given in square parentheses. The probit model assumes that the cumulative distribution function of the error term is standard normal: $\Phi(\lambda_j - \sum_k \beta_k X_{ik}) = (2\pi)^{-1/2} \exp[-\frac{1}{2}(\lambda_j - \sum_k \beta_k X_{ik})^2]$, $j=1,2$. All Probit regressions were estimated using E-Views 5.0.

Table 2a: Marginal Effects of Model 6 (Judgement)

Model 6				
	Pr(Y=1)	Pr(Y=2)	Pr(Y=3)	Pr(Y=4)
YOE Manager	-0.000	-0.184	0.040	0.143

Marginal effects are reported for each value of the dependent variable, denoted Y, for the variable included in Model 6 using the ordered probit specification. They are calculated using the mean of the explanatory variable, X_k .

Appendix 2

Questionnaire for Turkish Investment (Fund) Managers

Name :

Post held :

Q1. Sex: Male/ Female

Q2. Martial Status: Single Married Divorced

Q3. How many years of experience have you had within the organization?

Q4. How many years of experience have you had as a fund manager?

Q5. Specify your educational qualification in terms of:

(a) Level of award: BA MA/MBA PhD Other (please specify)

(b) Subject of award: A business subject A non-business subject

(c) Country of award: UK USA Turkey Other (please specify)

Q6. How many training courses have you attended as a fund manager?

Q 7. How many clients do you have?

Q8. How many investment funds are you responsible for?

Q9. To what extent do you feel performance pressure as a fund manager? To a:

Very high degree High degree Moderate degree Low degree Very low degree

Q10. Are you satisfied with the incentives provided to fund managers?

Very satisfied, satisfied, neither satisfied or unsatisfied, unsatisfied, very unsatisfied

Q11. What is your level of satisfaction with the quality of risk management techniques applied?

Very satisfied, satisfied, neither satisfied or unsatisfied, unsatisfied, very unsatisfied

Q12. How accurate is the data available to you on a scale of zero to four (inclusive), with zero being highly inaccurate and four being highly accurate?

0 1 2 3 4

Q13. How much do you rely on data to make your decisions?

Totally at all To a large extent , To a moderate extent, To a limited extent Not at all

Q14. To what extent are you concerned with the volatility of today's financial markets?

Totally concerned, Highly concerned, Moderately concerned , A little concerned, Unconcerned

Q15. To what extent are your investment decisions based on your personal judgement?

Totally To a large extent To a moderate extent, To a limited extent Not at all

Q16. How often do you use mathematical projections and statistical models for investment decisions?

Very often often, sometimes, seldom, never

Q17. How efficient satisfied are you with these projections and models:

Very satisfied, satisfied, neither satisfied or unsatisfied , unsatisfied , very unsatisfied

Q18. What importance do you give to financial statements of different companies when making investment decisions?

Very important , important , neither important nor unimportant , unimportant , very unimportant

Q19. What importance do you give to non-financial data when making investment decisions?

Very important, important , neither important nor unimportant , unimportant , very unimportant

Q20. How much do you rely on credit rating agencies?

Totally, A lot Moderately, A little Not at all

Q21 What is your age?

Q22. What is the amount (band) of performance related pay?

Q23. What is the size of your portfolio?

Q24. What is the return on the investment (capital employed)?

Endnotes

ⁱ For a comprehensive review of country/political risk see Bouchet et al (2003).

ⁱⁱ With a symmetric contract, the manager receives a percentage of the market value of the assets and a bonus if the portfolio return exceeds the return on the designated benchmark or incurs a penalty in the opposite case.

ⁱⁱⁱ With the bonus performance incentive fee the manager receives a percentage of the market value of the assets and a bonus if the portfolio return was higher than the return on some benchmark index; no penalties are imposed

^{iv} A “loser” manager is defined as a manager who is underperforming the designated benchmark.

^v The lowest return indicated by the fund managers in our sample is 10%. We therefore also estimated models that assumed managers with a return below 9% were excluded from our sample. These unreported results were virtually identical to those assuming a 0% truncation point.

^{vi} The marginal effects for the whole population of observations (that is, as if there were no truncation of the sample) are given by the coefficients γ_k . To obtain the marginal effects of the subpopulation (the data above the truncation point, the data points that are observed) the estimated coefficients, γ_k , need to be adjusted by a scale parameter. Because we are interested in drawing inferences about the whole population of fund managers we use the estimated coefficients without adjustment as the marginal effects.

^{vii} In Table 1 $\tau=0$, a 0% truncation point.

^{viii} Our interest is primarily confined to the general direction of correlation between the dependent and independent variables. Therefore, we use the sign of β_k to provide guidance on whether the estimated signs of coefficients concur with our *a priori* expectations. This is instead of looking at the marginal effects which indicate the direction of change of the dependent variable (for each value of the dependent variable) to a change in X_{ik} .

^{ix} Greene (2003) suggests that probit and logit (the error has a logistic distribution) models yield results that are very similar in practice. This is the case for our regressions.

^x This is a dichotomous variable that takes the value of 1 if the manager is male and zero if they are female.

^{xi} This variable takes the value of 1 if the manager is married and zero otherwise.

^{xii} This variable takes the value of 1 if the manager is single and zero otherwise. We allowed three categories for marital status being, married, single and divorced, hence we can only include two of them to avoid collinearity problems.

^{xiii} This variable takes the value of 1 if the manager has an MA, MSc or MBA and is zero otherwise.

^{xiv} This variable takes the value of 1 if the manager’s degree is in the area of business and is zero otherwise.

^{xv} This variable takes the value of 1 if the manager’s degree is from Turkey and is zero otherwise.

^{xvi} This variable takes the value of 1 if the manager’s degree is from the UK and is zero otherwise.

^{xvii} This variable takes the value of 1 if the manager’s degree is from the USA and is zero otherwise. There were four options for the country from which a degree was obtained, Turkey, UK, USA and other, so only three variables could be included (for Turkey, UK and USA) to avoid collinearity problems.

^{xviii} This variable is a combination of Data accuracy, question 12 (an ordinal variable that takes on the values 0, 1, 2, 3 and 4 where 0 indicates completely inaccurate data and 4 is extremely accurate data), and Data usage, question 13 (there were five integer ordinal categories with 0 being no use of data and 4 representing a total reliance on data). (Data accuracy/use) = [(question 12) + 1] × (question 13). The value of this variable increases (decreases) with a rise (fall) in Data accuracy and/or Data usage.

^{xix} This is an ordinal variable that takes the values 0, 1, 2, 3 and 4 such that low values indicate that little judgement is used and high values show a great use of judgement.

^{xx} This is a ranked variable taking the values 0, 1, 2, 3 and 4 where 0 indicates that projections/models are not used at all and 4 suggests a great reliance on such methods in making investment decisions.

^{xxi} This is a 5 category ordinal variable that takes the value zero when statements are unimportant to the decision making process and the value 4 when they are of crucial importance.

^{xxii} This variable takes integer values of 0 to 4 where lower values indicate that non-financial data is less important in making investment decisions compared to higher values.

^{xxiii} This is an ordinal variable that is zero when credit ratings are completely unimportant in making investment decisions and 4 when they are of the utmost importance.

^{xxiv} In this method we first delete all variables with z-statistics below one (or, exceptionally, 0.5 if the z-statistics are very small for a large number of variables) and apply a Likelihood Ratio, LR, test relative to the general model. If the restrictions cannot be rejected we then delete all variables with z-statistics below 1.5 and then all explanatory factors with z-statistics below 1.96 (applying LR tests relative to the general model). If any LR test for joint restrictions is rejected we experiment to find the variable(s) that cause this rejection and retain them in the model.

^{xxv} To place these figures in context we note that the Return variable ranges from a minimum value of 10% to a maximum value of 35% with a mean of 18.864% and a standard deviation of 8.396%.

^{xxvi} It should be noted that this was a “fragile” finding for Chevalier and Ellison (1999) because age was significant in some of their regressions but not others.

^{xxvii} This is similar to Chevalier and Ellison's (1999) rationalization for the significance of age in some of their regressions.

^{xxviii} Although we allowed five potential responses to the question on the degree of satisfaction with risk management techniques, from very satisfied to very unsatisfied, the range of fund managers' responses fell into only two of these categories: very unsatisfied and unsatisfied. We coded this variable to equal zero if the fund manager was very unsatisfied and unity if the manager was unsatisfied.

^{xxix} There were five ranked responses regarding the fund manager's assessment of the data's accuracy with 0 being the least accurate and 4 being the most accurate. This is different from the variable Data accuracy/use (which takes account of usage as well as accuracy of data) that was used in the Return regressions, Table 1.

^{xxx} The marginal effects for Model 6 are reported in Table 2a.