RATIONAL EXPECTATIONS OR BEHAVIORALLY INEFFICIENT MARKETS?

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DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy at
The University of Texas at Arlington
May 2020

Arlington, Texas

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DEDICATION

To the love of my life: Devendra Kale and to my greatest treasure: Dheer Kale, without both of your continued support, patience, and love, this would have been impossible. You brighten my world every moment.

To my parents Anil Dighe (Baba) and Anagha Dighe (Aai), thanks for putting up with all my shenanigans through the years and for loving and supporting me unconditionally in every possible way.

To my other set of parents Dwarkanath Kale (Baba) and Devayani Kale (Aai), thanks for loving me and making me part of our wonderful family.

To God, thanks for your infinite and eternal blessings on me and my family and for being with me always and forever.

ACKNOWLEDGEMENTS

I thank my supportive and encouraging advisors, Dr. John Adams and Dr. Sriram Villupuram for their continued guidance, support, and motivations. They trained me, inspired me, guided me, believed in me and stood by me through this five year journey. This dissertation would not have been possible without them. I have been working with Dr. John Adams since the first day. I have always admired him for his guidance but more so for his ability to always seeing the good in people. I am thankful to him for accepting me as his student. I also want to thank Dr. Sriram Villupuram. He is not only wonderful mentor and but also good friend.

I would like to express my deep gratitude to Dr. Bin Srinidhi for his guidance and support in this journey. I would also like to thank Dr. Ramgopal Venkataraman who I hounded with questions and requests throughout last five years. His encouragement and guidance helped me steer through the difficult times. He told me on my very first day at UT Arlington that PhD will transform your life and I want to acknowledge that it did and in so many wonderful ways. I want to express my gratitude to Dr. David Diltz for everything, from answering all my elementary questions to amazing conversations about mathematical finance to suggesting classes that helped me understand that world of quantitative finance better.

I want to thank Dr. Mahmut Yasar for his guidance and support in last five years. His econometrics training helped me navigate through the world of academic research. I would like to thank Dr. Salil Sarkar for giving me the opportunity to be part of the UT Arlington family. He was always there for all of us. I want to thank Dr. Sanjiv Sabherwal for all the support, flexibility as well as opportunities he provided. I would also like to thank Dr. Wendy Casper for all the care. She is an inspiration. I have been fortunate to work with her and to learn from her. I want to thank Dr. Tatia Jordan for taking time out from her busy schedule for always being there for me.

I would also like to thank my co-author Gajanan Ganji who helped me and adjusted his work schedule to accommodate me. I want to thank all my friends at UT Arlington, particularly, Mohammad Alhashim and Jason Morrison. From our arguments over market efficiency to our birthday parties, they were always there. I was new to Texas and now I have family here because of them. I would like to thank administrators of Department of Finance and Real Estate, Debbie Maxey and Teresa Sexton. I truly cherish everything they did and every time they went out of their way for me. I would also like to thank my friend Prachee Joshi, who literally cooked for me every day. I could concentrate on the research because, every evening she would keep her hot and yummy food ready. I want to thank everyone for their support in this journey.

ABSTRACT

RATIONAL EXPECTATIONS OR BEHAVIORALLY INEFFICIENT MARKETS?

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The University of Texas at Arlington, 2020

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In this dissertation, I examine the rational investment hypothesis, postulated by classical theories, in mutual fund and portfolio management settings. My first two essays focus on mutual fund investors. I study whether mutual fund investors display racial or ethnic prejudices, which can be observed by mutual fund flows. I hand-collect data on characteristics of mutual fund managers in addition to their names and photographs. I use machine learning algorithms from computer science literature to calculate the probabilistic race from photographs and the probabilistic ethnicity from names. In my third essay, I construct a portfolio comprising of the small growth firms and demonstrate that firms in this portfolio have heterogenous financial distress risk.

In the first essay, I examine investor rationality by examining the relation between 'foreign-sounding' names of the mutual fund managers and fund flows. I use MTurk survey as well as Name Prism to identify 'foreign-sounding' names of the mutual fund managers. I try to improve the accuracy of existing survey methodology by enforcing certain constraints from fields of sociology and onomastics. I also suggest an objective measure by identifying ethnicities using Name-Prism algorithm. I do not find any evidence of in-group bias in fund flows.

In the second essay, I examine investor rationality by investigating the racial (photo based) discrimination and the ethnic (name based) discrimination. I use machine learning algorithms to identify the probabilistic race (photo based) and the probabilistic ethnicity (name based) of the managers. After controlling for fund characteristics, flows, performance as well as other manager characteristics, I do not find any evidence of racial (photo based) or ethnic (name based) discrimination in fund flows.

In the third essay, I attempt to incorporate the financial distress risk as an explanatory measure only to correct any mis-estimation of returns by the Fama French 3-factor model. I demonstrate that the abnormal

return, as represented by the intercept of the 3-factor model for the universe of stocks with lower market capitalization and low ratio of book equity to market equity, can be attributed to the financial distress risk, at least in part. Due to the heterogeneity of financial distress risk in this portfolio of small growth stocks, I demonstrate construction of profitable long-short portfolios by sorting on financial distress risk within the universe of small growth stocks.

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CHAPTER 1

INTRODUCTION

In this study, I use mutual funds and asset prices to evaluate the efficient allocation of capital in financial markets. The rational expectations equilibrium framework, also known as the efficient markets hypothesis, is the foundation of standard finance. Following this school of thought, asset prices are completely defined by risk as investors compete to acquire assets that earn high risk-adjusted returns. This competition ensures that expected returns in excess of the risk-free rate plus a risk premium are zero. On the other hand, behavioral finance hypothesizes that investors also base their investment selection decisions on parameters not solely related to risk or return. This implies that markets inefficiently allocate capital and that consistently profitable arbitrage opportunities exist in the financial markets. I test this in two different settings. In the first, I use mutual funds setting. If arbitrage opportunities exist, then mutual fund managers can exploit those opportunities and can consistently generate returns in excess of the risk-based performance benchmark. However, Berk & Green (2004), have demonstrated that manager's ability to outperform decreases as investors compete for outperformance and fund size increases since positive net present value investment opportunities are limited. Hence, I examine the rational behavior of mutual fund investors in my first two essays. In my third essay, I analyze well-known and persistent abnormal returns obtained by the portfolio of small growth stocks when the Fama-French 3-factor model is used a performance benchmark. Davis, Fama & French (2000) exhibit that portfolio of stocks with low market value – small stocks and stocks with low ratio of book equity to market equity – growth stocks always displays statistically significant intercept.

In the first essay, I study the potential for in-group bias by mutual fund investors. Ethnic prejudices have existed in America since the dawn of independence. Literature in sociology is rife with various instances of ethnic prejudices from availability of medical treatment to employment opportunities, housing and education (Elvira & Zatzick, 2002; Geiger & Borchelt, 2003; Smedley, Stith & Nelson, 2003; and Rosenfeld, 2008). If investors use the ethnicity to infer ability or trustworthiness, then the ethnic groups farther removed from the American culture would be viewed more negatively by the investors. In line with this argument, Jung et. al (2019) find that forecast revisions of financial analysts with last names associated with more favorable countries of origin generate stronger market reactions. Kumar, Niessen-Ruenzi & Splat (2016), also called KNS hereinafter, find that compared to managers with 'American' sounding names, fund managers with foreign-sounding names receive less investor flows. This finding seems at odds with

the rational expectations equilibrium framework as rational investors should only be concerned with risk and expected mutual fund returns.

I construct two measures of 'foreign-sounding' names. In the first, I improve on the survey used by KNS. Anglo-Germanic immigrants have been shielded from racial or ethnic prejudice (Faust, 1927; and Hall, 1990). Using last name origin analysis (Mateos, 2007), I filter out the Anglo-Germanic common last names (Appendix 1 provides more details). Since the survey methodology can be inconsistent, I turn to machine learning algorithm for consistency in the measure. In the second, following Ye et. al (2017), I identify the probabilistic ethnicity of the manager using the machine learning algorithm by Name-Prism. After controlling for flows, performance and fund characteristics, I do not find any evidence of in-group bias (name based discrimination) in fund flows.

In the second essay, I examine racial and ethnic biases of mutual fund investors. KNS demonstrate that mutual fund investors display ethnic bias. Pope & Sydnor (2011) evidence that loan listings with black applicants in the attached pictures are 25 to 35 percent less likely to receive funding than those of white applicants with similar credit profiles. Using Morningstar, I hand-collect the data on the characteristics of mutual fund managers in addition to their names (collected from Morningstar) and their professional photographs (collected from LinkedIn or from the fund family websites). I use machine learning algorithms from computer science literature to calculate the probabilistic race from photographs and probabilistic ethnicity from names. I use machine learning algorithm by Name Prism to calculate probabilistic ethnicity from the names of the managers. I use machine learning algorithm by Clarifai to calculate probabilistic race from manager photos. LeRory (2018), Miles (2004), and McLaren & Torres (1999) have identified that in the past non-white races and ethnicities have been at the receiving end of discrimination. Hence, I use indicator variables for four main non-white races and ethnicities: black, asian, middle eastern and hispanic. I observe that non-white (black, asian, middle eastern, and hispanic) managers manage funds with characteristics different from the characteristics of funds managed by white managers. However, after controlling for flows, performance, fund characteristics, and manager characteristics, I do not find evidence of any racial (photo based) or ethnic (name based) discrimination in fund flows for non-white managers.

In my third essay, I attempt to correct mis-estimation of returns, as calculated by the Fama French 3-factor model, for small-growth stocks. Davis, Fama & French (2000) call the portfolio of small-growth stocks the aberrant portfolio for Fama-French 3-factor model, stating "the pricing of small growth stocks presents problems for the three-factor model throughout the 7/29- 6/97 period". I repeat Fama & French (1992) methodology and construct the portfolio comprising of stocks with low market value – small stocks and

stocks with low ratio of book equity to market equity – growth stocks. Davis, Fama & French (2000) postulate that distressed firms might have higher returns due to high risk and might mask themselves as strong firms. This can be one of the reasons for the statistically significant intercept of the 3-factor model for the small-growth portfolio. Chen & Zhang (1998) display that stocks with smaller size, display higher financial distress risk as compared to other stocks. DeBondt & Thaler (1987), and Lakonishok, Shleifer & Vishny (1994), argue that investors overreact to performance and assign irrationally high values to low BE/ME stocks. This overvaluation can increase financial distress risk (Penman, 1996). Zhang (2008) demonstrates that smaller firms have higher information asymmetry, which can worsen the effects of financial distress risk. I use the following six different measures of the financial distress risk namely z-score (Altman, 1968), analyst coverage (Hong, Lim & Stein, 2000), lag analyst coverage and change in analyst coverage (Derrien & Kecskes, 2013), o-score (Ohlson, 1980), Tobin's q (Tobin, 1969). I double sort of size and BE/ME to identify the universe of small-growth stocks. Following the approach suggested by Daniel & Titman (1997), I further sort the universe of small-growth stocks using various measures of financial distress risk. I construct the long-short portfolio (long low distress risk – short high distress risk or L-H). Financial distress risk anomaly has pointed out that stocks with high financial distress risk earn low returns which is anomalous to their higher risk loading (Campbell, Hlischer & Szilagyi, 2008). Hence, the long low distress risk – short high distress risk portfolio (L-H) produces positive and significant abnormal return for the meausres of financial distress risk. The abnormal return on the long-short portfolio ranges from -0.0246 percent to 0.1309 percent which is economically and statically significant (at 1% confidence level). I demonstrate that the statistically significant intercept of 3-factor model can be attributed to distress risk, at least in part. I observe that the intercept of the 3-factor model decreases for firms in higher decile and quintiles of financial distress risk.

The rest of the study is divided in four chapters. Chapter 2 discusses the fund flows attributed to 'foreign-sounding' managers. Chapter 3 further evaluates the racial and ethnic discrimination as identified by the fund flows for non-white managers. Chapter 4 examines the 3-factor model and tries to provide rational explanation for statistically significant intercept of 3-factor model for portfolio of small-growth stocks. Chapter 5 is the conclusion.

CHAPTER 2

FOREIGN-SOUNDING MANAGER NAMES AND MUTUAL FUND FLOWS

Section 1: Introduction

What's in a name? That which we call a rose by any other name would smell as sweet.
William Shakespeare, 1594.

Names are powerful. They can send signals about who we are and where we come from. Unfortunately, names can also invoke in-group biases. Multiple studies have demonstrated that some names are associated with ethnic discrimination. For example, Bertrand & Mullainathan (2004) find that candidates with "white-sounding" names receive more interview offers than candidates with "black-sounding" names. Similarly, Holbrook, Fessler & Navarrete (2016), find some names automatically lead to expectations of prestige and status while others are associated with low socioeconomic status. Jung et. al (2019) find forecast revisions of financial analysts with last names associated with more favorable countries of origin generate stronger market reactions, suggesting financial market participants use names to infer ability and trustworthiness. Consistent with this view, KNS find that compared to managers with 'American' sounding names, fund managers with 'foreign-sounding' names receive less investor flows.

The idea that investors as a group are irrational and use ethnic information about managers in the fund selection process implies that the markets inefficiently allocate capital and that mutual fund managers can consistently generate returns in excess of the risk-based performance benchmark. In Berk & Green's (2004) rational expectations equilibrium framework (e.g., efficient market hypothesis), investors rationally interpret past performance as a measure of manager ability and direct cash flows to high performing funds.[1] In their model, a manager's ability to generate high gross returns decreases as fund size increases because positive net present value investment opportunities are not infinitely scalable, and a fund eventually earns an expected return equal to that of its passive benchmark. Consistent with Berk & Green (2004), there is considerable evidence in the extant literature that fund performance is not predictable. Thus, KNS findings are puzzling. If investors collectively indulge in ethnic biases to the point that they irrationally forego positive risk adjusted returns, the mutual fund market will not equilibrate on size and the excess returns of

[1] Rationality has always been an underlying principle of financial theories. Classical theories in finance, including Markowitz's (1952) portfolio theory, capital assets pricing theory of Sharpe (1954), and Lintner (1965), the efficient market hypothesis of Fama (1970), the option-pricing theory of Black & Myron (1973), agency theory of Jensen & Meckling (1976), and arbitrage pricing model of Ross (1976), are based on the underlying assumption that participants, and hence, financial markets, demonstrate rational decision making and choose wealth maximizing alternatives

foreign-named managers will be predictable. Furthermore, even if some investors are willing to forgo any excess returns generated by foreign-named managers, it seems unreasonable to assume that none would exploit the opportunity to earn positive risk-adjusted excess returns.

In this paper, I examine investor rationality by revisiting KNS. KNS use an MTurk survey to identify foreign-sounding names. However, Wright (2005), among others, has pointed out the sampling errors in online surveys (Howard, Rainie & Jones, 2001; and Andrews, Nonnecke & Preece, 2003). To reduce this potential error, I use two approaches. First, I improve accuracy of the MTurk survey. I put additional restrictions for survey respondents regarding education and current employment status. I also increase the survey respondents by a multiple of five for greater accuracy. There has been no documented evidence of discrimination against Anglo-Germanic ethnicity in the US. Hence, using last name origin analysis (Choi et. al, 1993; Mateos, 2007; Webber, 2007) I further improve the survey by filtering out Anglo-Germanic common last names (Please see Section 3 and Appendix 1 for more details). Second, to minimize error and to provide consistency, I identify the ethnicity of the manager as determined by nationality classification using name embedding via the Name-Prism algorithm (Ye et. al, 2017).

I bifurcate the sample between funds managed by managers with 'foreign-sounding' names and other funds. I refer to those funds as Foreign funds and other funds as Non-Foreign funds. My key finding is, after controlling for other factors, I do not find any evidence of differential fund flows between Foreign and Non-Foreign funds. While I find that managers with 'foreign-sounding' names manage different funds as compared to other managers, after controlling for fund characteristics, I do not find any evidence of in-group bias (name based discrimination) in terms of fund flows. My results align with Chevalier & Ellison (1997), Sirri & Tufano (1998), Barberis & Shleifer, (2003), and Berk & Green (2004) that mutual fund flows respond to past performance. In addition to past performance, fund ratings (Del Guercio & Tkac, 2008) and loads (Barben, Odeon & Zheng, 2005) seem to direct fund flows. This result is in stark contrast to KNS, which find discriminatory behavior. I repeat my analysis various ways, including identifying differential performance measures and creating a one-to-one matched sample on fund characteristics. I still find no significant difference between fund flows for Foreign and Non-Foreign funds.

My paper is one of the few papers testing for the in-group biases of mutual fund investors. I contribute to the literature in two ways. In the first, I try to improve the accuracy of existing survey methodology by enforcing certain constraints from fields of sociology and onomastics. In the second, I suggest an objective measure by identifying ethnicities using Name-Prism algorithm. I do not find any differential fund flows attributed to Foreign fund managers and do not find any evidence of in-group bias in mutual fund flows.

This is in stark contrast to KNS. The rest of the paper is divided into 6 sections. Section 2 discusses hypothesis development. Section 3 details the data and sample. Section 4 provides the results. Section 5 presents the robustness checks and Section 6 is the conclusion.

Section 2: Hypothesis Development

The issue of discrimination in the United States has been a topic of continuous debate and research since the inception of this great nation. One the earliest evidences is in "*Poems on Various Subjects, Religious and Moral*," by Phillis Wheatley in 1773 (Kendi, 2017) which states –"an 'uncultivated barbarian from Africa' could be civilized, that enslaved Africans 'may be refin'd, and join th' angelic train' of European civilization and human freedom." The Chinese Exclusion Act of 1882, Gentlemen's Agreement of 1907, Racial Integrity Act of 1924 in Virginia, Immigration and Nationality Act of 1965 have been some of the historical examples of structured racial or ethnic prejudices in the governance system.

Other instances of societal racial or ethnic prejudices include evidence of substantial racial or ethnic disparities and discrimination extending from important health indices, such as infant mortality, to disparities in medical treatment, earned wages, and access to and quality of a range of basic services, from health care and job training, to employment, housing, and education. (Williams et. al, 2001; Elvira & Zatzick, 2002; Geiger & Borchelt, 2003; Smedley, Stith & Nelson, 2003; Dovidio et. al, 2008; and Rosenfeld, 2008). These go well beyond African Americans. Major racial or ethnic biases include anti-Hispanic protests (Stacey, Carbon-Lopez & Rosenfeld, 2011), Islamophobia (Rauf, 2016), anti-Asian movements (Kim, 1999), anti-Indian discrimination (Hess, 1974) and Antisemitism (Quinley & Glock, 1979).

Contrastingly, European Americans have been fortunate to not be at the receiving end of these prejudices (McLaren & Torres, 1999; Leonardo, 2004; Miles, 2004; and Gillborn, 2005). Evidence suggests that the white American population with European origin is considered (inherently) 'American' as compared to any other group (McLaren & Torres, 1999; Miles, 2004; and LeRory, 2018). While there might have been instances of anti-Catholicism and discrimination against Eastern European ethnicities in the past, since 1940s the European Americans have always been considered the main ethnic group that identified as American (Balibar, 1990; Small, 1999; Hunter, 2002; and Leonardo, 2004). German ethnicity is one of the biggest ethnic groups in the US. In the 2000 census (US Census Bureau 2000), self-identified German Americans made up 17.1% of the U.S. population. This makes the German the largest self-reported ethnic groups in the United States. However, Water, 2000, notes that the British-American ethnic group would tantamount to the biggest ethnicity but in the last several years they have also chosen to classify themselves as 'American' by ethnicity considering themselves 'indigenous' because their families had resided in the US for so long.

While the Anglo-Germanic immigrants have been shielded from this racial or ethnic prejudice (Faust, 1927; and Hall, 1990), the most instances of racism in last 40 years are felt by persons of non-white-European origins (anyone not of white European origin) also broadly referred to as 'persons of color'. Examples of this racism include employers, educational institutes (Hunter, 2002; Gillborn, 2005; Stacey, Carbon-Lopez & Rosenfeld, 2011; and Leroy, 2018), housing market prejudices (Department of Housing and Development). More recently, a less overt but still equally disturbing form of racism can still be seen by inappropriate designs by Prada and Gucci in 2019.

A simple explanation for the origin of racial or ethnic prejudices is in-group bias. In its truest sense, a group is a collection of individuals or entities that demonstrate homogeneity within the said collection, and heterogeneity outside of it. Members of a group can systematically adopt a favorable opinion of the members of their own group and might be indifferent or possess a less favorable opinion of people outside of the group (Sumner, 1906; Campbell, 1965; and Mummendey et. al, 1992). In-group bias has been shown to impact consumers' choices regarding products sold by or associated with individuals of other races (Nardinelli & Simon, 1990; and Ouellet, 2007), referees' decisions in sporting events (Price & Wolfers, 2010), and even courtroom decisions (Abrams, Bertrand & Mullainathan, 2012). Jung et. al (2019) find that forecast revisions of analysts with last names associated with more favorable countries of origin generate stronger market reaction. Giannetti & Yafeh (2012) show that more culturally distant lead banks offer borrowers smaller loans at a higher interest rate and are more likely to require third-party guarantees. Guiso, Sapienza & Zingales (2009) suggest that perceptions rooted in culture are important determinants of economic exchange. Harjoto, Laxmana & Lee (2015) find that firms with ethnic minority CEOs pay significantly higher audit fees which indicates that they are sensitive to the market pressure to avoid audit delay.

KNS find that mutual fund investors are affected by name-induced stereotypes. However, if this is true, and mutual fund investors display in-group bias, then it would create opportunities for consistent high risk-adjusted returns. Following Berk & Green (2004) it would then be possible to predict manager alpha. Then following Wermers (2003), other rational investors would chase this alpha and earn consistent higher return. This is at odd with the rational expectations equilibrium. In this paper, I test the name induced in-group bias of mutual fund managers as seen from mutual fund flows. Repeating KNS, I construct two measures for 'foreignness' of fund manager names. I hypothesize that if investors do display in-group bias then I should find lower fund flows for funds managed by managers with 'foreign-sounding' names. But since there is no financial theory to support this, I keep it a simple two tailed test. I regress net fund flows on an indicator binary variable for 'foreignness'. While it is certainly plausible that managers with foreign-

sounding names choose certain funds, once chosen, those fund flows would be outside of the control of managers, with exception to superior performance, and hence should not create endogeneity in the model.

H0: Foreign funds do not receive differential fund flows.
H1: Foreign funds receive differential fund flows.

I offer two different measures to ascertain the ethnicities of manager names. In the first, following KNS, I conduct an online survey through Amazon Mechanical Turk. Following literature from sociology, psychology, and onomastics I enhance survey robustness as detailed in data section. However previous literature has already presented the disadvantages of online surveys (Wright, 2005). Hence, in the second, I also provide an objective measure of ethnicity as determined by nationality classification using name embedding by algorithm Name-Prism (Ye et. al, 2017). I bifurcate the sample in two groups. I create an indicator variable Foreign which takes the value of 1, if that fund in that year is managed by a manager with a 'foreign-sounding' name, and 0 otherwise.

Section 3: Data and Sample

For purposes of this paper, I can ascertain that for ethnic prejudices to exist the investors at a minimum have to know the name of the mutual fund managers. I offer two different measures to ascertain ethnicities using names. In the first, I try to improve the accuracy of existing survey of KNS by enforcing certain constraints from fields of sociology and onomastics. In the second, I suggest an objective measure by identifying ethnicities using Name-Prism algorithm.

KNS use survey methodology to identify 'foreign-sounding' names. However, identifying ethnic information from names can be tricky. Darwin (1875), Lasker (1985), and Piazza et. al (1987) show that first names are given and hence are more susceptible to evolution over time. Immigrants tend to adopt more western first names for their kids. Names with other ethnic heritages also tend to get shortened and westernized for everyday use (Biavaschi, Giulietti & Siddique, 2013). An example of this would be "Dev" an Indian name, which would become "Dave" in the US and assimilate with common Anglo-American names from the northeastern part of the country. The same is true for "Dong" which evolves into "Don". The last name, as a family name passed on from generation to generation, is considered to have better potential to accurately identify the country of origin of the individuals. (Tucker, 2003; 2005; Mateos, 2007). Studies show that the fields of marketing (Webber, 2007) and public policy (Choi et. al, 1993) have used last names to improve ethnicity identification. Following these, I use last name analysis to identify 'foreignness' of manager names.

Anglo-Germanic ethnicities are the two largest ethnicities in the US and have not been affected by in-group bias. Conzen et. al (1992) have demonstrated that Anglo-Germanic ethnicities are considered 'American' for the last 60 years. Hence, these names cannot be included in the survey created to identify 'foreignness' of names as these names should sound 'American' in the US. I take all unique last names and then first drop most common last names of Anglo-Germanic origin following list of last names provided by US Census[2]. In addition to the U.S. Census and prior research (detailed in Appendix 1), I also use Ancestry.com and ethnic websites disclosing common last names based out of Ireland, Scotland, England and Germany. I only screen the name out if it is identified as common last name (Petersen & Petersen, 2001) of that ethnicity either by government or research institutes or if it is flagged as common last name of that ethnicity by more than two ethnic websites. I cross check the screened and dropped last names using Name-Prism to

[2]Just to point out, "Sanchez" is a common last name in the US in 2010s, but I still keep it in the list, to increase the chance of capturing ethnic bias.

make sure I didn't screen out incorrect last names. After screening I come up with 964 names (with unique last names). This helps to reduce the cognitive bias of survey respondents.

Following KNS, I then give these names to respondents for online survey on Amazon Mechanical Turk (MTurk). I put constraints that the respondent should live in the US, should have at the least a high school diploma and should be working currently. I recruit highest rated respondents by paying each of them $15 (twice the minimum wage rate). I recruit 144 respondents, ask them to observe the manager name and respond to the question "Does this name sound foreign in the U.S.?" by choosing "Yes, No, or Unsure". The respondents can choose from "Yes, No, and Unsure". Of those who did not respond "Unsure," if 75% of the respondents said "Yes" I consider that name to be "Foreign". Thus, I obtained 144 classification scores for each manager. This allows me to have five times more classification scores as compared to KNS. To capture the maximum impact, I split the last name and assign Foreign as 1 for all managers with last name that received "Foreign" classification. Again, this would work in favor of finding the potential ethnic prejudices if they exist. I construct the measure for foreign-sounding names Foreign (Foreign as per MTurk) to take a value of 1 if the name is "Foreign" as per MTurk and 0 otherwise. I refer to all the funds with Foreign equal to 1 according to the survey as Foreign funds as per MTurk.

However, when conducting online research, investigators can encounter problems as regards to sampling (Howard, Rainie & Jones, 2001; and Andrews, Nonnecke & Preece, 2003). Relatively little may be known about the characteristics of people in online communities, aside from some basic demographic variables, and even this information may be questionable (Stanton, 1998; and Dillman, 2000). Self-selection bias is another major limitation of online survey research (Wittmer, Colman & Katzman, 1999; and Thompson et. al, 2003). Hence, I also provide an objective measure of ethnicity as determined by the machine learning algorithm Name-Prism (Ye et. al, 2017). It has been recently used by National Bureau of Economic Research (Diamond, McQuade & Quin, 2018). Name Prism is developed by the academics from Stony Brook University and researchers from Yahoo! Research, Amazon AI, and NEC Labs America. It has been used as an objective tool to determine ethnicities in over 300 research papers[3]. Name-Prism calculates probabilistic ethnicities with six major categories: white, black, asian/pacific islander, american indian/alaskan native and two or more races. It further calculates probabilities for 39 subcategories. I require the minimum probability of ethnic origin to be 0.51. I drop any name considered to have two or more ethnic origins. Following McLaren & Torres (1999), Miles (2004), and LeRory (2018), I bifurcate the sample

[3]It analyses over 74 million labelled names from 118 different countries that cover 90% of world's population to obtain the homophily-induced coherence using name embedding methods as the basis for a nationality or ethnicity classifier.

between funds managed by managers having names of Western European ethnicity and other funds. The indicator variable Foreign (Foreign as per MTurk) takes value of 1 if the fund in that year is managed by manager of non-Western European ethnicity and 0 otherwise.

Thus, I obtain two different measures, for 'foreignness' of names, namely Foreign as per MTurk and Foreign as per Name Prism. I select the universe of mutual funds from Morningstar database from January 1978 to December 2016. Data on mutual funds comes from CRSP Survivor-Bias-Free U.S. Mutual Fund Database (CRSP MF) and Morningstar Direct Mutual Fund Database (MS Direct). Following Pastor, Stambaugh & Taylor (2015), which identifies the matches based on the CUSIPs, and on the funds' tickers, I use the matched database between MS Direct and CRSP MF fund classes. Massa, Reuter & Zitzewitz (2010) and Patel & Sarkissian (2017) demonstrate that the fund manager information provided by MS Direct is more accurate than the data provided by CRSP MF. Also, prior literature mentions Morningstar as a more likely source of information for mutual fund investors. Hence, I obtain the fund manager names as well as the start and end dates of their management period at the respective fund via MS Direct.

I consider the U.S. open ended actively managed funds for this study. Hence, I drop index funds. I also use benchmark-adjusted return in my analysis. Morningstar doesn't report benchmark for Real Estate Funds, so I drop them from my sample. Since there are higher instances of Target Date Funds and Sector Funds being passive managed funds, I drop them from my sample. I also drop all Quantitative Funds as they are run using an algorithm. Following previous literature including Sapp & Tiwari (2004), Frazzini & Lamont, (2008), and KNS, I calculate flows from fund return and total net assets. My main variable of interest the net inflow ("fund flow") for fund *i* in year *t* is defined as,

$$Fund\ Flow = \frac{TNA_{i,t} - TNA_{i,t-1}}{TNA_{i,t-1}} - r_{i,t}$$

Where $TNA_{i,t}$ denotes the fund *i*'s total net assets at the end of the year *t* and r_t denotes fund *i*'s return (net of fees) in year *t*. Appendix 3 details all of the variables as well as data sources. Following Evans (2010), I drop all funds less than three years old and funds with net assets less than $25 million. I also drop all observations missing values on measures of foreign name identifiers, Foreign (computed from MTurk survey) and Non-European (computed from Name Prism). Since flow and performance variables are integral to my models, I follow rigorous cut offs for data cleaning. I drop all the observations with missing values for fund flow, style flow, and family flow. I exclude the observations with missing values on monthly return, annual return, benchmark adjusted return, Morningstar rating. In addition, I also require all variables

to have non-missing values on fund characteristics, namely: fund size, turnover, fund risk, expense ratio, fund age, load, and 12B-1 fees. To exclude passive funds, I also drop observations where expense ratio or turnover are zero. Further, to avoid results being driven by extreme or implausible values I drop observations on 1st and 99th percentile for fund flows, family flows and turnover. After all the filters, I get the final sample of matched data with 22,060 observations with non-missing values.

Table 1 panel A presents the descriptive statistics for the final sample after all data cleaning. About 6.7% of fund-year observations in my sample are classified as foreign funds as per MTurk. This drops by 50% when I change the foreign identification to Name Prism. According to Name Prism 3.6% of fund-year observations are classified as foreign funds. Overall, I observe very few foreign managers. Average fund flows are about 7%, however median fund flows are -4% which points to a skewed distribution. Style flows and family flows, on the other hand, mean is about 4% flows and median is around 0%. Average performance rank is 0.51. This is by construction, as performance rank is constructed to lie between 0 and 1 for all funds in the same market style in the same year. In line with Blume (1998), I observe that mean rating is slightly higher than 3 demonstrating fewer funds getting low ratings. Average fund size is about $459 million. Average standard deviation of returns is 4% and mean expense ratio is 1%. Average fund age is 8.5 years. Average manager tenure is 12 years with around 20% of fund managers being female. Most (about 80%) of fund managers have graduate degrees and around 70% of them have professional certifications. Only 7% of managers have PhDs.

Table 1 panel B presents the correlation matrix for the two measures of foreignness and the main variable of interest the fund flows. Both measures of foreignness have 50% correlation. While the correlation between flows and foreign identifiers is negative, it is very low, about 2%. Table 1 panel C presents univariate sorting results for Foreign funds as per MTurk and Foreign funds as per Name Prism. I illustrate that Foreign funds as per MTurk get significantly lower annual fund flows as compared to Non-Foreign funds as per MTurk. This difference is highly significant at 1%. But as I change the measure of foreignness to Foreign as per Name-Prism there is no statistically significant difference in annual fund flows. Foreign funds as per MTurk get lower style flows as well as family flows, however, there is no difference in style flows and family flows for Foreign funds as per Name Prism and Non-Foreign funds as per Name Prism. The univariate results highlights that the differences in Foreign and Non-Foreign funds are prominently measure driven. Foreign funds as per MTurk get slightly lower Morningstar rating and they earn 1% higher annual return. For performance, there's no difference in performance rank or benchmark adjusted return for Foreign and Non-Foreign funds. After comparing with similar other funds, Foreign funds as per MTurk and as per Name Prism do not earn differential returns. In fund characteristics, I observe that Foreign and Non-

Foreign funds have similar fund size, fund age and turnover. Foreign funds as per Name Prism have slightly higher fund risk as compared to Non-Foreign funds as per Name Prism. However, Foreign funds as per MTurk do not have differential fund risk as compared to Non-Foreign funds as per MTurk. Foreign funds as per Name Prism have lower 12B-fees as compared to Non-Foreign funds as per Name Prism but Foreign funds as per MTurk do not have differential 12B-1 fees. Foreign funds as per MTurk have lower expense ratios as compared to Non-Foreign funds as per MTurk but Foreign funds as per Name Prism have higher expense ratios as compared to Non-Foreign funds as per Name Prism. Less of Foreign funds as per MTurk have no loads as compared to Non-Foreign funds as per MTurk but more of Foreign funds as per Name Prism have no loads to Non-Foreign funds as per Name Prism. This table points to the lack of consistency as well as high measure dependence of results.

Section 4: Results

While, univariate results point to the lack of consistency, there are still differential flows for Foreign and Non-Foreign funds as per MTurk. To put this argument to the test, I examine the relationship between the foreignness of fund manager names and fund flows. I estimate the fund flow regressions in which annual net fund flow is the dependent variable. I run the fund flows on both measures of foreignness. The main variable of interest here is Foreign indicator which indicates whether the manager of that fund in that year had a perceived Foreign ethnicity. My controls, commonly used in literature, include fund size, turnover, fund risk, expense ratio, fund age, style flow (i.e., the aggregate flow to funds that are in the same style during the year), fund family flow, and lagged fund flows. In addition, I control for fund return by including performance rank, defined as the rank of the fund in the previous year relative to all other funds in the same style, as well as the squared performance rank measure. I lag all control variables by one year. I observe that Foreign indicator is insignificant. As Berk & Green (2004), have illustrated previous performance and prior fund flows seem to usurp most of the statistical significance. I include year, style, and fund family fixed effects. I cluster standard errors at the fund level. Column 1, 2 and 3 display results using Foreign as per MTurk as measure for foreignness. Column 4, 5 and 6 illustrate results using Foreign as per Name Prism as measure for foreignness. Column 1 and 4 display results for the entire sample period 1976 to 2016 whereas the rest of the columns display sub-sample analysis. Columns 2 and 5 display results for sub-period 1993-2011 and columns 3 and 6 display results for sub-period 1993-2016. All else equal, I do not find any evidence of differential fund flows that might suggest in-group bias. I observe that fund flows are positively and significantly related to family flows (Brown & Wu, 2015), performance rank and fund size. Older funds, on average, get lower fund flows. Interestingly, funds with no load get lower fund flows. Irrespective of sample period and measure for foreignness, Foreign funds do not get differential fund flows.

DelGarcio & Tkuc (2008) document that investors pay attention to Morningstar ratings and direct fund flows to funds with higher rating. Hence, I split my sample and run base regressions from table 2 for each Morningstar rating. In table 3, I repeat this analysis for each Morningstar rating. Columns 1 through 5 exhibit results for Foreign as per MTurk as measure for foreignness. Columns 6 through 10 exhibit results for Foreign as per Name Prism as measure for foreignness. Column 1 and 6 display results for Morningstar rating 1. Columns 2 and 7 display results for Morningstar rating 2. Columns 3 and 8 display results for Morningstar rating 3. Columns 4 and 8 display results for Morningstar rating 4 and Columns 5 and 10 display results for Morningstar rating 5. I observe that fewer funds have Morningstar rating of 1 or 2. Most have Morningstar rating 3 and 4. Fund age is negatively related to fund flows. Family flows and performance rank are positive and significant for Morningstar ratings 3, 4 and 5. I observe that Foreign

funds do not get differential fund flows from Non-Foreign funds. Exception to this is Foreign funds as per MTurk in Morningstar rating 4. These results are driven by 486 observations (2% of the final sample) and hence, cannot be generalized. This result also disappears when I change the measure to Foreign funds as per Name Prism.

One potential concern with the flow regression may be that the results are spuriously induced by unobservable fund or managerial attributes. One might argue that I am comparing two distinct funds and hence do not find results due to this misspecification. To mitigate this concern, I create a matched sample of funds for which I match the subset of Foreign funds with similar Non-Foreign funds at the same point in time. I create one for one match using attributes that clearly influence funds flows. Table 4 panel A (Foreign funds as per MTurk) and panel B (Foreign funds as per Name Prism) present these results. I then re-estimate the baseline regressions using only the matched sample. If perceived ethnicity of manager names is the cause of differential fund flows, then this matched sample should highlight that, and I should observe a negative and statistically significant coefficient on Foreign. First, I identify a set of matching attributes, such as fund size, age, fund family, style, and previous return. Then, each year, for each Foreign fund in the sample, I identify all Non-Foreign funds that match the Foreign funds on the chosen dimensions. I keep only these Non-Foreign funds in the sample and drop all other Non-Foreign funds that do not have a matching Foreign fund in the chosen year. This matching procedure yields a set of Non-Foreign funds that closely resembles my sample of Foreign funds. I do not find any differential fund flows for Foreign funds. This clarifies that fund flows are driven by prior performance and managers of Foreign funds might have differential personal attributes as compared to managers of Non-Foreign funds. In table 4 panel A I repeat baseline flow regressions from table 2 for matched sample. Foreign funds are identified as Foreign funds as per MTurk. Column 1 presents results for sample matched on year, fund size and style. Column 2 presents results for sample matched on year, fund size, style and fund age. Column 3 presents results for sample matched on year, fund size, style and prior return. Column 4 presents results for sample matched on year, fund size and fund family and column 5 presents results for sample matched on year, fund size, style, and fund family. Again, I notice significant drop in sample size. I do not find differential funds for Foreign funds as per MTurk. Fund size seems to be positive and significant and fund age seems to be negative and significant for most of the matched samples. Past fund flows also illustrate positive autocorrelation. However, irrespective matching attributes, I do not find any evidence that Foreign funds get differential fund flows. In tabulated results, I also create a matched sample on year, fund family, style and manager education and find that Foreign funds do not get differential fund flows.

In table 4 panel B I repeat table 4 panel A but use Foreign as per Name Prism as measure for foreignness. Column 1 presents results for sample matched on year, fund size and style. Column 2 presents results for sample matched on year, fund size, style and fund age. Column 3 presents results for sample matched on year, fund size, style and prior return. Column 4 presents results for sample matched on year, fund size and fund family and column 5 presents results for sample matched on year, fund size, style, and fund family. Sample size is still smaller. I do not find differential funds for Foreign funds as per Name Prism. Fund size and fund age retain the significant relation with higher economic impact. Past fund flows still display positive autocorrelation only for one matched sample and has reduced economic impact. However, irrespective matching attributes, I do not find any evidence that Foreign funds get differential fund flows. Again, in tabulated results, I also create a matched sample on year, fund family, style and manager education and find that Foreign funds do not get differential fund flows.

With known Islamophobia, especially in recent times, one can expect names with Muslim sounding names should face higher ethnicity-based discrimination. So, if I can differentiate between middle eastern ethnicity and all other Foreign ethnicities it should provide robustness to the results and I should capture differential fund flows. I purposely tilt the model towards finding significance. Table 5 displays results by re-estimating the base regressions in table 2 but I add indicator variable for Middle Eastern managers and interaction term between Non-Middle Eastern managers and Foreign measure as well as manager characteristics for education and gender. Columns 1 and 3 classify Foreign funds using MTurk and columns 2 and 4 classify Foreign funds using Name Prism. Columns 1 and 2 repeat table 2 but add manager characteristics. Columns 3 and 4 repeat 1 and 2 but split Foreign funds between funds with middle eastern managers and all other foreign managers except middle eastern managers. I illustrate similar results here. Fund age has negative and significant relation to fund flow. No load funds receive lower fund flows. Fund size, performance rank and family flows exhibit positive and economically significant relation to fund flows. However, I do not find any differential fund flows for Foreign funds. I also do not find any differential fund flows for middle eastern managers. This adds robustness to my results.

As documented in prior literature, retail investors display investor biases more prominently. Hence any fund with a higher percentage of retail investors must be the fund where I must spot ethnicity-based discrimination, if it exists. To test this, I re-estimate base regression from table 2 on a subset of funds. I split my sample in three groups: with institutional holding of 0%, with institutional holding of less than 10%, and with institutional holding of more than 50%. Columns 1, 2 and 3 present results for Foreign funds using Foreign as per MTurk as measure for foreignness and columns 4, 5 and 6 present results for Foreign funds using Foreign as per Name Prism as measure for foreignness. In columns 1 and 4 I present results for

sub-sample of funds institutional holding of 0%. Columns 2 and 5 display results for sub-sample of funds institutional holding of less than 10%. Columns 3 and 6 demonstrate results for sub-sample of funds institutional holding of more than 50%. I observe that in addition to fund age, fund size and performance rank, and past fund flows, style flows are positive and significant. This finding is in line with Barberis and Shleifer (2003). Family flows are positively related to fund flows at 1% level for retail investors, however for institutional investors they are insignificant. It is unsurprising as institutional investors have lower costs for changing fund families unlike retail investors for whom this can be very costly in terms of time and money. I do not find any evidence of lower annual fund flows for Foreign funds. My results from table 2 robustly stand.

To alleviate concerns of model misspecification, I also run fund flow regressions with controls from base regression and add interaction terms. Since I have observed that previous performance and lagged fund flows are two of the variables that explain fund flows, I interact Foreign with performance rank, squared performance rank and fund size. I present the results in table 7. Column 1 presents results for Foreign as per MTurk as measure and column 2 presents results for Foreign as per Name Prism. The coefficients on interaction terms are statistically insignificant. This buttresses my conjecture Foreign funds do not receive differential fund flows. Family flows, fund age, fund size and loads seem to retain the statistically significant relationship and the direction irrespective of changes in models or sub-sample analysis. Investors seem to allocate funds by using fund characteristics rather than manager characteristics.

Section 5: Robustness

To test my conjecture that managers of Foreign funds might have differential performance, I regress performance variables on the Foreign indicator using controls from baseline regressions. Jensen (1968), Carhart (1997), Malkiel (1995), and Fama & French (2010), among others, evidence that actively managed U.S. equity mutual funds significantly "underperform" passive investment strategies. Hence benchmark-adjusted return should be better measure for performance. I also calculate performance rank which compares funds within the same style in the same year. In table 8, I repeat my estimations using controls from baseline regressions but using performance rank as well as benchmark-adjusted return as dependent variable. I exclude lagged fund flow since performance rank is calculated using lagged fund flows. I also split Foreign into middle eastern and non-middle eastern funds. Columns 1 and 2 present results with performance rank as the dependent variable and columns 3 and 4 present results with benchmark adjusted return as the dependent variable. Columns 1 and 3 display results for Foreign funds as per MTurk and columns 2 and 4 display results for Foreign funds as per Name Prism. I find family flows are positively and significantly related to performance rank as well as benchmark adjusted returns. Fund age has negative and significant relation to performance rank as well as benchmark adjusted return. I also observe that manager tenure is positive and significant, demonstrating that managers with longer tenure earn higher benchmark adjusted return as well higher performance rank. Women managers seem to have lower performance rank and earn lower benchmark adjusted return. Also, funds with higher risk earn higher benchmark adjusted return. I do not differential performance for Foreign Managers in terms of performance rank. Foreign funds as per MTurk seem to earn higher benchmark adjusted return, however when I change the measure to Foreign funds as per Name Prism these results completely go away and I find no differential performance.

For robustness, I also estimate Fama & MacBeth (1973) regressions in table 9. I use the model specifications from table 2 but run Fama & Macbeth (1973) regressions. I split the sample between all funds and domestic equity. Columns 1 and 3 exhibit results for all funds and columns 2 and 4 exhibit results only for domestic equity funds. Columns 1 and 2 use Foreign as per MTurk as measure for foreignness and Columns 3 and 4 use Foreign as per Name Prism as measure for foreignness. I find my results unchanged. Fund flow and fund age still seem to be driving factors for fund flows in addition to style flows. Again, I find that there is no difference in fund flows for Foreign funds. This supports my results from previous tables and evidences that my results are robust to change in methodology.

In table 10, I repeat table 2 but display sub-sample analysis by splitting my sample between all funds and only domestic equity funds. I also add interaction term for foreign funds with no load. Columns 1 and 3

display results for all funds and columns 2 and 4 display results for domestic equity funds. Columns 1 and 2 exhibit results using Foreign funds as per MTurk as measure of foreignness. Columns 3 and 4 exhibit results using Foreign funds as per Name Prism as measure of foreignness. My results remain unchanged. Fund age has negative and significant relation to fund flow. No load funds receive lower fund flows. Fund size, performance rank and family flows exhibit positive and economically significant relation to fund flows. I do not find any differential fund flows for Foreign funds. I observe that, in fact, foreign managers (as per Name Prism) who manage funds with no load get higher fund flows. I will however qualify that the higher fund flows go away when I change the measure of foreignness to Foreign funds as per MTurk.

In table 11 I repeat table 8 by changing the dependent variable to expense ratio. I further illustrate the sub-sample analysis. Columns 1 and 3 display results for all funds and columns 2 and 4 display results for only domestic equity funds. Columns 1 and 2 use Foreign as per MTurk to identify Foreign funds. In Columns 3 and 4 use Foreign as per Name Prism to identify Foreign funds. Fund size, fund age and no-load indicator have negative and significant relationship with expense ratio. I observe that funds with higher risk have higher expense ratio. I also find that non-middle eastern foreign managers have lower expense ratios, however these results do not sustain when I change the measure to Foreign funds as per Name Prism.

Performance rank is consistently significant in fund flow regressions irrespective of the model specification. Hence, one might argue that the significance of foreign indicator is usurped by performance rank. Table 12 displays a different iteration of table 8. I repeat table 8 by changing fund flow as dependent variable and by adding benchmark adjusted return as control variable. Columns 1 and 3 display results for all funds and columns 2 and 4 display results for domestic equity funds. Columns 1 and 2 use Foreign as per MTurk to identify Foreign funds. In Columns 3 and 4 use Foreign as per Name Prism to identify Foreign funds. Benchmark adjusted return, fund size and family flow are positive and significant. Fund age and no-load indicator are negative and significant. Foreign funds do not receive differential funds even after changing the performance from performance rank to benchmark adjusted return.

In table 13, I repeat table 2 but add interaction terms for return as well as fund size with Foreign indicator. Columns 1 and 3 display results for all funds and columns 2 and 4 display results only for domestic equity funds. Columns 1 and 2 use Foreign as per MTurk to identify Foreign funds. In Columns 3 and 4 use Foreign as per Name Prism to identify Foreign funds. Again, return and performance rank have a positive relationship with fund flows, whereas fund age and no-load indicator have a negative relationship. I observe that the positive relationship between returns and flows reduces for Foreign funds as per MTurk. As

displayed in prior tables, these results change when I change the measure to Foreign funds as per Name Prism.

In table 14, I repeat table 9 Fama & MacBeth (1973) regressions by splitting the sample. Columns 1 through 4 display results for sub-sample period 1993 to 2011 and columns 5 through 8 demonstrate results for sub-sample period 1993 to 2016. Columns 1, 3, 5 and 7 display results for Foreign funds as per MTurk and Columns 1, 3, 5 and 7 illustrate results for Foreign funds as per Name Prism. Columns 1, 2, 4 and 5 display results for all funds and Columns 1, 2, 4 and 5 display results for domestic equity funds. Style flows are positive and significant to fund flows and fund age is negative and significant. Again, I find that there is no difference in fund flows for Foreign funds any category. Also, this result survives as I change measure of foreignness from MTurk to Name Prism.

In table 15, I repeat table 8 by changing the dependent variable to gross return. I further demonstrate sub-sample analysis. Columns 1 and 3 display results for all funds and columns 2 and 4 display results for domestic equity funds. Columns 1 and 2 use Foreign as per MTurk to identify Foreign funds. In Columns 3 and 4 use Foreign as per Name Prism to identify Foreign funds. Smaller funds and younger funds earn higher gross return. Female managers earn lower gross return and managers with more experience earn higher gross return. I also find that non-middle eastern foreign managers earn higher gross return. The results go away when I change the measure to Foreign funds as per Name Prism.

Table 16 repeats table 15 analysis by changing dependent variable to net return. Columns 1 and 3 display results for all funds and columns 2 and 4 display results for domestic equity funds. Columns 1 and 2 use Foreign as per MTurk to identify Foreign funds. In Columns 3 and 4 use Foreign as per Name Prism to identify Foreign funds. Again, my results from table 15 get enhanced when net return is the dependent variable. I observe that younger funds earn higher net return. Funds with lower risk earn lower net return. Female managers earn lower net return and managers with more experience earn higher net return. I find that non-middle eastern foreign managers earn higher net return. The results go away when I change the measure to Foreign funds as per Name Prism.

Section 6: Conclusion

I regress net fund-flows on measures for 'foreignness' of names and on all the controls as are documented in the literature. I fail to reject the hypothesis that Foreign fund managers get differential fund flows after controlling for other factors. I also create a one-to-one matched sample on the attributes of fund age, fund size, style and family. I create various combinations of the matched sample and run the main model with controls and fixed effects. The results remain unchanged. I do not find evidence of differential fund flows for funds managed by managers with 'foreign-sounding' names and cannot conclude that investors display in-group bias while making investment decisions.

Whether investors chase performance or display in-group bias has been in debate in recent empirical financial research. Since in-group bias in investors can be unobservable, I present two measures here. In the first, I improve the accuracy of existing survey by enforcing certain constraints from fields of sociology and onomastics. In the second, I suggest an objective measure by identifying ethnicities using Name Prism algorithm. Furthermore, I follow data-cleaning techniques to eradicate any data errors. After these, I do not find any differential fund flows attributed to Foreign funds and hence fail to reject the null hypothesis that investors do not allocate differential fund flows to managers with foreign-sounding names.

To summarize, looking at mutual fund flows I do not find evidence that investors display in-group in investment decision making. Since retail investors are majority investors in mutual funds the result has wider applicability.

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Tables

Table 1. Descriptive Statistics

Panel A: Summary Statistics

Variables	Mean	SD	Min	P1	P5	P25	P50	P75	P95	P99	Max
Foreign Name Identification											
MTurk	0.067	0.250	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000
Name Prism	0.036	0.187	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000
Flows											
Fund Flow (%)	6.945	45.365	-57.613	-48.673	-33.833	-14.921	-4.305	13.170	85.682	214.949	393.110
Style Flow (%)	3.953	72.212	-89.524	-24.391	-18.237	-5.356	0.245	8.981	27.346	66.460	4,671.739
Family Flow (%)	3.834	27.576	-61.328	-48.116	-30.942	-9.857	-0.137	10.854	52.632	113.851	213.527
Performance											
Performance Rank	0.519	0.279	0.000	0.012	0.070	0.285	0.523	0.759	0.949	0.994	1.000
Morningstar Rating	3.376	0.982	1.000	1.000	2.000	3.000	3.000	4.000	5.000	5.000	5.000
Fund Characteristics											
Fund Size	6.130	1.587	3.219	3.344	3.746	4.915	6.024	7.175	8.941	10.229	12.405
Turnover	87.890	82.266	3.040	6.000	13.300	35.000	64.000	110.000	254.000	438.000	566.000
Fund Risk (%)	4.107	2.240	0.115	0.559	0.798	2.655	3.768	5.535	8.009	10.339	20.770
Expense Ratio (%)	1.110	0.382	0.010	0.280	0.502	0.870	1.090	1.323	1.775	2.171	3.590
Fund Age	8.433	0.697	6.999	7.047	7.288	7.956	8.433	8.866	9.695	10.187	10.416
No Load	0.435	0.496	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000
12B-1 Fee	0.622	0.427	0.000	0.000	0.000	0.250	0.750	1.000	1.000	1.000	1.000
Manager Characteristics											
Tenure	12.870	7.204	0.083	1.583	3.333	7.500	11.833	16.917	26.250	33.833	50.750
Female	0.195	0.396	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000
Graduate Degree	0.816	0.388	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
PhD	0.074	0.262	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000
Certifications	0.683	0.465	0.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000
Obs.	**22060**										

This table reports the descriptive statistics for fund and fund manager characteristics for all funds. Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding t -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund i's total net assets in year t , and r_t denotes fund i's return in year t as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same market style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year t. Style flow is the growth rate of fund i's style due to flows in year t, excluding flows in fund i. Family flow is the growth rate of fund i's fund family due to flows in year t, excluding flows in fund i. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Panel B: Correlation Matrix

	Foreign MTurk	Foreign Name Prism	Fund Flow	Style Flow	Family Flow
Foreign - MTurk	1				
Foreign - Name Prism	0.507	1			
Fund Flow	-0.029	-0.003	1		
Style Flow	-0.015	-0.003	0.051	1	
Family Flow	-0.023	0.008	0.135	0.068	1

This table reports the descriptive statistics for fund and fund manager characteristics for all funds. Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding *t* -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t} - TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund *i*'s total net assets in year *t* , and r_t denotes fund *i*'s return in year *t* as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year *t*. Style flow is the growth rate of fund *i*'s style due to flows in year *t*, excluding flows in fund *i*. Family flow is the growth rate of fund *i*'s fund family due to flows in year *t*, excluding flows in fund *i*. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.
Correlation about 51%. Add performance rank to the correlation.

Panel C: Differences in Foreign and Non-Foreign Managers and Funds

	MTurk				Name Prism			
Variables	**Foreign=1**	**Foreign=0**	**Diff.**		**Foreign=1**	**Foreign=0**	**Diff.**	
Flows								
Fund Flow	1.971	7.301	5.331	***	6.154	6.975	0.821	
Style Flow	-0.058	4.241	4.299	**	3.008	3.989	0.981	
Family Flow	1.471	4.004	2.533	***	4.891	3.794	-1.096	
Performance								
Performance Rank	0.524	0.519	-0.006		0.532	0.519	-0.014	
Morningstar Rating	3.264	3.385	0.120	***	3.323	3.379	0.055	
Annual Return	8.968	7.792	-1.176	**	8.634	7.841	-0.793	
Benchmark Adjusted Return	-0.506	-0.467	0.039		-0.608	-0.464	0.144	
Fund Characteristics								
Fund Size	6.077	6.133	0.057		6.095	6.131	0.036	
Turnover	90.111	87.731	-2.380		88.515	87.866	-0.649	
Fund Risk	4.167	4.102	-0.064		4.301	4.099	-0.201	**
Expense Ratio	1.078	1.112	0.034	***	1.142	1.108	-0.033	**
Fund Age	8.464	8.431	-0.033		8.451	8.433	-0.018	
No Load	0.404	0.438	0.034	**	0.499	0.433	-0.067	***
12B-1 Fee	0.620	0.622	0.002		0.592	0.623	0.032	**
Manager Characteristics								
Tenure	11.711	12.953	1.242	***	10.984	12.942	1.958	***
Female	0.372	0.182	-0.190	***	0.098	0.199	0.101	***
Graduate Degree	0.924	0.808	-0.117	***	0.720	0.819	0.099	***
PhD	0.146	0.069	-0.077	***	0.061	0.075	0.014	
Certifications	0.859	0.671	-0.188	***	0.354	0.696	0.341	***

This table reports the mean fund and fund manager characteristics for all funds sorted by my 2 main variables – Foreign (panel A) and Non-European (panel B). Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding t -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t} - TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund i's total net assets in year t , and r_t denotes fund i's return in year t as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year t. Style flow is the growth rate of fund i's style due to flows in year t, excluding flows in fund i. Family flow is the growth rate of fund i's fund family due to flows in year t, excluding flows in fund i. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Table 2. Fund Flows and Foreign Named Managers

	MTurk			Name Prism		
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
= Fund Flow	1978-2016	1993-2011	1993-2016	1978-2016	1993-2011	1993-2016
Foreign Name Identification						
Foreign	-1.432	-1.424	-1.433	-0.341	-1.092	-0.343
	(1.253)	(1.712)	(1.253)	(1.716)	(1.934)	(1.715)
Flows						
Fund Flow$_{t-1}$	0.001	0.001**	0.001	0.001	0.001**	0.001
	(0.000)	(0.000)	(0.000)	(0.00)	(0.000)	(0.000)
Style Flow	0.021	0.014	0.024	0.021	0.014	0.024
	(0.015)	(0.016)	(0.017)	(0.015)	(0.016)	(0.017)
Family Flow	0.113***	0.111***	0.113***	0.113***	0.111***	0.113***
	(0.016)	(0.019)	(0.016)	(0.016)	(0.019)	(0.016)
Performance						
Performance Rank	-4.440	-8.840	-4.463	-4.462	-8.833	-4.485
	(4.419)	(5.428)	(4.433)	(4.420)	(5.428)	(4.434)
Performance Rank^2	38.822***	44.395***	38.947***	38.837***	44.388***	38.962***
	(4.550)	(5.629)	(4.564)	(4.551)	(5.628)	(4.565)
Fund Characteristics						
Fund Size	3.500***	3.999***	3.495***	3.510***	3.999***	3.505***
	(0.287)	(0.372)	(0.287)	(0.287)	(0.372)	(0.287)
Turnover	0.009*	0.010*	0.009*	0.009*	0.010*	0.009*
	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)
Fund Risk	-0.204	-0.041	-0.195	-0.199	-0.038	-0.189
	(0.313)	(0.338)	(0.313)	(0.313)	(0.338)	(0.313)
Expense Ratio	-2.097	-0.641	-2.093	-2.047	-0.597	-2.044
	(1.624)	(1.811)	(1.624)	(1.624)	(1.808)	(1.624)
Fund Age	-14.838***	-16.366***	-14.84***	-14.840***	-16.368***	-14.842***
	(0.653)	(0.805)	(0.653)	(0.653)	(0.805)	(0.653)
No Load	-6.888***	-5.605***	-6.892***	-6.859***	-5.573***	-6.863***
	(1.549)	(1.817)	(1.549)	(1.549)	(1.816)	(1.548)
12B-1 Fee	2.598	3.593	2.597	2.627	3.608	2.626
	(1.944)	(2.336)	(1.944)	(1.943)	(2.334)	(1.942)
Constant	98.697***	127.147**	94.125	98.585***	127.409**	94.067
	(21.152)	(59.490)	(63.111)	(21.143)	(59.436)	(63.077)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund	Fund	Fund
Obs.	22,060	15,222	22,013	22,060	15,222	22,013
R-squared	0.167	0.175	0.167	0.167	0.175	0.167

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 3. Fund Flows and Morningstar Ratings

	MTurk					Name Prism				
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
= Fund Flow	1 Star	2 Star	3 Star	4 Star	5 Star	1 Star	2 Star	3 Star	4 Star	5 Star
Foreign Name Identification										
Foreign	1.929	5.304	-1.031	-5.401***	7.657	-1.876	2.316	0.764	1.498	9.889
	(5.771)	(2.831)	(1.582)	(1.948)	(6.382)	(5.156)	(2.610)	(2.464)	(2.791)	(9.309)
Flow										
Fund Flow$_{t-1}$	-0.004	0.003	0.005**	0.002	0.000	-0.004	0.003	0.005**	0.002	0.000
	(0.003)	(0.002)	(0.002)	(0.002)	(0.000)	(0.003)	(0.002)	(0.002)	(0.002)	(0.000)
Style Flow	-0.024	0.090***	0.186***	-0.007	0.308***	-0.025	0.089***	0.187***	-0.007	0.310***
	(0.107)	(0.034)	(0.043)	(0.014)	(0.112)	(0.106)	(0.034)	(0.043)	(0.014)	(0.113)
Family Flow	0.043	0.046**	0.074***	0.099***	0.168***	0.043	0.045**	0.074***	0.099***	0.168***
	(0.063)	(0.022)	(0.018)	(0.026)	(0.057)	(0.063)	(0.022)	(0.018)	(0.026)	(0.057)
Performance										
Performance Rank	21.327	5.624	-8.434	8.251	-20.139	21.617	5.925	-8.452	8.637	-19.612
	(23.681)	(8.720)	(7.085)	(8.320)	(22.046)	(23.673)	(8.745)	(7.088)	(8.319)	(22.058)
Performance Rank^2	-17.280	4.327	28.437***	19.335**	56.108***	-17.563	4.035	28.443***	18.884**	55.721***
	(26.017)	(9.183)	(7.323)	(7.929)	(18.942)	(26.018)	(9.209)	(7.330)	(7.928)	(18.959)
Fund Characteristics										
Fund Size	-0.915	0.488	0.727	0.780	2.544**	-0.912	0.429	0.735	0.821	2.574**
	(1.992)	(0.672)	(0.391)	(0.485)	(1.184)	(1.982)	(0.674)	(0.392)	(0.488)	(1.181)
Turnover	-0.004	0.006	0.004	0.023**	0.021	-0.003	0.006	0.004	0.023**	0.022
	(0.025)	(0.008)	(0.006)	(0.009)	(0.021)	(0.025)	(0.008)	(0.006)	(0.009)	(0.022)
Fund Risk	1.812	0.920	0.536	0.003	0.227	1.810	0.874	0.539	0.025	0.239
	(1.166)	(0.798)	(0.433)	(0.543)	(1.131)	(1.171)	(0.798)	(0.433)	(0.543)	(1.130)
Expense Ratio	-1.783	-9.615***	-3.032	0.199	5.316	-1.808	-9.862***	-3.008	0.514	5.513
	(5.994)	(2.890)	(2.201)	(3.138)	(6.770)	(5.989)	(2.913)	(2.198)	(3.143)	(6.771)
Fund Age	-8.057***	-9.049***	-9.547***	-13.137***	-20.817***	-8.010***	-9.013***	-9.538***	-13.134***	-20.794***
	(2.833)	(1.184)	(0.842)	(1.046)	(2.485)	(2.808)	(1.185)	(0.842)	(1.047)	(2.488)
No Load	4.284	-2.772	-5.103***	-8.540***	-15.604**	4.197	-2.945	-5.105***	-8.488***	-15.923**
	(4.837)	(3.080)	(1.978)	(2.572)	(6.912)	(4.801)	(3.082)	(1.978)	(2.569)	(6.928)
12B-1 Fee	-2.578	-0.954	1.450	1.413	0.057	-2.651	-.944	1.428	1.485	-0.574
	(9.229)	(3.642)	(2.352)	(3.446)	(8.164)	(9.280)	(3.636)	(2.355)	(3.440)	(8.212)
Constant	45.623	-326.315**	289.899***	175.263***	187.054***	46.048	-323.333**	289.890***	175.381***	194.826***
	(32.099)	(155.219)	(20.578)	(11.166)	(26.988)	(32.122)	(154.694)	(20.593)	(11.160)	(26.525)
Obs.	692	3,169	8,103	7,296	2,800	692	3,169	8,103	7,296	2,800
R-squared	0.469	0.192	0.153	0.188	0.292	0.469	0.191	0.153	0.187	0.292
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicators and various control variables. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In both panels, the model is estimated by pooled OLS in all columns. This model uses sub-sample of funds that have Morningstar rating = 1. In panel A, I use Foreign as the ethnic indicator and in panel B I use Non-European as the ethnic indicator. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 4. Matched Samples

Panel A: Foreign Names Identified with MTurk

Dependent Variable = Fund Flow	(1) Year, Seg, Size	(2) Year, Seg, Size, Age	(3) Year, Seg, Size, Ret	(4) Year, Size, Family	(5) Year, Seg, Size, Family
Foreign Name Identification					
Foreign - MTurk	-2.588	-1.013	-0.441	-3.185	-10.652
	(1.548)	(7.497)	(3.885)	(1.935)	(6.980)
Flows					
Fund Flow$_{t-1}$	0.019***	0.000	0.022	0.014***	0.010***
	(0.006)	(0.008)	(0.017)	(0.006)	(0.002)
Style Flow	0.043	0.592**	-0.267	0.123	-0.131
	(0.062)	(0.277)	(0.186)	(0.078)	(0.305)
Family Flow	0.016	-0.084	0.086	-0.012	-0.051
	(0.024)	(0.125)	(0.081)	(0.049)	(0.170)
Performance					
Performance Rank	-9.505	-38.376	-22.796	3.310	-30.218
	(9.406)	(49.101)	(22.746)	(11.723)	(55.145)
Performance Rank^2	46.463***	86.822	59.086**	28.667**	74.069
	(9.557)	(53.401)	(24.122)	(12.030)	(58.634)
Fund Characteristics					
Fund Size	2.874***	7.005**	1.470	3.780***	5.879
	(0.700)	(3.148)	(2.057)	(0.927)	(4.542)
Turnover	0.031***	0.003	0.031	0.030	0.034
	(0.012)	(0.057)	(0.040)	(0.016)	(0.061)
Fund Risk	-0.546	1.753	1.445	-0.140	-1.749
	(0.746)	(3.583)	(2.152)	(0.928)	(3.408)
Expense Ratio	-4.678	-44.129***	-17.199	-1.033	-20.018
	(3.701)	(15.394)	(12.382)	(5.357)	(14.426)
Fund Age	-14.357***	-21.057***	-8.927**	-10.417***	2.423
	(1.339)	(7.593)	(3.593)	(1.571)	(5.822)
No Load	-7.257**	-11.945	-5.906	-12.62***	-3.153
	(3.614)	(15.963)	(9.148)	(4.513)	(20.581)
12B-1 Fee	0.446	7.185	7.624	-6.030	7.180
	(4.269)	(22.701)	(10.002)	(4.828)	(23.002)
Constant	215.264***	81.160	13.889	201.756***	-79.842
	(15.301)	(95.737)	(56.693)	(47.368)	(70.112)
Year FE	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund	Fund
Obs.	5,704	379	888	2,913	386
R-squared	0.205	0.488	0.400	0.214	0.406

This table shows the estimates of percentage fund flows regressed on the Foreign indicator and various control variables for all funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 1. In panel A, presents results from estimating specification (5) from table 4 panel A on a sample of matched funds. I construct the matched fund sample by keeping for each fund with a manager with foreign-sounding name only the subset of funds with the same set of matching criteria in a given year. The following matching attributes are used: fund size, fund style, fund family, fund location, manager age, fund performance, and education. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Panel B: Foreign Names Identified with Name Prism

Dependent Variable = Fund Flow	(1) Year, Seg, Size	(2) Year, Seg, Size, Age	(3) Year, Seg, Size, Ret	(4) Year, Size, Family	(5) Year, Seg, Size, Family
Foreign Name Identification					
Foreign - Name-Prism	-1.837	-9.832	-12.073	-2.295	-9.384
	(2.358)	(10.492)	(6.433)	(3.126)	(9.000)
Flows					
Fund Flow$_{t-1}$	0.012**	0.010	-0.002	0.001	0.014
	(0.005)	(0.046)	(0.003)	(0.002)	(0.074)
Style Flow	0.237***	0.630	-0.238	0.268**	-0.753
	(0.091)	(0.531)	(0.295)	(0.132)	(1.684)
Family Flow	0.101***	0.047	0.083	0.201***	0.088
	(0.034)	(0.127)	(0.099)	(0.069)	(0.152)
Performance					
Performance Rank	-7.146	95.966	-9.053	20.987	62.929
	(13.12)	(72.313)	(44.437)	(16.669)	(61.936)
Performance Rank^2	38.326***	-65.907	49.974	16.659	3.539
	(13.198)	(66.187)	(44.775)	(17.377)	(58.288)
Fund Characteristics					
Fund Size	3.480***	8.562	-1.908	2.776**	-5.899
	(0.870)	(6.457)	(3.369)	(1.378)	(7.088)
Turnover	0.008	0.024	0.001	0.033	-0.029
	(0.012)	(0.090)	(0.034)	(0.020)	(0.054)
Fund Risk	-0.219	4.957	-4.076	-0.061	-2.553
	(0.800)	(5.421)	(3.556)	(1.146)	(5.454)
Expense Ratio	-1.877	28.840	4.512	-3.827	2.612
	(4.261)	(28.816)	(18.12)	(6.436)	(26.935)
Fund Age	-15.930***	-10.723	-17.236**	-16.010***	-11.305
	(1.670)	(29.406)	(6.670)	(2.662)	(7.639)
No Load	-4.663	35.718	17.084	3.187	15.176
	(3.379)	(24.309)	(19.421)	(5.829)	(24.955)
12B-1 Fee	9.931**	61.268	46.593**	9.219	18.242
	(4.560)	(45.68)	(18.115)	(7.255)	(26.469)
Constant	87.667***	-143.637	102.226	91.775***	171.267
	(17.717)	(202.609)	(69.47)	(33.127)	(123.934)
Year FE	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund	Fund
Obs.	3,315	204	413	1,752	243
R-squared	0.226	0.654	0.554	0.302	0.541

This table shows the estimates of percentage fund flows regressed on the Non-European indicator and various control variables for all funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, presents results from estimating specification (5) from table 4 panel B on a sample of matched funds. I construct the matched fund sample by keeping for each fund with a manager with foreign-sounding name only the subset of funds with the same set of matching criteria in a given year. The following matching attributes are used: fund size, fund style, fund family, fund location, manager age, fund performance, and education. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 5. Fund Flows and Manager Characteristics

Dependent Variable = Fund Flow	(1) MTurk	(2) Name Prism	(3) MTurk	(4) Name Prism
Foreign Name Identification				
Foreign	-1.441	-0.057		
	(1.258)	(1.729)		
Middle East			0.729	0.823
			(4.741)	(4.743)
Non-Middle East*Foreign			-1.394	-0.971
			(1.263)	(1.716)
Flows				
Fund Flow$_{t-1}$	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)
Style Flow	0.021	0.021	0.020	0.020
	(0.015)	(0.015)	(0.015)	(0.015)
Family Flow	0.113***	0.113***	0.114***	0.114***
	(0.016)	(0.016)	(0.016)	(0.016)
Performance				
Performance Rank	-4.595	-4.609	-4.711	-4.701
	(4.423)	(4.424)	(4.439)	(4.439)
Performance Rank^2	38.822***	38.825***	38.900***	38.886***
	(4.559)	(4.559)	(4.569)	(4.568)
Fund Characteristics				
Fund Size	3.386***	3.397***	3.349***	3.359***
	(0.306)	(0.306)	(0.306)	(0.306)
Turnover	0.010	0.010	0.009	0.009
	(0.005)	(0.005)	(0.005)	(0.005)
Fund Risk	-0.192	-0.187	-0.197	-0.192
	(0.314)	(0.313)	(0.315)	(0.315)
Expense Ratio	-2.017	-1.967	-2.186	-2.142
	(1.626)	(1.627)	(1.631)	(1.630)
Fund Age	-14.939***	-14.940***	-15.005***	-15.002***
	(0.661)	(0.661)	(0.662)	(0.662)
No Load	-6.934***	-6.913***	-7.046***	-7.012***
	(1.547)	(1.547)	(1.566)	(1.566)
12B-1 Fee	2.478	2.501	2.354	2.387
	(1.939)	(1.937)	(1.948)	(1.947)
Manager Characteristics				
Tenure	0.103	0.103	0.104	0.103
	(0.061)	(0.062)	(0.062)	(0.062)
Female	-0.284	-0.339	-0.347	-0.410
	(0.915)	(0.913)	(0.916)	(0.915)
Graduate Degree	-1.507	-1.546	-1.691	-1.732
	(0.967)	(0.969)	(0.976)	(0.977)
PhD	0.761	0.708	0.826	0.781
	(1.508)	(1.508)	(1.509)	(1.509)
Certifications	1.053	1.000	0.946	0.857
	(0.849)	(0.852)	(0.853)	(0.856)
Constant	94.857***	94.608***	95.949***	95.881***
	(20.784)	(20.776)	(20.706)	(20.666)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Style x Year FE	No	No	No	No
Clustering	Fund	Fund	Fund	Fund
Obs.	22,060	22,060	21,911	22,060
R-squared	0.167	0.167	0.168	0.167

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator interacted with indicator variable Middle East (that takes value 1 if the manager name ethnicity is identified as Middle Eastern by name Prism and 0 otherwise) for all funds. I use both ethnic indicators Foreign and Non-European. I use the same specifications as in table 5 and add interaction terms of the ethnic indicator with the respective performance and fund size variables. All control variables, except for style and family flows, are lagged by one year and have been defined in table 2. The standard errors are clustered at the fund level. The corresponding standard errors are shown in parentheses below the coefficient estimates.

Table 6. Fund Flows in Retail and Institutional Investor Funds

	MTurk			Name Prism		
Dependent Variable = Fund Flow	(1) Institutional =0	(2) Institutional <0.1	(3) Institutional >0.5	(4) Institutional =0	(5) Institutional <0.1	(6) Institutional >0.5
Foreign Name Identification						
Foreign	3.319	0.922	0.558	1.432	-0.124	-3.358
	(2.793)	(1.737)	(1.770)	(2.664)	(2.020)	(3.038)
Flows						
Fund Flow$_{t-1}$	0.211***	0.213***	0.191***	0.211***	0.213***	0.191***
	(0.019)	(0.015)	(0.020)	(0.019)	(0.015)	(0.020)
Style Flow	0.213***	0.212***	0.153***	0.213***	0.212***	0.154***
	(0.065)	(0.046)	(0.048)	(0.065)	(0.046)	(0.048)
Family Flow	0.075***	0.068***	0.029	0.075***	0.068***	0.030
	(0.026)	(0.021)	(0.025)	(0.026)	(0.021)	(0.025)
Performance						
Performance Rank	-17.209**	-7.305	10.953	-17.105**	-7.267	10.975
	(6.808)	(5.548)	(8.304)	(6.810)	(5.548)	(8.306)
Performance Rank^2	43.476***	32.665***	19.270**	43.365***	32.637***	19.243**
	(7.350)	(5.946)	(8.159)	(7.351)	(5.947)	(8.162)
Fund Characteristics						
Fund Size	2.246***	1.937***	3.274***	2.227***	1.925***	3.280***
	(0.511)	(0.381)	(0.528)	(0.512)	(0.380)	(0.528)
Turnover	-0.005	0.001	0.010	-0.005	0.001	0.010
	(0.008)	(0.006)	(0.009)	(0.008)	(0.006)	(0.009)
Fund Risk	-0.317	-0.527	-0.054	-0.321	-0.529	-0.058
	(0.443)	(0.323)	(0.657)	(0.444)	(0.323)	(0.657)
Expense Ratio	-2.508	-3.607*	6.508*	-2.620	-3.641*	6.528*
	(2.901)	(1.947)	(3.634)	(2.902)	(1.947)	(3.628)
Fund Age	-9.319***	-7.940***	-9.488***	-9.299***	-7.925***	-9.536***
	(1.184)	(0.902)	(1.349)	(1.184)	(0.900)	(1.351)
No Load	-2.547	-2.198	-5.413**	-2.683	-2.223	-5.352**
	(2.407)	(1.755)	(2.564)	(2.413)	(1.756)	(2.566)
12B-1 Fee	1.082	0.054	1.435	1.028	0.063	1.633
	(3.584)	(2.397)	(3.111)	(3.583)	(2.395)	(3.133)
Constant	79.933***	57.971***	86.126***	79.140***	58.037***	85.921***
	(22.925)	(19.776)	(16.744)	(22.808)	(19.837)	(16.752)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund	Fund	Fund
Obs.	5,928	8,812	5,464	5,928	8,812	5,464
R-squared	0.256	0.240	0.222	0.256	0.240	0.222

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator and various control variables for all categories of funds. For this table sub-sample of all funds with institutional ratio of less than 10% are selected. Columns 1 and 3 report estimates for all funds with institutional ownership of 0%. Columns 2 and 4 report estimates for all funds with institutional ownership of less than 10%. Panel A reports results by using Foreign as the ethnic indicator and panel B reports results by using Non-European as the ethnic indicator. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 7. Flow Regression Estimate with interaction – Performance Rank

Dependent Variable = Fund Flow	MTurk (1)	Name Prism (2)
Foreign Name Identification		
Foreign	6.008	-6.960
	(5.754)	(6.674)
Performance Rank*Foreign	-13.531	22.395
	(16.183)	(20.103)
Performance Rank^2*Foreign	6.904	-15.646
	(16.372)	(22.167)
Fund Size*Foreign	-0.431	0.040
	(0.730)	(0.914)
Flows		
Fund Flow$_{t-1}$	0.001	0.001
	(0.000)	(0.000)
Style Flow	0.020	0.020
	(0.015)	(0.015)
Family Flow	0.113***	0.113***
	(0.016)	(0.016)
Performance		
Performance Rank	-7.585	-8.901
	(16.432)	(16.542)
Performance Rank^2	29.040	29.582
	(16.864)	(16.975)
Performance Rank*Fund Size	0.954	0.929
	(2.565)	(2.575)
Performance Rank^2*Fund Size	1.248	1.294
	(2.618)	(2.626)
Fund Characteristics		
Fund Size	2.548***	2.519***
	(0.604)	(0.602)
Turnover	0.009	0.009
	(0.005)	(0.005)
Fund Risk	-0.201	-0.201
	(0.312)	(0.312)
Expense Ratio	-2.107	-2.077
	(1.621)	(1.621)
Fund Age	-14.831***	-14.822***
	(0.654)	(0.652)
No Load	-6.855***	-6.847***
	(1.552)	(1.552)
12B-1 Fee	2.600	2.673
	(1.947)	(1.944)
Constant	106.418***	106.755***
	(21.360)	(21.303)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	22,060	22,060
R-squared	0.167	0.167

This table shows the estimates of percentage fund flows regressed on the Foreign interacted with lagged performance indicators and fund size for all categories of funds. I use the same specifications as in table 5 and add interaction terms of the Foreign with the respective performance and fund size variables. All control variables, except for style and family flows, are lagged by one year and have been defined in table 2. The standard errors are clustered at the fund level. The corresponding standard errors are shown in parentheses below the coefficient estimates.
Table 8 onwards robustness

Table 8. Return Regression Estimate using Performance Rank and Benchmark-Adjusted Return

	Performance Rank		Benchmark Adjusted Return	
Dependent Variable	MTurk	Name Prism	MTurk	Name Prism
= Performance Rank	(1)	(2)	(3)	(4)
Foreign Name Identification				
Middle East	0.027	0.027	-0.155	-0.197
	(0.028)	(0.028)	(0.569)	(0.567)
Non-ME*Foreign	0.011	0.013	0.439**	-0.076
	(0.008)	(0.011)	(0.183)	(0.319)
Flow				
Style Flow	0.000	0.000	0.003	0.003
	(0.000)	(0.000)	(0.002)	(0.002)
Family Flow	0.000***	0.000***	0.007***	0.007***
	(0.000)	(0.000)	(0.002)	(0.002)
Fund Characteristics				
Fund Size	0.016***	0.016***	0.050	0.046
	(0.002)	(0.002)	(0.043)	(0.043)
Turnover	0.000***	0.000***	-0.001	-0.001
	(0.000)	(0.000)	(0.001)	(0.001)
Fund Risk	-0.001	-0.001	0.289***	0.287***
	(0.002)	(0.002)	(0.108)	(0.108)
Expense Ratio	-0.025***	-0.025***	0.323	0.310
	(0.009)	(0.009)	(0.311)	(0.310)
Fund Age	-0.028***	-0.028***	-0.411***	-0.411***
	(0.003)	(0.003)	(0.088)	(0.088)
No Load	0.011	0.010	0.425	0.421
	(0.008)	(0.008)	(0.307)	(0.308)
12B-1 Fee	0.019*	0.019*	0.142	0.138
	(0.01)	(0.010)	(0.375)	(0.376)
Manager Characteristics				
Tenure	0.004***	0.004***	0.086***	0.086***
	(0.000)	(0.000)	(0.009)	(0.009)
Female	-0.015***	-0.015***	-0.504***	-0.488***
	(0.005)	(0.005)	(0.124)	(0.124)
Graduate	-0.006	-0.005	-0.168	-0.157
	(0.005)	(0.005)	(0.162)	(0.162)
PhD	0.006	0.007	-0.052	-0.033
	(0.008)	(0.008)	(0.190)	(0.190)
Certifications	-0.004	-0.003	0.136	0.147
	(0.005)	(0.005)	(0.125)	(0.125)
Constant	1.287***	1.286***	-23.129***	-23.035***
	(0.289)	(0.289)	(6.332)	(6.336)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	21,911	21,911	21,911	21,911
R-squared	0.061	0.061	0.110	0.110

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of performance rank and benchmark-adjusted return regressed on the ethnic indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

How many non-me managers

Table 9. Fund Flow Regression Estimate using Fama Macbeth for 1976-2016

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Fund Flow	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Foreign	0.0481	2.799	-0.777	-0.237
	(1.412)	(1.889)	(0.857)	(0.834)
Flows				
Fund $Flow_{t-1}$	0.099**	0.126***	0.099**	0.126***
	(0.041)	(0.041)	(0.041)	(0.041)
Style Flow	0.205**	0.265***	0.207**	0.267***
	(0.0786)	(0.0839)	(0.079)	(0.084)
Family Flow	-0.498	-0.471	-0.497	-0.470
	(0.542)	(0.529)	(0.542)	(0.529)
Performance				
Performance Rank	12.010	7.756	12.060	7.887
	(15.470)	(12.540)	(15.440)	(12.500)
Performance Rank^2	10.600	16.130	10.620	16.070
	(14.770)	(13.400)	(14.750)	(13.360)
Fund Characteristics				
Fund Size	-0.780	-1.579	-0.786	-1.586
	(3.219)	(3.224)	(3.219)	(3.224)
Turnover	0.121	0.0466	0.121	0.047
	(0.449)	(0.435)	(0.449)	(0.435)
Fund Risk	-1.085	-2.128	-1.119	-2.144
	(2.012)	(1.797)	(2.012)	(1.795)
Expense Ratio	1.651	1.746	1.749	1.818
	(1.065)	(1.343)	(1.080)	(1.358)
Fund Age	-9.875***	-8.765***	-9.835***	-8.740***
	(1.580)	(1.777)	(1.579)	(1.777)
No Load	-0.594	-0.863	-0.511	-0.818
	(0.761)	(0.966)	(0.776)	(0.984)
12B-1 Fee	1.192	0.909	1.308	1.039
	(0.924)	(1.052)	(0.923)	(1.054)
Constant	90.130	91.450	89.630	91.120
	(55.640)	(55.630)	(55.650)	(55.630)
Observations	22,128	17,787	22,128	17,787
R-squared	0.441	0.454	0.440	0.453
Number of groups	33	33	33	33

Standard errors in parentheses *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated Fama-Macbeth regression in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 10. Fund Flow Regression Estimate with additional controls

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Fund Flow	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Foreign	-2.012	-0.984	-3.261	-3.841
	(1.682)	(1.955)	(2.436)	(2.896)
No Load*Foreign	1.555	1.598	6.653**	7.219
	(2.458)	(2.790)	(3.196)	(3.779)
Flows				
Fund Flow$_{t-1}$	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)
Style Flow	0.021	0.013	0.021	0.012
	(0.015)	(0.015)	(0.015)	(0.015)
Family Flow	0.113***	0.113***	0.113***	0.113***
	(0.016)	(0.018)	(0.016)	(0.018)
Performance				
Performance Rank	-4.625	-5.958	-4.596	-5.929
	(4.424)	(5.265)	(4.423)	(5.264)
Performance Rank^2	38.853***	42.741***	38.800***	42.686***
	(4.559)	(5.410)	(4.558)	(5.408)
Fund Characteristics				
Fund Size	3.388***	3.598***	3.389***	3.587***
	(0.306)	(0.357)	(0.306)	(0.356)
Turnover	0.010*	0.012	0.010**	0.013
	(0.005)	(0.008)	(0.005)	(0.008)
Fund Risk	-0.191	-0.121	-0.184	-0.118
	(0.314)	(0.368)	(0.313)	(0.368)
Expense Ratio	-2.014	-1.570	-1.979	-1.566
	(1.626)	(1.905)	(1.625)	(1.901)
Fund Age	-14.936***	-15.754***	-14.931***	-15.735***
	(0.661)	(0.758)	(0.659)	(0.756)
No Load	-7.030***	-6.959***	-7.209***	-7.176***
	(1.559)	(1.790)	(1.557)	(1.782)
12B-1 Fee	2.521	3.055	2.507	3.001
	(1.942)	(2.208)	(1.940)	(2.204)
Manager Characteristics				
Tenure	0.103	0.062	0.104	0.062
	(0.061)	(0.070)	(0.061)	(0.070)
Female	-0.291	-0.020	-0.322	-0.029
	(0.915)	(1.083)	(0.913)	(1.078)
Graduate	-1.499	-1.769	-1.601	-1.845
	(0.967)	(1.126)	(0.969)	(1.126)
PhD	0.753	-0.880	0.647	-0.964
	(1.508)	(1.859)	(1.509)	(1.858)
Certifications	1.040	0.665	0.999	0.654
	(0.850)	(0.969)	(0.852)	(0.968)
Constant	94.898***	96.594***	94.057***	95.790***
	(20.785)	(21.464)	(20.890)	(21.579)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	22,060	17,776	22,060	17,776
R-squared	0.167	0.176	0.167	0.176

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the Foreign indicator and various control variables from table 4 panel A with additional controls for Gender, Education and 12B-1 Fees and interaction for no load and ethnic Indicator for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 11. Return Regression Estimate using Expense Ratio

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Expense Ratio	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Middle East	-0.049	-0.017	-0.047	-0.015
	(0.039)	(0.047)	(0.039)	(0.047)
Non-ME*Foreign	-0.029**	-0.031**	0.002	-0.004
	(0.013)	(0.014)	(0.016)	(0.017)
Flows				
Fund Flow	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Performance				
Benchmark Adjusted Return	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Fund Characteristics				
Fund Size	-0.049***	-0.050***	-0.049***	-0.049***
	(0.003)	(0.004)	(0.003)	(0.004)
Turnover	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Fund Risk	0.011***	0.011***	0.011***	0.011***
	(0.003)	(0.003)	(0.003)	(0.003)
Fund Age	-0.019***	-0.031***	-0.019***	-0.031***
	(0.007)	(0.008)	(0.007)	(0.008)
No Load	-0.263***	-0.245***	-0.263***	-0.244***
	(0.017)	(0.018)	(0.017)	(0.018)
12B-1 Fee	0.029	0.038	0.029	0.039
	(0.023)	(0.025)	(0.023)	(0.025)
Manager Characteristics				
Tenure	-0.001	0.000	-0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Female	0.010	0.004	0.009	0.003
	(0.009)	(0.010)	(0.009)	(0.010)
Graduate	0.007	0.015	0.007	0.014
	(0.009)	(0.010)	(0.009)	(0.010)
PhD	-0.016	-0.010	-0.017	-0.011
	(0.015)	(0.017)	(0.015)	(0.017)
Certifications	-0.003	-0.010	-0.004	-0.012
	(0.008)	(0.009)	(0.008)	(0.010)
Constant	3.399***	3.457***	3.396***	3.455***
	(0.094)	(0.093)	(0.094)	(0.093)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	21,911	17,660	21,911	17,660
R-squared	0.677	0.641	0.677	0.641

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of Expense Ratio regressed on the ethnic indicator and various control variables for all categories of funds. Panel A shows estimations using Foreign indicator and panel B shows estimations using Non-European indicator. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Fund family sets expense ratios.

Table 12. Fund Flow Regression Estimate with Benchmark-Adjusted Return

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Fund Flow	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Middle East	1.642	7.406	1.747	7.433
	(5.120)	(6.180)	(5.124)	(6.178)
Non-ME*Foreign	-1.362	-0.402	-0.505	-0.205
	(1.304)	(1.493)	(1.759)	(2.014)
Flows				
Style Flow	0.021	0.014	0.021	0.014
	(0.015)	(0.015)	(0.015)	(0.015)
Family Flow	0.125***	0.126***	0.125***	0.126***
	(0.016)	(0.019)	(0.016)	(0.019)
Performance				
Benchmark Adjusted Return	0.788***	0.848***	0.788***	0.848***
	(0.057)	(0.060)	(0.057)	(0.060)
Fund Characteristics				
Fund Size	3.926***	4.174***	3.936***	4.176***
	(0.317)	(0.368)	(0.316)	(0.368)
Turnover	0.007	0.005	0.007	0.005
	(0.005)	(0.008)	(0.005)	(0.008)
Fund Risk	-0.259	0.100	-0.254	0.101
	(0.328)	(0.383)	(0.328)	(0.383)
Expense Ratio	-2.463	-1.946	-2.421	-1.934
	(1.668)	(1.941)	(1.668)	(1.940)
Fund Age	-15.790***	-16.633***	-15.788***	-16.630***
	(0.696)	(0.801)	(0.696)	(0.801)
No Load	-7.068***	-7.199***	-7.042***	-7.192***
	(1.623)	(1.841)	(1.623)	(1.841)
12B-1 Fee	2.810	3.403	2.835	3.414
	(2.008)	(2.239)	(2.008)	(2.239)
Manager Characteristics				
Tenure	0.180***	0.133	0.180***	0.132
	(0.064)	(0.073)	(0.064)	(0.074)
Female	-0.604	-0.340	-0.662	-0.359
	(0.937)	(1.108)	(0.935)	(1.104)
Graduate	-1.793	-2.192	-1.830	-2.204
	(1.000)	(1.163)	(1.002)	(1.163)
PhD	1.101	0.247	1.052	0.239
	(1.538)	(1.877)	(1.537)	(1.875)
Certifications	0.599	0.233	0.532	0.207
	(0.872)	(0.997)	(0.877)	(1.000)
Constant	158.739***	163.834***	158.573***	163.787***
	(21.394)	(21.812)	(21.390)	(21.840)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	21,911	17,660	21,911	17,660
R-squared	0.136	0.144	0.136	0.144

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator and various control variables from table 4 with additional controls for Benchmark-adjusted Return for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. The model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 13. Flow Regression Estimate with interaction – Gross Return

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Fund Flow	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Foreign	2.463	7.031	-1.746	-0.782
	(4.776)	(5.635)	(5.693)	(6.272)
Return* Foreign	-0.133***	-0.168***	0.114	0.078
	(0.052)	(0.056)	(0.070)	(0.075)
Fund Size* Foreign	-0.441	-0.918	0.027	-0.089
	(0.721)	(0.837)	(0.893)	(0.951)
Flow				
Fund Flow	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)
Style Flow	0.015	0.008	0.015	0.008
	(0.014)	(0.014)	(0.014)	(0.014)
Family Flow	0.112***	0.111***	0.112***	0.110***
	(0.015)	(0.018)	(0.015)	(0.018)
Performance				
Return	0.300***	0.472***	0.287***	0.461***
	(0.039)	(0.059)	(0.039)	(0.059)
Performance Rank	-10.191**	-16.175***	-10.118**	-16.092***
	(4.489)	(5.432)	(4.487)	(5.427)
Performance Rank^2	38.282***	42.198***	38.138***	41.973***
	(4.548)	(5.395)	(4.547)	(5.388)
Fund Characteristics				
Fund Size	3.432***	3.629***	3.410***	3.569***
	(0.294)	(0.346)	(0.289)	(0.341)
Turnover	0.009*	0.012	0.009*	0.012
	(0.005)	(0.008)	(0.005)	(0.008)
Fund Risk	-0.406	-0.737**	-0.407	-0.743**
	(0.312)	(0.374)	(0.312)	(0.373)
Expense Ratio	-1.999	-1.463	-1.978	-1.473
	(1.615)	(1.885)	(1.617)	(1.884)
Fund Age	-14.750***	-15.530***	-14.738***	-15.506***
	(0.652)	(.747)	(0.651)	(0.745)
No Load	-6.811***	-6.692***	-6.772***	-6.679***
	(1.548)	(1.763)	(1.548)	(1.763)
12B-1 Fee	2.642	3.073	2.723	3.087
	(1.949)	(2.199)	(1.948)	(2.201)
Constant	103.830***	110.677***	103.812***	110.672***
	(19.804)	(19.577)	(19.748)	(19.545)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	22,060	17,776	22,060	17,776
R-squared	0.171	0.182	0.170	0.181

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator interacted with lagged raw return and fund size for all categories of funds. I use the same specifications as in table 5 and add interaction terms of the Foreign with the respective performance and fund size variables. All control variables, except for style and family flows, are lagged by one year and have been defined in table 2. The standard errors are clustered at the fund level. The corresponding standard errors are shown in parentheses below the coefficient estimates.

Table 14. Fund Flow Regression Estimate using Fama Macbeth

Dependent Variable = Fund Flow	1993-2011				1993-2016			
	MTurk		Name Prism		MTurk		Name Prism	
	(1) All	(2) Domestic Equity	(3) All	(4) Domestic Equity	(5) All	(6) Domestic Equity	(7) All	(8) Domestic Equity
Foreign Name Identification								
Foreign	0.663	5.304	-1.371	-0.257	0.066	3.848	-1.068	-0.326
	(2.424)	(3.159)	(1.299)	(1.314)	(1.954)	(2.579)	(1.180)	(1.153)
Flows								
Fund Flow	0.076	0.092**	0.076	0.092**	0.068**	0.082**	0.068**	0.083**
	(0.037)	(0.037)	(0.037)	(0.037)	(0.029)	(0.030)	(0.029)	(0.030)
Style Flow	0.242***	0.342***	0.245***	0.346***	0.234***	0.315***	0.237***	0.317***
	(0.080)	(0.0923)	(0.081)	(0.093)	(0.065)	(0.075)	(0.066)	(0.076)
Family Flow	0.238	0.225	0.239	0.226	0.217**	0.206**	0.218**	0.206**
	(0.116)	(0.119)	(0.116)	(0.119)	(0.0922)	(0.094)	(0.092)	(0.094)
Performance								
Performance Rank	19.870	12.620	20.070	13.010	16.510	10.660	16.580	10.840
	(26.950)	(21.800)	(26.910)	(21.730)	(21.320)	(17.310)	(21.280)	(17.250)
Performance Rank^2	10.670	19.610	10.620	19.380	14.230	21.840	14.270	21.760
	(25.690)	(23.080)	(25.650)	(23.020)	(20.370)	(18.390)	(20.350)	(18.340)
Fund Characteristics								
Fund Size	-2.429	-3.309	-2.443	-3.325	-1.645	-2.358	-1.653	-2.368
	(5.605)	(5.610)	(5.604)	(5.609)	(4.424)	(4.434)	(4.424)	(4.434)
Turnover	-0.277	-0.281	-0.276	-0.281	-0.221	-0.227	-0.221	-0.227
	(0.266)	(0.266)	(0.266)	(0.266)	(0.210)	(0.210)	(0.210)	(0.210)
Fund Risk	-2.285	-2.956	-2.321	-2.969	-1.992	-2.192	-2.039	-2.214
	(3.035)	(3.056)	(3.034)	(3.054)	(2.396)	(2.434)	(2.395)	(2.432)
Expense Ratio	3.440**	3.675	3.555**	3.752	2.270	2.401	2.404	2.500
	(1.626)	(2.196)	(1.645)	(2.222)	(1.451)	(1.839)	(1.470)	(1.858)
Fund Age	-14.550***	-13.150***	-14.480***	-13.110***	-13.490***	-12.520***	-13.440***	-12.480***
	(1.977)	(2.353)	(1.983)	(2.356)	(1.638)	(1.897)	(1.642)	(1.899)
No Load	-0.559	-1.047	-0.462	-1.013	-0.817	-1.187	-0.703	-1.125
	(1.304)	(1.644)	(1.326)	(1.673)	(1.049)	(1.330)	(1.070)	(1.355)
12B-1 Fee	1.456	0.547	1.623	0.745	1.640	1.250	1.799	1.428
	(1.566)	(1.737)	(1.554)	(1.730)	(1.266)	(1.448)	(1.261)	(1.449)
Constant	159.000	157.000	158.200	156.500	140.200	138.600	139.600	138.200
	(91.200)	(91.810)	(91.250)	(91.830)	(72.240)	(72.720)	(72.270)	(72.730)
Observations	15,290	12,224	15,290	12,224	22,081	17,741	22,081	17,741
R-squared	0.252	0.272	0.251	0.271	0.231	0.249	0.231	0.248
Number of groups	19	19	19	19	24	24	24	24

Standard errors in parentheses *** p<0.01, ** p<0.05

This table shows the estimates of percentage fund flows regressed on the ethnic indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated Fama-Macbeth regression in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 15. Return Regression Estimate using Return

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Raw Return	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Middle East	-0.863	-1.345	-0.914	-1.372
	(0.774)	(0.719)	(0.770)	(0.717)
Non-ME*Foreign	0.753***	0.546**	0.521	0.643
	(0.274)	(0.252)	(0.413)	(0.426)
Flows				
Style Flow	0.005**	0.001	0.005**	0.001
	(0.003)	(0.002)	(0.003)	(0.002)
Family Flow	0.001	0.004	0.001	0.004
	(0.003)	(0.004)	(0.003)	(0.004)
Performance				
Return	-0.017	-0.022	-0.017	-0.022
	(0.011)	(0.013)	(0.011)	(0.013)
Fund Characteristics				
Fund Size	0.251***	0.052	0.246***	0.050
	(0.062)	(0.061)	(0.062)	(0.061)
Turnover	0.000	-0.001	0.000	-0.001
	(0.001)	(0.002)	(0.001)	(0.002)
Fund Risk	-1.537***	-0.796***	-1.540***	-0.798***
	(0.140)	(0.130)	(0.140)	(0.130)
Expense Ratio	1.344***	0.665*	1.320***	0.649*
	(0.411)	(0.371)	(0.411)	(0.371)
Fund Age	-0.355***	-0.460***	-0.356***	-0.464***
	(0.121)	(0.124)	(0.120)	(0.123)
No Load	0.846**	1.042***	0.827	1.027***
	(0.421)	(0.324)	(0.423)	(0.325)
12B-1 Fee	-0.041	0.651	-0.059	0.634
	(0.509)	(0.383)	(0.509)	(0.382)
Manager Characteristics				
Tenure	0.065***	0.088***	0.066***	0.089***
	(0.013)	(0.013)	(0.013)	(0.012)
Female	-0.801***	-0.749***	-0.766***	-0.719***
	(0.190)	(0.188)	(0.190)	(0.187)
Graduate	-0.060	-0.126	-0.038	-0.111
	(0.218)	(0.211)	(0.217)	(0.210)
PhD	-0.281	-0.396	-0.256	-0.395
	(0.290)	(0.305)	(0.290)	(0.306)
Certifications	0.002	0.140	0.050	0.191
	(0.178)	(0.175)	(0.179)	(0.175)
Constant	19.740***	15.295***	19.778***	15.274***
	(4.656)	(5.028)	(4.644)	(5.014)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	21,911	17,660	21,911	17,660
R-squared	0.699	0.791	0.699	0.791

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of annual return regressed on the ethnic indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. The model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 16. Return Regression Estimate using Net Return

	MTurk		Name Prism	
Dependent Variable	(1)	(2)	(3)	(4)
= Net Return	All	Domestic Equity	All	Domestic Equity
Foreign Name Identification				
Middle East	-0.863	-1.359	-0.914	-1.388
	(0.772)	(0.714)	(0.768)	(0.712)
Non-ME*Foreign	0.749***	0.559**	0.528	0.607
	(0.272)	(0.250)	(0.414)	(0.427)
Flow				
Style Flow	0.005**	0.001	0.005**	0.001
	(0.003)	(0.001)	(0.003)	(0.001)
Family Flow	0.000	0.003	0.000	0.003
	(0.003)	(0.004)	(0.003)	(0.004)
Performance				
Return	-0.021**	-0.024	-0.021**	-0.024
	(0.011)	(0.013)	(0.011)	(0.013)
Fund Characteristics				
Fund Size	0.248***	0.051	0.242***	0.049
	(0.062)	(0.062)	(0.062)	(0.061)
Turnover	0.000	-0.001	0.000	-0.001
	(0.001)	(0.002)	(0.001)	(0.002)
Fund Risk	-1.527***	-0.798***	-1.530***	-0.800***
	(0.141)	(0.131)	(0.140)	(0.131)
Expense Ratio	0.446	-0.263	0.423	-0.280
	(0.409)	(0.371)	(0.409)	(0.371)
Fund Age	-0.339***	-0.448***	-0.341***	-0.453***
	(0.121)	(0.124)	(0.121)	(0.123)
No Load	0.815	1.015***	0.797	1.001***
	(0.423)	(0.325)	(0.424)	(0.326)
12B-1 Fee	-0.133	0.634*	-0.151	0.617
	(0.510)	(0.382)	(0.511)	(0.381)
Manager Characteristics				
Tenure	0.068***	0.090***	0.069***	0.091***
	(0.013)	(0.012)	(0.013)	(0.012)
Female	-0.762***	-0.735***	-0.728***	-0.705***
	(0.191)	(0.188)	(0.191)	(0.188)
Graduate	-0.097	-0.113	-0.075	-0.097
	(0.219)	(0.212)	(0.218)	(0.211)
PhD	-0.281	-0.420	-0.257	-0.418
	(0.292)	(0.306)	(0.292)	(0.307)
Certifications	-0.055	0.113	-0.006	0.163
	(0.179)	(0.175)	(0.179)	(0.175)
Constant	20.385***	16.276***	20.415***	16.259***
	(3.929)	(4.231)	(3.925)	(4.223)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	21,720	17,523	21,720	17,523
R-squared	0.700	0.792	0.700	0.792

Standard errors are in parenthesis *** p<0.01, ** p<0.05

This table shows the estimates of Net return regressed on the ethnic indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Appendix

Appendix 1: Sources for Identification of Anglo-Germanic Names

Following sources were used for identification of Anglo-Germanic last names.

A. Government Sources

1. Department of Health. 2005. A Practical Guide to Ethnic Monitoring in the NHS and Social Care
2. UK Census 2000 Data - accessed by http://www.statistics.gov.uk/census2001/census2001.asp
3. US Bureau of Labor and Statistics
4. US Census 2000 - Data
5. US Census 2010 - Data
6. US Senate 1928

B. Other Institutional Sources

7. Dictionary of American Family Names Publisher: Oxford University Press Print Publication Date: 2003 Print ISBN-13:9780195081374 Published online: 2006
8. London Health Observatory. 2003. Missing Record: The Case for Recording Ethnicity at Birth and Death Registration. LHO Reports
9. Office for National Statistics. 2003. Ethnic Group Statistics: A Guide for the Collection and Classification of DataONS neighbourhood statistics
10. Oxford Dictionary of family names in Britain and Ireland - accessed by http://named.publicprofiler.org as directed by telegraph.uk

C. Academic Sources

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12. Chiarelli (1992) - Chiarelli, B. "The use of family names in the study of human migration during the last two centuries." Mankind Quarterly 33, no. 1 (1992): 69.
13. Coldman, Braun, Gallgher 1988 - Coldman, Andrew J., Terry Braun, and Richard P. Gallagher. "The classification of ethnic status using name information." Journal of Epidemiology & Community Health 42, no. 4 (1988): 390-395.
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22. Peach (1996) - Peach, Ceri. "Ethnicity in the 1991 census: Volume two. The ethnic minority populations of Great Britain." (1996).
23. Peach (2000) - Peach, Ceri. "Discovering white ethnicity and parachuted plurality." Progress in Human Geography 24, no. 4 (2000): 620-626.
24. Petersen (2001) - Petersen, William. "Surnames in US population records." Population and Development Review 27, no. 2 (2001): 315-322.
25. Rossiter (1909) - United States. Census Office. A Century of Population Growth from the First Census of the United States to the Twelfth, 1790-1900. Vol. 900. US Government Printing Office, 1909.
26. Scapoli, Mamolini, Carrieri, Rodriguez-Larralde, Barrai (2007) - Scapoli, Chiara, Elisabetta Mamolini, Alberto Carrieri, Alvaro Rodriguez-Larralde, and Italo Barrai. "Surnames in Western Europe: A comparison of the subcontinental populations through isonymy."Theoretical Population Biology 71, no. 1 (2007): 37-48.
27. Shriver, Kittles (2004) - Shriver, Mark D., and Rick A. Kittles. "Genetic ancestry and the search for personalized genetic histories." Nature Reviews Genetics 5, no. 8 (2004): 611.
28. Smith (1950) - Smith, Elsdon Coles. The story of my names. Harper, 1950.
29. Smith (1986) - Smith, Elsdon Coles. American surnames. Genealogical Publishing Com, 1986.
30. Smith, Blanc (1995) - Smith, David M., and Maurice Blanc. "Some comparative aspects of ethnicity and citizenship in the European Union." Migration, Citizenship and Ethno-National Identities in the European Union. Aldershot, Brookfield, Hong King, Singapore, Sidney: Avebury (1995).
31. Szucs (1998) - Szucs, Loretto Dennis. They became Americans: finding naturalization records and ethnic origins. Ancestry Publishing, 1998.
32. Tucker (2001) - Tucker, D. Kenneth. "Distribution of Forenames, Surnames, and Forename–Surname Pairs in the United States." Names 49, no. 2 (2001): 69-96.

D. Other Sources

33. http://www.alumni-portal.deutschland.com
34. https://www.americannamesociety.org/names/
35. https://www.americannamesociety.org/the-journal/ - Study in onomastics
36. http://www.ancestry.com
37. http://www.behindthename.com

38. http://www.britishsurnames.co.uk
39. http://www.familyeducation.com
40. http://www.familytreemagazine.com
41. http://www.geneologybank.com
42. http://www.originsinfo.com
43. http://www.revolvy.com
44. http://www.rong-chang.com
45. http://www.sofeminine.co.uk
46. https://www.theguardian.com/science/2016/nov/17/dictionary-of-50000-surnames-and-their-origins-published
47. http://www.thoughtcatalog.com
48. http://www.thoughtco.com

Appendix 2: Name Prism categories

Name-Prism calculates probabilities in 5 major ethnicities:

1. White 2. Black 3. Asian/Pacific Islander 4. American Indian/Alaskan Native 5. 2 or More Races

These can be further divided 39 categories as follows:

1. European, South Slavs
2. European, Italian, Italy
3. European, Baltics
4. European, Italian, Romania
5. European, French
6. European, Russian
7. European, East European
8. European, German
9. Celtic English
10. Nordic, Scandinavian, Denmark
11. Nordic, Finland
12. Nordic, Scandinavian, Sweden
13. Nordic, Scandinavian, Norway
14. Greek
15. Jewish
16. South Asian
17. East Asian, Japan
18. East Asian, Indochina, Myanmar
19. East Asian, Indochina, Thailand
20. East Asian, Indochina, Vietnam
21. East Asian, Chinese
22. East Asian, Indochina, Cambodia
23. East Asian, Malay, Malaysia
24. East Asian, Malay, Indonesia
25. East Asian, South Korea
26. Hispanic, Portuguese
27. Hispanic, Spanish
28. Hispanic, Philippines
29. African, South African
30. African, West African
31. African, East African
32. Muslim, Pakistanis, Bangladesh

33. Muslim, Nubian
34. Muslim, Turkic, Central Asian
35. Muslim, Turkic, Turkey
36. Muslim, Arabian Peninsula
37. Muslim, Maghreb
38. Muslim, Pakistanis, Pakistan
39. Muslim, Persian

Appendix 3: Variable description

Variable	Data Source	Explanation
Foreign Identification		
Foreign	Amazon Mechanical Turk Survey	Indicator variable equal to one if at least 75% of respondents indicated that the fund manager's name sounds foreign, and zero otherwise. Respondents indicating "Unsure" are left out.
Non-European	Name Prism	Indicator variable equal to one if it is indicated as having probabilistic ethnicity from Western Europe according to Name Prism, and zero otherwise.
Flow Variables		
Fund Flow	Morningstar/CRSP	Computed as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1}-r_{i,t}$ where $TNA_{i,t}$ denotes fund i's total net assets in year t and r_t denotes fund i's return in year t, winsorized at the top 99% and bottom 1%.
Style Flow	Computed	Growth rate of fund i's market style due to flows in year t, excluding flows in fund i
Family Flow	Computed	Growth rate of fund i's fund family due to flows in year t, excluding flows in fund i
Performance		
Performance Rank	Computed	The performance rank of the fund in the previous year relative to all other funds in the same market style, scaled to lie between zero (lowest performance) and one (highest performance).
Morningstar Rating	Morningstar	Rating for that fund as given by Morningstar
Fund Characteristics		
Fund Size	Morningstar/CRSP	Lagged natural logarithm of the fund's size in million dollars.
Turnover	Morningstar/CRSP	Fund's lagged turnover rate.
Fund Risk	Computed	Lagged return time series standard deviation of the fund return using the past twelve-monthly return observations.
Expense Ratio	Morningstar/CRSP	Percentage of fund assets charged annually to pay for operating expenses including 12b-1 fees, management/administrative fees, distribution fees, and custodial services.
Fund Age	Morningstar/CRSP	Log of number of years since the fund's inception.
No Load Fund	Morningstar/CRSP	Indicator variable equal to one (zero) if the fund does (not) have load fees.
12B-1 Fee	Morningstar/CRSP	Percentage of fund assets charged to pay for distribution and marketing costs.
Institutional Holding	Morningstar/CRSP	Percentage of institutional class holdings in fund.
Manager Characteristics		
Name	Morningstar	Manager name as given in Morningstar database.
Tenure	Morningstar	Difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar.
Female	Morningstar	Indicator variable equal to one if the manager gender mentioned in Morningstar is female zero otherwise.
Graduate Degree	Morningstar	Indicator variable equal to one if the manager has master's degrees including an MBA as per description in Morningstar zero otherwise.
PhD	Morningstar	Indicator variable equal to one if the manager has PhD as per description in Morningstar zero otherwise.
Certifications	Morningstar	Indicator variable equal to one if the manager has professional certifications in finance and/or accounting including CA/CPA/CMA/CFA/CFM/CIA/CFE as per description in Morningstar zero otherwise.

Appendix 4: IRB Approval and OpenScience Registration

To conduct the surveys, I completed approval process with Institutional Review Board for the Protection of Human Subjects. Interested readers can contact me for a copy of the approval.

To mitigate Data-Mining, P-Hacking and Harking concerns I registered my project with OpenScience Registration. It is public platform where I outline the details and hypothesis. Interested readers can contact me for a copy of the registration.

CHAPTER 3

RACE/ETHNCITY OF MANAGERS AND MUTUAL FUND FLOWS

Section 1: Introduction

Market efficiency rests on the idea that competition among investors for high risk-adjusted returns ensures that the expected returns are solely a function of risk and that expected abnormal risk adjusted returns are zero. This has given rise to various portfolio evaluation models that predict relations between returns and risk. (Sharpe, 1964; Lintner, 1965; Fama, 1968; Jensen, 1968). Pastor & Stambaugh (2002) argue that investors believe managers can earn positive abnormal risk-adjusted returns and choose funds with high past alphas. This suggests that investors use past performance in the asset allocation decision. This supports the Berk & Green (2004) argument that manager ability to outperform decreases as fund size increases due to investors chasing past performance and the limited scalability of good investment ideas. Pastor, Stambaugh & Taylor (2015) posit that as the size of the active mutual fund industry increases, a fund's ability to outperform passive benchmarks declines. This line of thought supports the argument that rational investors assess past performance to allocate fund flows (I call this the rational investor hypothesis).

On the other hand, there's another school of thought that proposes a behavioral story. For example, Barberis & Schleifer (2003) demonstrate that some investors categorize risky assets into different styles and move monies among these styles depending on style performance. Supporting this conjecture, Cooper, Gulen & Rau (2005) find that mutual fund investors chase current hot fund styles irrespective of individual fund performance. This suggests that investors select on characteristics not related to fund risk or past performance. This phenomenon is illustrated by studies connecting fund flows to manager characteristics. Kumar, Niessen-Ruenzi & Splat (2016), find that compared to managers with 'American' sounding names, fund managers with foreign-sounding names receive less investor flows after controlling for performance. This implies investors act irrationally because manager race and ethnicity should not have any impact on mutual fund performance.

In this paper, I investigate the issue of investor rationality. I use the race and ethnicity of mutual fund managers as instruments to detect investor irrationality. My insight is that if investors allocate funds based on race or ethnicity and collectively select particular race(s) or ethnicity(s) over others (racial or ethnic discrimination) then after controlling for performance (i) mutual fund market will not equilibrate

on size and (ii) excess returns of managers of disaffected races and ethnicities will be predictable. In addition, it is unreasonable to assume other investors would not exploit this opportunity to earn additional risk-adjusted returns. That is, even if some investors are irrationally racist it is not clear why other investors would not exploit positive net present value opportunities. I assess investor rationality using race and ethnicity because there is a rich literature documenting their effects on perceptions, decision making, and cash flows. Bertrand & Mullainathan (2004) find that after controlling for education and prior work experience, candidates with "white-sounding" names receive more interview offers than candidates with "black-sounding" names. Pope & Sydnor (2011) document evidence of significant racial disparities in the peer-to-peer lending market. Loan listings with black applicants in the attached pictures are 25 to 35 percent less likely to receive funding than those of white applicants with similar credit profiles. Similarly, Holbrook, Fessler & Navarrete (2016) find some names automatically lead to expectations of prestige and status while others are associated with low socioeconomic status. These studies suggest decision makers use name and photo based evidence to irrationally discriminate on race and ethnicity. In the context of the mutual fund marketplace, fund asset allocations based on fund manager race and ethnicity and not the risk-return tradeoff are evidence of net investor irrationality. I call this the behavioral investor hypothesis.

I examine investor rationality by investigating racial (photo based) discrimination and ethnic (name based) discrimination in fund flows. I use machine learning algorithm by Clarifai (Zeiler & Fergus, 2014) to identify race (photo based) from professional photographs of the mutual fund managers and machine learning algorithm by Name Prism (Ye et. al, 2017) to identify ethnicity (name based) from the name of the managers. Following LeRory (2018), Miles (2004), and McLaren & Torres (1999), I create indicator variables for four race(s) and ethnicity(s): black, asian, middle eastern and hispanic.

I find that managers of black, asian, middle eastern or hispanic race (photo based) or ethnicity (name based) manage funds having different fund characteristics. Controlling for flows, performance, fund characteristics and manager characteristics, I do not find evidence of racial (photo based) or ethnic (name based) discrimination in fund flows. This supports the rational investor hypothesis suggesting investors allocate funds by analyzing to past performance (Chevalier & Ellison, 1997; Sirri & Tufano, 1998; Barberis & Shleifer, 2003; and Berk & Green, 2004) and fund ratings (Del Guercio & Tkac, 2008) and loads (Barben, Odeon & Zheng, 2005). I repeat my analysis various ways, including identifying differential performance, and controlling for benchmark-adjusted return. I still find no statistically significant difference between fund flows for white and non-white (black, asian, middle eastern, hispanic) managers.

Racial or ethnic prejudices in investors can be unobservable, I present two measures here. In the first, I present probabilistic races calculated using the Clarifai algorithm. In the second, I suggest an objective measure by identifying ethnicities using the Name-Prism algorithm. Furthermore, I follow data-cleaning techniques to eradicate any data errors. I do not find any differential fund flows attributed to fund managers with non-white ethnicities (name based) or races (photo based) and hence fail to reject the null hypothesis that investors do not allocate differential fund flows to non-white managers. The rest of the paper is divided into 6 sections. Section 2 discusses hypothesis development. Section 3 details the data and sample. Section 4 provides the results. Section 5 presents the robustness checks and Section 6 is the conclusion.

Section 2: Hypothesis Development

Rational expectations equilibrium points to the idea that investors evaluate risk-adjusted return of an asset in investment decision making. (Sharpe, 1964; Lintner, 1965; Fama, 1968; Jensen, 1968). Wermers (2003) displays that money is smart in chasing winning managers. Flows in and out of mutual funds are strongly related to lagged measures of excess return. This suggests that mutual fund investors pay attention to the past performance. This reasoning that investors assess fund risk and past performance to allocate fund flows (I call it the rational investor hypothesis).

Pastor & Stambaugh (2002) suggest that investors believe managers can earn abnormal returns and that investors choose funds with high past alpha. However, there have been papers that cast doubts over consistency of high alpha produced by mutual fund managers. Busse & Irvine (2006) study the persistence of alpha in active mutual funds. Berk & Green (2004) argue that managers ability to outperform decreases as fund size increases. Pastor, Stambaugh & Taylor (2015) posit that as the size of the active mutual fund industry increases, a fund's ability to outperform passive benchmarks declines. Chevalier & Ellison (1997), Sirri & Tufano (1998) and Barberies & Schleifer (2003) find evidence to style chasing behavior by the investors. If this were true then do investors truly act rationally or do they exhibit behavioral biases?.

If investors do display behavioral biases, then one such bias could be racial or ethnic prejudice. Upon hearing a person's name or seeing a person's photograph, individuals typically assign, either consciously or subconsciously, a host of attributes to the person; the attributes are often related to the "group" (race, ethnicity, country of origin, religion etc.). Jung et. al (2019) find forecast revisions of financial analysts with last names associated with more favorable countries of origin generate stronger market reactions. Harjoto, Laxmana & Lee (2015) find that firms with ethnic minority CEOs pay significantly higher audit fees which indicates that they are sensitive to the market pressure to avoid audit delay. Pope & Sydnor (2011) evidence of significant racial disparities by peer-to-peer lending market. Loan listings with black applicants in the attached pictures are 25 to 35 percent less likely to receive funding than those of white applicants with similar credit profiles. KNS find that compared to managers with 'American' sounding names, fund managers with foreign-sounding names receive less investor flows. However, these racial or ethnic biases are unrelated to the performance of the fund. Hence, a rational investor should not consider these racial or ethnic characteristics in investment decision making, Scrutinizing the aforementioned studies, it would appear that investors consider for manager characteristics unrelated to performance while allocating the funds. (I call it the behavioral investor hypothesis).

I choose race as well as ethnicity to test for these behavioral biases. European Americans have always been considered the main ethnic group that identified as American (Balibar, 1990; Small, 1999; Hunter, 2002; and Leonardo, 2004) and hence, European American immigrants have been shielded from racial or ethnic discrimination (Faust, 1927; and Hall, 1990). Most instances of racism in last 40 years are felt by persons of non-white-European origins (anyone not of white European origin) also broadly referred to as "persons of color". Instances of societal racial and ethnic discriminations include disparities in medical treatment, earned wages, and access to and quality of a range of basic services, from health care and job training, to employment, housing, and education. (Williams et. al, 2001; Elvira & Zatzick, 2002; Geiger & Borchelt, 2003; Smedley, Stith & Nelson, 2003; Dovidio et. al, 2008; and Rosenfeld, 2008). These are not just limited to African Americans. Major racial biases include anti-Hispanic protests (Stacey, Carbon-Lopez & Rosenfeld, 2011), Islamophobia (Rauf, 2016), anti-Asian movements (Kim, 1999), anti-Indian discrimination (Hess, 1974) and Antisemitism (Quinley & Glock, 1979).

In the US, a manager with non-white European ethnicity should be prone to racial or ethnic prejudices (Hunter, 2002; Gillborn, 2005; Stacey, Carbon-Lopez & Rosenfeld, 2011; and Leroy, 2018) and if investors do display racial or ethnic biases in investing decisions then funds managed by non-white managers should get lower fund flows after controlling for flows, performance, fund characteristics and manager characteristics. I mainly consider four major race and ethnicity measures: black, asian, middle eastern and hispanic. Using machine learning algorithm by Clarifai, I identify four major probabilistic racial identities namely black, asian, middle eastern and hispanic, from professional photos of mutual fund managers. Using machine learning algorithm by Name Prism, I also identify four major probabilistic ethnic identities namely black, asian, middle eastern and hispanic, from names of mutual fund managers. These measures are detailed in the data section. While fund flows can be noisy measure, I would observe lower net fund flows for funds that managed by managers of non-white race (photo based) or ethnicity (name based).

One might argue that when investors observe race, they subconsciously might be observing beauty as beauty standards are interlinked with race (Martin, 1964; Duke, 2000; Craig, 2006). Robinson-Moore (2008) discusses that beauty standards have been Euro-centric in the US, where facial features akin to white-Europeans are considered more beautiful. To control for this impact of facial appearance, I also compute probabilistic age, masculinity and beauty score from the photos. Follow Lefevre, Lewis, Perrett & Penke (2013) I calculate facial height to width ratio (FWHR) and probabilistic age. I use FWHR to calculate beauty score for each manager. I present three hypotheses here:

Hypothesis 1: Manager ethnicity and mutual fund flows

H0: Funds managed by managers of black, asian, middle eastern or hispanic ethnicity do not receive differential fund flows.

H1: Funds managed by managers of black, asian, middle eastern or hispanic ethnicity do receive differential fund flows.

Hypothesis 2: Manager race and mutual fund flows

H0: Funds managed by managers of black, asian, middle eastern or hispanic race do not receive differential fund flows.

H1: Funds managed by managers of black, asian, middle eastern or hispanic race do receive differential fund flows.

Hypothesis 3: Facial Appearance of Manager and mutual fund flows

H0: Funds managed by managers having attractive facial appearance do not receive differential fund flows.

H1: Funds managed by managers having attractive facial appearance do receive differential fund flows.

I hypothesize that if investors do display racial (photo based) or ethnic (name based) biases then I should find differential fund flows for funds managed by managers of non-white (black, asian, middle eastern or hispanic) ethnicity (name based) or race (photo based). Knowing that racial or ethnic prejudice has negative connotations, I expect funds managed by managers of non-white (black, asian, middle eastern or hispanic) ethnicity (name based) or race (photo based) to get lower fund flows as compared to funds managed by managers of white ethnicity (name based) or race (photo based) and hence I should expect a negative sign. But since there is no theory in financial literature to support this, I keep it a simple two tailed test. It is possible that managers of non-white race or ethnicity select funds with specific characteristics to manage, once selected, managers would not have control over fund flows, with exception of superior fund performance (which will attract higher fund flows). This alleviates the issue of endogeneity in my model specification.

For purposes of this paper, I can ascertain that for racial (photo based) or ethnic (name based) prejudices to exist, the investors, at a minimum, know the names of the mutual fund managers or have seen their photos. I offer two measures to ascertain race(s) and ethnicity(s). I provide an objective measure of ethnicity as determined by the machine algorithm Name-Prism (Ye et. al, 2017). It has been used as an

objective tool to determine ethnicities in over 300 research papers. It analyses over 74 million labelled names from 118 different countries that cover 90% of world's population. Name-Prism calculates probabilities for five major ethnicities: white, black, asian/pacific islander, american indian/alaskan native and two or more races. But it further calculates probabilities for 39 subcategories. Using machine learning algorithm by Clarifai, I calculate probabilities for races from photos of the managers (Zeiler & Fergus, 2014). Clarifai software has been used by various companies such as Unilever, BuzzFeed, Ubisoft and Staples, as well as makers of medical devices and drones, to automatically analyze millions of images and videos. I follow Lefevre et. al (2013) to calculate facial height to width ratio (FWHR) and probabilistic age.[4] Then I use FWHR to calculate beauty score. Pallett, Link & Lee (2009) compute the beauty score for managers.

[4]FWHR is calculated by API using Python. The API is also available on European Accounting Association website.

Section 3: Data and Sample

In this digital era, investors have significant information available at fingertips. It is realistic to assume that investors collect detailed information about mutual fund managers if they were to care for race or ethnicity of the managers. For investors predisposed to racial biases, it would be very easy to search and look for the person's name, picture and/or video to ascertain whether to invest with a particular manager.

KNS point out that mutual fund investors pay attention to manager names. Massa, Reuter & Zitzewitz (2010), and Patel & Sarkissian (2017), demonstrate that the fund manager information provided by MS Direct is more accurate than the data provided by CRSP MF. I obtain the fund manager names as well as the start and end dates of their management period at the respective fund via MS Direct. Following Mateos, Longley & D. O'Sullivan (2011), I use machine learning algorithm Name Prism to find ethnicities for each manager name (Ye et. al, 2017). Name Prism is developed by academics from Stony Brook University and researchers from Yahoo! Research, Amazon AI, and NEC Labs America. It has been used as an objective tool to determine ethnicities in over 300 research papers. I use Name Prism to calculate probabilistic ethnicities of manager names. Name Prism calculates probabilities in five major ethnicities namely: white, black, asian/pacific islander, american indian/alaskan native and mixed race (of two or more races). These can be further divided 39 categories which are given in Appendix 2. I consider maximum probability as given by the algorithm to be ethnic origin of the name as long as that maximum probability is 0.51 or higher. I drop any name considered to have two or more ethnic origins. Using Name Prism, I create six different ethnicity classifications namely: white, black, asian, hispanic, middle eastern and south asians. Appendix 3 provides more detailed descriptions of the variables.

I also hand collect professional photographs of the managers from two sources: their LinkedIn accounts and/or websites of the funds. I only collect professional photographs to maintain consistency. I use Clarifai to calculate probabilistic races for the managers from the photos. Clarifai software has been used by various companies such as Unilever, BuzzFeed, Ubisoft and Staples, as well as makers of medical devices and drones, to automatically analyze millions of images and videos. Clarifai follows Zeiler & Fergus (2014) to calculate probabilistic race as well as probabilistic age information. I get five major races from photos namely white, black, asian, hispanic and middle eastern. I consider the maximum probability as given by the algorithm to be racial origin of the photo as long as calculate the probability for that race is 0.51 or higher.

I follow Lefevre et. al (2013) to calculate facial height to width ratio (FWHR) and probabilistic age. FWHR is calculated by API using Python. The API is also available on website for European Accounting Association. Then I use FWHR to calculate beauty score. Pallett, Link & Lee (2009) compute the "golden ratio" for most beautiful face. According to them faces with FWHR of 1.618 is scientifically considered the most beautiful face. Hence, I calculate my beauty score as follows:

$$Beauty\ Score = Ln(\frac{1}{|1.618 - FWHR|})$$

In addition to beauty score, I follow Jia, Van Lent & Zeng (2014) to calculate masculinity score and from the photos. This provides us with three measures probabilistic age (hereinafter called age), probabilistic race (hereinafter called race), and probabilistic beauty score (hereinafter called beauty score).

I hand-collect other manager attributes from Morningstar profiles of managers. I verify the information collected with LinkedIn profiles of managers. DelGarcia & Tkac (2008) point out the importance of Morningstar ratings. In fact, Ben-David et. al (2019) point out that investors might blindly follow Morningstar ratings. I restrict to information on Morningstar as one might argue that investors might not actively access the information available at other sources such as LinkedIn. Also, manager description available at Morningstar is carefully chosen by the fund, hence it would be rational to assume that they would choose only he most attractive information about managers. I hand collect data on manager tenure, gender, degrees, certifications, affiliation to elite universities, academic excellence, and experience outside of the financial industry. The variables descriptions are detailed in Appendix 3.

I select the universe of mutual funds from Morningstar database from 1978 to 2016. Data on mutual funds comes from CRSP Survivor-Bias-Free U.S. Mutual Fund Database (CRSP MF) and Morningstar Direct Mutual Fund Database (MS Direct). Following Pastor, Stambaugh & Taylor (2015), which identifies the matches based on the CUSIPs, and on the funds' tickers, I use the matched database between MS Direct and CRSP MF fund classes.

I consider the U.S. open ended actively managed funds for this study. Hence, I drop index funds. I also use benchmark-adjusted return in my analysis. Morningstar doesn't report benchmark for Real Estate Funds, so I drop them from my sample. Since there are higher instances of Target Date Funds and Sector Funds being passive managed funds, I drop them as well. I also drop all Quantitative Funds as they are run using an algorithm. Following previous literature including Sapp & Tiwari (2004), Frazzini &

Lamont (2008), and KNS, I calculate flows from fund return and total net assets. My main variable of interest the net inflow ("fund flow") for fund *i* in year *t* is defined as,

$$Fund\ Flow = \frac{TNA_{i,t} - TNA_{i,t-1}}{TNA_{i,t-1}} - r_{i,t}$$

Where $TNA_{i,t}$ denotes the fund *i*'s total net assets at the end of the year *t* and r_t denotes fund *i*'s return (net of fees) in year *t*. Appendix 3 gives details of all my variables as well as data sources. Following Evans (2010), I drop all funds less than three years old and funds with net assets less than $25 million. Since flow and performance variables are integral to my models, I follow rigorous cut offs for data cleaning. Further I drop all observations missing values for fund flow, style flow, and family flow. I exclude observations with missing values on monthly return, annual return, benchmark adjusted return, Morningstar rating. In addition, I also require all variables to have non-missing values on fund characteristics, namely: fund size, turnover, fund risk, expense ratio, fund age, load, and 12B-1 fees. To exclude passive funds, I also drop observations where expense ratio or turnover are zero. Further, to avoid results being driven by extreme or implausible values I drop observations on 1st and 99th percentile for fund flows, family flows and turnover. After all the filters, I get the final sample of with non-missing values on flows, performance and fund characteristics. I present descriptive statistics for my sample in table 1 panel A. Table 1 panels B through E displays results for t-test on measures of race and ethnicity for all my variables.

Table 1 panel A presents the descriptive statistics for the final sample after all data cleaning. I observe that while I have 21,911 observations for ethnicity classifications (name based), they drop by 30% when I use race classification (photo based) and I have 15,103 observations. About 2% of observations have black ethnicity (name based) and 3% have black race (photo based). There are 0.1% of funds with middle eastern ethnicity (name based) whereas only 0.3% have middle eastern race (photo based). Of all observations, 7% have asian ethnicity (name based) and 11% have asian race (photo based). 16% of observations are identified as having hispanic ethnicity (name based) and 7% have hispanic race (photo based). Mean FHWR is 1.488. Since the golden ratio for most beautiful face is 1.618, I can observe that most managers have fairly beautiful faces. Average masculine probability is 0.97 and average probabilistic age is around 55 years. I observe that, average manager tenure is 14 years with around 22% of fund managers being female. Most (about 90%) of fund managers have graduate degrees and around 78% of them have professional certifications. Only 9% of managers have PhDs. It is evident that most managers have affiliation to top schools with 88% of them have degrees from top schools and about

50% of have academic excellence. Most of the managers in my sample have experience outside of financial services industry in terms of academic background and/or work experience. Average fund flows are about 7%, however median fund flows are -4% which points to a skewed distribution. Style flows and family flows, on the other hand, mean is about 4% flows and median is around 0%. Average performance rank is 0.52. This is by construction, as performance rank is constructed to lie between 0 and 1 for all funds in the same style in the same year. Even for Morningstar rating, I observe that mean rating is 3.38 demonstrating fewer funds getting low ratings. Average fund size is about $459 million. Average standard deviation of returns is 4% and mean expense ratio is 1%. Average fund age is 8.4 years and 43% of the funds in the sample do not have any load.

Table 1 panel B presents univariate sorting results for white and non-white funds (name and photo based). I observe that in univariate analysis, white managers receive additional fund flows as well as style flows and family flows as compared to non-white managers. However, I can also observe that white managers manage funds with higher Morningstar rating. Even in performance, there's not much difference in white and non-white funds. They have statistically similar performance rank, annual return and benchmark adjusted return.

In fund characteristics, white managers manage slightly bigger funds, have higher fund risk and higher expense ratios and have lower turnover and lower institutional ratios. According to ethnicity (name based), white managers manage funds with lower age and higher loads. But according to race (photo based), white managers manage funds with higher age and have lower loads. However, there's significant difference between white and non-white managers when considering manager characteristics. As compared to white managers, non-white managers have longer tenure. Less white managers have graduate degrees and certifications as compared to non-white managers. There are also fewer white female managers as compared to female non-white managers. Also, in my sample, less white managers attended elite universities and have fewer academic honors as compared to non-white managers.

Table 1 panel C presents univariate sorting results for black and non-black funds (name and photo based). I observe that there is no difference in fund flows as well as style flows and family flows even in univariate analysis. Even in performance, there's not much difference in black and no-black funds. They have statistically similar performance rank, annual return and benchmark adjusted return. However, funds managed by managers of black race (photo based) have slightly lower Morningstar rating. Looking at ethnicity, black managers have statistically indifferent Morningstar rating as compared to non-black managers. In fund characteristics, I observe that race and ethnicity give

differential results. According to ethnicity (name based), black managers manage slightly bigger funds and have higher fund risk as compared to non-black fund managers. But according to race (photo based), black managers manage slightly smaller funds and have lower fund risk as compared to non-black fund managers. Black and non-black funds have similar turnover, expense ratio, fund age and institutional ownership. However, there's significant difference between black and non-black managers when considering manager characteristics. As compared to non-black managers, black managers have higher tenure. More black managers have graduate degrees and certifications as compared to non-black managers. Also, in my sample, more black managers attended elite universities and have more academic honors as compared to non-black managers. Also, I have fewer female black managers as compared female non-black managers.

Table 1 panel D presents univariate sorting results for middle eastern and non-middle eastern funds (name and photo based). I observe that there is no difference in fund flows as well as style flows. But funds managed by middle eastern managers get overall lower family flows even in univariate analysis. Middle eastern funds have statistically indifferent performance rank, Morningstar rating, annual return and benchmark adjusted return as compared to non-middle eastern funds. However, funds managed by middle eastern managers are different from funds managed by non-middle eastern managers. I observe that race (photo based) and ethnicity (name based) give very different results. According to ethnicity (name based), middle eastern managers manage bigger funds, have more funds with no load, have lower turnover, have lower expense ratio and lower fees. But according to race (photo based), middle eastern managers manage smaller funds, have lower fund risk, lower institutional ratio and have expense ratio. Again, there's significant difference between middle eastern and non-middle eastern managers in manager characteristics. As compared to non-middle eastern managers, have longer tenures, more middle eastern managers have graduate degrees attended elite universities and have more academic honors in my sample. Also, as compared to non-middle eastern managers, there are more female middle eastern managers.

Table 1 panel E presents univariate sorting results for asian and non-asian funds (name and photo based). In univariate analysis, asian managers receive lower fund flows and lower family flows. However, I can observe that asian managers also manage funds with lower Morningstar rating. There's no statistical difference in the performance rank or returns between asian and non-asian managers. As for fund characteristics, asian managers manage smaller funds, have higher turnover and have higher institutional holdings as compared to non-asian managers. Asian managers manage funds with higher age, higher 12B-1 fees, lower expense ratio and lower loads as compared to non-asian managers. As compared to

non-asian managers, more asian managers have graduate degrees and certifications, have attended elite universities and have academic honors in my sample. Asian managers also have shorter tenure and have more women managers.

Table 1 panel F presents univariate sorting results for hispanic and non-hispanic funds (name and photo based). In univariate analysis, there's no difference in fund flows, style flows or family flows between hispanic and non-hispanic managers. Hispanic funds have statistically indifferent performance rank and annual return. Hispanic managers manage funds with differential fund characteristics as compared to funds managed by non-hispanic managers. Hispanic managers manage funds with lower risk and lower institutional holding. Observing ethnicity (name based), I identify that hispanic fund managers have lower expense ratio, lower 12B-1 fees and higher loads. Contrastingly, observing race (photo based) I ascertain that hispanic managers higher expense ratio, lower loads and higher 12B-1 fees. More hispanic managers have graduate degrees, academic honors, and have attended elite universities. Hispanic managers also have longer tenure as compared to non-hispanic managers and I have more female hispanic managers in my sample.

Table 1 points out that while there are differences based on ethnicity or race for manager characteristics, for fund characteristics and performance, most of them seem measure driven. It also demonstrates that white and non-white managers manage different funds which can be observed by fund characteristics.

Section 4: Results

Univariate results point to the lack of consistency. There's no statistical difference in fund flows for black, middle eastern and hispanic funds. Asian funds get lower fund flows in univariate analysis. To put this argument to the test, I examine the relationship between the race or ethnicity of fund manager names and fund flows. I estimate the fund flow regressions in which annual net fund flow is the dependent variable. I run the fund flows on measures of ethnicity and race. The main variables of interest here are ethnicity and race indicator variables which indicates whether the manager of that fund in that year had the indicated perceived race or ethnicity. My controls, commonly used in literature, include fund size, turnover, fund risk, expense ratio, fund age, style flow (i.e., the aggregate flow to funds that are in the same style during the year), fund family flow, and lagged fund flows. In addition, I control for fund return by including performance rank, defined as the rank of the fund in the previous year relative to all other funds in the same style, as well as the squared performance rank measure. I lag all control variables by one year. I also control for manager characteristics of tenure, gender, graduate degrees, certifications, affiliation to elite universities, academic excellence and experience outside of financial services industry. I observe that race or ethnicity indicators are insignificant. As Berk & Green (2004) have displayed that previous performance and prior fund flows seem to usurp the statistical significance. I include year, style, and fund family fixed effects. I cluster standard errors at the fund level.

In table 2, I run two different models. Column 1 display results for regressing fund flows on prior fund flows, style flows and family flows by controlling for performance and fund characteristics. Performance is measured by performance rank. Fund characteristics include fund size, turnover, fund risk, expense ratio, fund age, 12B-1 fees and no-load indicator. I observe that family flows have positive and significant relationship with fund flows with coefficient of 0.1129. Younger funds get higher flows by 14.8406 percentage points. Funds with no load get 6.8661 percentage points lower fund flows whereas bigger funds get 3.5111 percentage points higher fund flows. No other fund characteristics, performance characteristics or flows seem to have statistically significant relationship with fund flows. In column 2 I regress fund flows on prior fund flows, performance rank, and fund characteristics from column 1 but add manager characteristics. I use tenure, gender, graduate degrees and certifications earned by the managers, elite universities attended, academic honors achieved, and outside industry experience earned by the managers as manager characteristics. My results from column 1 remain unchanged. Family flows still have positive and significant relationship with fund flows with coefficient of 0.1068. Younger funds get higher flows by 14.8367 percentage points. Funds with no load get 7.3567 percentage points lower fund flows whereas bigger funds get 3.4818 percentage points higher fund flows. No other fund

characteristics, performance characteristics or flows seem to have statistically significant relationship with fund flows. I can observe that controlling for manager characteristics does not change the statistical relationship, however the economic impact reduces slightly. Managers who attended elite universities receive 2.4548 percentage points lower fund flows as compared to other managers. No other manager characteristic holds statistically significant relationship to fund flows. This confirms that fund characteristics determine fund flows rather than manager characteristics.

Table 3 displays results for ethnicity (name based). Columns 1 and 2 exhibit results for ethnicity (name based) without manager characteristics. Column 1 displays black, middle eastern, asian and hispanic ethnicity in addition to other controls. In column 2 I add south asian ethnicity to model specification in column 1. I observe that using ethnicity (name based), there's no statistical difference in fund flows for black, middle eastern, asian or hispanic managers. Columns 3 and 4 exhibit results for ethnicity (name based) with manager characteristics. I add manager characteristics to model specifications in columns 1 and 2. These results are presented in columns 3 and 4. I observe that ethnicity (name based) indicator variables do not gain any significance. However, managers with affiliations to top schools seem to get lower fund flows. No other manager characteristics seem to capture differential fund flows. On the other hand, family flows (coefficient 0.1072 to 0.1133), performance rank (coefficient 37.9108 to 38.9381) and fund size (coefficient 3.4463 to 3.4762) have positive and significant in relation to fund flows. Older funds receive (14.9229 to 14.9322 percentage points) lower fund flows and funds with no load receive (6.9730 to 7.4554 percentage points) lower fund flows. Again, my results from table 2 remain unchanged with flows being directed by fund characteristics conforming that investors act rationally, on average. I cannot observe ethnic (name based) discrimination from fund flows.

Table 4 displays results for race (photo based). I repeat analysis from table 3 by using race (photo based). Column 1 exhibits results for race (photo based) without manager characteristics. My sample drops significantly from 20,839 observations to 14,648 observations due to non-availability of photographs for some managers. Columns 1 exhibits results for regressing fund flows on race (name based), black, middle eastern, asian and hispanic, controlling for fund characteristics. Column 2 repeats the regression model from column 1 with manager characteristics. I observe that race (name based) indicator variables aren't statistically significant. Manager characteristics are statistically insignificant. On the other hand, I observe fund flows display positive autocorrelation (coefficient 0.0006). Family flows (coefficient 0.0836 to 0.0886), style flows (coefficient 0.0368 to 0.0394), performance rank (coefficient 24.2503 to 24.3951) and fund size (coefficient 3.5953 to 3.6425) have positive and significant in relation to fund flows. Older funds receive (10.1179 to 10.2644 percentage points) lower fund flows, funds with higher

expense ratio receive (3.8840 to 4.4063 percentage points) lower fund flows and funds with no load receive (5.2833 to 5.2879 percentage points) lower fund flows. I observe that fund characteristics determine fund flows and do not find racial (photo based) discrimination from fund flows.

In table 5, I test whether facial appearance of fund managers has any impact of fund flows. I use beauty index, masculinity and age as measures for facial appearance. In column 1 I regress fund flows on measures of facial appearance and fund characteristics. I observe that my sample drops slightly from 14,468 to 13,101 since I use employ stringent restrictions on facial orientation in photos while calculating the probabilistic beauty index. Column 2 displays results by regressing fund flows on facial appearance characteristics and fund characteristics after controlling for other manager characteristics. I observe that facial appearance of managers does not generate differential fund flows. Manager characteristics do not generate differential fund flows. Fund flows still get determined by flows, performance as well as fund characteristics. I observe fund flows display positive autocorrelation (coefficient 0.0006). Family flows (coefficient 0.0779 to 0.0849), performance rank (coefficient 24.5598 to 24.6986) and fund size (coefficient 3.6501 to 3.7539) have positive and significant in relation to fund flows. Older funds receive (10.3428 to 10.4738 percentage points) lower fund flows, funds with higher expense ratio receive (3.5334 to 4.1564 percentage points) lower fund flows and funds with no load receive (5.0334 to 5.0723 percentage points) lower fund flows. Again, I discern that fund characteristics determine fund flows and do not find any evidence that facial appearance of managers has any significant impact fund flows.

Table 6 panel A provides the sub-sample analysis for ethnicity (name based) and race (photo based). I repeat my regressions from table 3 column 3 and table 4 column 2 for ethnicity (name based) and race (photo based) respectively. Columns 1, 2 and 3 present results for ethnicity (name based) and columns 4, 5, and 6 present results for race (photo based). Column 1 presents the base regression from table 3 column 3 for my entire sample, using ethnicity (name based) and column 4 presents the base regression from table 4 column 2 for my entire sample using race (photo based). Results are repeated here for ease of reader. Columns 2 and 4 display results for sub-sample period 1993-2011 and Columns 3 and 6 display results for sub-sample period 1993-2016. All else equal, I do not find any evidence of differential fund flows that might suggest name based discrimination. However, I observe that for the sub-sample period 1993-2011 asian managers receive (3.6734 to 4.1468 percentage points) lower fund flows. No other ethnicity (name based) or race (photo based) receives differential flows. Family flows, performance rank and fund size have positive and significant relation to fund flows and fund age and load have negative and significant relation to fund flows irrespective of the change in sample period. I

discern that fund flows are determined by fund characteristics and not by manager characteristics or manager race or ethnicity. I do not find robust evidence for ethnic (name based) or racial (photo based) discrimination in fund flows.

Table 6 panel B provides the sub-sample analysis for facial appearance of the managers. I repeat my regressions from table 5 column 2. Column 1 presents the base regression from table 5 column 2 for my entire sample, using measures of facial appearance. Results are repeated here for ease of reader. Columns 2 and 3 display results for sub-sample period 1993-2011 and 1993-2016 respectively. I do not find any evidence of differential fund flows that might suggest discrimination based on facial appearances of fund managers. Family flows, performance rank and fund size have positive and significant relation to fund flows and fund age and load have negative and significant relation to fund flows irrespective of the change in sample period. Fund flows continue the statistically significant relationship with fund characteristics. Fund flows do not hold statistically significant relationship to facial appearance of the managers.

DelGarcio & Tkuc (2008) document the effect of Morningstar ratings on fund flows. I document economically and statistically significant positive abnormal flow following rating upgrades. Hence, it is possible that my results might get muddied when analyzing funds with differential Morningstar rating together. In table 7 I split my sample on Morningstar rating and run base regressions for each Morningstar rating.

In table 7 panel A, I repeat my baseline regression from table 3 column 3. Columns 1, 2, 3, 4 and 5 exhibit results for Morningstar rating 1, 2, 3, 4 and 5 respectively, using ethnicity (name based). I observe that fewer funds have Morningstar rating of 1. Most funds have Morningstar rating 3 and 4. Fund age is the only explanatory variable that is significant for all Morningstar ratings. Older funds get lower fund flows. Family flows and performance rank are positive and significant for Morningstar ratings 3, 4 and 5. I demonstrate that funds managed by managers of black, asian and hispanic ethnicities do not get differential fund flows. Funds with middle eastern managers receive 15.2199 percentage points lower fund flows. But I can observe that only 2,670 observations have Morningstar rating 5. With 265 observations with of middle eastern managers, these results are driven by a very small percentage of observations. In table 7 panel B, I repeat my baseline regression from table 4 column 2. Columns 1, 2, 3, 4 and 5 exhibit results for Morningstar rating 1, 2, 3, 4 and 5 respectively, using race (photo based). I observe that fewer funds have Morningstar rating of 1. Most funds have Morningstar rating 3 and 4. Fund age is the only explanatory variable that is significant for most Morningstar ratings. Older funds

get lower fund flows. Family flows are positive and significant for Morningstar ratings 3 and 4. I demonstrate that funds managed by managers of black, asian and hispanic races do not get differential fund flows. I do not find any evidence of racial (photo based) discrimination in fund flows. In table 7 panel C, I repeat my baseline regression from table 5 column 2. Columns 1, 2, 3, 4 and 5 exhibit results for Morningstar rating 1, 2, 3, 4 and 5 respectively, using race (photo based). I observe that fewer funds have Morningstar rating of 1. Most funds have Morningstar rating 3 and 4. Fund age is the only explanatory variable that is significant for most Morningstar ratings. Older funds get lower fund flows. Family flows are positive and significant for Morningstar ratings 3 and 4. I demonstrate that fund flows are not determined by facial appearance of fund managers. Investors do not allocate differential fund flows based on facial appearance of the managers. Fund flows are still allocated based fund characteristics, lending robustness to the rationality argument.

As documented in prior literature, retail investors display investor biases more prominently. Hence any fund with a higher percentage of retail investors must be the fund where I must spot ethnicity-based discrimination, if it exists. To test this, I re-estimate base regression on a subset of funds in table 8. I split my sample in two groups: with institutional holding of less than 25%, and with institutional holding of more than 75%.

In table 8 panel A, I repeat my baseline regressions for funds with different institutional holding ratios for fund managers with white ethnicity (name based) and race (photo based). Columns 1 and 2 I present the results for white ethnicity (name based) and columns 3 and 4 present the results for white race (photo based). Columns 1 and 3 present results for sub-sample of funds institutional holding of less than 25% (retail funds). Columns 2 and 4 demonstrate results for sub-sample of funds institutional holding of more than 75% (institutional funds). I observe that in addition to fund size, performance rank and family flows are positive and significant. Funds flows exhibit positive autocorrelation. Older funds and funds with no load receive lower funds. Manager characteristics do not influence fund flows. I can observe that white managers receive higher fund flows in primarily retail (2.7242 to 4.2030 percentage points) as well as primarily institutional funds (5.2663 percentage points).

In table 8 panel B, I repeat my baseline regressions for funds with different institutional holding ratios for ethnicity (photo based) and race (name based). In columns 1 and 2 I repeat regression from table 3 column 3 for ethnicity (name based) and in columns 3 and 4 I repeat regression from table 4 column 2 for race (photo based). Columns 1 and present results for sub-sample of funds institutional holding of less than 25% (retail funds). Columns 2 and 4 demonstrate results for sub-sample of funds institutional

holding of more than 75% (institutional funds). I observe that in addition to fund size, performance rank, and family flows are positive and significant.

Funds flows exhibit positive autocorrelation. Older funds get lower fund flows. Funds with no load also receive higher funds. Other manager characteristics do not influence fund flows. However, for race (photo based) column 4 suggests that primarily institutional funds direct higher fund flows toward managers with academic honors and direct lower fund flows to managers with graduate degrees. Again, these results cannot be reproduced in column 2 with ethnicity (name based), suggesting that these results seem weak and measure driven. I observe that black, asian and hispanic funds do not receive statistically different fund flows in primarily retail or in primarily institutional funds. However, middle eastern funds do get lower fund flows, in funds with most retail investors. I would like to note here that out of 12,430 observations in column 1for primarily retail funds, only 213 observations have middle eastern managers and hence the results seem to be driven by 1.7% of the observations and hence cannot be expounded with certainty. To illustrate this point, I can observe the middle eastern indicator variable in column 3 which is insignificant. This buttresses the notion that results for lower fund flows for middle eastern managers are measure driven and weak. I do not find evidence of ethnic (name based) or racial (photo based) discrimination in fund flows.

In table 8 panel C, I repeat my baseline regressions for funds with different institutional holding ratios for measures of facial appearance for the managers. In columns 1 and 2 I repeat regression from table 5 column 2 for facial appearance of the managers. Columns 1 presents results for sub-sample of funds institutional holding of less than 25% (retail funds) and column 2 demonstrates results for sub-sample of funds institutional holding of more than 75% (institutional funds). I observe that in addition to fund size, performance rank, and family flows are positive and significant. Funds flows exhibit positive autocorrelation. Older funds get lower fund flows. Manager characteristics do not influence fund flows for primarily retail funds. However, institutional funds direct lower fund flows toward managers with graduate degrees. But institutional funds direct higher fund flows toward the managers with academic honors. I can observe that manager facial appearance characteristics do not influence fund flows in primarily retail funds. In primarily institutional funds, managers with masculine faces receive 10.1188 percentage points higher fund flows.

Section 5: Robustness

In table 9, I repeat my baseline regressions but use performance rank as dependent variable. I regress performance rank on race (photo based) or ethnicity (name based) or facial appearance of managers after controlling for flows, fund characteristics and manager characteristics. I exclude lagged fund flow since performance rank is calculated using lagged fund flows. Column 1 presents results for ethnicity (name based), column 2 presents results for race (photo based) and column 3 presents results for facial appearance of the managers. I find family flows and fund size are positively and significantly related to performance rank. Fund age, turnover and expense ratio has negative and significant relation to performance rank. I also observe that manager tenure is positive and significant, demonstrating that managers with longer tenure earn have performance rank. Women managers seem to have lower performance rank. Also, funds with higher risk earn higher benchmark adjusted return. I do not differential performance for black, middle eastern or hispanic manager in terms of performance rank. However, asian managers seem to have higher performance rank. Also, older managers have lower performance rank. I find no other differential performance. I also observe that managers with longer tenure have (0.0033 to 0.0041 percentage points) higher performance rank. Women managers seem to have (0.0159 to 0.0169 percentage points) lower performance rank. I find family flows are positively and significantly related to performance rank. Bigger funds have higher performance rank. Younger fund and funds with smaller turnover and lower expense ratio receive higher performance rank. From column 1, I can observe, that asian managers receive higher performance rank, if I change the measure from ethnicity (name based) to race (photo based) then asian managers do not have differential performance rank. I also observe that younger managers have higher performance rank. I can conclude that I do not find differential performance based on ethnicity (name based) or race (photo based).

In table 10 panel A, I repeat my regressions from table 9 but use benchmark adjusted return as dependent variable. I regress benchmark adjusted return on race (photo based) or ethnicity (name based) after controlling for flows, fund characteristics and manager characteristics. Column 1 presents results for ethnicity (name based) and column 2 presents results for race (photo based). I can observe that managers with longer tenure earn higher benchmark adjusted return, female managers earn lower benchmark adjusted return and managers with affiliation to elite universities earn lower benchmark adjusted return. Apart from these, all other results change in significance as I change the measure from ethnicity (name based) to race (photo based). In column 1, ethnicity (name based), I observe that family flows, funds with higher risk and managers with academic honors earn higher benchmark adjusted return and older funds and managers with outside industry experience earn lower benchmark adjusted returns. But these

results do not retain significance in column 2 which uses race (photo based). In column 2, race (photo based), I observe that style flows, funds with lower 12B-1 fees and managers with longer tenure earn higher benchmark adjusted return and managers with graduate degrees earn lower benchmark adjusted returns. I find no other differential performance based on ethnicity (name based) or race (photo based). I also observe that managers with longer tenure earn (0.0722 to 0.0918 percentage points) higher benchmark adjusted return. Women managers seem to earn (0.4338 to 0.4835 percentage points) lower benchmark adjusted return. Managers with affiliation to elite universities earn (0.4114 to 0.4161 percentage points) lower benchmark adjusted return. I can conclude that I do not find differential performance based on ethnicity (name based) or race (photo based). This supports my results from my baseline regression. I do not any evidence of differential performance based on ethnicity (name based) or race (photo based). Hence, it is unsurprising that I do not find any evidence of differential fund flows based on ethnicity (name based) or race (photo based). Investors care for performance and direct fund flows to funds with higher performance. This is in line with the rational argument.

In table 10 panel B, I repeat my regressions from table 9 but use benchmark adjusted return as dependent variable. I regress benchmark adjusted return on facial appearance of managers after controlling for flows, fund characteristics and manager characteristics. I can observe that managers with longer tenure earn 0.0777 percentage point higher benchmark adjusted return, female managers earn 0.4037 percentage point lower benchmark adjusted return and managers with graduate degrees earn 0.6944 percentage point lower benchmark adjusted return. Apart from these, style flows have positive and significant relationship with fund flows. Funds with lower 12B-1 fees earn 0.9444 percentage point higher benchmark adjusted return. I do not any evidence of differential performance based on facial appearance of the managers. Hence, it is unsurprising that I do not find any evidence of differential fund flows based on facial appearance of the managers. Investors care for performance and direct fund flows to funds with higher performance. This supports the rational argument.

To alleviate concerns of model misspecification, I also run fund flow regressions with controls from base regression and add interaction terms. Since I have observed that previous performance and lagged fund flows are two of the variables that explain fund flows, I interact ethnicity (name based) and race (photo based) with performance rank, squared performance rank and fund size. I present the results in table 11.

Table 11 panel A, column 1 presents results for ethnicity (name based) and column 2 presents results for race (photo based). I repeat my baseline regressions and add interaction terms for race or ethnicity

(photo and name based respectively) with no load. My results remain unchanged. Fund age has negative and significant relation to fund flow. No load funds receive lower fund flows. Fund size and style flows exhibit positive and economically significant relation to fund flows. Observing column 1 which uses ethnicity (name based), I find managers with middle eastern funds with higher performance rank receive higher fund flows. I also find that middle eastern managers with extreme values of performance rank receive lower fund flows. However, I do not find differential flows for managers with middle eastern funds in column 2 using race (photo based). Observing column 2 which uses race (photo based), I find managers with black funds with lower performance rank receive higher fund flows. I also find that black managers with extreme values of performance rank receive lower fund flows. However, I do not find differential flows for managers with black funds in column 1 using measures of ethnicity (name based).

Table 11 panel B exhibits results for facial appearances of fund managers. I repeat my baseline regressions and add interaction terms for facial appearance of fund managers. My results remain unchanged. Fund age and expense ratio have negative and significant relation to fund flow. No load funds receive lower fund flows. Fund size and family flows exhibit positive and economically significant relation to fund flows. Fund flows also display positive autocorrelation. Observing column 1 which uses ethnicity (name based), I find managers with middle eastern funds with higher performance rank receive higher fund flows. I also find that middle eastern managers with extreme values of performance rank receive lower fund flows. However, I do not find differential flows for managers with middle eastern funds in column 2 using race (photo based). Observing column 2 which uses race (photo based), I find managers with black funds with lower performance rank receive higher fund flows. I also find that black managers with extreme values of performance rank receive lower fund flows. However, I do not find differential flows for managers with black funds in column 1 using ethnicity (name based). I find that no manager characteristic or facial appearance characteristic have statistically significant relation to fund flows. The coefficients on interaction terms are statistically insignificant. This buttresses my conjecture Foreign funds do not receive differential fund flows. Investors seem to allocate funds by using fund characteristics rather than manager characteristics.

For robustness, I also estimate Fama & MacBeth (1973) regressions in table 12. I use the model specifications from my baseline regressions but run Fama & Macbeth (1973) regressions. In panel A I exhibit results for race or ethnicity (photo and name based respectively). Column 1 exhibits results for ethnicity (name based) and column 2 exhibits results for race (photo based). Performance rank is positive and significant whereas fund age is negative and significant. I find my results unchanged. Again, I find that there is no difference in fund flows for black, middle eastern, asian and hispanic funds. No other

manager characteristics have any statistically significant relation with fund flows. This supports my results from previous tables and illustrates that my results are robust to change in methodology. In panel B I exhibit results for beauty characteristics. Performance rank and fund size are positive and significant whereas fund age is negative and significant. Managers with longer tenure receive higher fund flows. No manager characteristic holds statistically significant relation to fund flows. I find my results unchanged. Again, I find that there is no difference in fund flows for facial appearance characteristics. This supports my results from previous tables and illustrates that the results are robust to change in methodology.

In table 13, I repeat my baseline regressions and add interactions between no load indicator and race or ethnicity (photo and name based respectively). Table 13 panel A, column 1 presents results for ethnicity (name based) and column 2 presents results for race (photo based). My results remain unchanged. Fund age has negative and significant relation to fund flow. No load funds receive lower fund flows. Fund size, family flows and performance rank exhibit positive and economically significant relation to fund flows. Observing column 1 which uses ethnicity (name based), I find asian managers receive lower flows however asian managers of funds with no load receive higher funds. I also find that managers affiliated with elite universities receive lower fund flows. However, I do not find differential flows for asian managers or managers with affiliation to elite universities in column 2 using race (photo based). Observing column 2 which uses race (photo based), I find that manager race (photo based) does not hold statistically significant relation with fund flows. Again, this reinforces my results that investors direct fund flows by observing fund characteristics and not manager characteristics. I don't find any evidence of racial (photo based) or ethnic (name based) discriminations in fund flows. Table 13 panel B exhibits results for facial appearances of fund managers. I repeat my baseline regressions and add interaction terms for facial appearance of fund managers. My results remain unchanged. Fund age and expense ratio have negative and significant relation to fund flow. Fund size and family flows exhibit positive and economically significant relation to fund flows. Fund flows also display positive autocorrelation. I do not find differential flows for facial appearance of managers. I find that no manager characteristic or facial appearance characteristic have statistically significant relation to fund flows. The coefficients on interaction terms are statistically insignificant. This buttresses my conjecture funds managed by non-white managers do not receive differential fund flows. Investors seem to allocate funds by using fund characteristics rather than manager characteristics.

In table 14, I repeat table 9 by changing the dependent variable to expense ratio. Columns 1, 2 and 3 exhibit results for ethnicity (name based), race (photo based) and beauty characteristics respectively. I

observe that funds with higher risk have higher expense ratio. Fund size, fund age and no-load indicator have negative and significant relationship with expense ratio. Observing ethnicity (name based), asian managers have lower expense ratio. Observing race (photo based) middle eastern managers have higher expense ratios. However, these results go away when I change the measure from ethnicity (name based) and vice versa. Facial appearance of managers or any other manager characteristics does not have statistically significant relationship with expense ratio.

Performance rank is consistently significant in in fund flow regressions in many of the model specification. Hence, one might argue that the significance of foreign indicator is usurped by performance rank. Table 15 repeats my baseline regressions but instead of performance rank I control for benchmark adjusted return as a measure for fund performance. Columns 1, 2 and 3 use ethnicity (name based), race (photo based) and beauty characteristics respectively. Benchmark adjusted return, fund size and family flow are positively correlated to fund flows. Fund age and no-load indicator are negative and significant. There is no evidence of racial (photo based) or ethnic (name based) discrimination in fund flows. I also do find any evidence of discrimination on facial appearance of managers in fund flows. Of all the manager characteristics, longer tenure seems to generate higher fund flows and affiliation to top school seems to generate lower fund flows, but these results go away when I change the measure from ethnicity (name based) to race (photo based).

In table 16, I repeat my baseline regression but add interaction terms for return as well as fund size with ethnicity (name based), race (photo based) indicators and facial appearances. Columns 1, 2 and 3 display results for ethnicity (name based), race (photo based) and facial appearance respectively. Again, return, family flows, fund size and performance rank have a positive relationship with fund flows, whereas fund age, expense ratio and no-load indicator have a negative relationship. I observe that investors do not direct funds on manager characteristics, facial appearance of managers or manager race (photo based) or ethnicity (name based). Fund characteristics seem to still hold explanatory power for fund flows.

In table 17 panel A, I repeat table 12 Fama & MacBeth (1973) regressions by splitting the sample. Panel A displays the results for sub-sample period 1993 to 2011. Columns 1, 2 and 3 display results for ethnicity (name based), race (photo based) and beauty characteristics respectively. Style flows, fund flow, fund size and performance rank are positive and significant to fund flows and fund age is negative and significant. Again, I find that there is no difference in fund flows for any race or ethnicity category. In table 17 panel B, I repeat table 12 Fama & MacBeth (1973) regressions by splitting the sample. Panel A displays the results for sub-sample period 1993 to 2016. Columns 1, 2 and 3 display results for

ethnicity (name based), race (photo based) and beauty characteristics respectively. Style flows, fund flow, fund size and performance rank are positive and significant to fund flows and fund age is negative and significant. Again, I find that there is no difference in fund flows for any race or ethnicity category. I also observe that managers with longer tenures get higher fund flows. I confirm that my results are not driven by any sub-period in the sample.

In table 18 panel A, I repeat table 9 by changing the dependent variable to gross return. Panel A displays the results for race or ethnicity (photo and name based respectively). Columns 1 and 2 display results for ethnicity (name based) and race (photo based) respectively. Larger funds and younger funds earn higher gross return. Funds with lower fund risk and higher expense ratio earn higher gross return. I also notice that female managers earn lower gross return and managers with more experience earn higher gross return. Managers with graduate degrees earn lower gross return. I find that asian managers earn higher gross return. The results go away when I change the measure to ethnicity (name based) from race (photo based). Panel B displays results for beauty characteristics. Larger funds and younger funds earn higher gross return. Funds with lower fund risk and higher expense ratio earn higher gross return. I also notice that female managers earn lower gross return and managers with more experience earn higher gross return. Managers with graduate degrees or certifications earn lower gross return. Younger managers earn higher return.

Table 19 repeats table 9 analysis by changing dependent variable to net return. Panel A displays the results for race or ethnicity (photo and name based respectively). Columns 1 and 2 display results for ethnicity (name based) and race (photo based) respectively. Again, my results from table 18 grow stronger with net return. Larger funds and younger funds earn higher net return. Funds with lower fund risk earns higher net return. I also notice that female managers earn lower net return and managers with more experience earn higher net return. I find that asian managers earn higher net return. The results go away when I change the measure to ethnicity (name based) from race (photo based). Panel B displays results for beauty characteristics. Larger funds and younger funds earn higher net return. Funds with lower fund risk earn higher net return. I also notice that female managers earn lower net return and managers with more experience earn higher net return. Managers with graduate degrees or certifications earn lower net return. Younger managers earn higher net return. My results are robust to changes to model specifications and sub-sample analysis.

Section 6: Conclusion

I regress net fund-flows on measures of race and ethnicity and on the controls of flow, performance, fund characteristics as well as manager characteristics. I do not find any evidence of racial or ethnic discrimination in fund flows. I repeat each model (all analysis) for ethnicity (name based), race (photo based) and beauty characteristics. I also create a one-to-one matched sample on the attributes of fund age, fund size, style and family. I create various combinations of the matched sample and run the main model with controls and fixed effects. I fail to reject the hypothesis that black, middle eastern, asian or hispanic fund managers get differential fund flows. This supports the rational investor hypothesis. This is contrast with some of the recent papers.

While literature on racial or ethnic prejudices in consumers has been abundant, there haven't been many papers testing racial or ethnic prejudices among investors. Whether investors chase performance or display racial or ethnic biases has been in debate in recent empirical financial research. Since racial or ethnic prejudice in investors can be unobservable, I present two measures here. In the first, I employ an objective measure by identifying ethnicities using Name-Prism algorithm. In the second, I employ photos to calculate races using Clarifai algorithm. My results support the argument that overall investors are rational, and they chase prior performance.

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Tables

Table 1. Descriptive Statistics

Panel A-1: Summary Statistics

Variables	Mean	SD	Min	P1	P5	P25	P50	P75	P95	P99	Max	Obs.
Ethnicity Identification												
Black	0.018	0.132	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	21,911
Middle Eastern	0.001	0.099	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	21,911
Asian	0.068	0.251	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	21,911
Hispanic	0.161	0.367	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	21,911
Race Identification												
Black	0.028	0.165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	15,103
Middle Eastern	0.003	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	15,103
Asian	0.110	0.313	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	15,103
Hispanic	0.068	0.251	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	15,103
Race Identification												
Beauty Index	2.041	1.027	0.081	0.707	0.902	1.404	1.801	2.388	4.017	5.946	8.613	13,492
Masculine	0.969	0.133	0.001	0.038	0.894	0.994	0.998	0.999	0.999	1.000	1.000	15,103
Age	55.329	9.231	24.000	36.000	39.000	48.000	55.000	61.000	72.000	82.000	85.000	15,103
Manager Characteristics												
Tenure	12.870	7.204	0.083	1.583	3.333	7.500	11.833	16.917	26.250	33.833	50.750	22,060
Female	0.195	0.396	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	22,060
Graduate Degree	0.816	0.388	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	22,060
PhD	0.074	0.262	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	22,060
Certifications	0.683	0.465	0.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	22,060
Top School	0.877	0.328	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	20.988
Academic Excellence	0.502	0.500	0.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	20.988
Outside Industry Experience	0.880	0.326	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	20,988

Panel A-2: Summary Statistics

Variables	Mean	SD	Min	P1	P5	P25	P50	P75	P95	P99	Max	Obs.
Flows												
Fund Flow (%)	6.945	45.365	-57.613	-48.673	-33.833	-14.921	-4.305	13.170	85.682	214.949	393.110	22,060
Style Flow (%)	3.953	72.212	-89.524	-24.391	-18.237	-5.356	0.245	8.981	27.346	66.460	4,671.739	22,060
Family Flow (%)	3.834	27.576	-61.328	-48.116	-30.942	-9.857	-0.137	10.854	52.632	113.851	213.527	22,060
Performance												
Performance Rank	0.519	0.279	0.000	0.012	0.070	0.285	0.523	0.759	0.949	0.994	1.000	22,060
Morningstar Rating	3.376	0.982	1.000	1.000	2.000	3.000	3.000	4.000	5.000	5.000	5.000	22,060
Fund Characteristics												
Fund Size	6.130	1.587	3.219	3.344	3.746	4.915	6.024	7.175	8.941	10.229	12.405	22,060
Turnover	87.890	82.266	3.040	6.000	13.300	35.000	64.000	110.000	254.000	438.000	566.000	22,060
Fund Risk (%)	4.107	2.240	0.115	0.559	0.798	2.655	3.768	5.535	8.009	10.339	20.770	22,060
Expense Ratio (%)	1.110	0.382	0.010	0.280	0.502	0.870	1.090	1.323	1.775	2.171	3.590	22,060
Fund Age	8.433	0.697	6.999	7.047	7.288	7.956	8.433	8.866	9.695	10.187	10.416	22,060
No Load	0.435	0.496	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000	22,060
12B-1 Fee	0.622	0.427	0.000	0.000	0.000	0.250	0.750	1.000	1.000	1.000	1.000	22,060

This table reports the descriptive statistics for fund and fund manager characteristics for all funds. Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding t -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1}-r_{i,t}$, where $TNA_{i,t}$ denotes fund i's total net assets in year t , and r_t denotes fund i's return in year t as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same style scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year t. Style flow is the growth rate of fund i's style due to flows in year t, excluding flows in fund i. Family flow is the growth rate of fund i's fund family due to flows in year t, excluding flows in fund i. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Panel B: Differences in White and Non-White Managers and Funds

	Ethnicity				Race			
Variables	**White=1**	**White=0**	**Diff.**		**White=1**	**White=0**	**Diff.**	
Manager Characteristics								
Tenure	12.7696	13.1735	0.4038	***	12.7404	13.736	0.9956	***
Female	0.1497	0.3324	0.1826	***	0.1685	0.3730	0.2045	***
Graduate Degree	0.7862	0.9044	0.1183	***	0.7985	0.9299	0.1315	***
PhD	0.0502	0.1474	0.0971	***	0.0562	0.1960	0.1399	***
Certifications	0.6441	0.8021	0.1580	***	0.6566	0.8622	0.2056	***
Top School	0.8040	0.9027	0.0987	***	0.8118	0.9393	0.1275	***
Academic Excellence	0.3737	0.5537	0.1800	***	0.3862	0.6315	0.2452	***
Outside Industry Experience	0.8049	0.9196	0.1147	***	0.8191	0.9299	0.1108	***
Flows								
Fund Flow	7.6590	4.7876	-2.8714	***	7.8313	1.0255	-6.8058	***
Style Flow	4.6350	1.8935	-2.7416	**	4.4229	0.8170	-3.6059	**
Family Flow	4.2818	2.4828	-1.7989	***	4.1111	1.9866	-2.1244	***
Performance								
Performance Rank	0.5192	0.5184	-0.0008		0.5178	0.5273	0.0095	
Morningstar Rating	3.3900	3.3356	-0.0544	***	3.3821	3.3390	-0.0431	**
Annual Return	7.8791	7.8434	-0.0357		7.7870	8.4254	0.6384	
Benchmark Adjusted Return	-0.4137	-0.6378	-0.2240		-0.4658	-0.4940	-0.0283	
Fund Characteristics								
Fund Size	6.1344	6.1149	-0.0196		6.1261	6.1526	0.0265	
Turnover	86.9743	90.6558	3.6814	***	87.7071	89.1108	1.4038	
Fund Risk	4.1397	4.0071	-0.1326	***	4.1131	4.0644	-0.0487	
Expense Ratio	1.1160	1.0903	-0.0257	***	1.1141	1.0797	-0.0343	***
Fund Age	8.4365	8.4233	-0.0132		8.4220	8.5082	0.0862	***
No Load	0.4288	0.4550	0.0263	***	0.4364	0.4278	-0.0086	
12B-1 Fee	0.6280	0.6042	-0.0238	***	0.6224	0.6197	-0.0027	
Institutional Ratio	0.3051	0.3577	0.0526	***	0.3105	0.3691	0.0585	***

This table reports the mean fund and fund manager characteristics for all funds sorted by my 2 main variables – Ethnicity (panel A) and Race (panel
Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding,
zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western Europ
origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding *t* -statistics, clustered by fund for f
attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year define
$(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund *i*'s total net assets in year *t* , and r_t denotes fund *i*'s return in year *t* as reported in CRSP. Performa
rank is the performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performa
and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. F
risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fu
expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year *t*. Style flow is the growth rat
fund *i*'s style due to flows in year *t*, excluding flows in fund *i*. Family flow is the growth rate of fund *i*'s fund family due to flows in year *t*, excluding fl
in fund *i*. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is
monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morning
match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP
Morningstar match and annual return for the Morningstar benchmark for that year.

Panel C: Differences in Black and Non-Black Managers and Funds

	Ethnicity				Race			
Variables	**Black=1**	**Black=0**	**Diff.**		**Black=1**	**Black=0**	**Diff.**	
Manager Characteristics								
Tenure	16.4208	12.8518	-3.5690	***	16.1608	14.4283	-1.7325	***
Female	0.1188	0.1976	0.0788	***	0.6277	0.2065	-0.4212	***
Graduate Degree	0.9109	0.8200	-0.0909	***	0.9130	0.8663	-0.0467	***
PhD	0.0726	0.0749	0.0023		0.1848	0.0826	-0.1022	***
Certifications	0.9043	0.6851	-0.2192	***	0.9484	0.7327	-0.2157	***
Top School	0.8940	0.8344	-0.0597	***	0.9565	0.8690	-0.0875	***
Academic Excellence	0.4801	0.4218	-0.0583	**	0.6413	0.4784	-0.1629	***
Top School	0.9834	0.8382	-0.1452	***	0.9810	0.8632	-0.1178	***
Flows								
Fund Flow	4.3083	7.0000	2.6917		0.4769	2.4734	1.9964	
Style Flow	2.7618	3.9475	1.1856		2.0645	2.4619	0.3974	
Family Flow	3.1602	3.8483	0.6881		3.7567	2.3635	-1.3932	
Performance								
Performance Rank	0.5224	0.5192	-0.0031		0.5220	0.5287	0.0067	
Morningstar Rating	3.3234	3.3785	0.0550		3.2799	3.4302	0.1503	***
Annual Return	7.5285	7.8843	0.3558		8.8986	8.0094	-0.8891	
Benchmark Adjusted Return	-0.7007	-0.4637	0.2370		-0.4112	-0.4187	-0.0076	
Fund Characteristics								
Fund Size	6.4096	6.1312	-0.2785	***	5.7660	6.3622	0.5962	***
Turnover	83.7212	87.8867	4.1655		84.2004	84.5165	0.3161	
Fund Risk	3.8547	4.1080	0.2534		4.3352	4.0563	-0.2789	**
Expense Ratio	1.1028	1.1090	0.0063		1.1046	1.0758	-0.0288	
Fund Age	8.3799	8.4361	0.0562		8.4281	8.5406	0.1124	***
No Load	0.5842	0.4330	-0.1512	***	0.5489	0.4419	-0.1070	***
12B-1 Fee	0.4523	0.6241	0.1718	***	0.5828	0.6116	0.0288	
Institutional Ratio	0.2937	0.3185	0.0248		0.3372	0.3383	0.0011	

This table reports the mean fund and fund manager characteristics for all funds sorted by my 2 main variables – Ethnicity (panel A) and Race (panel B). Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding *t* -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t} - TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund *i*'s total net assets in year *t* , and r_t denotes fund *i*'s return in year *t* as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same market style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year *t*. Style flow is the growth rate of fund *i*'s style due to flows in year *t*, excluding flows in fund *i*. Family flow is the growth rate of fund *i*'s fund family due to flows in year *t*, excluding flows in fund *i*. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Panel D: Differences in Middle Eastern and Non-Middle Eastern Managers and Funds

	Ethnicity				Race			
Variables	**ME=1**	**ME=0**	**Diff.**		**ME=1**	**ME=0**	**Diff.**	
Manager Characteristics								
Tenure	14.408	12.887	-1.5210	***	12.6395	14.4761	1.8366	
Female	0.3812	0.1948	-0.1864	***	0.5000	0.2159	-0.2841	***
Graduate Degree	0.9554	0.8200	-0.1354	***	0.9348	0.8672	-0.0675	
PhD	0.1188	0.0745	-0.0443	**	0.0000	0.0853	0.0853	**
Certifications	0.6881	0.6881	0.0000		0.6087	0.7383	0.1296	**
Top School	0.8528	0.8351	-0.0177		0.8372	0.8713	0.0341	
Academic Excellence	0.5127	0.4218	-0.0909	**	0.7907	0.4816	-0.3091	***
Top School	0.8680	0.8400	-0.0280		0.9535	0.8659	-0.0876	
Flows								
Fund Flow	5.5484	6.9760	1.4276		4.7716	2.4176	-2.3540	
Style Flow	-0.6193	3.9733	4.5926		9.7925	2.4298	-7.3627	
Family Flow	-3.2243	3.9044	7.1286	***	-7.3126	2.4270	9.7397	***
Performance								
Performance Rank	0.5266	0.5192	-0.0075		0.5195	0.5286	0.0090	
Morningstar Rating	3.3960	3.3775	-0.0185		3.3261	3.4268	0.1008	
Annual Return	7.7742	7.8804	0.1062		8.1153	8.0308	-0.0845	
Benchmark Adjusted Return	-0.8170	-0.4637	0.3533		-0.8776	-0.4172	0.4605	
Fund Characteristics								
Fund Size	6.9523	6.1274	-0.8249	***	5.2577	6.351	1.0933	***
Turnover	72.9543	87.9673	15.0130	***	92.3478	84.4849	-7.8630	
Fund Risk	3.8199	4.1072	0.2873		3.0539	4.0661	1.0122	***
Expense Ratio	0.9306	1.1106	0.1801	***	1.3551	1.0756	-0.2795	***
Fund Age	8.4920	8.4348	-0.0572		8.4287	8.5382	0.1095	
No Load	0.5446	0.4340	-0.1105	***	0.3478	0.4448	0.0969	
12B-1 Fee	0.4609	0.6233	0.1624	***	0.6685	0.6107	-0.0578	
Institutional Ratio	0.2770	0.3186	0.0416		0.1838	0.3388	0.1550	***

This table reports the mean fund and fund manager characteristics for all funds sorted by my 2 main variables – Ethnicity (panel A) and Race (panel B). Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding *t* -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund *i*'s total net assets in year *t* , and r_t denotes fund *i*'s return in year *t* as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year *t*. Style flow is the growth rate of fund *i*'s style due to flows in year *t*, excluding flows in fund *i*. Family flow is the growth rate of fund *i*'s fund family due to flows in year *t*, excluding flows in fund *i*. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Panel E: Differences in Asian and Non-Asian Managers and Funds

	Ethnicity				Race			
Variables	**Asian=1**	**Asian=0**	**Diff.**		**Asian=1**	**Asian=0**	**Diff.**	
Manager Characteristics								
Tenure	12.1323	12.9474	0.8152	***	13.2538	14.6050	1.3513	***
Female	0.3480	0.1873	-0.1606	***	0.3517	0.2018	-0.1499	***
Graduate Degree	0.8835	0.8175	-0.0660	***	0.9342	0.8601	-0.0741	***
PhD	0.1868	0.0681	-0.1186	***	0.2074	0.0715	-0.1359	***
Certifications	0.8579	0.6779	-0.1801	***	0.8723	0.7231	-0.1493	***
Top School	0.9119	0.8305	-0.0814	***	0.9272	0.8649	-0.0623	***
Academic Excellence	0.5620	0.4140	-0.1480	***	0.6480	0.4637	-0.1843	***
Top School	0.9429	0.8339	-0.1090	***	0.9352	0.8583	-0.0769	***
Flows								
Fund Flow	1.6956	7.2814	5.5859	***	0.1878	2.6720	2.4842	***
Style Flow	0.6233	4.1311	3.5079		0.2272	2.6982	2.4710	
Family Flow	0.4689	4.0426	3.5737	***	1.4560	2.5015	1.0454	
Performance								
Performance Rank	0.5187	0.5193	0.0006		0.5351	0.5278	-0.0073	
Morningstar Rating	3.2562	3.3850	0.1289	***	3.3551	3.4344	0.0794	***
Annual Return	7.1891	7.9212	0.732		8.5961	7.9687	-0.6274	
Benchmark Adjusted Return	-0.5127	-0.4642	0.0485		-0.3944	-0.4212	-0.0268	
Fund Characteristics								
Fund Size	5.9702	6.1450	0.1748	***	6.1890	6.3652	0.1762	***
Turnover	97.6321	87.2365	-10.3956	***	92.2581	83.6522	-8.6059	***
Fund Risk	4.2213	4.0975	-0.1238		4.1196	4.0568	-0.0628	
Expense Ratio	1.0954	1.1098	0.0144		1.0417	1.0803	0.0386	***
Fund Age	8.5574	8.4280	-0.1294	***	8.5112	8.5408	0.0296	
No Load	0.3974	0.4373	0.0399	***	0.4222	0.4469	0.0247	
12B-1 Fee	0.6467	0.6203	-0.0264	**	0.6214	0.6097	-0.0116	
Institutional Ratio	0.3567	0.3159	-0.0408	***	0.3772	0.3340	-0.0431	***

This table reports the mean fund and fund manager characteristics for all funds sorted by my 2 main variables – Ethnicity (panel A) and Race (panel B). Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding *t* -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund *i*'s total net assets in year *t* , and r_t denotes fund *i*'s return in year *t* as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year *t*. Style flow is the growth rate of fund *i*'s style due to flows in year *t*, excluding flows in fund *i*. Family flow is the growth rate of fund *i*'s fund family due to flows in year *t*, excluding flows in fund *i*. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Panel F: Differences in Hispanic and Non-Hispanic Managers and Funds

	Ethnicity				Race			
Variables	**Hispanic=1**	**Hispanic=0**	**Diff.**		**Hispanic=1**	**Hispanic=0**	**Diff.**	
Manager Characteristics								
Tenure	13.8885	12.7502	-1.1383	***	13.615	14.5288	0.9139	***
Female	0.3749	0.1693	-0.2057	***	0.3029	0.2109	-0.0920	***
Graduate Degree	0.9010	0.8091	-0.0920	***	0.9295	0.8632	-0.0662	***
PhD	0.1113	0.0693	-0.0420	***	0.1919	0.0778	-0.1141	***
Certifications	0.7897	0.6726	-0.1170	***	0.8257	0.7319	-0.0938	***
Top School	0.9136	0.8230	-0.0906	***	0.9563	0.8653	-0.0910	***
Academic Excellence	0.5574	0.4016	-0.1557	***	0.5948	0.4746	-0.1202	***
Top School	0.9090	0.8296	-0.0794	***	0.9010	0.8637	-0.0374	***
Flows								
Fund Flow	6.5078	7.0324	0.5246		2.3630	2.4289	0.0659	
Style Flow	2.5705	4.1388	1.5683		0.8327	2.5626	1.7299	
Family Flow	3.9005	3.8294	-0.0711		2.5825	2.3848	-0.1977	
Performance								
Performance Rank	0.5128	0.5203	0.0075		0.5175	0.5293	0.0118	
Morningstar Rating	3.3777	3.3777	0.0000		3.3371	3.4326	0.0955	***
Annual Return	7.8925	7.8774	-0.0151		7.9933	8.0337	0.0404	
Benchmark Adjusted Return	-0.7910	-0.4175	0.3736	**	-0.6628	-0.4019	0.2609	
Fund Characteristics								
Fund Size	6.0969	6.1408	0.0439		6.2861	6.3518	0.0657	
Turnover	88.6189	87.7087	-0.9101		85.9206	84.4126	-1.5080	
Fund Risk	3.9463	4.1287	0.1824	***	3.9230	4.0726	0.1496	**
Expense Ratio	1.0918	1.1116	0.0197	***	1.1165	1.0737	-0.0428	***
Fund Age	8.3677	8.4457	0.0779	***	8.5378	8.5378	0.0000	
No Load	0.4959	0.4258	-0.0701	***	0.3942	0.4479	0.0537	***
12B-1 Fee	0.5884	0.6269	0.0384	***	0.6288	0.6097	-0.0191	
Institutional Ratio	0.3542	0.3127	-0.0415	***	0.3774	0.3357	-0.0418	***

This table reports the mean fund and fund manager characteristics for all funds sorted by my 2 main variables – Ethnicity (panel A) and Race (panel B). Foreign is an indicator variable that takes on the value of one if at least 75% of AMT workers indicate that the name of the manager is foreign-sounding, and zero otherwise. Non-European is an indicator variable that takes on the value of one if the name of the manager is classified as being of Western European origin according to Name-Prism, and zero otherwise. The differences between the group means and the corresponding *t* -statistics, clustered by fund for fund attributes and clustered by manager for manager attributes, are also reported here. Fund flow is the net inflow into the fund in the current year defined as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$, where $TNA_{i,t}$ denotes fund *i*'s total net assets in year *t* , and r_t denotes fund *i*'s return in year *t* as reported in CRSP. Performance rank is the performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performance) and one (highest performance). Fund size is the lagged natural logarithm of the fund's size in million USD. Turnover is the fund's lagged turnover rate. Fund risk is the lagged return time series standard deviation of the fund return using the past twelve-monthly return observations. Expense ratio is the fund's expense ratio as reported by Morningstar. Fund age is the natural logarithm of fund age in years at the beginning of year *t*. Style flow is the growth rate of fund *i*'s style due to flows in year *t*, excluding flows in fund *i*. Family flow is the growth rate of fund *i*'s fund family due to flows in year *t*, excluding flows in fund *i*. Tenure is the difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar. Monthly return is the monthly raw return as reported in CRSP and Morningstar match. Annual return is the compounded monthly raw return as reported in CRSP and Morningstar match for one year. Benchmark-adjusted return is the annual excess return calculated as difference between annual raw return as reported in CRSP and Morningstar match and annual return for the Morningstar benchmark for that year.

Table 2. Fund Flows and Fund Characteristics as well as Manager Characteristics from 1976-2016

Dependent Variable = Fund Flow	Fund Characteristics (1)	Manager Characteristics (2)
Manager Characteristics		
Tenure		0.0866
		(0.0627)
Female		-0.2920
		(0.9225)
Graduate		-0.9916
		(1.1581)
PhD		0.8083
		(1.5061)
Certifications		0.8590
		(0.9786)
Top School		-2.4548**
		(1.1410)
Academic Excellence		0.0900
		(0.8325)
Outside Industry Experience		0.5131
		(1.1537)
Flow		
Fund Flow$_{t-1}$	0.0007	0.0007
	(0.0004)	(0.0004)
Style Flow	0.0206	0.0254
	(0.0151)	(0.0159)
Family Flow	0.1129***	0.1068***
	(0.0156)	(0.0157)
Performance		
Performance Rank	-4.4657	-3.9245
	(4.4194)	(4.5219)
Performance Rank^2	38.8383***	37.8955***
	(4.5505)	(4.6393)
Fund Characteristics		
Fund Size	3.5111***	3.4818***
	(0.2868)	(0.3089)
Turnover	0.0089	0.0098
	(0.0049)	(0.0050)
Fund Risk	-0.1992	-0.3224
	(0.3127)	(0.3219)
Expense Ratio	-2.0470	-1.9861
	(1.6243)	(1.6645)
Fund Age	-14.8406***	-14.8367***
	(0.6529)	(0.6751)
No Load	-6.8661***	-7.3567***
	(1.5499)	(1.6092)
12B-1 Fee	2.6202	2.5253
	(1.944)	(1.9985)
Constant	98.5326***	171.581***
	(21.1399)	(22.7776)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	22,060	20,988
R-squared	0.1668	0.1688

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 3. Fund Flows and Foreign Named Managers from 1976-2016 based on ethnicity classifications

Dependent Variable = Fund Flow	(1)	(2)	(3)	(4)
Race/Ethnicity Identifiers				
Black	-3.1943	-3.2508	-2.5606	-2.6259
	(3.3893)	(3.3914)	(3.2875)	(3.2902)
Middle Eastern	-3.4707	-3.4574	-3.0387	-3.039
	(3.6387)	(3.6432)	(3.7221)	(3.7265)
Asian	-1.8221	-1.7042	-1.7057	-1.5969
	(1.3699)	(1.3886)	(1.4175)	(1.4358)
Hispanic	-1.1314	-1.1213	-1.5196	-1.5232
	(1.0852)	(1.0857)	(1.1124)	(1.1121)
South Asian		-1.1444		-1.2513
		(1.4495)		(1.4534)
Manager Characteristics				
Tenure			0.0919	0.0907
			(0.0633)	(0.0633)
Female			-0.1695	-0.1441
			(0.9297)	(0.9303)
Graduate			-1.1642	-1.1240
			(1.1748)	(1.1750)
PhD			0.9688	1.1251
			(1.5034)	(1.5093)
Certifications			0.8394	0.8383
			(0.9795)	(0.9793)
Top School			-2.6018**	-2.6036**
			(1.1472)	(1.1470)
Academic Excellence			0.2289	0.2751
			(0.8317)	(0.8320)
Outside Industry Experience			0.3328	0.3514
			(1.1595)	(1.1602)
Flow				
Fund Flow$_{t-1}$	0.0007	0.0007	0.0007	0.0007
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Style Flow	0.0205	0.0205	0.0251	0.0251
	(0.0151)	(0.0151)	(0.0159)	(0.0159)
Family Flow	0.1133***	0.1133***	0.1072***	0.1072***
	(0.0156)	(0.0156)	(0.0157)	(0.0158)
Performance				
Performance Rank	-4.5596	-4.5473	-3.9757	-3.9670
	(4.4335)	(4.4330)	(4.5415)	(4.5411)
Performance Rank^2	38.9381***	38.9369***	37.9108***	37.9160***
	(4.5596)	(4.5588)	(4.6548)	(4.6537)
Fund Characteristics				
Fund Size	3.4762***	3.4739***	3.4477***	3.4463***
	(0.2872)	(0.2874)	(0.3094)	(0.3094)
Turnover	0.0085	0.0085	0.0096	0.0095
	(0.0049)	(0.0049)	(0.0050)	(0.0050)
Fund Risk	-0.2088	-0.2077	-0.3348	-0.3333
	(0.3140)	(0.3140)	(0.3233)	(0.3232)
Expense Ratio	-2.2534	-2.2707	-2.2216	-2.2383
	(1.6313)	(1.6314)	(1.6718)	(1.6717)
Fund Age	-14.9229***	-14.9259***	-14.9306***	-14.9322***
	(0.6550)	(0.6546)	(0.6785)	(0.6781)
No Load	-6.9730***	-6.9891***	-7.4448***	-7.4554***
	(1.572)	(1.5716)	(1.6292)	(1.6288)
12B-1 Fee	2.5091	2.5074	2.4007	2.4058
	(1.9611)	(1.9611)	(2.0122)	(2.0122)
Constant	100.8525***	100.9243***	174.2425***	175.5639***
	(20.9768)	(20.9779)	(22.8089)	(22.8408)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	21,911	21,911	20,839	20,839
R-squared	0.1676	0.1676	0.1697	0.1698

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 4. Fund Flows and Foreign Named Managers from 1976-2016 based on race classification

Dependent Variable = Fund Flow	(1)	(2)
Race/Ethnicity Identifiers		
Black	-0.6746	-0.7671
	(1.7271)	(1.7415)
Middle Eastern	1.3235	3.6187
	(6.6019)	(7.6649)
Asian	-0.5175	-0.5074
	(1.2337)	(1.2620)
Hispanic	0.3930	0.5542
	(1.4444)	(1.4512)
Manager Characteristics		
Tenure		0.0371
		(0.0612)
Female		-0.0626
		(0.8595)
Graduate		-1.2922
		(1.1468)
PhD		-0.1857
		(1.4536)
Certifications		0.6004
		(0.9583)
Top School		-1.0895
		(1.0798)
Academic Excellence		0.6308
		(0.7570)
Outside Industry Experience		-0.4129
		(1.1551)
Flow		
Fund Flow$_{t-1}$	0.0006**	0.0006**
	(0.0003)	(0.0003)
Style Flow	0.0394**	0.0368**
	(0.0166)	(0.0162)
Family Flow	0.0886***	0.0836***
	(0.0142)	(0.0145)
Performance		
Performance Rank	3.1603	2.8457
	(4.1909)	(4.2513)
Performance Rank^2	24.3951***	24.2503***
	(4.2086)	(4.2599)
Fund Characteristics		
Fund Size	3.6425***	3.5935***
	(0.2742)	(0.2953)
Turnover	-0.0015	-0.0004
	(0.0049)	(0.0051)
Fund Risk	-0.6022	-0.5919
	(0.3180)	(0.3232)
Expense Ratio	-3.8840**	-4.4063***
	(1.5950)	(1.6120)
Fund Age	-10.2644***	-10.1179***
	(0.6570)	(0.6724)
No Load	-5.2833***	-5.2879***
	(1.6473)	(1.6599)
12B-1 Fee	1.3862	1.6811
	(1.8917)	(1.9217)
Constant	79.1329***	69.0316***
	(14.1050)	(11.2381)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	15,103	14,648
R-squared	0.1768	0.1769

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 5. Fund Flows and Foreign Named Managers from 1976-2016

Dependent Variable	Beauty	
= Fund Flow	(1)	(2)
Beauty Characteristics		
Beauty Index	-0.0759	0.0677
	(0.4169)	(0.4301)
Masculine	-0.9526	-0.2522
	(2.7261)	(2.8857)
Age		-0.0604
		(0.0488)
Manager Characteristics		
Tenure		0.0698
		(0.0652)
Female		-0.1081
		(0.9403)
Graduate		-1.8691
		(1.2848)
PhD		-1.2015
		(1.4212)
Certifications		0.0400
		(1.0731)
Top School		-0.4310
		(1.1922)
Academic Excellence		0.6891
		(0.8256)
Outside Industry Experience		0.3468
		(1.3088)
Flow		
Fund Flow$_{t-1}$	0.0006***	0.0006***
	(0.0002)	(0.0002)
Style Flow	0.0407	0.0367
	(0.0225)	(0.0222)
Family Flow	0.0849***	0.0779***
	(0.0144)	(0.0146)
Performance		
Performance Rank	2.6308	1.8892
	(4.4605)	(4.5314)
Performance Rank^2	24.5598***	24.6986***
	(4.4587)	(4.5225)
Fund Characteristics		
Fund Size	3.7539***	3.6501***
	(0.2903)	(0.3135)
Turnover	-0.0006	0.0002
	(0.0052)	(0.0054)
Fund Risk	-0.7038**	-0.6724
	(0.3533)	(0.3594)
Expense Ratio	-3.5334**	-4.1564**
	(1.7370)	(1.7538)
Fund Age	-10.4738***	-10.3428***
	(0.6905)	(0.7013)
No Load	-5.0334***	-5.0723***
	(1.7987)	(1.8139)
12B-1 Fee	1.4414	1.7477
	(2.0627)	(2.0981)
Constant	93.0662***	76.2388***
	(16.2237)	(12.1542)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	13,492	13,101
R-squared	0.1766	0.1765

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 6 Panel D. Fund Flows and Foreign Named Managers

	Ethnicity			Race		
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
= Fund Flow	1978-2016	1993-2011	1993-2016	1978-2016	1993-2011	1993-2016
Race/Ethnicity Identifiers						
Black	-2.5606	-4.9017	-2.5585	-0.7671	-0.1338	-0.7638
	(3.2875)	(4.5202)	(3.2862)	(1.7415)	(2.9846)	(1.7427)
Middle Eastern	-3.0387	-6.5931	-3.0364	3.6187	3.3450	3.6033
	(3.7221)	(4.7013)	(3.7192)	(7.6649)	(9.1428)	(7.6515)
Asian	-1.7057	-3.6734**	-1.7045	-0.5074	-4.1468***	-0.5172
	(1.4175)	(1.7214)	(1.4173)	(1.2620)	(1.5538)	(1.2618)
Hispanic	-1.5196	-1.8188	-1.5105	0.5542	-0.9090	0.5607
	(1.1124)	(1.4563)	(1.1130)	(1.4512)	(1.7249)	(1.4505)
Manager Characteristics						
Tenure	0.0919	0.1691**	0.0915	0.0371	0.0826	0.0359
	(0.0633)	(0.0786)	(0.0633)	(0.0612)	(0.0790)	(0.0613)
Female	-0.1695	-0.1713	-0.1687	-0.0626	-0.4462	-0.0572
	(0.9297)	(1.1749)	(0.9298)	(0.8595)	(1.0952)	(0.8595)
Graduate	-1.1642	-1.9605	-1.1589	-1.2922	-1.6813	-1.2583
	(1.1748)	(1.4765)	(1.1762)	(1.1468)	(1.5515)	(1.1473)
PhD	0.9688	-1.4552	0.9695	-0.1857	-2.2104	-0.1828
	(1.5034)	(1.8475)	(1.5028)	(1.4536)	(1.7016)	(1.4521)
Certifications	0.8394	0.4847	0.8426	0.6004	0.3471	0.5597
	(0.9795)	(1.1997)	(0.9809)	(0.9583)	(1.2123)	(0.9594)
Top School	-2.6018**	-2.4988	-2.6283**	-1.0895	-1.0698	-1.1644
	(1.1472)	(1.3683)	(1.1506)	(1.0798)	(1.4182)	(1.0832)
Academic Excellence	0.2289	1.5642	0.2325	0.6308	1.9463**	0.6323
	(0.8317)	(1.075)	(0.8317)	(0.7570)	(0.9738)	(0.7568)
Outside Industry Experience	0.3328	0.0406	0.2816	-0.4129	-0.8610	-0.4447
	(1.1595)	(1.3866)	(1.1614)	(1.1551)	(1.3947)	(1.1558)
Flow						
Fund $Flow_{t-1}$	0.0007	0.0006**	0.0007	0.0006**	0.0006***	0.0006**
	(0.0004)	(0.0003)	(0.0004)	(0.0003)	(0.0002)	(0.0003)
Style Flow	0.0251	0.0210	0.0289	0.0368**	0.0449	0.0517**
	(0.0159)	(0.0175)	(0.0184)	(0.0162)	(0.0253)	(0.0259)
Family Flow	0.1072***	0.1027***	0.1072***	0.0836***	0.0751***	0.0838***
	(0.0157)	(0.0189)	(0.0157)	(0.0145)	(0.0184)	(0.0144)
Performance						
Performance Rank	-3.9757	-7.9982	-4.0044	2.8457	1.3718	2.5782
	(4.5415)	(5.6658)	(4.5557)	(4.2513)	(5.2936)	(4.2697)
Performance $Rank^2$	37.9108***	42.6700***	38.0317***	24.2503***	25.7983***	24.5325***
	(4.6548)	(5.8411)	(4.6684)	(4.2599)	(5.3677)	(4.2785)
Fund Characteristics						
Fund Size	3.4477***	3.8517***	3.4444***	3.5935***	4.0999***	3.5930***
	(0.3094)	(0.4006)	(0.3095)	(0.2953)	(0.3880)	(0.2954)
Turnover	0.0096	0.0112	0.0095	-0.0004	-0.0023	-0.0005
	(0.0050)	(0.0060)	(0.0050)	(0.0051)	(0.0062)	(0.0051)
Fund Risk	-0.3348	-0.1054	-0.3242	-0.5919	-0.2556	-0.5705
	(0.3233)	(0.3542)	(0.3236)	(0.3232)	(0.3492)	(0.3239)
Expense Ratio	-2.2216	-0.8804	-2.2189	-4.4063***	-3.4900*	-4.3838***
	(1.6718)	(1.8675)	(1.6715)	(1.6120)	(1.8475)	(1.6111)
Fund Age	-14.9306***	-16.5072***	-14.9380***	-10.1179***	-11.1449***	-10.1458***
	(0.6785)	(0.8448)	(0.6788)	(0.6724)	(0.8510)	(0.6726)
No Load	-7.4448***	-6.3467***	-7.4498***	-5.2879***	-3.3622	-5.3036***
	(1.6292)	(1.9467)	(1.6286)	(1.6599)	(1.9951)	(1.6599)
12B-1 Fee	2.4007	3.2791	2.3999	1.6811	3.2480	1.6852
	(2.0122)	(2.4648)	(2.0116)	(1.9217)	(2.4674)	(1.9209)
Constant	174.2425***	122.9007**	175.0185***	69.0316***	8.9055	-15.8593
	(22.8089)	(58.0882)	(61.5144)	(11.2381)	(54.6792)	(55.7009)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund	Fund	Fund
Obs.	20,839	14,220	20,795	14,648	9,559	14,609
R-squared	0.1698	0.1769	0.1699	0.1769	0.1913	0.1772

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one

year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 6 Panel B. Fund Flows and Foreign Named Managers

		Beauty	
Dependent Variable	(1)	(2)	(3)
= Fund Flow	1978-2016	1993-2011	1993-2016
Beauty Characteristics			
Beauty Index	0.0677	0.5812	0.0839
	(0.4301)	(0.5058)	(0.4307)
Masculine	-0.2522	-1.4400	-0.2276
	(2.8857)	(3.3365)	(2.8889)
Age	-0.0604	-0.0787	-0.0619
	(0.0488)	(0.0612)	(0.0489)
Manager Characteristics			
Tenure	0.0698	0.1150	0.0691
	(0.0652)	(0.0860)	(0.0653)
Female	-0.1081	-1.1194	-0.0988
	(0.9403)	(1.2105)	(0.9400)
Graduate	-1.8691	-1.9745	-1.8342
	(1.2848)	(1.6954)	(1.2849)
PhD	-1.2015	-4.9199***	-1.2006
	(1.4212)	(1.6527)	(1.4186)
Certifications	0.0400	0.0100	0.0161
	(1.0731)	(1.3552)	(1.0724)
Top School	-0.4310	-0.3126	-0.4943
	(1.1922)	(1.5454)	(1.1949)
Academic Excellence	0.6891	2.4353**	0.6864
	(0.8256)	(1.0696)	(0.8250)
Outside Industry Experience	0.3468	-0.6051	0.3554
	(1.3088)	(1.6005)	(1.3085)
Flow			
Fund Flow$_{t-1}$	0.0006***	0.0006***	0.0006***
	(0.0002)	(0.0002)	(0.0002)
Style Flow	0.0367	0.0428	0.0607
	(0.0222)	(0.0429)	(0.0386)
Family Flow	0.0779***	0.0658***	0.0782***
	(0.0146)	(0.0186)	(0.0146)
Performance			
Performance Rank	1.8892	0.7111	1.8238
	(4.5314)	(5.6465)	(4.5439)
Performance Rank^2	24.6986***	25.7276***	24.7655***
	(4.5225)	(5.6896)	(4.5380)
Fund Characteristics			
Fund Size	3.6501***	4.2202***	3.6511***
	(0.3135)	(0.4233)	(0.3137)
Turnover	0.0002	-0.0010	0.0002
	(0.0054)	(0.0065)	(0.0054)
Fund Risk	-0.6724	-0.3219	-0.6413
	(0.3594)	(0.3879)	(0.3615)
Expense Ratio	-4.1564**	-3.1721	-4.1188**
	(1.7538)	(2.0230)	(1.7532)
Fund Age	-10.3428***	-11.7456***	-10.3692***
	(0.7013)	(0.8913)	(0.7005)
No Load	-5.0723***	-3.0358	-5.0953***
	(1.8139)	(2.1894)	(1.8145)
12B-1 Fee	1.7477	3.7404	1.7352
	(2.0981)	(2.7230)	(2.0971)
Constant	76.2388***	21.1736	-54.3086
	(12.1542)	(175.4662)	(164.9712)
Year FE	Yes	Yes	Yes
Style FE	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes
Clustering	Fund	Fund	Fund
Obs.	13,101	8,430	13,068
R-squared	0.1765	0.1963	0.1766

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 7 Panel A. Fund Flows and Morningstar Ratings on Ethnicity

Dependent Variable = Fund Flow	(1) 1 Star	(2) 2 Star	(3) 3 Star	(4) 4 Star	(5) 5 Star
Race/Ethnicity Identifiers					
Black	2.7421	0.5081	-3.9587	-6.6010	22.8729
	(7.8656)	(4.4045)	(2.8744)	(4.1414)	(16.0345)
Middle Eastern	6.0185	2.3866	6.8834	6.1273	-15.2199**
	(15.5371)	(4.4150)	(4.6715)	(8.3054)	(7.5757)
Asian	14.2866	0.8320	-1.6355	-2.9122	-5.6058
	(12.4767)	(2.6623)	(2.0414)	(2.6683)	(6.1546)
Hispanic	-3.2977	2.4853	-0.5721	-1.3565	-0.5197
	(4.1683)	(2.2642)	(1.3664)	(1.7625)	(5.2788)
Manager Characteristics					
Tenure	-0.1723	0.0348	-0.0525	0.0988	-0.4095
	(0.4564)	(0.1192)	(0.0869)	(0.1025)	(0.2393)
Female	8.7229**	2.1428	1.4665	-2.9377	6.6871
	(3.7267)	(1.6930)	(1.2798)	(1.5293)	(4.6934)
Graduate	5.8815	-1.7835	1.1721	-3.4152	-1.5187
	(3.8683)	(2.6972)	(1.2574)	(2.0287)	(5.0773)
PhD	-5.2677	2.0139	1.4509	0.6918	1.0530
	(4.0619)	(3.7619)	(2.0879)	(2.1658)	(6.8779)
Certifications	-4.7115	-4.5320**	-0.8964	0.6053	6.8722
	(5.4243)	(2.2537)	(1.2815)	(1.6486)	(3.9001)
Top School	-2.5478	-1.2985	-1.8229	-3.7287	-6.5974
	(4.3549)	(2.2902)	(1.2833)	(1.9667)	(5.5815)
Academic Excellence	-0.1021	-1.3506	-0.3898	0.6568	-2.8822
	(3.1403)	(1.4093)	(1.1286)	(1.4193)	(3.8831)
Outside Industry Experience	-5.3818	2.4293	1.4016	2.9932	-7.2172
	(5.3167)	(2.4815)	(1.5830)	(1.8311)	(4.8631)
Flow					
Fund $Flow_{t-1}$	0.0046	0.0158	0.0071	0.0021	0.0002
	(0.0133)	(0.0097)	(0.0039)	(0.0018)	(0.0001)
Style Flow	-0.0004	0.0671	0.1764***	-0.0097	0.2925***
	(0.1077)	(0.0358)	(0.0406)	(0.0133)	(0.1130)
Family Flow	0.0221	0.0412	0.0777***	0.0890***	0.1429**
	(0.0703)	(0.0236)	(0.0184)	(0.0257)	(0.0598)
Performance					
Performance Rank	7.6016	4.9307	-8.3280	7.0024	-15.8626
	(19.0118)	(9.1988)	(7.3490)	(8.4706)	(22.6715)
Performance $Rank^2$	0.5877	3.8828	28.0589***	19.9026**	51.3369***
	(20.1527)	(9.6842)	(7.6159)	(8.0551)	(19.4735)
Fund Characteristics					
Fund Size	-0.7339	0.2802	0.8964**	0.7841	2.9408**
	(2.1420)	(0.7034)	(0.4116)	(0.5208)	(1.2782)
Turnover	0.0091	0.0018	0.0033	0.0231**	0.0221
	(0.0241)	(0.0091)	(0.0059)	(0.0096)	(0.0223)
Fund Risk	0.6491	1.1231	0.2952	0.0418	-0.2855
	(0.9005)	(0.8691)	(0.4342)	(0.5565)	(1.1971)
Expense Ratio	2.0418	-10.8763***	-3.0968	-0.8078	6.7405
	(6.6552)	(2.9491)	(2.2984)	(3.1930)	(7.0699)
Fund Age	-6.2355**	-8.8410***	-9.4813***	-13.3443***	-20.0060***
	(2.7353)	(1.2435)	(0.9028)	(1.0668)	(2.6352)
No Load	7.1748	-3.4788	-6.9772***	-9.0948***	-12.3284
	(4.8938)	(3.3824)	(2.0500)	(2.7144)	(7.3566)
12B-1 Fee	-0.3947	-0.0541	-0.6883	1.4969	1.0840
	(10.1884)	(3.9103)	(2.3608)	(3.6185)	(8.7948)
Constant	26.0722	-201.9932	210.1258***	177.3513***	218.7414***
	(40.2924)	(169.9108)	(11.1478)	(11.5396)	(25.5246)
Obs.	637	2,975	7,647	6,910	2,670
R-squared	0.5323	0.1927	0.1564	0.1898	0.2962
Year FE	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicators and various control variables. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In both panels, the model is estimated by pooled OLS in all columns. This model uses sub-sample of funds that have that have different Morningstar ratings. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 7 Panel B. Fund Flows and Morningstar Ratings on Race

Dependent Variable = Fund Flow	(1) 1 Star	(2) 2 Star	(3) 3 Star	(4) 4 Star	(5) 5 Star
Race/Ethnicity Identifiers					
Black	-0.0889	0.4645	-0.3046	-1.9290	-12.2044
	(7.7672)	(3.7785)	(2.5138)	(3.8057)	(6.7226)
Middle Eastern	24.4587	-3.5867	-1.1815	2.1331	-15.9458
	(14.1028)	(7.5474)	(4.8422)	(22.5398)	(9.9716)
Asian	5.2045	-0.2433	0.5094	-2.3180	-3.6712
	(8.7504)	(2.5731)	(1.5041)	(2.1879)	(5.8077)
Hispanic	-4.6765	0.7726	2.9763	-.9410	-5.4003
	(7.6397)	(4.0016)	(1.6875)	(2.1019)	(5.0967)
Manager Characteristics					
Tenure	-0.3179	0.1248	-0.0299	-0.0465	-0.5334**
	(0.2728)	(0.1351)	(0.0762)	(0.0953)	(0.2272)
Female	5.8568	2.4460	1.0484	-1.8951	8.8044**
	(3.2881)	(1.8712)	(1.0148)	(1.3754)	(3.9777)
Graduate	1.1503	3.5875	0.2411	-2.9017	2.1696
	(5.7367)	(2.6931)	(1.4104)	(1.9911)	(4.6724)
PhD	-0.8812	-0.8509	-2.1047	2.0636	1.3113
	(5.0296)	(3.2183)	(1.5872)	(1.9784)	(6.1380)
Certifications	2.1207	-5.6882**	-0.5072	1.5975	3.7460
	(5.1256)	(2.4823)	(1.1697)	(1.6715)	(3.4218)
Top School	-7.1662	-3.2325	-2.8044**	0.6074	-2.3656
	(5.5650)	(3.0498)	(1.2932)	(1.7478)	(4.9252)
Academic Excellence	1.1437	-1.3803	0.2890	1.2072	-0.8280
	(3.7210)	(1.5839)	(.9575)	(1.2169)	(3.3879)
Outside Industry Experience	-5.1357	0.9244	0.6342	1.8117	-5.2805
	(4.8440)	(3.1003)	(1.2147)	(1.9519)	(4.3636)
Flow					
Fund $Flow_{t-1}$	0.0641	0.0116	0.0046	0.0031	0.0003***
	(0.0329)	(0.0100)	(0.0036)	(0.0028)	(0.0001)
Style Flow	0.0445	0.0811**	0.1865***	0.0079	0.2242**
	(0.1415)	(0.0343)	(0.0319)	(0.0248)	(0.0928)
Family Flow	0.1012	0.0434	0.0550***	0.0901***	0.0555
	(0.0736)	(0.0298)	(0.0170)	(0.0256)	(0.0520)
Performance					
Performance Rank	32.3272	1.6761	5.0436	10.3060	-5.2850
	(16.6525)	(9.0320)	(5.9183)	(8.0544)	(19.1364)
Performance $Rank^2$	-33.3503	8.3599	10.6426	12.0140	28.8985
	(19.0373)	(9.7009)	(6.0054)	(7.6050)	(16.5732)
Fund Characteristics					
Fund Size	-0.2531	1.6868**	1.5704***	0.7508	4.0559***
	(1.4190)	(0.7348)	(0.3643)	(0.4701)	(1.0292)
Turnover	0.0135	0.0007	0.0053	0.0016	0.0053
	(0.0190)	(0.0102)	(0.0059)	(0.0098)	(0.0177)
Fund Risk	0.0692	0.1456	-0.2753	-0.0008	0.1332
	(0.9620)	(0.6438)	(0.4474)	(0.5654)	(1.0903)
Expense Ratio	-1.6314	-3.9470	-2.3897	-6.5876**	-0.5736
	(5.7365)	(3.0852)	(1.8620)	(2.9549)	(6.7223)
Fund Age	-3.0147	-5.7037***	-7.1849***	-8.3451***	-13.6484***
	(3.0061)	(1.3873)	(0.8024)	(1.0261)	(2.6884)
No Load	7.7128	2.2564	-1.8958	-8.3341***	-8.4941
	(4.3157)	(3.4851)	(1.9383)	(2.7680)	(7.9381)
12B-1 Fee	-3.6236	-0.5732	-0.7779	3.4814	3.3827
	(5.4944)	(3.9309)	(2.1757)	(3.1595)	(9.3798)
Constant	-26.3315	67.4029***	64.8284***	66.2327***	131.5231***
	(33.0803)	(19.1570)	(15.0801)	(19.0400)	(34.2918)
Obs.	364	1,935	5,358	5,063	1,928
R-squared	0.6542	0.2382	0.1856	0.1736	0.2963
Year FE	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicators and various control variables. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In both panels, the model is estimated by pooled OLS in all columns. This model uses sub-sample of funds that have that have different Morningstar ratings. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 7 Panel C. Fund Flows and Morningstar Ratings on Beauty

Dependent Variable = Fund Flow	(1) 1 Star	(2) 2 Star	(3) 3 Star	(4) 4 Star	(5) 5 Star
Beauty Characteristics					
Beauty Index	-1.5955	-0.6444	-0.0778	0.4499	1.0536
	(1.7455)	(0.6626)	(0.4788)	(0.8007)	(1.4451)
Masculine	16.5354	7.8779	1.4468	-1.3323	1.4297
	(12.6229)	(4.6907)	(2.5013)	(5.1446)	(10.3963)
Age	-0.1766	0.0431	0.0223	-0.1286	-0.3098
	(0.3337)	(0.1269)	(0.0637)	(0.0717)	(0.1959)
Manager Characteristics					
Tenure	0.0663	0.1233	0.0084	0.0351	-0.5163**
	(0.3181)	(0.1631)	(0.0820)	(0.1066)	(0.2558)
Female	9.3149**	3.2336	1.3646	-2.0107	6.5443
	(4.6446)	(2.0974)	(1.1521)	(1.4671)	(4.2663)
Graduate	3.6717	2.5199	-0.0484	-3.0595	-0.4446
	(8.0187)	(3.3385)	(1.7215)	(2.2846)	(5.5186)
PhD	1.9203	-1.6335	-2.4257	1.2573	-1.3622
	(5.7869)	(3.4908)	(1.6508)	(2.0110)	(6.8288)
Certifications	1.4337	-6.6696**	-0.8358	0.7851	3.6008
	(6.7520)	(2.9145)	(1.3272)	(1.8282)	(3.7917)
Top School	-3.4088	-2.5708	-2.4506	-0.1486	-1.1890
	(7.9032)	(3.5515)	(1.5433)	(1.9666)	(5.4622)
Academic Excellence	2.0686	-1.5005	0.1493	1.6816	-1.1503
	(3.8066)	(1.7945)	(1.0558)	(1.2856)	(3.6342)
Outside Industry Experience	-0.3669	0.0762	0.6327	2.2390	-3.1302
	(5.0058)	(3.8893)	(1.4126)	(2.2215)	(4.9725)
Flow					
Fund $Flow_{t-1}$	0.0352	0.0086	0.0046	0.0027	0.0004***
	(0.0505)	(0.0095)	(0.0037)	(0.0025)	(0.0001)
Style Flow	-0.0050	0.0656**	0.1611***	0.0066	0.2458**
	(0.1773)	(0.0306)	(0.0327)	(0.0254)	(0.0959)
Family Flow	0.0219	0.0382	0.0435***	0.0822***	0.0720
	(0.0459)	(0.0350)	(0.0167)	(0.0253)	(0.0580)
Performance					
Performance Rank	21.2282	0.8504	3.1873	12.4698	-12.6644
	(19.7537)	(10.2715)	(6.3522)	(8.4969)	(20.8155)
Performance $Rank^2$	-22.0219	8.9930	12.8786**	9.5555	33.8049
	(22.4011)	(11.0692)	(6.4541)	(7.9846)	(17.8794)
Fund Characteristics					
Fund Size	1.5163	2.2335***	1.6981***	0.7678	4.3651***
	(1.6758)	(0.8262)	(0.4055)	(0.5055)	(1.1563)
Turnover	0.0192	0.0070	0.0080	0.0005	0.0028
	(0.0227)	(0.0121)	(0.0062)	(0.0099)	(0.0185)
Fund Risk	0.5796	0.2488	-0.5435	-0.1536	-0.5609
	(1.0722)	(0.7643)	(0.4725)	(0.6122)	(1.1407)
Expense Ratio	-4.3763	-4.4783	-2.3729	-6.3197**	3.2428
	(7.1702)	(3.5547)	(2.0593)	(3.1942)	(7.7120)
Fund Age	0.3798	-6.4834***	-7.7506***	-8.4778***	-13.2402***
	(2.4445)	(1.5971)	(0.8426)	(1.0661)	(2.9087)
No Load	15.0447***	1.6961	-1.7691	-8.4953***	-8.2453
	(5.3569)	(3.9933)	(2.1297)	(3.0325)	(8.0634)
12B-1 Fee	3.1923	0.0950	-0.8308	3.0624	1.7504
	(6.3429)	(4.5484)	(2.3767)	(3.4324)	(10.1475)
Constant	-63.9193	49.5265**	64.5430***	71.6205***	148.7539***
	(33.3183)	(22.8267)	(16.9513)	(22.9415)	(36.6573)
Obs.	299	1,692	4,810	4,580	1,720
R-squared	0.7197	0.2418	0.1848	0.1695	0.2939
Year FE	Yes	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes	Yes

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicators and various control variables. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In both panels, the model is estimated by pooled OLS in all columns. This model uses sub-sample of funds that have

different Morningstar ratings. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 8 Panel A. Fund Flows in Retail and Institutional Investor Funds on Ethnicity

Dependent Variable	Ethnicity (Name Based)		Race (Photo Based)	
	(1)	(2)	(3)	(4)
= Fund Flow	Institutional<0.25	Institutional>0.75	Institutional<0.25	Institutional>0.75
Race/Ethnicity Identifiers				
White	2.7242**	0.1573	4.2030***	5.2663***
	(1.1568)	(1.5492)	(1.3645)	(2.0212)
Manager Characteristics				
Tenure	0.1235	0.0451	0.1331	0.0313
	(0.0774)	(0.1355)	(0.0777)	(0.1359)
Female	1.2317	-1.5125	1.1503	-1.1755
	(1.1714)	(1.7916)	(1.1648)	(1.7932)
Graduate	-1.5939	-2.1800	-1.7328	-2.3476
	(1.3545)	(2.2888)	(1.3496)	(2.2958)
PhD	1.5552	1.4104	1.6188	2.5884
	(1.9051)	(2.4938)	(1.9266)	(2.5524)
Certifications	1.2649	1.4775	1.2695	1.8339
	(1.227)	(1.9898)	(1.2309)	(2.0285)
Top School	-2.1143	-1.6503	-2.0331	-1.4174
	(1.417)	(2.3444)	(1.4154)	(2.3399)
Academic Excellence	-0.4850	2.8172	-0.4196	3.3701**
	(1.0356)	(1.5834)	(1.0345)	(1.5901)
Outside Industry Experience	-0.7934	-1.6672	-0.8218	-1.6825
	(1.4019)	(2.5918)	(1.4038)	(2.6003)
Flows				
Fund Flow$_{t-1}$	0.0005**	0.0124***	0.0005**	0.0124***
	(0.0002)	(0.0035)	(0.0002)	(0.0035)
Style Flow	0.0170	0.0639	0.0169	0.0640
	(0.0151)	(0.0448)	(0.0151)	(0.0448)
Family Flow	0.1102***	0.0700**	0.1100***	0.0717**
	(0.0196)	(0.0287)	(0.0196)	(0.0284)
Performance				
Performance Rank	-9.8393	8.6914	-9.5271	9.5696
	(5.6248)	(9.3378)	(5.6281)	(9.3060)
Performance Rank^2	42.6232***	19.1461**	42.2576***	18.3315**
	(5.8566)	(9.1907)	(5.8602)	(9.1462)
Fund Characteristics				
Fund Size	3.0370***	4.2279***	3.0365***	4.2766***
	(0.4213)	(0.6872)	(0.4210)	(0.6878)
Turnover	0.0085	0.0128	0.0084	0.0116
	(0.0067)	(0.0096)	(0.0067)	(0.0096)
Fund Risk	-0.1400	0.2112	-0.1412	0.1777
	(0.3846)	(0.7578)	(0.3843)	(0.7601)
Expense Ratio	-3.5958	6.2714	-3.5322	6.0644
	(2.0945)	(4.4714)	(2.0978)	(4.4798)
Fund Age	-15.3631***	-14.4919***	-15.2430***	-14.2681***
	(0.9115)	(1.5594)	(0.9083)	(1.5615)
No Load	-5.9591***	-7.7649***	-5.9941***	-7.6236***
	(2.1665)	(2.8822)	(2.1661)	(2.8957)
12B-1 Fee	0.7006	-0.8802	0.6698	-0.6057
	(2.7557)	(3.7735)	(2.7547)	(3.7866)
Constant	100.1782***	106.1993***	96.4867***	98.2253***
	(15.7214)	(24.1117)	(15.7346)	(24.1116)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	12,525	4,911	12,525	4,911
R-squared	0.1960	0.2017	0.1962	0.2031

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. For this table sub-sample of all funds with institutional ratio of less than 10% are selected. Columns 1 and 3 report estimates for all funds with institutional ownership of 0%. Columns 1 and 3 report estimates for funds with institutional ownership of 0%, institutional ownership of less than 10% and institutional ownership of more than 50%. Panel A reports results by using Foreign as the racial indicator and panel B reports results by using Non-European as the racial indicator. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 8 Panel B. Fund Flows in Retail and Institutional Investor Funds on Ethnicity

Dependent Variable	Ethnicity (Name Based)		Race (Photo Based)	
	(1)	(2)	(3)	(4)
= Fund Flow	Institutional<0.25	Institutional>0.75	Institutional<0.25	Institutional>0.75
Race/Ethnicity Identifiers				
Black	-3.2521	3.2498	-3.8053	3.6806
	(4.0482)	(4.8092)	(2.5345)	(3.2983)
Middle Eastern	-8.9002**	18.5071	1.7075	7.9081
	(3.9204)	(11.3696)	(7.6818)	(6.6281)
Asian	-1.1809	-1.5933	-0.0830	-3.1402
	(1.6676)	(2.5432)	(1.7520)	(2.0041)
Hispanic	-1.9366	-0.2900	-0.3468	-2.9647
	(1.5304)	(1.8012)	(1.7810)	(3.2766)
Manager Characteristics				
Tenure	0.1325	0.0228	0.0453	-0.0157
	(0.0780)	(0.1367)	(0.0765)	(0.1351)
Female	1.1243	-1.7254	0.2782	-1.0946
	(1.1811)	(1.7836)	(1.1028)	(1.6618)
Graduate	-1.8980	-2.9804	-2.3931	-4.7715**
	(1.3643)	(2.3072)	(1.4519)	(2.1357)
PhD	1.3208	1.5291	-0.6508	1.8077
	(1.9023)	(2.4528)	(1.7157)	(2.4362)
Certifications	1.0842	1.5495	1.5168	2.6030
	(1.2302)	(2.0055)	(1.1335)	(1.9624)
Top School	-2.3857	-1.6744	-0.5188	-2.1914
	(1.4231)	(2.2975)	(1.297)	(2.2556)
Academic Excellence	-0.4030	2.8464	0.2752	3.7167**
	(1.0382)	(1.6005)	(0.9355)	(1.4457)
Outside Industry Experience	-0.9881	-1.8747	-1.2456	-4.5935
	(1.4126)	(2.6530)	(1.3184)	(2.6891)
Flows				
Fund Flow$_{t-1}$	0.0005**	0.0155***	0.0005***	0.0174***
	(0.0002)	(0.0046)	(0.0001)	(0.0058)
Style Flow	0.0166	0.0667	0.0286	0.0793
	(0.0150)	(0.0449)	(0.0160)	(0.0420)
Family Flow	0.1102***	0.0723**	0.0840***	0.0822***
	(0.0196)	(0.0290)	(0.0186)	(0.0292)
Performance				
Performance Rank	-9.9727	8.9287	1.4028	8.0002
	(5.6609)	(9.4399)	(5.0878)	(9.6665)
Performance Rank^2	42.6598***	18.7332**	23.2290***	16.4259
	(5.8815)	(9.2683)	(5.1604)	(9.4026)
Fund Characteristics				
Fund Size	3.0021***	4.1255***	3.0496***	4.6370***
	(0.4228)	(0.6951)	(0.3971)	(0.6492)
Turnover	0.0079	0.0126	-0.0024	0.0130
	(0.0067)	(0.0095)	(0.0066)	(0.0094)
Fund Risk	-0.1448	0.0779	-0.3138	-0.2475
	(0.3850)	(0.7570)	(0.3652)	(0.9226)
Expense Ratio	-3.8042	6.1840	-6.0195***	2.1082
	(2.0975)	(4.4764)	(2.0552)	(3.9316)
Fund Age	-15.5056***	-14.1916***	-9.7197***	-12.7006***
	(0.9137)	(1.5442)	(0.8612)	(1.6453)
No Load	-5.8196***	-7.7445***	-2.8805	-7.3721**
	(2.1954)	(2.9527)	(2.1813)	(2.9290)
12B-1 Fee	0.7965	-0.7403	2.6512	-1.9416
	(2.7840)	(3.8416)	(2.7626)	(3.1496)
Constant	103.6314***	126.1958***	79.2535***	116.6338***
	(15.3785)	(17.6740)	(12.6171)	(18.7358)
Year FE	Yes	Yes	Yes	Yes
Style FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Clustering	Fund	Fund	Fund	Fund
Obs.	12,430	4,863	8,374	3,619
R-squared	0.1973	0.2044	0.2087	0.2200

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. For this table sub-sample of all funds with institutional ratio of less than 10% are selected. Columns 1 and 3 report estimates for all funds with institutional ownership of 0%. Columns 1 and 3 report estimates for funds with institutional ownership of 0%, institutional ownership of less than 10% and institutional ownership of more than 50%. Panel A reports results by using Foreign as the racial indicator and panel B reports results by using Non-European as the racial indicator. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 8 Panel C. Fund Flows in Retail and Institutional Investor Funds on Beauty

Dependent Variable = Fund Flow	(2) Institutional<0.25	(3) Institutional>0.75
Beauty Characteristics		
Beauty Index	0.0862	-0.5836
	(0.4711)	(1.2647)
Masculine	-5.2259	10.1188**
	(3.8568)	(4.7966)
Age	-0.0863	0.1489
	(0.0595)	(0.0872)
Manager Characteristics		
Tenure	0.0550	0.0672
	(0.0830)	(0.1386)
Female	-0.1414	-0.5461
	(1.2003)	(1.7970)
Graduate	-2.4601	-6.5434**
	(1.6153)	(2.6014)
PhD	-3.3830**	1.2709
	(1.5517)	(2.5963)
Certifications	1.1414	2.6105
	(1.2530)	(2.2043)
Top School	-0.5346	-1.4417
	(1.4121)	(2.5013)
Academic Excellence	0.3773	3.0155**
	(1.0299)	(1.5195)
Outside Industry Experience	0.2777	-5.7852
	(1.4503)	(3.0534)
Flows		
Fund Flow$_{t-1}$	0.0005***	0.0230***
	(0.0001)	(0.0080)
Style Flow	0.0181	0.1020**
	(0.0226)	(0.0450)
Family Flow	0.0749***	0.0742**
	(0.0188)	(0.0294)
Performance		
Performance Rank	0.9516	9.9714
	(5.4222)	(10.0330)
Performance Rank^2	22.6592***	13.9294
	(5.4607)	(9.6918)
Fund Characteristics		
Fund Size	3.3574***	4.4769***
	(0.4298)	(0.6830)
Turnover	0.0000	0.0143
	(0.0073)	(0.0093)
Fund Risk	-0.4567	-0.2286
	(0.4051)	(1.0516)
Expense Ratio	-6.4820***	3.1348
	(2.2117)	(4.2576)
Fund Age	-10.6484***	-11.8909***
	(0.9178)	(1.7551)
No Load	-2.1629	-7.9023***
	(2.3808)	(2.9519)
12B-1 Fee	3.1234	-4.4658
	(2.8900)	(3.3425)
Constant	88.3247***	90.4553***
	(13.7846)	(20.495)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	7,347	3,295
R-squared	0.2111	0.2260

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. For this table sub-sample of all funds with institutional ratio of less than 10% are selected. Columns 1 and 3 report estimates for all funds with institutional ownership of 0%. Columns 1 and 3 report estimates for funds with institutional ownership of 0%, institutional ownership of less than 10% and institutional ownership of more than 50%. All independent variables,

except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 9. Return Regression Estimate using Performance Rank

Dependent Variable = Performance Rank	Ethnicity (1)	Race (2)	Beauty (3)
Race/Ethnicity Identifiers			
Black	-0.0037	0.0127	
	(0.0181)	(0.0143)	
Middle Eastern	0.0134	0.0018	
	(0.0182)	(0.0433)	
Asian	0.0223**	0.0088	
	(0.0092)	(0.0086)	
Hispanic	0.0047	-0.0059	
	(0.0061)	(0.0103)	
Beauty Characteristics			
Beauty Index			-0.0005
			(0.0033)
Masculine			0.0248
			(0.0158)
Age			-0.0006**
			(0.0003)
Manager Characteristics			
Tenure	0.0041***	0.0033***	0.0035***
	(0.0004)	(0.0004)	(0.0004)
Female	-0.0169***	-0.0159***	-0.0116
	(0.0051)	(0.0060)	(0.0066)
Graduate	-0.0091	-0.0186**	-0.0254***
	(0.0063)	(0.0083)	(0.0089)
PhD	0.0047	0.0060	0.0020
	(0.0078)	(0.0090)	(0.0093)
Certifications	-0.0045	-0.0114	-0.0168**
	(0.0057)	(0.0071)	(0.0078)
Top School	-0.0047	-0.0080	-0.0005
	(0.0062)	(0.0077)	(0.0083)
Academic Excellence	0.0126***	0.0098	0.0077
	(0.0046)	(0.0053)	(0.0057)
Outside Industry Experience	-0.0044	0.0096	0.0101
	(0.0067)	(0.0080)	(0.0092)
Flow			
Style Flow	0.0001	0.0002	0.0000
	(0.0001)	(0.0001)	(0.0001)
Family Flow	0.0005***	0.0005***	0.0005***
	(0.0001)	(0.0001)	(0.0001)
Fund Characteristics			
Fund Size	0.0154***	0.0133***	0.0144***
	(0.0017)	(0.0020)	(0.0021)
Turnover	-0.0001***	-0.0001**	0.0000
	(0.0000)	(0.0000)	(0.0000)
Fund Risk	-0.0013	-0.0051**	-0.0066**
	(0.0020)	(0.0025)	(0.0027)
Expense Ratio	-0.0254***	-0.0279***	-0.0269**
	(0.0088)	(0.0107)	(0.0113)
Fund Age	-0.0257***	-0.0191***	-0.0198***
	(0.0035)	(0.0042)	(0.0042)
No Load	0.0089	0.0028	0.0092
	(0.0081)	(0.0098)	(0.0103)
12B-1 Fee	0.0175	0.0124	0.0177
	(0.0100)	(0.0124)	(0.0132)
Constant	0.9944***	0.8964***	0.7504***
	(0.2838)	(0.2826)	(0.2868)
Year FE	Yes	Yes	Yes
Style FE	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes
Clustering	Fund	Fund	Fund
Obs.	20,839	14,648	13,101
R-squared	0.0625	0.0585	0.0616

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of performance rank and benchmark-adjusted return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 10 Panel A. Return Regression Estimate using Benchmark-Adjusted Return

Dependent Variable = Benchmark Adjusted Return	Ethnicity (1)	Race (2)
Race/Ethnicity Identifiers		
Black	-0.1250	0.0894
	(.5233)	(0.2905)
Middle Eastern	-0.2252	-0.5358
	(0.4418)	(1.1885)
Asian	0.2194	0.2510
	(0.2139)	(0.1894)
Hispanic	-0.2650	0.0548
	(0.1498)	(0.2202)
Manager Characteristics		
Tenure	0.0918***	0.0722***
	(0.0092)	(0.0097)
Female	-0.4835***	-0.4338***
	(0.1280)	(0.1338)
Graduate	-0.2739	-0.5443**
	(0.1822)	(0.2274)
PhD	-0.0994	-0.3161
	(0.1933)	(0.2007)
Certifications	0.2052	0.1764
	(0.1309)	(0.1600)
Top School	-0.4114**	-0.4161**
	(0.1882)	(0.2099)
Academic Excellence	0.3463***	0.0442
	(0.1199)	(0.1213)
Outside Industry Experience	-0.3641**	-0.1986
	(0.1808)	(0.2171)
Flow		
Style Flow	0.0022	0.0058***
	(0.0016)	(0.0018)
Family Flow	0.0057**	0.0023
	(0.0025)	(0.0036)
Fund Characteristics		
Fund Size	0.0365	-0.0116
	(0.0426)	(0.0483)
Turnover	-0.0004	-0.0003
	(0.0008)	(0.0009)
Fund Risk	0.2660**	0.0890
	(0.1050)	(0.1059)
Expense Ratio	0.4110	0.3524
	(0.3093)	(0.2994)
Fund Age	-0.3858***	-0.1209
	(0.0892)	(0.1040)
No Load	0.4152	0.4354
	(0.3037)	(0.2574)
12B-1 Fee	0.1833	0.8778***
	(0.3841)	(0.3087)
Constant	-17.0846***	-19.7462***
	(2.9782)	(3.1728)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	20,839	14,648
R-squared	0.1079	0.1098

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of performance rank and benchmark-adjusted return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 10 Panel B. Return Regression Estimate using Benchmark-Adjusted Return

Dependent Variable	Beauty
= Benchmark Adjusted Return	(3)
Beauty Characteristics	
Beauty Index	0.0517
	(0.0615)
Masculine	-0.0921
	(0.4182)
Age	-0.0116
	(0.0084)
Manager Characteristics	
Tenure	0.0777***
	(0.0108)
Female	-0.4037***
	(0.1471)
Graduate	-0.6944***
	(0.2482)
PhD	-0.2860
	(0.2058)
Certifications	-0.0143
	(0.1688)
Top School	-0.2615
	(0.2213)
Academic Excellence	0.0052
	(0.1278)
Outside Industry Experience	-0.0823
	(0.2433)
Flow	
Style Flow	0.0064**
	(0.0029)
Family Flow	-0.0035
	(0.0031)
Fund Characteristics	
Fund Size	0.0056
	(0.0517)
Turnover	-0.0001
	(0.0009)
Fund Risk	0.0909
	(0.1119)
Expense Ratio	0.3388
	(0.3208)
Fund Age	-0.1424
	(0.1071)
No Load	0.4729
	(0.2703)
12B-1 Fee	0.9444***
	(0.3214)
Constant	-6.2930
	(3.2179)
Year FE	Yes
Style FE	Yes
Fund Family FE	Yes
Clustering	Fund
Obs.	13,101
R-squared	0.1134

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of performance rank and benchmark-adjusted return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 11 Panel A. Flow Regression Estimate with interaction – Performance Rank

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)
Race/Ethnicity Identifiers		
Black	0.0056	-10.6450**
	(0.0517)	(4.7173)
Middle Eastern	-0.0001	9.4123
	(0.0009)	(8.2814)
Asian	0.0909	-0.5981
	(0.1119)	(2.7676)
Hispanic	0.3388	-6.2320
	(0.3208)	(7.2160)
Black*Performance Rank	-23.0848	39.2593
	(28.1770)	(25.1808)
Middle Eastern*Performance Rank	50.6743**	86.2006
	(25.2929)	(73.8456)
Asian*Performance Rank	6.6279	-16.6663
	(13.1497)	(11.5940)
Hispanic*Performance Rank	-14.4009	29.0084
	(12.5469)	(19.0001)
Black*Performance Rank^2	15.9802	-48.6786**
	(31.1768)	(24.6261)
Middle Eastern*Performance Rank^2	-53.7889**	-92.9413
	(24.3549)	(60.9170)
Asian*Performance Rank^2	-17.6923	12.2207
	(13.3743)	(11.8542)
Hispanic*Performance Rank^2	10.9436	-22.6307
	(12.6969)	(18.3419)
Black*Size	-0.9711	1.0561
	(1.2696)	(1.1461)
Middle Eastern*Size	-2.0542	-2.6437
	(1.1896)	(2.9521)
Asian*Size	-0.2688	0.7724
	(0.5183)	(0.4141)
Hispanic*Size	0.9077	-0.1912
	(0.6495)	(0.7760)
Manager Characteristics		
Tenure	0.0900	0.0390
	(0.0633)	(0.0613)
Female	-0.0491	-0.0379
	(0.9265)	(0.8552)
Graduate	-1.1737	-1.2792
	(1.1720)	(1.1447)
PhD	0.9899	-0.2067
	(1.5122)	(1.4459)
Certifications	0.8672	0.5901
	(0.9813)	(0.9594)
Top School	-2.5905**	-1.1481
	(1.1432)	(1.0773)
Academic Excellence	0.3040	0.6265
	(0.8292)	(0.7581)
Outside Industry Experience	0.4376	-0.4018
	(1.1594)	(1.1527)
Flows		
Fund Flow$_{t-1}$	0.0007	0.0006**
	(0.0004)	(0.0003)
Style Flow	0.0248	0.0364**
	(0.0159)	(0.0161)
Family Flow	0.1065***	0.0823***
	(0.0157)	(0.0144)
Performance		
Performance Rank	-6.1168	-8.9115
	(17.3508)	(15.2485)
Performance Rank^2	28.0579	24.1280

	(17.7424)	(15.4598)
Performance Rank*Fund Size	0.7854	1.8701
	(2.6685)	(2.3478)
Performance Rank^2*Fund Size	1.4171	0.0899
	(2.7118)	(2.3338)
Fund Characteristics		
Fund Size	2.4506***	2.4490***
	(0.6403)	(0.5668)
Turnover	0.0099**	-0.0005
	(0.0050)	(0.0051)
Fund Risk	-0.3368	-0.5956
	(0.3227)	(0.3225)
Expense Ratio	-2.2546	-4.2096***
	(1.6689)	(1.6117)
Fund Age	-14.9221***	-10.0539***
	(0.6772)	(0.6760)
No Load	-7.3255***	-5.0719***
	(1.6324)	(1.6538)
12B-1 Fee	2.4826	1.7213
	(2.0146)	(1.924)
Constant	179.8388***	74.1352***
	(23.4602)	(11.8254)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	20,839	14,648
R-squared	0.1713	0.1791

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the Foreign interacted with lagged performance indicators and fund size for all categories of funds. I use the same specifications as in table 5 and add interaction terms of the Foreign with the respective performance and fund size variables. All control variables, except for style and family flows, are lagged by one year and have been defined in table 2. The standard errors are clustered at the fund level. The corresponding standard errors are shown in parentheses below the coefficient estimates.

Table 11 Panel B. Flow Regression Estimate with interaction – Performance Rank

Dependent Variable = Fund Flow	Beauty (3)
Beauty Characteristics	
Beauty Index	-0.5198
	(1.9905)
Masculine	1.6462
	(10.7279)
Age	-0.0939
	(0.2045)
Beauty Index*Performance Rank	-2.2084
	(4.9081)
Masculine*Performance Rank	58.5451
	(49.8866)
Age*Performance Rank	0.9007
	(0.5083)
Beauty Index*Performance Rank^2	3.6959
	(5.1681)
Masculine*Performance Rank^2	-52.7091
	(50.0067)
Age*Performance Rank^2	-0.9740
	(0.4968)
Beauty Index*Size	0.0779
	(0.2381)
Masculine*Size	-2.2776
	(1.2808)
Age*Size	-0.0163
	(0.0217)
Manager Characteristics	
Tenure	0.0725
	(0.0655)
Female	-0.1315
	(0.9415)
Graduate	-2.0663
	(1.2817)
PhD	-1.1605
	(1.4152)
Certifications	0.0436
	(1.0792)
Top School	-0.4311
	(1.1964)
Academic Excellence	0.7362
	(0.8227)
Outside Industry Experience	0.3639
	(1.3122)
Flows	
Fund Flow$_{t-1}$	0.0006***
	(0.0002)
Style Flow	0.0368
	(0.0222)
Family Flow	0.0769***
	(0.0146)
Performance	
Performance Rank	-110.6591
	(58.8402)
Performance Rank^2	121.3777**
	(58.4109)
Performance Rank*Fund Size	1.8903
	(2.5406)
Performance Rank^2*Fund Size	-0.0893
	(2.5169)
Fund Characteristics	
Fund Size	5.6003***
	(1.8424)
Turnover	0.0000

	(0.0054)
Fund Risk	-0.6501
	(0.3595)
Expense Ratio	-4.1888**
	(1.7501)
Fund Age	-10.3502***
	(0.7030)
No Load	-5.1803***
	(1.8088)
12B-1 Fee	1.7796
	(2.1067)
Constant	81.4087***
	(19.4253)
Year FE	Yes
Style FE	Yes
Fund Family FE	Yes
Clustering	Fund
Obs.	13,101
R-squared	0.1780

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the Foreign interacted with lagged performance indicators and fund size for all categories of funds. I use the same specifications as in table 5 and add interaction terms of the Foreign with the respective performance and fund size variables. All control variables, except for style and family flows, are lagged by one year and have been defined in table 2. The standard errors are clustered at the fund level. The corresponding standard errors are shown in parentheses below the coefficient estimates.

Table 12 Panel A. Fund Flow Regression Estimate using Fama Macbeth for 1976-2016

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)
Race/Ethnicity Identifiers		
Black	-2.3980	-3.5540
	(2.1030)	(3.9600)
Middle Eastern	-2.2260	1.1860
	(3.1310)	(3.5170)
Asian	-1.9830	-1.5930
	(1.0630)	(1.0280)
Hispanic	-1.1370	2.3190
	(0.6470)	(1.4960)
Manager Characteristics		
Tenure	1.1960	0.3620
	(0.7450)	(0.2200)
Female	1.4770	0.0890
	(1.1900)	(0.4990)
Graduate	-0.5280	0.0395
	(0.7020)	(0.9010)
PhD	0.8090	-0.0815
	(0.8760)	(0.8690)
Certifications	2.0670	0.5500
	(1.1680)	(0.5410)
Top School	-0.1940	-0.5640
	(1.0230)	(1.3090)
Academic Excellence	-0.2720	0.0012
	(0.6220)	(0.7530)
Outside Industry Experience	1.5220	0.4320
	(1.5030)	(0.8170)
Flows		
Fund Flow$_{t-1}$	0.0825	0.0253
	(0.1260)	(0.1050)
Style Flow	0.2880**	0.1900
	(0.1140)	(0.1030)
Family Flow	0.0574	0.0993
	(0.3410)	(0.3580)
Performance		
Performance Rank	-1.9110	2.9600
	(3.3240)	(4.2860)
Performance Rank^2	26.6000***	17.0300***
	(5.3750)	(5.0140)
Fund Characteristics		
Fund Size	1.3820	1.8220***
	(0.7390)	(0.2720)
Turnover	-0.1540	-0.1760
	(0.1190)	(0.1150)
Fund Risk	-3.1730	-0.4560
	(4.1040)	(0.2560)
Expense Ratio	3.0230	-0.1560
	(1.7190)	(0.7650)
Fund Age	-8.1360***	-5.1600***
	(1.2760)	(0.8240)
No Load	-1.2090	-0.5650
	(0.9910)	(0.7790)
12B-1 Fee	1.1080	1.0900
	(0.9960)	(0.7460)
Constant	47.9400***	6.6830
	(16.7100)	(19.0500)
Observations	20,897	14,655
R-squared	33	33
Number of groups	0.4600	0.4910

Standard errors in parentheses *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and

various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated Fama-Macbeth regression in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 12 Panel B. Fund Flow Regression Estimate using Fama Macbeth for 1976-2016

Dependent Variable = Fund Flow	Beauty (3)
Beauty Characteristics	
Beauty Index	-0.3380
	(0.3250)
Masculine	1.8830
	(1.7970)
Age	-0.0562
	(0.0677)
Manager Characteristics	
Tenure	0.2170***
	(0.0773)
Female	0.7190
	(0.6940)
Graduate	0.0414
	(0.7150)
PhD	-1.0320
	(1.4530)
Certifications	0.8800
	(0.5890)
Top School	-0.8020
	(0.7300)
Academic Excellence	0.3920
	(0.7950)
Outside Industry Experience	0.3830
	(0.7760)
Flows	
Fund $Flow_{t-1}$	0.2190
	(0.1160)
Style Flow	0.0902
	(0.0670)
Family Flow	-0.1350
	(0.1500)
Performance	
Performance Rank	3.5040
	(4.9250)
Performance $Rank^2$	15.7500***
	(5.1300)
Fund Characteristics	
Fund Size	1.8870***
	(0.3110)
Turnover	0.0114
	(0.0348)
Fund Risk	-0.5020
	(0.2600)
Expense Ratio	-0.4330
	(0.8670)
Fund Age	-5.4680***
	(0.8550)
No Load	-0.3920
	(0.6870)
12B-1 Fee	0.7160
	(0.8010)
Constant	43.8100***
	(15.6800)
Observations	13,108
R-squared	33
Number of groups	0.4980

Standard errors in parentheses *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated Fama-Macbeth regression in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 13 Panel A. Fund Flow Regression Estimate with additional controls

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)
Race/Ethnicity Identifiers		
Black	-1.1179	-0.6251
	(4.7293)	(2.7175)
Middle Eastern	-0.8417	2.0086
	(4.8181)	(7.8388)
Asian	-3.2402**	-1.2151
	(1.625)	(1.4709)
Hispanic	-0.6522	0.9379
	(1.5725)	(1.5318)
Black*No Load	-3.2972	-0.8438
	(4.8852)	(4.2582)
Middle Eastern*No Load	-4.3936	16.6027
	(5.5629)	(21.2519)
Asian*No Load	5.5239**	2.1703
	(2.2564)	(2.1202)
Hispanic*No Load	-2.3268	-1.3610
	(2.0444)	(3.1297)
Manager Characteristics		
Tenure	0.0929	0.0358
	(0.0632)	(0.0614)
Female	-0.1853	-0.0803
	(0.9289)	(0.8626)
Graduate	-1.1995	-1.3148
	(1.1755)	(1.1497)
PhD	0.8649	-0.2133
	(1.5064)	(1.4441)
Certifications	0.8504	0.5514
	(0.9797)	(0.9567)
Top School	-2.5857**	-1.0462
	(1.1479)	(1.0826)
Academic Excellence	0.2248	0.6159
	(0.8297)	(0.7573)
Outside Industry Experience	0.3107	-0.3929
	(1.1612)	(1.1552)
Flows		
Fund Flow$_{t-1}$	0.0007	0.0006**
	(0.0004)	(0.0003)
Style Flow	0.0251	0.0368**
	(0.0159)	(0.0162)
Family Flow	0.1073***	0.0837***
	(0.0158)	(0.0144)
Performance		
Performance Rank	-3.9492	2.8735
	(4.5386)	(4.2531)
Performance Rank^2	37.9182***	24.2233***
	(4.6519)	(4.2621)
Fund Characteristics		
Fund Size	3.4666***	3.5996***
	(0.3095)	(0.2956)
Turnover	0.0095	-0.0003
	(0.0050)	(0.0051)
Fund Risk	-0.3406	-0.5959
	(0.3237)	(0.3235)
Expense Ratio	-2.1192	-4.4243***
	(1.6724)	(1.6134)
Fund Age	-14.9038***	-10.1142***
	(0.6796)	(0.6733)
No Load	-7.3832***	-5.4245***
	(1.6999)	(1.6856)
12B-1 Fee	2.4094	1.6654
	(2.0230)	(1.9202)
Constant	173.2529***	69.0135***

	(22.8941)	(11.2445)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	20,839	14,648
R-squared	0.1700	0.1771

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the Foreign indicator and various control variables from table 4 panel A with additional controls for Gender, Education and 12B-1 Fees and interaction for No Load and Racial Indicator for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 13 Panel B. Fund Flow Regression Estimate with additional controls

Dependent Variable = Fund Flow	Beauty (3)
Beauty Characteristics	
Beauty Index	0.5799
	(0.4795)
Masculine	-2.3380
	(3.5058)
Age	-0.0127
	(0.0564)
Beauty*No Load	-1.5063
	(0.9116)
Masculine*No Load	7.8009
	(5.4507)
Age*No Load	-0.1554
	(0.0922)
Manager Characteristics	
Tenure	0.0664
	(0.0653)
Female	0.1225
	(0.9513)
Graduate	-1.8562
	(1.2863)
PhD	-1.1506
	(1.4172)
Certifications	.00409
	(1.0705)
Top School	-0.4594
	(1.1900)
Academic Excellence	0.6596
	(0.8265)
Outside Industry Experience	0.3715
	(1.3069)
Flows	
Fund $Flow_{t-1}$	0.0006***
	(0.0002)
Style Flow	0.0375
	(0.0219)
Family Flow	0.0770***
	(0.0147)
Performance	
Performance Rank	2.0600
	(4.5205)
Performance $Rank^2$	24.5444***
	(4.5111)
Fund Characteristics	
Fund Size	3.6248***
	(0.3139)
Turnover	0.0006
	(0.0054)
Fund Risk	-0.6622
	(0.3581)
Expense Ratio	-4.1657**
	(1.7571)
Fund Age	-10.2955***
	(0.7015)
No Load	-1.0321
	(7.694)
12B-1 Fee	2.0042
	(2.1068)
Constant	76.197***
	(12.4042)
Year FE	Yes
Style FE	Yes
Fund Family FE	Yes

Fund Family FE	Yes
Clustering	Fund
Obs.	13,101
R-squared	0.1774

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the Foreign indicator and various control variables from table 4 panel A with additional controls for Gender, Education and 12B-1 Fees and interaction for No Load and Racial Indicator for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 14. Return Regression Estimate using Expense Ratio

Dependent Variable = Expense Ratio	Ethnicity (1)	Race (2)	Beauty (3)
Race/Ethnicity Identifiers			
Black	0.0123	-0.0072	
	(0.0264)	(0.0267)	
Middle Eastern	-0.0029	0.2448**	
	(0.0342)	(0.1073)	
Asian	-0.0331**	-0.0209	
	(0.0141)	(0.0143)	
Hispanic	0.0088	0.0134	
	(0.0103)	(0.0187)	
Beauty Characteristics			
Beauty Index			0.0086
			(0.0044)
Masculine			0.0313
			(0.0278)
Age			0.0011
			(0.0006)
Manager Characteristics			
Tenure	-0.0005	0.0000	0.0003
	(0.0007)	(0.0008)	(0.0009)
Female	0.0094	-0.0047	-0.0002
	(0.0089)	(0.0102)	(0.0108)
Graduate	0.0034	0.0057	0.0162
	(0.0102)	(0.0125)	(0.0141)
PhD	-0.0136	-0.0009	-0.0217
	(0.0151)	(0.0166)	(0.0161)
Certifications	-0.0058	-0.0035	-0.0077
	(0.0100)	(0.0118)	(0.0122)
Top School	-0.0086	-0.0099	-0.0197
	(0.0103)	(0.0136)	(0.0141)
Academic Excellence	-0.0001	-0.0017	0.0029
	(0.0078)	(0.0089)	(0.0096)
Outside Industry Experience	0.0046	0.0126	0.0046
	(0.0109)	(0.0132)	(0.0136)
Flow			
Style Flow	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0001)
Family Flow	0.0001	0.0001**	0.0001**
	(0.0001)	(0.0001)	(0.0001)
Fund Characteristics			
Fund Size	-0.0490***	-0.0479***	-0.0491***
	(0.0035)	(0.0039)	(0.0040)
Turnover	0.0000	0.0000	0.0000
	(0.0000)	(0.0001)	(0.0001)
Fund Risk	0.0123***	0.0146***	0.0180***
	(0.0028)	(0.0035)	(0.0038)
Fund Age	-0.0154**	-0.0166**	-0.0194**
	(0.0070)	(0.0083)	(0.0086)
No Load	-0.2645***	-0.2579***	-0.2575***
	(0.0172)	(0.0194)	(0.0207)
12B-1 Fee	0.0275	0.0096	0.0167
	(0.0230)	(0.0248)	(0.0262)
Constant	1.7857***	2.2093***	1.4880***
	(0.1351)	(0.0944)	(0.1034)
Year FE	Yes	Yes	Yes
Style FE	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes
Clustering	Fund	Fund	Fund
Obs.	20,839	14,648	13,101
R-squared	0.6777	0.6961	0.6971

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of Expense Ratio regressed on the racial indicator and various control variables for all categories of funds. Panel A shows estimations using Foreign indicator and panel B shows estimations using Non-European indicator. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 15. Fund Flow Regression Estimate with Benchmark-Adjusted Return

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)	Beauty (3)
Race/Ethnicity Identifiers			
Black	-2.6285	-0.3950	
	(3.4960)	(1.7716)	
Middle Eastern	-2.5713	4.9412	
	(3.9548)	(7.4589)	
Asian	-0.9033	-0.4454	
	(1.4423)	(1.3100)	
Hispanic	-1.2073	0.1587	
	(1.1362)	(1.5168)	
Beauty Characteristics			
Beauty Index			0.0318
			(0.4298)
Masculine			0.5171
			(3.0190)
Age			-0.0698
			(0.0502)
Manager Characteristics			
Tenure	0.1662**	0.0914	0.1239
	(0.0658)	(0.0641)	(0.0684)
Female	-0.5068	-0.3598	-0.2948
	(0.9497)	(0.8840)	(0.9616)
Graduate	-1.3105	-1.5421	-2.2781
	(1.2025)	(1.1822)	(1.3322)
PhD	1.1974	0.2424	-0.9263
	(1.5334)	(1.5142)	(1.4751)
Certifications	0.3987	0.1086	-0.4514
	(1.0000)	(0.9695)	(1.0874)
Top School	-2.6019**	-1.1069	-0.3612
	(1.1867)	(1.1296)	(1.2432)
Academic Excellence	0.4988	0.9461	0.9781
	(0.8500)	(0.7821)	(0.8507)
Outside Industry Experience	0.4801	-0.0730	0.5844
	(1.1951)	(1.1977)	(1.3688)
Flow			
Style Flow	0.0268	0.0387**	0.0349
	(0.0159)	(0.0173)	(0.0240)
Family Flow	0.1193***	0.0983***	0.0958***
	(0.0162)	(0.0146)	(0.0152)
Performance			
Benchmark Adjusted Return	0.7819***	0.5725***	0.5597***
	(0.0573)	(0.0489)	(0.0511)
Fund Characteristics			
Fund Size	3.9977***	4.0096***	4.0863***
	(0.3213)	(0.3069)	(0.3256)
Turnover	0.0068	-0.0022	-0.0005
	(0.0052)	(0.0053)	(0.0056)
Fund Risk	-0.3949	-0.6432	-0.7541**
	(0.3362)	(0.3308)	(0.3680)
Expense Ratio	-2.5880	-4.9731***	-4.7235***
	(1.7065)	(1.6605)	(1.8105)
Fund Age	-15.6704***	-10.6763***	-10.9093***
	(0.7143)	(0.7062)	(0.7326)
No Load	-7.5787***	-5.5518***	-5.1526***
	(1.6908)	(1.6912)	(1.8485)
12B-1 Fee	2.6829	1.4620	1.6694
	(2.0814)	(1.9603)	(2.1486)
Constant	219.1566***	103.9056***	100.1297***
	(23.1477)	(9.9618)	(11.1292)
Year FE	Yes	Yes	Yes
Style FE	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes
Clustering	Fund	Fund	Fund

Obs.	20,839	14,648	13,101
R-squared	0.1382	0.1377	0.1380

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables from table 4 with additional controls for Benchmark-adjusted Return for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. The model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 16. Flow Regression Estimate with interaction – Gross Return

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)	Beauty (3)
Race/Ethnicity Identifiers			
Black	7.6082	-10.3372	
	(5.4569)	(5.4186)	
Middle Eastern	4.6501	9.1341	
	(5.7122)	(10.1221)	
Asian	1.9855	-1.7004	
	(2.4028)	(2.6155)	
Hispanic	-7.0226	-0.0618	
	(4.0364)	(5.4979)	
Black*Gross Return	-0.0266	-0.0275	
	(0.1621)	(0.0694)	
Middle Eastern*Gross Return	-0.0378	0.0584	
	(0.1094)	(0.2478)	
Asian*Gross Return	-0.0170	-0.0152	
	(0.0547)	(0.0366)	
Hispanic*Gross Return	0.0896	0.0286	
	(0.0507)	(0.0545)	
Black*Size	-1.5174	1.5891	
	(0.9147)	(0.8181)	
Middle Eastern*Size	-1.0445	-1.0870	
	(0.5450)	(0.8261)	
Asian*Size	-0.5675	0.2377	
	(0.3443)	(0.3718)	
Hispanic*Size	0.8344	-0.0611	
	(0.6407)	(0.7854)	
Beauty Characteristics			
Beauty Index			-0.6300
			(1.6540)
Masculine			11.6100
			(7.7975)
Age			0.0502
			(0.1548)
Beauty Index*Gross Return			0.0123
			(0.0146)
Masculine*Gross Return			0.0642
			(0.0859)
Age*Gross Return			-0.0011
			(0.0016)
Beauty Index*Size			0.0889
			(0.2355)
Masculine*Size			-1.9394
			(1.2226)
Age*Size			-0.0163
			(0.0219)
Manager Characteristics			
Tenure	0.0922	0.0396	0.0747
	(0.0629)	(0.0612)	(0.0651)
Female	-0.0137	-0.1224	-0.0489
	(0.9274)	(0.8527)	(0.9398)
Graduate	-1.0504	-1.2740	-1.9769
	(1.1743)	(1.1466)	(1.2871)
PhD	1.2106	-0.1443	-1.1290
	(1.5024)	(1.441)	(1.4109)
Certifications	0.8243	0.5975	0.1107
	(0.9761)	(0.9560)	(1.0708)
Top School	-2.5117**	-1.0061	-0.3531
	(1.1476)	(1.0780)	(1.1922)
Academic Excellence	0.2794	0.5813	0.7009
	(0.8300)	(0.7597)	(0.8232)
Outside Industry Experience	0.3352	-0.4757	0.2619

	(1.1558)	(1.1487)	(1.3031)
Flows			
Fund Flow$_{t-1}$	0.0007	0.0006**	0.0006***
	(0.0004)	(0.0003)	(0.0002)
Style Flow	0.0198	0.0306**	0.0274
	(0.0148)	(0.0148)	(0.0209)
Family Flow	0.1059***	0.0834***	0.0780***
	(0.0156)	(0.0144)	(0.0146)
Performance			
Performance Rank	-9.3013**	-0.3796	-0.9771
	(4.6187)	(4.2900)	(4.5848)
Performance Rank^2	37.3419***	23.5004***	24.0825***
	(4.6526)	(4.2590)	(4.5357)
Return$_{t-1}$	0.2634***	0.1975***	0.1495
	(0.0400)	(0.0347)	(0.1281)
Fund Characteristics			
Fund Size	3.3331***	3.5046***	6.2224***
	(0.3209)	(0.3040)	(1.7342)
Turnover	0.0102**	-0.0003	0.0007
	(0.0050)	(0.0051)	(0.0054)
Fund Risk	-0.5118	-0.6913**	-0.7707**
	(0.3204)	(0.3211)	(0.3556)
Expense Ratio	-2.1035	-4.2533***	-4.0838**
	(1.6681)	(1.6036)	(1.7354)
Fund Age	-14.8341***	-10.0215***	-10.2796***
	(0.6752)	(0.6735)	(0.7012)
No Load	-7.3377***	-5.1790***	-5.1497***
	(1.6269)	(1.6536)	(1.8144)
12B-1 Fee	2.5265	1.6691	1.7409
	(2.0163)	(1.9227)	(2.1139)
Constant	177.8128***	71.1365***	57.9699***
	(22.7693)	(10.8625)	(16.3448)
Year FE	Yes	Yes	Yes
Style FE	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes
Clustering	Fund	Fund	Fund
Obs.	20,839	14,648	13,101
R-squared	0.1733	0.1799	0.1788

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator interacted with lagged raw return and fund size for all categories of funds. I use the same specifications as in table 5 and add interaction terms of the Foreign with the respective performance and fund size variables. All control variables, except for style and family flows, are lagged by one year and have been defined in table 2. The standard errors are clustered at the fund level. The corresponding standard errors are shown in parentheses below the coefficient estimates.

Table 17 Panel A. Fund Flow Regression Estimate using Fama Macbeth 1993-2011

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)	Beauty (3)
Race/Ethnicity Identifiers			
Black	-4.7280	-5.7370	
	(3.4610)	(6.8820)	
Middle Eastern	-4.5170	2.0400	
	(5.2320)	(6.1330)	
Asian	-3.2570	-3.1690	
	(1.7630)	(1.6940)	
Hispanic	-1.2340	3.4250	
	(1.0630)	(2.5700)	
Beauty Characteristics			
Beauty Index			-0.2920
			(0.5450)
Masculine			2.3400
			(3.0250)
Age			-0.0868
			(0.0511)
Manager Characteristics			
Tenure	1.6790	0.1380	0.1720***
	(1.2460)	(0.0780)	(0.0554)
Female	2.5830	0.0958	0.9530
	(2.0470)	(0.8320)	(1.1960)
Graduate	-1.1520	0.1100	0.2340
	(1.0990)	(1.5460)	(1.1970)
PhD	0.1270	-0.8510	-2.5830
	(1.3290)	(1.4150)	(2.4360)
Certifications	2.6140	0.3920	0.9060
	(1.9710)	(0.8810)	(0.9740)
Top School	-0.5170	-1.4930	-0.9370
	(1.3490)	(1.9880)	(1.2650)
Academic Excellence	-0.4430	0.0423	0.8100
	(1.0820)	(1.3120)	(1.3750)
Outside Industry Experience	2.4110	0.3650	-0.0317
	(2.5870)	(1.3370)	(1.2410)
Flows			
Fund $Flow_{t-1}$	0.0305	0.0863***	0.0962***
	(0.0641)	(0.0246)	(0.0297)
Style Flow	0.3520***	0.2190***	0.2020***
	(0.1020)	(0.0603)	(0.0574)
Family Flow	0.3120	0.3850	0.1270***
	(0.1820)	(0.2610)	(0.0298)
Performance			
Performance Rank	-3.5130	4.8520	5.6810
	(5.5300)	(7.4310)	(8.5050)
Performance $Rank^2$	38.1000***	23.0600**	21.0100**
	(7.5500)	(8.0480)	(8.2800)
Fund Characteristics			
Fund Size	1.8380	2.4450***	2.7500***
	(1.2640)	(0.3260)	(0.3870)
Turnover	-0.0205	-0.0086	-0.0224
	(0.0710)	(0.0083)	(0.0155)
Fund Risk	-5.2440	-0.4950	-0.5420
	(7.1690)	(0.4120)	(0.4090)
Expense Ratio	5.6140	0.5910	-0.0811
	(2.7960)	(1.2240)	(1.4530)
Fund Age	-11.5800***	-7.1650***	-7.7690***
	(1.5730)	(1.0070)	(1.0140)
No Load	-1.8390	-0.5780	-0.4100

	(1.6890)	(1.2900)	(1.0860)
12B-1 Fee	1.0780	1.4620	0.8380
	(1.6680)	(1.2040)	(1.2890)
Constant	74.6300***	12.9200	67.5600**
	(18.5500)	(27.0400)	(24.6100)
Observations	14,278	9,566	8,437
R-squared	19	19	19
Number of groups	0.2830	0.3340	0.3480

Standard errors in parentheses *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated Fama-Macbeth regression in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 17 Panel B. Fund Flow Regression Estimate using Fama Macbeth 1993-2016

Dependent Variable = Fund Flow	Ethnicity (1)	Race (2)	Beauty (3)
Race/Ethnicity Identifiers			
Black	-3.2970	-4.8860	
	(2.8860)	(5.4520)	
Middle Eastern	-3.0600	1.6300	
	(4.3170)	(4.8610)	
Asian	-2.7270	-2.1910	
	(1.4400)	(1.4020)	
Hispanic	-1.5630	3.1880	
	(0.8790)	(2.0400)	
Beauty Characteristics			
Beauty Index			-0.4640
			(0.4470)
Masculine			2.5890
			(2.4700)
Age			-0.0761
			(0.0410)
Manager Characteristics			
Tenure	1.3540	0.1330**	0.1650***
	(0.9890)	(0.0630)	(0.0454)
Female	2.0310	0.1220	0.9890
	(1.6310)	(0.6900)	(0.9530)
Graduate	-0.7260	0.0542	0.0569
	(0.9670)	(1.2460)	(0.9890)
PhD	1.1120	-0.1120	-1.4190
	(1.2060)	(1.2010)	(2.0030)
Certifications	2.8420	0.7570	1.2100
	(1.5850)	(0.7440)	(0.8040)
Top School	-1.0930	-1.6020	-1.1030
	(1.1130)	(1.5720)	(1.0020)
Academic Excellence	-0.3750	0.0017	0.5390
	(0.8600)	(1.0420)	(1.0980)
Outside Industry Experience	2.0930	0.5940	0.5260
	(2.0660)	(1.1280)	(1.0720)
Flows			
Fund $Flow_{t-1}$	0.0323	0.0751***	0.0834***
	(0.0505)	(0.0200)	(0.0240)
Style Flow	0.3150***	0.1950***	0.1870***
	(0.0832)	(0.0504)	(0.0478)
Family Flow	0.2750	0.3270	0.1230***
	(0.1440)	(0.2070)	(0.0248)
Performance			
Performance Rank	-2.6280	4.0700	4.8190
	(4.5890)	(5.9110)	(6.7910)
Performance $Rank^2$	36.5800***	23.4100***	21.6500***
	(6.2770)	(6.4500)	(6.6920)
Fund Characteristics			
Fund Size	1.7470	2.3530***	2.5940***
	(1.0010)	(0.2740)	(0.3250)
Turnover	-0.0194	-0.0097	-0.0201
	(0.0559)	(0.0068)	(0.0124)
Fund Risk	-4.3630	-0.6270	-0.6900
	(5.6560)	(0.3470)	(0.3520)
Expense Ratio	4.1560	-0.2150	-0.5950
	(2.3340)	(1.0570)	(1.1970)
Fund Age	-11.1900***	-7.0950***	-7.5180***
	(1.2770)	(0.8370)	(0.8540)
No Load	-1.6630	-0.7780	-0.5390

	(1.3590)	(1.0750)	(0.9480)
12B-1 Fee	1.5230	1.4980	0.9850
	(1.3680)	(1.0190)	(1.1020)
Constant	72.9400***	18.6300	61.1600***
	(14.8400)	(21.4700)	(19.6100)
Observations	20,853	14,616	13,075
R-squared	24	24	24
Number of groups	0.2580	0.3000	0.3100

Standard errors in parentheses *** p<0.01, ** p<0.05. This table shows the estimates of percentage fund flows regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for style and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated Fama-Macbeth regression in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level

Table 18 Panel A. Return Regression Estimate using Gross Return

Dependent Variable = Gross Return	Ethnicity (1)	Race (2)
Race/Ethnicity Identifiers		
Black	0.1945	0.7923
	(0.7063)	(0.5128)
Middle Eastern	-0.2934	3.0114
	(0.6108)	(2.4918)
Asian	0.3400	0.7300**
	(0.3114)	(.2879)
Hispanic	-0.0815	0.6607**
	(0.2094)	(0.3264)
Manager Characteristics		
Tenure	0.0666***	0.0492***
	(0.0133)	(0.0148)
Female	-0.8101***	-0.8537***
	(0.1959)	(0.1993)
Graduate	-0.5182**	-0.6123**
	(0.2493)	(0.3027)
PhD	-0.3888	-0.4531
	(0.2947)	(0.2975)
Certifications	-0.1421	-0.4377
	(0.2018)	(0.2377)
Top School	0.0197	-0.2589
	(0.2548)	(0.2828)
Academic Excellence	0.4688***	0.2529
	(0.1713)	(0.1841)
Outside Industry Experience	-0.0971	0.0769
	(0.2554)	(0.2951)
Flow		
Style Flow	0.0049	0.0088***
	(0.0026)	(0.0033)
Family Flow	0.0004	-0.0017
	(0.0034)	(0.0048)
Performance		
Gross Return$_{t-1}$	-0.0175	-0.0373***
	(0.0110)	(0.0110)
Fund Characteristics		
Fund Size	0.2379***	0.1426**
	(0.0626)	(0.0717)
Turnover	-0.0001	-0.0024
	(0.0012)	(0.0014)
Fund Risk	-1.6193***	-2.0494***
	(0.1406)	(0.1402)
Expense Ratio	1.4846***	1.5456***
	(0.4096)	(0.4270)
Fund Age	-0.3365***	-0.2792
	(0.1244)	(0.1472)
No Load	0.7003	0.3251
	(0.4134)	(0.4033)
12B-1 Fee	-0.1932	0.1135
	(0.5083)	(0.4583)
Constant	16.4501***	16.6746***
	(2.1935)	(2.8410)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	20,839	14,648
R-squared	0.7014	0.7363

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of annual return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for segment and family flows, are lagged by one year and have been defined in table 2. The model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 18 Panel B. Return Regression Estimate using Gross Return

Dependent Variable = Gross Return	Beauty (3)
Beauty Characteristics	
Beauty Index	0.0876
	(0.0920)
Masculine	-0.4489
	(0.6805)
Age	-0.0244**
	(0.0116)
Manager Characteristics	
Tenure	0.0489***
	(0.0157)
Female	-0.7884***
	(0.2140)
Graduate	-0.7395**
	(0.3280)
PhD	-0.3987
	(0.2946)
Certifications	-0.5586**
	(0.2526)
Top School	-0.1871
	(0.2980)
Academic Excellence	0.1816
	(0.1980)
Outside Industry Experience	0.1192
	(0.3337)
Flow	
Style Flow	0.0107**
	(0.0044)
Family Flow	-0.0068
	(0.0044)
Performance	
Gross Return$_{t-1}$	-0.0415***
	(0.0111)
Fund Characteristics	
Fund Size	0.1922**
	(0.0764)
Turnover	-0.0021
	(0.0015)
Fund Risk	-2.1250***
	(0.1560)
Expense Ratio	1.6124***
	(0.4525)
Fund Age	-0.3569**
	(0.1503)
No Load	0.7175
	(0.4144)
12B-1 Fee	0.5968
	(0.4810)
Constant	24.4329***
	(3.0825)
Year FE	Yes
Style FE	Yes
Fund Family FE	Yes
Clustering	Fund
Obs.	13,101
R-squared	0.7386

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of annual return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for segment and family flows, are lagged by one year and have been defined in table 2. The model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 19 Panel A. Return Regression Estimate using Net Return

Dependent Variable = Net Return	Ethnicity (1)	Race (2)
Race/Ethnicity Identifiers		
Black	0.2859	0.8418
	(0.7155)	(0.5154)
Middle Eastern	-0.2972	2.8206
	(0.6141)	(2.4890)
Asian	0.2644	0.6521**
	(0.3110)	(0.2849)
Hispanic	-0.0339	0.6644**
	(0.2106)	(0.3237)
Manager Characteristics		
Tenure	0.0697***	0.0492***
	(0.0133)	(0.0147)
Female	-0.7689***	-0.8152***
	(0.1971)	(0.1999)
Graduate	-0.5305**	-0.5852
	(0.2503)	(0.3042)
PhD	-0.3695	-0.4354
	(0.2970)	(0.2950)
Certifications	-0.1903	-0.4609
	(0.2029)	(0.2385)
Top School	-0.0056	-0.2928
	(0.2551)	(0.2828)
Academic Excellence	0.4349**	0.2157
	(0.1718)	(0.1845)
Outside Industry Experience	-0.0848	0.0691
	(0.2563)	(0.2960)
Flow		
Style Flow	0.0046	0.0084***
	(0.0025)	(0.0031)
Family Flow	-0.0001	-0.0022
	(0.0034)	(0.0048)
Performance		
Net Return$_{t-1}$	-0.0211	-0.0397***
	(0.0110)	(0.0110)
Fund Characteristics		
Fund Size	0.2376***	0.1460**
	(0.0625)	(0.0716)
Turnover	-0.0001	-0.0025
	(0.0012)	(0.0014)
Fund Risk	-1.6079***	-2.0405***
	(0.1415)	(0.1405)
Expense Ratio	0.5656	0.5798
	(0.4072)	(0.4237)
Fund Age	-0.3280***	-0.2611
	(0.1247)	(0.1472)
No Load	0.7043	0.4117
	(0.4160)	(0.4061)
12B-1 Fee	-0.2502	0.1327
	(0.5106)	(0.4612)
Constant	16.1743***	16.5988***
	(2.1939)	(2.8641)
Year FE	Yes	Yes
Style FE	Yes	Yes
Fund Family FE	Yes	Yes
Clustering	Fund	Fund
Obs.	20,667	14,578
R-squared	0.7026	0.7375

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of Net return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for segment and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Table 19 Panel B. Return Regression Estimate using Net Return

Dependent Variable = Net Return	Beauty (3)
Beauty Characteristics	
Beauty Index	0.0809
	(0.0929)
Masculine	-0.4531
	(0.6834)
Age	-0.0245**
	(0.0115)
Manager Characteristics	
Tenure	0.0500***
	(0.0156)
Female	-0.7632***
	(0.2154)
Graduate	-0.7008**
	(0.3302)
PhD	-0.3884
	(0.2961)
Certifications	-0.5818**
	(0.2542)
Top School	-0.2101
	(0.2988)
Academic Excellence	0.1450
	(0.1983)
Outside Industry Experience	0.1128
	(0.3360)
Flow	
Style Flow	0.0100**
	(0.0043)
Family Flow	-0.0074
	(0.0044)
Performance	
Net Return$_{t-1}$	-0.0436***
	(0.0111)
Fund Characteristics	
Fund Size	0.1938**
	(0.0762)
Turnover	-0.0021
	(0.0015)
Fund Risk	-2.1256***
	(0.1564)
Expense Ratio	0.6466
	(0.4496)
Fund Age	-0.3447**
	(0.1503)
No Load	0.8053
	(0.4174)
12B-1 Fee	0.5924
	(0.4847)
Constant	24.6329***
	(3.1351)
Year FE	Yes
Style FE	Yes
Fund Family FE	Yes
Clustering	Fund
Obs.	13,044
R-squared	0.7396

Standard errors are in parenthesis *** p<0.01, ** p<0.05. This table shows the estimates of Net return regressed on the racial indicator and various control variables for all categories of funds. All independent variables, except for segment and family flows, are lagged by one year and have been defined in table 2. In panel A, the model is estimated by pooled OLS in all columns. The standard errors are displayed in parentheses below the coefficient estimates. The standard errors are clustered at the fund level.

Appendix

Appendix 1: Name Prism categories

Name-Prism calculates probabilities in 5 major ethnicities:

1. White 2. Black 3. Asian/Pacific Islander 4. American Indian/Alaskan Native 5. 2 or More Races

These can be further divided 39 categories as follows:

40. European, South Slavs
41. European, Italian, Italy
42. European, Baltics
43. European, Italian, Romania
44. European, French
45. European, Russian
46. European, East European
47. European, German
48. Celtic English
49. Nordic, Scandinavian, Denmark
50. Nordic, Finland
51. Nordic, Scandinavian, Sweden
52. Nordic, Scandinavian, Norway
53. Greek
54. Jewish
55. South Asian
56. East Asian, Japan
57. East Asian, Indochina, Myanmar
58. East Asian, Indochina, Thailand
59. East Asian, Indochina, Vietnam
60. East Asian, Chinese
61. East Asian, Indochina, Cambodia
62. East Asian, Malay, Malaysia
63. East Asian, Malay, Indonesia
64. East Asian, South Korea
65. Hispanic, Portuguese
66. Hispanic, Spanish
67. Hispanic, Philippines

68. African, South African
69. African, West African
70. African, East African
71. Muslim, Pakistanis, Bangladesh
72. Muslim, Nubian
73. Muslim, Turkic, Central Asian
74. Muslim, Turkic, Turkey
75. Muslim, Arabian Peninsula
76. Muslim, Maghreb
77. Muslim, Pakistanis, Pakistan
78. Muslim, Persian

Appendix 2: Variable description

Variable	Data Source	Explanation
Manager Characteristics		
Name	Morningstar	Manager name as given in Morningstar database.
Tenure	Morningstar	Difference of the current year to the start year of the fund manager at a given fund as reported in Morningstar.
Female	Morningstar	Indicator variable equal to one if the manager gender mentioned in Morningstar is female zero otherwise.
Graduate Degree	Morningstar	Indicator variable equal to one if the manager has master's degrees including an MBA as per description in Morningstar zero otherwise.
PhD	Morningstar	Indicator variable equal to one if the manager has PhD as per description in Morningstar zero otherwise.
Top School	Morningstar	Indicator variable equal to one if the manager has graduated from a top school as per description in Morningstar zero otherwise.
Academic Excellence	Morningstar	Indicator variable equal to one if the manager is a member of academic honors societies as per description in Morningstar zero otherwise.
Outside Industry Experience	Morningstar	Indicator variable equal to one if the manager has experience outside the financial services industry as per description in Morningstar zero otherwise.
Age	Computed/EHB	Age is calculated as probabilistic age from professional photos (hand collected from LinkedIn/Fund Websites) by following Lefevre, Carmen, Lewis, Perrett and Penke (2013).
Beauty Score	Computed/EHB	Beauty score is calculated from professional photos (hand collected from LinkedIn/Fund Websites) by following Lefevre, Carmen, Lewis, Perrett and Penke (2013).
Masculine Score	Computed/JAR	Masculine score is calculated from professional photos (hand collected from LinkedIn/Fund Websites) by following Jia, Van Lent and Zent (2014).
Black	Name Prism/Clarifai	Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Black according to Name Prism, and zero otherwise. Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Black according to Clarifai, and zero otherwise.
Middle Eastern	Name Prism/Clarifai	Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Middle Eastern according to Name Prism, and zero otherwise. Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Middle Eastern according to Clarifai, and zero otherwise.
Asian	Name Prism/Clarifai	Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Asian according to Name Prism, and zero otherwise. Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Asian according to Clarifai, and zero otherwise.
Hispanic	Name Prism/Clarifai	Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Hispanic according to Name Prism, and zero otherwise. Indicator variable equal to one if it is indicated as having probabilistic ethnicity of Hispanic according to Clarifai, and zero otherwise.
Flow Variables		
Fund Flow	Morningstar/CRSP	Computed as $(TNA_{i,t}-TNA_{i,t-1})/TNA_{i,t-1}-r_{i,t}$ where $TNA_{i,t}$ denotes fund i's total net assets in year t and r_t denotes fund i's return in year t, winsorized at the top 99% and bottom 1%.
Style Flow	Computed	Growth rate of fund i's market style due to flows in year t, excluding flows in fund i
Family Flow	Computed	Growth rate of fund i's fund family due to flows in year t, excluding flows in fund i
Performance		
Performance Rank	Computed	The performance rank of the fund in the previous year relative to all other funds in the same style, scaled to lie between zero (lowest performance) and one (highest performance).
Morningstar Rating	Morningstar	Rating for that fund as given by Morningstar

Fund Characteristics		
Fund Size	Morningstar/CRSP	Lagged natural logarithm of the fund's size in million dollars.
Turnover	Morningstar/CRSP	Fund's lagged turnover rate.
Fund Risk	Computed	Lagged return time series standard deviation of the fund return using the past twelve monthly return observations.
Expense Ratio	Morningstar/CRSP	Percentage of fund assets charged annually to pay for operating expenses including 12b-1 fees, management/administrative fees, distribution fees, and custodial services.
Fund Age	Morningstar/CRSP	Log of number of years since the fund's inception.
No Load Fund	Morningstar/CRSP	Indicator variable equal to one (zero) if the fund does (not) have load fees.
12B-1 Fee	Morningstar/CRSP	Percentage of fund assets charged to pay for distribution and marketing costs.
Institutional Holding	Morningstar/CRSP	Percentage of institutional class holdings in fund.

JAR: Jia, Van Lent & Zent (2014) – Jia, Yuping, Laurence Van Lent, and Yachang Zeng. "Masculinity, testosterone, and financial misreporting." Journal of Accounting Research 52, no. 5 (2014): 1195-1246.

EHB: Lefevre, Lewis, Perrett & Penke (2013) – Lefevre, Carmen E., Gary J. Lewis, David I. Perrett, and Lars Penke. "Telling facial metrics: facial width is associated with testosterone levels in men." Evolution and Human Behavior 34, no. 4 (2013): 273-279.

Clarifai: https://www.clarifai.com/about – Zeiler, & Fergus (2014) Zeiler, Matthew D., and Rob Fergus. "Visualizing and understanding convolutional networks." In European conference on computer vision, pp. 818-833. Springer, Cham, 2014. https://www.forbes.com/sites/aarontilley/2017/07/13/clarifai-ai-image-recognition/#58dac09afe42
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CHAPTER 4

FINANCIAL DISTRESS RISK AND SMALL GROWTH STOCKS

Section 1: Introduction

Ever since Sharpe (1964) and Lintner (1965) proposed the capital asset pricing model (CAPM), asset pricing literature is rife with models attempting to explain stock returns. The most heavily cited and debated model among those is the 3-factor model (FF3/3-factor model) by Fama & French (1992). It suggests three factors, to explain the cross-sectional variation of expected returns, namely: Beta as proposed by Markowitz (1959), size and book-to-market equity ratio (BE/ME). Fama & French (1993) hypothesize that BE/ME captures a firm's sensitivities to a systematic distress factor. Daniel & Titman (1997) support that argument in a variant of characteristic hypothesis which states that BE/ME is a measure for relative distress risk. However, Davis, Fama & French (2000) show that BE/ME might not completely absorb the financial distress risk in 3-factor model for all portfolios.

Davis, Fama & French (2000) revisit the 3-factor model for the period of 1929-1997. Based on the market capitalization they allocate stocks in three size groups (Small, Medium, and Large) and three BE/ME groups (Low, Mid, and High). Independently sorting the universe of stocks on size as well as BE/ME, they form nice portfolios: Small/Low, Small/Mid, Small/High, Medium/Low, Medium/Mid, Medium/High and Large/Low, Large/Mid and Large/High. They find that the average abnormal return as calculated by the intercept of the 3-factor model, also called alpha, is statistically insignificant for all portfolios except Small/Low. This result is robust to sub-sample analysis and variations in sorting. However, the portfolio of small/low stocks (stocks having small size and low BE/ME) consistently produces an intercept statistically different from zero. Davis, Fama & French (2000) call it the aberrant portfolio for the 3-factor model, stating "the pricing of small growth stocks presents problems for the three-factor model throughout the 7/29- 6/97 period".

One reason, as attributed by Davis, Fama & French (2000), is that distressed firms might have higher returns due to high risk and might mask themselves as strong firms. Hence the results in that Small/Low portfolio might get muddied. Chan & Chen (1991) have demonstrated that distress risk is a priced factor in expected returns. Fama & French (1992) discuss that the risk captured by BE/ME can possibly explain the relative distress risk factor of Chan & Chen (1991). Firms that judged by the equity market to have lower future prospects, signaled by low stock prices and high BE/ME, have higher expected stock returns than firms

with stronger prospects. Alternatively, firms judged to have better prospects for the future would have low BE/ME. However, BE/ME can be a noisy measure.

To analyze this, I dig deeper in the universe of Small/Low stocks. The confounding part of Small/Low stocks is the fact that small growing companies and small declining companies (that used to be a large cap stock in the past) look very similar. An example of this is Google and General Electric. A growing Google and a diminishing General Electric load up very similar on size and BE/ME factors. But they have differential financial distress risk which can be observed by their bond yields, where Google bond yield is 2.21 percent and GE bond yield is 4.21 percent. Hence, the question becomes, why? Imagine a hypothetical scenario of two firms A and B. They both have same market cap of $1,000,000. They also have same book value of $500,000. But A is 2 years old and its book value and market value were $200,000 and $400,000 respectively in the previous year. Whereas, B is 25 years old and its book value and market value were $800,000 and $1,400,000 respectively in the previous year. If I calculate the size and BE/ME ratio for these firms, they would fall in the same portfolio. However, comparing the size and BE/ME to previous years I can observe that they have a disparity in their risk perception. In cases like this BE/ME may not explain financial distress risk in its entirety for low market capitalization firms. This may be of the causes of the statistically significant intercept of 3-fatcor model for the portfolio of Small/Low stocks.

Firstly, there is the debate on whether distress risk can be fully absorbed by size and BE/ME factors. The risk hypothesis says expected returns compensate risk loadings, irrespective of the BE/ME characteristic (Fama & French, 1992). However, the characteristics hypothesis says that relative distress drives stock returns, and BE/ME is a measure for relative distress (Daniel & Titman, 1997). Low BE/ME (characteristic of strong firms) produces low stock returns, irrespective of risk loadings. Similarly, high BE/ME stocks (distressed firms) have high returns, regardless of risk loadings.

Secondly, small firms with low BE/ME suffer from several drawbacks. Griffin & Lemmon (2002) find that consistent with mispricing arguments, the book-to-market effect is largest in small firms with low analyst coverage. Zhang (2006) highlights that issues of information asymmetry get exacerbated in small firms. He also documents that the uncertainty effect plays a greater role for smaller firms. Merton (1987) and Grossman & Miller (1988) state that arbitrage opportunities might be lower for smaller firms. Franzen, Rogers & Simin (2007) suggest that higher research and development spending increases the likelihood of misclassifying solvent firms. Since research and development expenses can be higher in small growing firms they face heightened concern of misclassification.

Thirdly, financial distress risk can also intensify the mis-estimation of returns. Financially distressed stocks have higher short sale constraints and Diamond & Verrecchia (1987) identify that short sale constraints could act as a barrier to full absorption of information in prices. Eisdorfer, Goyal & Zhdanov (2012) observe that return anomalies are most pronounced among distressed stocks and further elaborate that anomalies exist only among the subset of distressed stocks classified as mis-valued by their model.

Firstly, due to their smaller size, they display higher financial distress risk as compared to other stocks (Chen & Zhang 1998). Hence, I use z-score as calculated by Altman (1968) and o-score as calculated by Ohlson (1980) as measures for sorting the universe of Small/Low stocks. Secondly, DeBondt & Thaler (1987) and Lakonishok, Shleifer & Vishny (1994), argue that low BE/ME stocks tend to have strong fundamentals however, investors overreact to performance and assign irrationally high values to these firms. Jensen (2005) argues that overvaluation can results in negative risk infestation of net present value destroying the financial health resulting in the high risk of distress. Penman (1996) states that overvalued equity reflects distress indication, in part. I use Tobin's q as a measure (Tobin, 1969) to capture the overvaluation and, in turn, to capture the financial distress risk. Thirdly, small firms also tend have higher information asymmetry (Zhang, 2006) worsening the effects of financial distress risk and irrational value assignments. Mola, Rau & Khorana (2013) show that analysts tend to drop coverage of firms that are unlikely to provide future investment banking and trading revenues to the financial institution they work for. Campbell & Harvey (2008) find that distress anomaly is highest in firms with low analyst coverage and that stocks with low analyst coverage do have a somewhat greater spread in failure probability. Hence, I use analyst coverage (Hong, Lim & Stein, 2000), and change in analyst coverage (Derrien & Kecskes, 2013) as measures for the financial distress risk. Previous studies have demonstrated that time series components of analyst coverage can have information about distress risk. Hence, I also use lagged values of analyst coverage.

One might argue that BE/ME would capture this financial distress risk. However, Prior research has revealed that the relation between BE/ME and distress risk is not monotonic (Dichev, 1998, Kim & Lee, 2016). A distressed firm has high BE/ME, whereas an extremely distressed firm has lower BE/ME (Dichev, 1998). Kim & Lee (2016) presents the evidence in BE/ME pattern, showing that a firm with higher o-score (low distress risk) tends to have higher BE/ME (underpriced), except for the company with the highest o-score (high distress risk) and the lowest BE/ME (overpriced).

In this paper, I attempt to incorporate the financial distress risk as an explanatory measure only to correct any mis-estimation. I follow the approach suggested by Daniel & Titman (1997). I use double sorts of size

and BE/ME to identify the universe of Small/Low stocks. I further sort the universe of Small/Low stocks using various measures of financial distress risk. If the intercept produced by 3-factor model for Small/Low stocks in significantly different from zero due to financial distress risk, in part, then after sorting on measures of financial distress risk that intercept would reduce in economic significance for portfolios with high distress risk, however it need not to change for portfolios with low financial distress risk. In line with Campbell, Hilscher & Szilagyi (2008), I construct a portfolio which is long low distress risk – short high distress risk, also called long-short portfolio (L-H). Financial distress risk anomaly has pointed out that stocks with high financial distress risk earn low returns which is anomalous to their higher risk loading. I observe positive and significant returns on the long-short portfolio.

The abnormal return on the long-short portfolio ranges from -0.0246 percent to 0.1309 percent which is economically and statically significant (at 1% confidence level). This illustrates that, part of the risk in this universe of Small/Low stocks is due to the inability of BE/ME to better absorb the financial distress risk. For robustness, I also sort portfolios on quintiles and deciles. My results are robust to changes of sorting and measures. I also have results on tercile sorts, not included in the paper, for interested readers.

To the best of my knowledge, this is the first paper that attempts to explain financial distress risk as an explanatory factor to resolve the significant 3-factor alphas in Small/Low stocks. It is also the first paper to exhibit construction of profitable portfolios within Small/Low stocks with and without the measures for financial distress risk. In addition, I explore the universe of Small/Low stocks to demonstrate that while they are always grouped together, they tend to be more heterogenous and hence warrant a closer look in academic research. My paper is also of interest to managers of mutual funds and hedge funds, who might want a profitable portfolio strategy within the same investment style.

The rest of the paper is divided into 5 sections. Section II talks about data. Section III discusses the results. Section IV is robustness and Section V is conclusion.

Section 2: Data and Sample

The data comes from three sources. Returns are from the CRSP Monthly Stocks Combined File, which includes NYSE, AMEX, and Nasdaq stocks. Book value and other financial data are from COMPUSTAT. Analyst coverage data comes from I/B/E/S. GNP index is obtained from the Federal Reserve Bank of St. Louis.

I replicate nine portfolios from Fama & French (1995). I use their methodology and sort all stocks from CRSP for the sample period of 1966 to 2018. I focus on the portfolio of Small/Low stocks, formed yearly from a simple sort of firms into three groups based on market value and another simple sort into three groups based on BE/ME. Details of the sorts are as follows: In June of each year t, I rank all New York Stock Exchange (NYSE) stocks in the Center for Research in Securities Prices (CRSP) database on size which equals market value as calculated by price times shares outstanding. I then use NYSE size to allocate NYSE, American Stock Exchange (AMEX), and (after 1972) NASDAQ Stock Market stocks to three groups, based on the breakpoints for the bottom 30 percent (Small), middle 40 percent (Medium), and top 30 percent (Big) of the ranked value. I also break NYSE, AMEX, and NASDAQ stocks into three BE/ME groups based on the breakpoints for the bottom 30 percent (Low), middle 40 percent (Medium), and top 30 percent (High) of the ranked values of BE/ME for NYSE stocks. BE/ME is book value of common equity for the fiscal year ending in calendar year t - 1, divided by market value of equity at the end of December of year t - 1. I do not use negative BE firms, which are rare on COMPUSTAT prior to 1980, when calculating the breakpoints for BE/ME or when forming the size-BE/ME portfolios.

I then get nine portfolios: the three market value and the three BE/ME groups (S/L, S/M, S/H, M/L, M/M, M/H, B/L, B/M, and B/H). Out of these portfolios I drop the rest eight and focus only on the S/L portfolio. The S/L portfolio contains the stocks in the small-market value group that are also in the low-BE/ME group. Monthly value-weighted stock returns for the nine portfolios are calculated from July of year t to June of year t + 1, and the portfolios are reformed in June of year t + 1. I calculate returns beginning in July of year t to be sure that book value of equity for year t - 1 is known. To be included, a firm must have CRSP stock prices for December of year t - 1 and June of year t, and COMPUSTAT book value of equity for year t - 1.

When I examine profitability and other fundamentals, I also require that firms have COMPUSTAT earnings and sales for year t. This added data requirement is not imposed when I calculate stock returns, however, so it does not lead to look-ahead bias in the returns. Moreover, to reduce the survival bias inherent in the way COMPUSTAT adds firms to its tapes (Banz & Breen, 1986), I do not include firms until they are on COMPUSTAT for two years. Finally, I choose 1966 as the start date for the tests because the accounting

literature points to inaccuracies in COMPUSTAT data prior to 1966. Following Altman (1968) I construct z-score and I calculated o-score as posited by Ohlson (1980).

I employ six measures namely, Altman z-score, analyst coverage, change in analyst coverage, lag analyst coverage, change in lag analyst coverage, o-score, and Tobin's q. Altman z-score (Altman 1968) and o-score Ohlson (1980) are two of the strongest measurements of financial distress risk of a firm. Altman z-score is calculated as the following:

$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$

Where,

X_1 = working capital/total assets. Measures liquid assets in relation to the size of the company.

X_2 = retained earnings/total assets. Measures profitability that reflects the company's age and earning power.

X_3 = earnings before interest and taxes/total assets. Measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.

X_4 = market value of equity/book value of total liabilities. Adds market dimension that can show up security price fluctuation as a possible red flag.

X_5 = sales/total assets. Standard measure for total asset turnover (varies greatly from industry to industry).

The lower the Altman z-score, the greater is the risk of financial distress. I calculate analyst coverage as number of unique analysts that have provided an EPS estimate for the firm for the fiscal year ending prior to the June of the portfolio forming year. I also use change in analyst coverage as well as lag analyst coverage. The lower the analyst coverage the higher is the risk of financial distress. O-score is calculated as follows:

$$T = -1.32 - 0.407\log\left(\frac{TAt}{GNP}\right) + 6.03\left(\frac{TLt}{TAt}\right) - 1.43\left(\frac{WCt}{TAt}\right) + 0.0757\left(\frac{CLt}{CAt}\right) - 1.72X - 2.37\left(\frac{NIt}{TAt}\right) - 1.83\left(\frac{FFOt}{TLt}\right) + 0.285Y - 0.521\left(\frac{NIt - NIt - 1}{|NIt| + |NIt - 1|}\right)$$

Where,

TA = total assets

GNP = Gross National Product price index level

TL = total liabilities

WC = working capital

CL = current liabilities

CA = current assets

X = 1 if TL > TA, 0 otherwise

NI = net income

FFO = funds from operations

Y = 1 if a net loss for the last two years, 0 otherwise

For o-score, the higher the score, the higher is the risk of financial distress. Tobin's q is calculated as market value of assets divided by book value of assets for the fiscal year ending prior to the June of the portfolio forming year. Higher Tobin's q, represents higher probability of financial distress.

Section 3: Results

In Table I, I present the descriptive statistics. Altman z-score is available for 632,841 observations and Tobin's q is available for 632,301 observations. For rest of the measures of financial distress risk, observations decrease by two thirds. Analyst coverage has 251,995 followed by change in analyst coverage and lag analyst coverage with 220,631 observations. O-score has 196,921 observations. The mean Altman z-score is 14.93 which shows that on average firms have lower risk of bankruptcy, however the values of Altman z-score vary significantly demonstrating that risk of bankruptcy varies through the group of Small/Low firms. Average analyst coverage is 7 and on average firms gain 1 additional analyst. The analyst coverage ranges from firms with 1 analyst following them to firms with 57 analysts following them. Even for change in analyst coverage, the range is from firms that loose 25 analysts to firms that gain 27 analysts. The mean o-score for firms is 0.58 which suggests that on average firms are closer to bankruptcy. The probabilistic bankruptcy results are contrasting when I compare Altman z-score to o-score. Average Tobin's q is 3.56 suggesting that on average, market is optimistic about firms in my sample. It also points to overall overvaluation of firms. I notice that values for the financial distress risk measures vary significantly exhibiting that firms within the Small/Low bucket have differential financial distress risk.

Table II illustrates the correlation matrix for variables namely, market beta, size factor, value factor, risk-free rate, Altman z-score, analyst coverage, change in analyst coverage, lag analyst coverage, o-score and Tobin's q. Panel A has Pearson correlations among the aforementioned variables. Highest correlation is 0.90 between analyst coverage and change in analyst coverage. I can observe the negative correlation between Altman z-score and o-score. O-score has negative correlation to analyst coverage, change in analyst coverage, lag analyst coverage and Tobin's q. Panel B has Spearman correlations among the aforementioned variables. This displays correlations among all the variables similar to those in Panel A. Highest correlation is 0.86 between analyst coverage and change in analyst coverage. Again, I can observe the negative correlation between Altman z-score and o-score, which is line with Pearson correlation. O-score still has negative correlation to analyst coverage, change in analyst coverage, lag analyst coverage and Tobin's q. This also evidences that measures of financial distress risk do not replace the size and value factors. They are additional explanatory variables.

Table III presents excess return on long-short portfolio (L-H) after sorting on the six measures of financial distress risk. After sorting on the measures, I construct a long-short portfolio by going long on portfolio with lowest financial distress risk (L) and going short on portfolio with highest financial distress risk (H). Panel A displays decile sorts on measures of financial distress risks. I can observe excess return on long-short portfolio is positive for all measures of financial distress risk except Altman z-score which earns negative return. Long-short portfolio sorted on Altman z-score earns -0.0293 percent. Long-short portfolio

sorted on analyst coverage earns 0.0613 percent. Long-short portfolio sorted on change in analyst earns 0.0246 percent. The long-short portfolio sorted on lag analyst coverage earns 0.0468 percent. The long-short portfolio sorted on o-score earns 0.1219 percent and long-short portfolio sorted on Tobin's q earns 0.1308 percent. In panel B, I repeat panel A but with quintile sorts. Again, excess return on long-short portfolio is positive for all measures of financial distress risk except Altman z-score which earns negative return. The long-short portfolio sorted on Altman z-score earns -0.0214 percent. The long-short portfolio sorted on analyst coverage earns 0.0430 percent. The long-short portfolio sorted on change in analyst earns 0.0064 percent. The long-short portfolio sorted on lag analyst coverage earns 0.0473 percent. The long-short portfolio sorted on o-score earns 0.0956 percent and the long-short portfolio sorted on Tobin's q earns 0.1029 percent. I can discern that excess return on the long-short portfolio reduces in economic value when I change the sorting from decile to quintile. In untabulated results I have also sorted on tercile sorts and the results remain qualitatively similar. All portfolios with exception of Altman z-score earn negative excess return.

Table IV reports the results of the 3-factor model for the decile sorting of each financial distress risk measure. Each year I sort stocks into ten portfolios based on each financial distress risk measure. I observe that abnormal return (as documented by intercept of the long-short (L-H) portfolio) is consistently positive and significant for all measures of financial distress risk except Altman z-score using decile sorts. Panel A displays decile sorts based on Altman z-score. Abnormal return on the long-short portfolio (L-H) is -0.0176 percent. Panel B displays decile sorts based on analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.1026 percent. Panel C demonstrates decile sorts based on change in analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0027 percent. Panel D exhibits decile sorts based on lag analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0818 percent. Panel E displays decile sorts based on o-score. Abnormal return on the long-short portfolio (L-H) is 0.1564 percent. Panel F displays decile sorts based on Tobin's q. Abnormal return on the long-short portfolio (L-H) is 0.0468. I observe that with exception of the long-short portfolio by decile sorting on Altman z-score, all other long-short portfolios on decile sorts of measures of financial distress risk earn positive and significant return. This confirms my results from table III showing that measures of financial distress risk add explanatory values in Small/Low stocks.

Table V reports the intercepts of the 3-factor model for the quintile sorts for each financial distress risk measure. Each month I sort stocks into five portfolios based on a financial distress risk measure. I can observe that abnormal return (as documented by intercept of the long-short (L-H) portfolio) is consistently positive and significant for all measures of financial distress risk except Altman z-score. Panel A displays quintile sorts based on Altman z-score. Abnormal return on the long-short portfolio (L-H) is 0.0018 percent.

Panel B displays quintile sorts based on analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0625 percent. Panel C demonstrates quintile sorts based on change in analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0005 percent. Panel D exhibits quintile sorts based on lag analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0828 percent. Panel E displays quintile sorts based on o-score. Abnormal return on the long-short portfolio (L-H) is 0.1067 percent. Panel F displays quintile sorts based on Tobin's q. Abnormal return on the long-short portfolio (L-H) is 0.0622. All long-short portfolios on quintile sorts of measures of financial distress risk earn positive and significant return. This reconfirms table III results demonstrating that measures of the financial distress risk indeed add explanatory values in Small/Low stocks.

If my conjecture is accurate and intercept in Small/Low portfolio in 3-factor model is indeed due to the financial distress risk, then controlling for the financial distress risk, the intercept should reduce in value. To test this, I add measures of financial distress risk as explanatory variables in 3-factor model. I hypothesize that I should see reduction in intercept signifying reduction in abnormal return. I present my results in tables VI and VII for decile and quintile sorts of financial distress risk respectively.

Table VI reports the intercepts of the 3-factor model for ten portfolios for decile sorts on each financial distress risk measure. Each year I sort stocks into ten portfolios based on a financial distress risk measure. I regress excess return on 3 factors namely market beta, size and value and a financial distress risk measure. I observe that abnormal return is consistently positive and significant for most measures of financial distress risk. Exceptions are Altman z-score and o-score using decile sorts as well as change in analyst coverage and o-score using quintile sorts. Abnormal return on the long-short portfolios is still positive and significant, albeit lower in economic value. Panel A displays decile sorts based on Altman z-score. Abnormal return on the long-short portfolio (L-H) is -0.0202 percent. Panel B displays decile sorts based on analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0853 percent. Panel C demonstrates decile sorts based on change in analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0132 percent. Panel D exhibits decile sorts based on lag analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0360 percent. Panel E displays decile sorts based on o-score. Abnormal return on the long-short portfolio (L-H) is -3.4496 percent. Panel F displays decile sorts based on Tobin's q. Abnormal return on the long-short portfolio (L-H) is 0.0207.

In table VII, I change the sorting from decile to quintile sorts. Table VII reports the intercepts of the 3-factor model for the five portfolios for each financial distress risk measure. I observe that the abnormal return is positive and significant for most measures of financial distress risk except change in analyst coverage and o-score. Panel A displays quintile sorts based on Altman z-score. Abnormal return on the

long-short portfolio (L-H) is 0.0022 percent. Panel B displays quintile sorts based on analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0434 percent. Panel C demonstrates quintile sorts based on change in analyst coverage. Abnormal return on the long-short portfolio (L-H) is -0.0072 percent. Panel D exhibits quintile sorts based on lag analyst coverage. Abnormal return on the long-short portfolio (L-H) is 0.0568 percent. Panel E displays quintile sorts based on o-score. Abnormal return on the long-short portfolio (L-H) is -1.3014 percent. Panel F displays quintile sorts based on Tobin's q. Abnormal return on the long-short portfolio (L-H) is 0.0958.

I can ascertain the decrease in alpha as I go from portfolios with low financial distress risk to portfolios with high financial distress risk. This supports the hypothesis that financial distress risk has explanatory power over and above size and BE/ME factors. The consistently positive return on the long-short portfolios highlights the fact that as financial distress risk decreases, the explanatory power of the 3-factor model increases significantly. This buttresses my earlier argument that, one reason Small/Low portfolio has significant intercept is due to the confounding effects of the financial distress risk. I highlight that in table VIII. In table VIII, I summarize results from previous tables. Panel A displays excess return on the long-short portfolio (L-H) after decile as well as quintiles sorting on measures of financial distress risk. As discussed earlier, all the long-short portfolios earn positive excess return, except portfolios sorted on Altman z-score which earns negative returns. The highest long-short portfolio excess return is of 0.1309 percent and 0.1029 percent by decile and quintile sorting on Tobin's q. This is followed by o-score, using which the long-short portfolio excess return is of 0.1219 percent and 0.0956 percent by decile and quintile sorting respectively. Panel B exhibits abnormal return on the long-short portfolio (L-H) after decile as well as quintiles sorting on measures of financial distress risk. I can observe that all the long-short portfolios earn positive excess return, except portfolio with decile sorts on Altman z-score which earn negative returns. The highest long-short portfolio excess return is of 0.1564 percent and 0.1067 percent by decile and quintile sorting on o-score. This is followed by lag analyst coverage, using which the long-short portfolio abnormal return is of 0.0818 percent and 0.0828 percent by decile and quintile sorting respectively. I also observe that abnormal return on quintile sorts of financial distress risk have lower economic value as compared to decile sorts of financial distress risk.

Section 4: Robustness

Table IX to table XIX exhibit various robustness tests to ensure the robustness of my results from previous section. Two commonly raised concerns in portfolio analysis are that non-comparable firms might be sorted in portfolios being compared and that the results might stem from extreme but unrelated parameters that might get highlighted. In robustness section I address both these questions. One concern with portfolio sorting is the non-comparability of firms. In my sample of Small/Low firms, all firms do not have the data for all of the measures of financial distress risk. Hence, one might point out that I capture different firms in different measures and that can make the results murky. To remedy this, I replicate all tables from table IV to table VII after dropping firms that have missing values on some of the financial distress risk measures.

This reduces my sample by 75%. While this is significant loss, this allows me to assess the comparable firms as all firms in the sample now have non-missing values on all measures of the financial distress risk. The results are reported in tables IX through table XII. I repeat my analysis from table IV for the sub-sample of observations with non-missing values in table IX. Table IX presents decile portfolios sorts for the measures of financial distress risk. Table X repeats the analysis from table V using for the sub-sample of observations with non-missing values. Table X displays quintile portfolios sorts for the measures of financial distress risk. In table XI, I regress size, value and market beta from 3-factor model in addition to measures of financial distress risk, on the decile sorted measures of financial distress risk for the sub-sample of observations with non-missing values. Table XII displays results for the sub-sample of observations with non-missing values for quintile sorts. I use the quintile sorting for measures of financial distress risk and regress size, value and market beta from 3-factor model in addition to measures of financial distress risk for the subsample of observations with non-missing values. My results remain robust to this sub-sample analysis. Table XIII summarizes the results. I acknowledge that the results become weaker mainly in decile sorts with significant drop in sample due to the restriction of non-missing values. However, they are much stronger in quintile sorts as compared to decile sorts. This alleviates the concern of non-comparability.

Another concern might be that the results are due to the extreme but unrelated values that get highlighted in my sample of Small/Low firms and hence winsorizing might not be sufficient if outliers are not true representatives of the sample. Hence, I run an outlier test to identify such outliers. After the identification I drop those outliers at the 1% level. Tables XIV to table XVIII report results for the sub-sample after dropping outliers at 1%. I repeat my analysis from table IV using this sub-sample after dropping the outliers at 1% in table XIV. Table XIV reports the results of the outlier tests. Table XV presents decile portfolios sorted on the measures of financial distress risk for this sub-sample after dropping outliers at 1%. Table XVI displays quintile portfolios sorted on the measures of financial distress risk for the sub-sample after

dropping outliers at 1%. In table XVII, I regress size, value and market beta from 3-factor model in addition to the measures of financial distress risk, on decile sorts for sub-sample after dropping outliers at 1%. Table XVIII displays results for the sub-sample after dropping outliers at 1%. I use quintile sorting of financial distress risk and regress size, value and market beta from 3-factor model in addition to measures of financial distress risk. My results remain robust to the sub-sample after dropping outliers at 1%. Table XIX summarizes the results. I can observe that after the outlier drop at 1%, decile sorting improves my results, demonstrating the robustness of my findings. This assuages the concern of results driven by outlier observations. These robustness tests confirm the strength of the results.

Section 5: Conclusion

In this paper, I explain one of the reasons for the statistically significant intercept of the 3-factor model for the portfolio of small growth stocks. I hypothesize that while size and BE/ME might explain financial distress risk in medium and big sized firms as well as firms with mid and high BE/ME ratio, size and BE/ME do not fully explain the financial distress risk in the portfolio of small firms with low BE/ME. Sorting on measures of the financial distress risk in the universe of Small/Low firms, I observe that the long-short portfolio (L-H) produces positive and significant return. I also observe that the intercept of the 3-factor model reduces significantly for portfolios with high financial distress risk illustrating that it was the mis-capturing of financial distress risk that might have caused the intercept to gain statistical significance, at least in part. The long-short portfolios on the decile and quintile sorting of the financial distress risk produce abnormal return ranging from -0.0293 percent to 0.1309 percent which is statistically significant at 1% confidence level. In economic significance, the strongest financial distress risk explanatory measures are Tobin's q, o-score and analyst coverage. All of the financial distress risk measures are statistically significant. The results are robust to sorting changes as well as measure changes. Irrespective of the changes in measure and sorting, the long-short portfolio (L-H) earns positive and significant abnormal return.

To my knowledge, this is the first paper that attempts to explain that the intercept, produced by Small/Low portfolio in 3-factor model, which is statistically different from zero, can be explained in part by the financial distress risk. measures of financial distress risk demonstrate explanatory power in the 3-factor model for the universe of Small/Low stocks. It is also the first paper to demonstrate the construction of profitable portfolios within Small/Low stocks with and without the measures for financial distress risk. In addition, I explore the universe of Small/Low stocks and illustrate that while they are always grouped together, they tend to be more heterogenous and hence warrant a closer look in academic research. My paper presents opportunities for long-short portfolios within the universe of Small/Low stocks with average abnormal return of 0.0771 percent and hence, would be of interest to the portfolio managers. It would be of interest to the hedge fund managers, who might wish to sift the stocks with high financial distress risk within Small/Low stocks.

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Tables

Table I – Descriptive statistics

This table presents the descriptive statistics of the key variables used in this study. Market β refers to the coefficient of regressing excess stock return (r_i-r_f) on excess market return (r_m-r_f); size is calculated as the natural logarithm of the market capitalization of the company as on December 31 of the previous calendar year (market capitalization is calculated as price*shares outstanding in '000); value refers to the book to market ratio of the company; R_f refers to the risk free rate, shown in % terms; the remaining rows refer to each of the seven distress risk measures, which are defined in Appendix A

Variable	Obs.	Mean	Std. Dev.	Min	Max
Market β	647,471	0.0765	0.1657	-0.3065	0.5418
Size	647,471	0.0125	0.0988	-0.3259	0.3097
Value	647,471	0.0456	0.1465	-0.2405	0.5989
R_f	647,471	0.4112	0.2672	0.0000	1.3500
Altman z-score	632,841	14.9260	232.0983	-177.8300	38,382.5600
Analyst coverage	251,995	7.8044	6.2938	1.0000	57.0000
Δ Coverage	220,631	1.1739	2.8539	-25.0000	27.0000
Lag coverage	220,631	7.2256	6.1064	1.0000	57.0000
O-score	196,921	0.5792	0.3258	0.0000	1.0000
Tobin's q	632,301	3.5638	17.7809	0.2781	2,650.1200

Table II – Table of correlations

This table presents the correlation matrix of the key variables used in this study, as well as the seven distress risk measures. Panel A presents the Pearson correlation matrix and Panel B presents the Spearman correlation matrix. Market β refers to the coefficient of regressing excess stock return (r_i-r_f) on excess market return (r_m-r_f); size is calculated as the natural logarithm of the market capitalization of the company as on December 31 of the previous calendar year; Value refers to the book to market ratio of the company; R_f refers to the risk free rate, shown in % terms; the remaining variables are the seven distress risk measures, which are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table II Panel A: Table of Pearson correlations

Variable	Market β	Size	Value	R_f	Altman z-score	Analyst coverage	Δ Coverage	Lag coverage	O-score	Tobin's q
Market β	1									
Size	0.1103***	1								
Value	-0.3710***	-0.124***	1							
R_f	-0.0635***	-0.0393***	0.1213***	1						
Altman z-score	-0.0041***	-0.0083***	-0.0022*	-0.0104***	1					
Analyst coverage	-0.0301***	0.0579***	-0.0705***	-0.1536***	-0.0091***	1				
Δ Coverage	-0.0194***	-0.0392***	-0.0118***	0.0827***	0.0017	0.3188***	1			
Lag coverage	-0.0223***	0.0588***	-0.0557***	-0.1577***	-0.0120***	0.8965***	-0.1341***	1		
O-score	-0.0034	-0.0496***	-0.0095***	0.0007	-0.0398***	-0.1813***	-0.1694***	-0.1232***	1	
Tobin's q	-0.0084***	-0.0091***	0.0002	-0.0366***	0.2570***	-0.0148***	-0.0022	-0.0159***	-0.0242***	1

Table II Panel B: Table of Spearman correlations

Variable	Market β	Size	Value	R_f	Altman z-score	Analyst coverage	Δ Coverage	Lag coverage	O-score	Tobin's q
Market β	1									
Size	-0.0459***	1								
Value	-0.1882***	-0.0701***	1							
R_f	-0.0471***	-0.1698***	0.0802***	1						
Altman z-score	-0.0182***	-0.0414***	0.0271***	-0.0078***	1					
Analyst coverage	-0.0371***	0.0756***	0.0697***	-0.1761***	0.0628***	1				
Δ Coverage	-0.0048**	-0.0538***	0.0064***	0.0866***	0.1434***	0.3402***	1			
Lag coverage	-0.0348***	0.0869***	0.0562***	-0.1862***	-0.0131***	0.8649***	-0.1045***	1		
O-score	0.0084***	-0.0799***	0.0115***	-0.0090***	-0.6365***	-0.1857***	-0.1471***	-0.1185***	1	
Tobin's q	-0.0025**	-0.0963***	0.0401***	-0.2578***	0.5390***	0.0774***	0.1504***	-0.0035	-0.1265***	1

Table III – Excess return on portfolios by sorting on measures of financial distress risk

This table presents the excess returns for each of my distress risk measures, as well as the low minus high (L-H) for each of the measures based on decile sorts and quintile sorts. Panel A presents results based on decile sorts of each of the 7 distress risk measures; panel B presents results based on quintile sorts of each distress risk measure. Each of the measures are defined in Appendix A.

Table III Panel A: Decile portfolios by sorting on measures of financial distress risk

Excess Return Decile Sorts	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10	(11) (L-H)
Altman z-score (1=H)	0.0605	0.0872	0.0790	0.0798	0.1029	0.0931	0.1065	0.0885	0.0735	0.0312	-0.0293
Analyst coverage (1=H)	0.0742	0.1087	0.1084	0.0880	0.1025	0.1177	0.1123	0.0936	0.1285	0.1354	0.0613
Δ Coverage (1=H)	0.1486	0.1004	0.0574	0.1646	0.0930	0.1718	0.0982	0.0995	0.0927	0.1733	0.0246
Lag coverage (1=H)	0.0933	0.1024	0.1438	0.1199	0.1182	0.1250	0.0781	0.1250	0.1492	0.1401	0.0468
O-score (1=L)	0.1270	0.1379	0.1662	0.1427	0.1717	0.1373	0.1207	0.1499	0.0683	0.0051	0.1219
Tobin's q (1=L)	0.1306	0.1094	0.1015	0.1175	0.0981	0.0791	0.0684	0.0678	0.0344	-0.0002	0.1308

Table III Panel B: Quintile portfolios by sorting on measures of financial distress risk

Excess Return Quintile Sorts	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5	(6) (L-H)
Altman z-score (1=H)	0.0738	0.0794	0.0980	0.0975	0.0524	-0.0214
Analyst coverage (1=H)	0.0890	0.0981	0.1106	0.1028	0.1319	0.0430
Δ Coverage (1=H)	0.1256	0.0993	0.1285	0.0989	0.1319	0.0064
Lag coverage (1=H)	0.0973	0.1308	0.1215	0.1014	0.1446	0.0473
O-score (1=L)	0.1324	0.1544	0.1545	0.1353	0.0368	0.0956
Tobin's q (1=L)	0.1201	0.1095	0.0886	0.0681	0.0171	0.1029

Table IV – Abnormal return as calculated by intercept of Fama-French 3-factor model for decile portfolios by sorting on measures of financial distress risk

This table presents the decile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model) for each of my distress risk measures. In each of the panels, Column 1 presents results for decile 1 and column 10 presents returns for Decile 10. Panel A presents results using Altman z-score as the measure of distress risk; Panel B presents results based on analyst coverage; Panel C presents results based on change in analyst coverage; Panel D presents results based on lagged analyst coverage as the measure of distress risk; panel E uses presents results based on lagged change in analyst coverage; panel F presents results based on Ohlson O-score and panel G presents results based on Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table IV Panel A: Decile portfolios by sorting on Altman z-score

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.7522***	1.0222***	1.0630***	1.1051***	1.0384***	1.0769***	1.1378***	0.9787***	1.0234***	0.9909***
	(0.0057)	(0.0033)	(0.0032)	(0.0029)	(0.0025)	(0.0031)	(0.0032)	(0.0033)	(0.0035)	(0.0037)
Size	1.5963***	1.8103***	1.4536***	1.4830***	1.5471***	1.4576***	1.4540***	1.4402***	1.4730***	1.0655***
	(0.0086)	(0.0050)	(0.0049)	(0.0043)	(0.0038)	(0.0047)	(0.0048)	(0.0049)	(0.0053)	(0.0057)
Value	-0.3120***	-0.0554***	-0.0130***	-0.0519***	-0.0892***	-0.1443***	-0.3530***	-0.5099***	-0.6036***	-0.6158***
	(0.0063)	(0.0036)	(0.0035)	(0.0031)	(0.0028)	(0.0034)	(0.0035)	(0.0036)	(0.0039)	(0.0041)
α	0.0002	-0.0059***	-0.0145***	-0.0151***	0.0164***	0.0097***	0.0326***	0.0309***	0.0156***	-0.0176***
	(0.0011)	(0.0006)	(0.0006)	(0.0005)	(0.0005)	(0.0006)	(0.0006)	(0.0006)	(0.0007)	(0.0007)
Observations	43506	42983	43004	42974	42933	42876	42886	42875	42897	42669
R-squared	0.6290	0.8669	0.8502	0.8870	0.9082	0.8711	0.8855	0.8731	0.8697	0.8284

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IV Panel B: Decile portfolios by sorting on analyst coverage

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.4479***	0.9424***	1.0280***	1.1594***	1.3448***	0.8654***	1.0651***	0.7309***	1.2802***	0.8876***
	(0.0427)	(0.0575)	(0.0531)	(0.0423)	(0.0448)	(0.0325)	(0.0334)	(0.0300)	(0.0355)	(0.0124)
Size	1.8930***	1.5872***	1.2938***	1.1363***	1.3705***	1.0241***	0.7356***	0.4767***	1.7012***	0.7791***
	(0.0787)	(0.1127)	(0.0980)	(0.0794)	(0.0794)	(0.0614)	(0.0595)	(0.0556)	(0.0671)	(0.0218)
Value	-0.2838***	-0.2320***	-0.3331***	-0.1812***	0.0546	-0.3354***	-0.2021***	-0.1069***	-0.5417***	-0.3598***
	(0.0461)	(0.0474)	(0.0484)	(0.0377)	(0.0479)	(0.0357)	(0.0356)	(0.0299)	(0.0378)	(0.0110)
α	-0.0199**	0.0560***	0.0234***	0.0170***	-0.0111	0.0373***	0.0427***	0.0302***	0.0629***	0.0827***
	(0.0077)	(0.0096)	(0.0082)	(0.0064)	(0.0085)	(0.0058)	(0.0058)	(0.0051)	(0.0060)	(0.0020)
Observations	364	280	262	286	280	385	436	595	955	3886
R-squared	0.8405	0.6418	0.6758	0.7690	0.8244	0.7595	0.7591	0.5542	0.7105	0.6881

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IV Panel C: Decile portfolios by sorting on change in analyst coverage

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.8866***	1.0273***	0.8956***	1.4316***	0.9069***	1.1230***	1.0056***	1.4231***	1.0492***	1.3234***
	(0.0225)	(0.0283)	(0.0553)	(0.0924)	(0.0528)	(0.0854)	(0.0477)	(0.0687)	(0.0511)	(0.0257)
Size	1.4002***	0.9331***	0.9164***	1.4106***	1.7306***	1.9489***	0.9119***	1.0670***	0.6374***	1.1773***
	(0.0382)	(0.0571)	(0.0956)	(0.1666)	(0.0959)	(0.1197)	(0.1125)	(0.1210)	(0.0888)	(0.0460)
Value	-0.2358***	0.1032***	-0.1850***	-0.3706***	-0.1874***	-1.2886***	-0.1165***	-0.3093***	-0.3404***	-0.8075***
	(0.0194)	(0.0261)	(0.0429)	(0.1100)	(0.0417)	(0.0799)	(0.0406)	(0.0598)	(0.0472)	(0.0224)
α	0.0726***	0.0006	0.0084	-0.0092	0.0626***	0.0460***	0.0433***	-0.0146	0.0268***	0.0753***
	(0.0035)	(0.0044)	(0.0088)	(0.0135)	(0.0082)	(0.0130)	(0.0075)	(0.0107)	(0.0078)	(0.0039)
Obs.	1776	216	139	94	152	138	172	256	373	1844
R-squared	0.6017	0.8649	0.7290	0.7642	0.8150	0.8326	0.7684	0.7040	0.6014	0.7290

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IV Panel D: Decile portfolios by sorting on lag analyst coverage

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.2406***	1.0748***	1.2965***	1.0759***	0.8342***	1.2405***	0.8675***	0.9638***	0.8699***	0.8120***
	(0.0423)	(0.0451)	(0.0583)	(0.0458)	(0.0441)	(0.0692)	(0.0373)	(0.0348)	(0.0323)	(0.0119)
Size	1.6339***	1.0466***	1.2454***	0.8651***	0.5520***	1.9225***	0.9049***	0.7921***	1.4067***	0.6689***
	(0.0759)	(0.0984)	(0.0937)	(0.0870)	(0.0799)	(0.1373)	(0.0655)	(0.0667)	(0.0591)	(0.0203)
Value	-0.5724***	-0.1654***	-0.1389***	-0.1993***	-0.2555***	-0.3948***	-0.2108***	-0.0726**	-0.3971***	-0.1968***
	(0.0389)	(0.0445)	(0.0451)	(0.0412)	(0.0395)	(0.0652)	(0.0353)	(0.0314)	(0.0300)	(0.0101)
α	0.0096	0.0152**	0.0637***	0.0312***	0.0400***	0.0309***	0.0104*	0.0350***	0.1095***	0.0818***
	(0.0067)	(0.0073)	(0.0082)	(0.0072)	(0.0071)	(0.0108)	(0.0059)	(0.0054)	(0.0050)	(0.0018)
Observations	313	256	194	254	267	315	383	549	925	3719
R-squared	0.8374	0.7083	0.7692	0.7383	0.6506	0.6190	0.6575	0.6215	0.5808	0.6139

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IV Panel E: Decile portfolios by sorting on o-score

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.9471***	0.9924***	0.9756***	1.2745***	1.1432***	1.1448***	0.6950***	1.3581***	0.6628***	0.9734***
	(0.0045)	(0.0048)	(0.0051)	(0.0059)	(0.0062)	(0.0078)	(0.0069)	(0.0072)	(0.0085)	(0.0081)
Size	1.2525***	1.1287***	1.5423***	1.7136***	1.4810***	1.8334***	1.6405***	1.8825***	1.4798***	1.7729***
	(0.0061)	(0.0064)	(0.0068)	(0.0079)	(0.0084)	(0.0104)	(0.0093)	(0.0097)	(0.0114)	(0.0110)
Value	-0.2095***	-0.6029***	-0.4288***	0.0832***	-0.3790***	-0.1648***	-0.6974***	0.2152***	-0.5582***	-0.0524***
	(0.0081)	(0.0087)	(0.0094)	(0.0108)	(0.0115)	(0.0140)	(0.0127)	(0.0133)	(0.0155)	(0.0150)
α	0.0377***	0.0768***	0.0831***	-0.0038***	0.0758***	0.0095***	0.0752***	-0.0227***	0.0186***	-0.1187***
	(0.0011)	(0.0012)	(0.0012)	(0.0014)	(0.0015)	(0.0019)	(0.0017)	(0.0018)	(0.0021)	(0.0020)
Observations	16645	16443	16404	16450	16403	16429	16464	16436	16445	16354
R-squared	0.9261	0.9336	0.9332	0.9210	0.9107	0.8768	0.8769	0.8951	0.7954	0.8383

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IV Panel F: Decile portfolios by sorting on Tobin's q

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.2256***	1.0689***	1.2437***	1.0440***	0.9031***	0.9059***	0.9282***	1.0167***	0.9740***	0.9038***
	(0.0030)	(0.0030)	(0.0035)	(0.0031)	(0.0037)	(0.0029)	(0.0036)	(0.0037)	(0.0036)	(0.0045)
Size	1.5569***	1.5194***	1.4990***	1.4797***	1.7027***	1.3467***	1.4258***	1.4803***	1.4035***	1.3606***
	(0.0045)	(0.0045)	(0.0052)	(0.0046)	(0.0055)	(0.0044)	(0.0055)	(0.0055)	(0.0055)	(0.0068)
Value	0.4269***	0.1634***	0.0878***	-0.0905***	-0.4687***	-0.3801***	-0.5049***	-0.5942***	-0.6170***	-0.7265***
	(0.0033)	(0.0032)	(0.0038)	(0.0034)	(0.0040)	(0.0032)	(0.0040)	(0.0040)	(0.0040)	(0.0049)
α	0.0010*	0.0098***	-0.0072***	0.0339***	0.0443***	0.0179***	0.0098***	0.0133***	-0.0230***	-0.0468***
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0007)	(0.0005)	(0.0007)	(0.0007)	(0.0007)	(0.0008)
Observations	43236	42929	42839	42943	42850	42876	42876	42850	42873	42635
R-squared	0.8778	0.8683	0.8540	0.8681	0.8504	0.8730	0.8407	0.8596	0.8540	0.7926

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table V – Abnormal return as calculated by intercept of Fama-French 3-factor model for quintile portfolios by sorting on measures of financial distress risk

This table presents the quintile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model) for each of my distress risk measures. In each of the panels, Column 1 presents results for quintile 1 and column 5 presents returns for quintile 5. Panel A presents results using Altman z-score as the measure of distress risk; Panel B presents results based on analyst coverage; Panel C presents results based on change in analyst coverage; Panel D presents results based on lagged analyst coverage as the measure of distress risk; panel E uses presents results based on lagged change in analyst coverage; panel F presents results based on Ohlson O-score and panel G presents results based on Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table V Panel A: Quintile portfolios by sorting on Altman z-score

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8870***	1.0839***	1.0576***	1.0581***	1.0072***
	(0.0028)	(0.0019)	(0.0018)	(0.0021)	(0.0024)
Size	1.7038***	1.4680***	1.5024***	1.4472***	1.2702***
	(0.0043)	(0.0029)	(0.0028)	(0.0032)	(0.0036)
Value	-0.1839***	-0.0327***	-0.1168***	-0.4315***	-0.6098***
	(0.0031)	(0.0021)	(0.0020)	(0.0023)	(0.0026)
α	-0.0028***	-0.0147***	0.0130***	0.0317***	-0.0010**
	(0.0005)	(0.0004)	(0.0003)	(0.0004)	(0.0004)
Observations	86489	85978	85809	85761	85566
R-squared	0.8870***	1.0839***	1.0576***	1.0581***	1.0072***

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table V Panel B: Quintile portfolios by sorting on analyst coverage

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.2471***	1.0967***	1.0637***	0.8259***	1.0308***
	(0.0320)	(0.0293)	(0.0227)	(0.0172)	(0.0112)
Size	1.8254***	1.2276***	1.1847***	0.4943***	1.1754***
	(0.0603)	(0.0544)	(0.0417)	(0.0313)	(0.0199)
Value	-0.2388***	-0.2537***	-0.1873***	-0.1579***	-0.4261***
	(0.0304)	(0.0264)	(0.0246)	(0.0177)	(0.0103)
α	0.0130**	0.0220***	0.0204***	0.0382***	0.0755***
	(0.0056)	(0.0045)	(0.0042)	(0.0029)	(0.0018)
Observations	644	548	665	1031	4841
R-squared	0.8022	0.7741	0.8389	0.7409	0.7544

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table V Panel C: Quintile portfolios by sorting on change in analyst coverage

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.9463***	1.0418***	0.9271***	1.2382***	1.1593***
	(0.0174)	(0.0453)	(0.0511)	(0.0373)	(0.0176)
Size	1.4225***	0.9423***	1.7261***	0.9357***	0.8140***
	(0.0299)	(0.0796)	(0.0845)	(0.0720)	(0.0313)
Value	-0.1801***	-0.2152***	-0.4599***	-0.2289***	-0.5220***
	(0.0150)	(0.0388)	(0.0436)	(0.0324)	(0.0155)
α	0.0507***	0.0126*	0.0690***	0.0133**	0.0512***
	(0.0027)	(0.0070)	(0.0079)	(0.0058)	(0.0027)
Observations	1992	233	290	428	2217
R-squared	0.6974	0.7488	0.7580	0.7728	0.7513

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table V Panel D: Quintile portfolios by sorting on lag analyst coverage

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.1891***	1.1463***	1.0440***	0.9237***	0.8296***
	(0.0292)	(0.0320)	(0.0337)	(0.0233)	(0.0122)
Size	1.4866***	1.0304***	1.2565***	0.8870***	1.0804***
	(0.0559)	(0.0565)	(0.0644)	(0.0427)	(0.0210)
Value	-0.4299***	-0.1677***	-0.3416***	-0.1402***	-0.2909***
	(0.0274)	(0.0270)	(0.0312)	(0.0214)	(0.0105)
α	0.0141***	0.0454***	0.0320***	0.0234***	0.0969***
	(0.0047)	(0.0048)	(0.0054)	(0.0036)	(0.0018)
Observations	569	448	582	932	4644
R-squared	0.8113	0.7874	0.7069	0.6776	0.6088

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table V Panel E: Quintile portfolios by sorting on o-score

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.9708***	1.1256***	1.1445***	1.0272***	0.8174***
	(0.0030)	(0.0033)	(0.0043)	(0.0040)	(0.0053)
Size	1.1918***	1.6286***	1.6589***	1.7619***	1.6251***
	(0.0040)	(0.0044)	(0.0059)	(0.0054)	(0.0071)
Value	-0.4019***	-0.1714***	-0.2691***	-0.2402***	-0.3060***
	(0.0055)	(0.0060)	(0.0079)	(0.0074)	(0.0097)
_cons	0.0568***	0.0395***	0.0423***	0.0262***	-0.0499***
	(0.0007)	(0.0008)	(0.0011)	(0.0010)	(0.0013)
Observations	33088	32854	32832	32900	32799
R-squared	0.9405	0.9464	0.9159	0.9221	0.8475

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table V Panel F: Quintile portfolios by sorting on Tobin's q

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.1476***	1.1440***	0.9047***	0.9726***	0.9390***
	(0.0019)	(0.0020)	(0.0021)	(0.0023)	(0.0026)
Size	1.5377***	1.4894***	1.5247***	1.4533***	1.3819***
	(0.0029)	(0.0031)	(0.0032)	(0.0035)	(0.0040)
Value	0.2953***	-0.0011	-0.4244***	-0.5496***	-0.6718***
	(0.0021)	(0.0023)	(0.0023)	(0.0026)	(0.0029)
α	0.0054***	0.0133***	0.0311***	0.0116***	-0.0349***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0005)
Observations	86165	85782	85726	85726	85508
R-squared	0.8942	0.8866	0.8804	0.8745	0.8475

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VI – Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk for Decile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk.

This table presents the decile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for decile 1 and column 10 presents returns for Decile 10. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table VI Panel A: Decile portfolios by sorting on Altman z-score with distress risk measure

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.7501***	1.0168***	1.0586***	1.1055***	1.0371***	1.0732***	1.1250***	0.9676***	1.0053***	0.9907***
	(0.0057)	(0.0033)	(0.0032)	(0.0028)	(0.0025)	(0.0030)	(0.0029)	(0.0031)	(0.0033)	(0.0037)
Size	1.5963***	1.8133***	1.4621***	1.4767***	1.5331***	1.4279***	1.4154***	1.4162***	1.4438***	1.0649***
	(0.0086)	(0.0049)	(0.0049)	(0.0043)	(0.0038)	(0.0046)	(0.0045)	(0.0048)	(0.0050)	(0.0057)
Value	-0.3157***	-0.0717***	-0.0304***	-0.0395***	-0.0711***	-0.1108***	-0.2976***	-0.4668***	-0.5524***	-0.6160***
	(0.0063)	(0.0036)	(0.0036)	(0.0032)	(0.0028)	(0.0034)	(0.0033)	(0.0035)	(0.0037)	(0.0041)
Altman z-score	0.0010***	0.0158***	0.0196***	-0.0135***	-0.0163***	-0.0201***	-0.0211***	-0.0093***	-0.0064***	-0.0000***
	(0.0001)	(0.0005)	(0.0007)	(0.0007)	(0.0005)	(0.0004)	(0.0003)	(0.0002)	(0.0001)	(0.0000)
α	0.0029**	-0.0286***	-0.0654***	0.0332***	0.0911***	0.1247***	0.1847***	0.1213***	0.1102***	-0.0173***
	(0.0011)	(0.0010)	(0.0020)	(0.0027)	(0.0025)	(0.0025)	(0.0019)	(0.0016)	(0.0014)	(0.0007)
Observations	43506	42983	43004	42974	42933	42876	42886	42875	42897	42669
R-squared	0.6296	0.8698	0.8526	0.8879	0.9102	0.8774	0.9014	0.8826	0.8847	0.8285

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VI Panel B: Decile portfolios by sorting on analyst coverage with distress risk measure

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.4413***	0.9162***	1.0352***	1.1501***	1.2695***	0.9275***	1.0446***	0.7713***	1.1753***	0.8873***
	(0.0434)	(0.0604)	(0.0550)	(0.0434)	(0.0508)	(0.0372)	(0.0363)	(0.0328)	(0.0367)	(0.0125)
Size	1.9009***	1.6432***	1.2772***	1.1600***	1.3821***	1.0100***	0.7403***	0.4833***	1.6622***	0.7790***
	(0.0792)	(0.1197)	(0.1034)	(0.0834)	(0.0784)	(0.0607)	(0.0595)	(0.0553)	(0.0651)	(0.0218)
Value	-0.2910***	-0.2566***	-0.3279***	-0.1920***	0.0075	-0.2986***	-0.2194***	-0.0678**	-0.6657***	-0.3602***
	(0.0468)	(0.0506)	(0.0495)	(0.0394)	(0.0497)	(0.0370)	(0.0376)	(0.0326)	(0.0396)	(0.0111)
Analyst cover.	-0.0138	-0.0197	0.0045	-0.0051	-0.0169***	0.0123***	-0.0048	0.0074***	-0.0176***	-0.0000
	(0.0155)	(0.0143)	(0.0087)	(0.0055)	(0.0057)	(0.0037)	(0.0033)	(0.0025)	(0.0022)	(0.0002)
α	-0.0015	0.1097***	0.0057	0.0431	0.0944***	-0.0568*	0.0871***	-0.0549*	0.3230***	0.0838***
	(0.0220)	(0.0402)	(0.0354)	(0.0286)	(0.0362)	(0.0291)	(0.0312)	(0.0296)	(0.0325)	(0.0059)
Observations	364	280	262	286	280	385	436	595	955	3886
R-squared	0.8409	0.6443	0.6762	0.7698	0.8299	0.7662	0.7603	0.5606	0.7293	0.6881

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VI Panel C: Decile portfolios by sorting on change in analyst coverage with distress risk measure

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.8869***	1.0163***	0.9442***	1.3936***	0.9093***	1.1548***	1.0042***	1.3717***	1.0361***	1.3129***
	(0.0225)	(0.0291)	(0.0399)	(0.0931)	(0.0532)	(0.0809)	(0.0479)	(0.0668)	(0.0523)	(0.0263)
Size	1.3986***	0.9451***	0.8542***	1.2763***	1.7242***	2.0899***	0.9206***	0.9430***	0.6155***	1.1626***
	(0.0382)	(0.0575)	(0.0688)	(0.1779)	(0.0973)	(0.1178)	(0.1150)	(0.1191)	(0.0907)	(0.0467)
Value	-0.2355***	0.1057***	-0.1706***	-0.3434***	-0.1824***	-1.3185***	-0.1170***	-0.2931***	-0.3443***	-0.8103***
	(0.0194)	(0.0260)	(0.0308)	(0.1092)	(0.0433)	(0.0757)	(0.0407)	(0.0576)	(0.0473)	(0.0224)
Δ Coverage	0.0011	0.0107	-0.1652***	-0.0440*	-0.0105	0.0847***	0.0037	-0.0575***	-0.0099	-0.0016*
	(0.0008)	(0.0071)	(0.0146)	(0.0225)	(0.0237)	(0.0202)	(0.0096)	(0.0122)	(0.0085)	(0.0009)
α	0.0786***	0.0082	0.0095	0.0270	0.0741***	-0.1227***	0.0346	0.1781***	0.0733*	0.0918***
	(0.0054)	(0.0066)	(0.0063)	(0.0228)	(0.0272)	(0.0420)	(0.0239)	(0.0422)	(0.0404)	(0.0098)
Observations	1776	216	139	94	152	138	172	256	373	1844
R-squared	0.6021	0.8663	0.8617	0.7739	0.8153	0.8522	0.7686	0.7280	0.6028	0.7295

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VI Panel D: Decile portfolios by sorting on lag analyst coverage with distress risk measure

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.2237***	1.0683***	1.2951***	1.0240***	0.8269***	1.1469***	0.9061***	0.9829***	0.8550***	0.8088***
	(0.0426)	(0.0458)	(0.0534)	(0.0475)	(0.0459)	(0.0634)	(0.0383)	(0.0348)	(0.0327)	(0.0120)
Size	1.6812***	1.0922***	1.3871***	0.9252***	0.5646***	2.2726***	0.8598***	0.7251***	1.4074***	0.6679***
	(0.0780)	(0.1124)	(0.0890)	(0.0872)	(0.0829)	(0.1306)	(0.0657)	(0.0683)	(0.0589)	(0.0203)
Value	-0.5972***	-0.1847***	-0.1881***	-0.2562***	-0.2604***	-0.5868***	-0.1610***	-0.0319	-0.4207***	-0.1986***
	(0.0400)	(0.0501)	(0.0422)	(0.0438)	(0.0404)	(0.0630)	(0.0373)	(0.0329)	(0.0311)	(0.0101)
Lag coverage	-0.0384**	-0.0105	-0.0595***	-0.0220***	-0.0033	-0.0591***	0.0135***	0.0100***	-0.0050***	-0.0004**
	(0.0164)	(0.0125)	(0.0098)	(0.0066)	(0.0057)	(0.0070)	(0.0037)	(0.0027)	(0.0019)	(0.0002)
α	0.0569***	0.0418	0.2759***	0.1289***	0.0581*	0.4332***	-0.0998***	-0.0678**	0.1780***	0.0929***
	(0.0213)	(0.0324)	(0.0357)	(0.0302)	(0.0321)	(0.0484)	(0.0308)	(0.0282)	(0.0257)	(0.0050)
Observations	313	256	194	254	267	315	383	549	925	3719
R-squared	0.8403	0.7091	0.8069	0.7495	0.6510	0.6908	0.6690	0.6309	0.5841	0.6145

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VI Panel E: Decile portfolios by sorting on o-score with distress risk measure

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.9447***	0.9795***	0.9526***	1.2437***	1.0773***	1.1229***	0.6968***	1.3736***	0.7436***	1.0809***
	(0.0045)	(0.0049)	(0.0052)	(0.0060)	(0.0057)	(0.0076)	(0.0065)	(0.0069)	(0.0075)	(0.0074)
Size	1.2507***	1.1209***	1.5149***	1.6561***	1.3009***	1.7077***	1.4364***	1.6799***	1.1437***	1.5979***
	(0.0061)	(0.0064)	(0.0070)	(0.0082)	(0.0081)	(0.0110)	(0.0097)	(0.0103)	(0.0110)	(0.0102)
Value	-0.2137***	-0.6241***	-0.4736***	0.0027	-0.5912***	-0.2793***	-0.8429***	0.0915***	-0.6775***	-0.0253*
	(0.0081)	(0.0089)	(0.0097)	(0.0112)	(0.0109)	(0.0142)	(0.0122)	(0.0129)	(0.0137)	(0.0134)
O-score	-0.1461***	-0.1540***	-0.1788***	-0.2330***	-0.5947***	-0.3896***	-0.6296***	-0.7682***	-1.9993***	-3.6728***
	(0.0199)	(0.0130)	(0.0108)	(0.0103)	(0.0096)	(0.0133)	(0.0129)	(0.0175)	(0.0280)	(0.0567)
α	0.0443***	0.1037***	0.1418***	0.1081***	0.4439***	0.2948***	0.5923***	0.6650***	1.9091***	3.4939***
	(0.0014)	(0.0025)	(0.0038)	(0.0051)	(0.0061)	(0.0099)	(0.0107)	(0.0158)	(0.0265)	(0.0558)
Observations	16645	16443	16404	16450	16403	16429	16464	16436	16445	16354
R-squared	0.9263	0.9342	0.9343	0.9234	0.9277	0.8829	0.8925	0.9060	0.8439	0.8713

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VI Panel F: Decile portfolios by sorting on Tobin's q with distress risk measure

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.2275***	1.0404***	1.2096***	1.0390***	0.8899***	0.8808***	0.8996***	0.9979***	0.9479***	0.9030***
	(0.0030)	(0.0028)	(0.0033)	(0.0031)	(0.0036)	(0.0027)	(0.0034)	(0.0036)	(0.0035)	(0.0045)
Size	1.5653***	1.4422***	1.4197***	1.4677***	1.6720***	1.2885***	1.3597***	1.4434***	1.3642***	1.3603***
	(0.0046)	(0.0042)	(0.0050)	(0.0047)	(0.0056)	(0.0042)	(0.0052)	(0.0054)	(0.0053)	(0.0068)
Value	0.4315***	0.1340***	0.0623***	-0.0932***	-0.4716***	-0.3721***	-0.4818***	-0.5689***	-0.5685***	-0.7265***
	(0.0033)	(0.0030)	(0.0036)	(0.0034)	(0.0040)	(0.0030)	(0.0037)	(0.0039)	(0.0039)	(0.0049)
Tobin's q	0.0215***	-0.1368***	-0.1112***	-0.0134***	-0.0304***	-0.0519***	-0.0509***	-0.0259***	-0.0243***	-0.0001***
	(0.0026)	(0.0016)	(0.0014)	(0.0010)	(0.0010)	(0.0006)	(0.0006)	(0.0005)	(0.0004)	(0.0000)
α	-0.0244***	0.2146***	0.1862***	0.0604***	0.1115***	0.1469***	0.1568***	0.1036***	0.0886***	-0.0451***
	(0.0031)	(0.0025)	(0.0025)	(0.0021)	(0.0023)	(0.0016)	(0.0020)	(0.0020)	(0.0018)	(0.0009)
Observations	43236	42929	42839	42943	42850	42876	42876	42850	42873	42635
R-squared	0.8780	0.8869	0.8733	0.8686	0.8536	0.8904	0.8611	0.8670	0.8675	0.7929

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VII – Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk quintile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk.

This table presents the quintile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for quintile 1 and column 5 presents returns for quintile 5. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table VII Panel A: Quintile portfolios by sorting on Altman z-score with distress risk measure

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8857***	1.0835***	1.0557***	1.0491***	1.0071***
	(0.0028)	(0.0019)	(0.0018)	(0.0020)	(0.0024)
Size	1.7040***	1.4694***	1.4856***	1.4248***	1.2699***
	(0.0042)	(0.0029)	(0.0028)	(0.0031)	(0.0036)
Value	-0.1865***	-0.0356***	-0.0968***	-0.3948***	-0.6099***
	(0.0031)	(0.0022)	(0.0020)	(0.0023)	(0.0026)
Altman z-score	0.0011***	0.0032***	-0.0143***	-0.0101***	-0.0000***
	(0.0001)	(0.0004)	(0.0003)	(0.0001)	(0.0000)
α	-0.0022***	-0.0247***	0.0870***	0.1172***	-0.0008*
	(0.0005)	(0.0012)	(0.0014)	(0.0010)	(0.0004)
Observations	86489	85978	85809	85761	85566
R-squared	0.7988	0.8913	0.9075	0.9023	0.8701

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VII Panel B: Quintile portfolios by sorting on analyst coverage with distress risk measure

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.2302***	1.0979***	1.0785***	0.8520***	1.0274***
	(0.0325)	(0.0301)	(0.0255)	(0.0184)	(0.0112)
Size	1.8429***	1.2252***	1.1836***	0.4974***	1.1744***
	(0.0604)	(0.0561)	(0.0417)	(0.0311)	(0.0199)
Value	-0.2480***	-0.2527***	-0.1777***	-0.1344***	-0.4298***
	(0.0304)	(0.0270)	(0.0257)	(0.0185)	(0.0104)
Analyst coverage	-0.0159***	0.0007	0.0031	0.0051***	-0.0005***
	(0.0058)	(0.0036)	(0.0025)	(0.0013)	(0.0002)
α	0.0439***	0.0190	-0.0015	-0.0160	0.0873***
	(0.0126)	(0.0171)	(0.0178)	(0.0142)	(0.0047)
Observations	644	548	665	1031	4841
R-squared	0.8045	0.7741	0.8393	0.7447	0.7547

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VII Panel C: Quintile portfolios by sorting on change in analyst coverage with distress risk measure

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.9466***	1.0615***	0.9287***	1.2357***	1.1619***
	(0.0174)	(0.0452)	(0.0521)	(0.0366)	(0.0178)
Size	1.4221***	0.9148***	1.7249***	0.9007***	0.8176***
	(0.0299)	(0.0790)	(0.0850)	(0.0712)	(0.0316)
Value	-0.1800***	-0.2174***	-0.4595***	-0.2261***	-0.5216***
	(0.0150)	(0.0382)	(0.0437)	(0.0318)	(0.0155)
Δ Coverage	0.0007	-0.0315***	-0.0021	-0.0245***	0.0005
	(0.0006)	(0.0112)	(0.0121)	(0.0059)	(0.0006)
α	0.0539***	0.0215***	0.0720***	0.0853***	0.0467***
	(0.0039)	(0.0076)	(0.0194)	(0.0183)	(0.0059)
Observations	1992	233	290	428	2217
R-squared	0.6976	0.7572	0.7580	0.7817	0.7514

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VII Panel D: Quintile portfolios by sorting on lag analyst coverage with distress risk measure

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.1836***	1.1208***	0.9915***	0.9438***	0.8294***
	(0.0291)	(0.0320)	(0.0334)	(0.0231)	(0.0123)
Size	1.5095***	1.0783***	1.3568***	0.8451***	1.0804***
	(0.0562)	(0.0566)	(0.0638)	(0.0423)	(0.0210)
Value	-0.4414***	-0.2011***	-0.3989***	-0.1034***	-0.2910***
	(0.0275)	(0.0277)	(0.0312)	(0.0218)	(0.0105)
Lag coverage	-0.0150***	-0.0188***	-0.0224***	0.0102***	-0.0000
	(0.0054)	(0.0045)	(0.0033)	(0.0016)	(0.0002)
α	0.0408***	0.1217***	0.1717***	-0.0722***	0.0976***
	(0.0107)	(0.0189)	(0.0215)	(0.0157)	(0.0045)
Observations	569	448	582	932	4644
R-squared	0.8138	0.7954	0.7280	0.6907	0.6088

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VII Panel E: Quintile portfolios by sorting on o-score with distress risk measure

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.9685***	1.1117***	1.1188***	1.0329***	0.8686***
	(0.0030)	(0.0033)	(0.0042)	(0.0038)	(0.0048)
Size	1.1903***	1.6073***	1.5629***	1.6231***	1.4674***
	(0.0040)	(0.0045)	(0.0059)	(0.0055)	(0.0068)
Value	-0.4057***	-0.2032***	-0.3690***	-0.3324***	-0.3452***
	(0.0055)	(0.0061)	(0.0078)	(0.0071)	(0.0088)
O-score	-0.0471***	-0.1059***	-0.3062***	-0.4719***	-1.4653***
	(0.0058)	(0.0045)	(0.0058)	(0.0071)	(0.0180)
α	0.0620***	0.0823***	0.2492***	0.4312***	1.3634***
	(0.0010)	(0.0020)	(0.0040)	(0.0062)	(0.0174)
Observations	33088	32854	32832	32900	32799
R-squared	0.9406	0.9473	0.9225	0.9313	0.8731

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VII Panel F: Quintile portfolios by sorting on Tobin's q with distress risk measure

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.1414***	1.1260***	0.8863***	0.9517***	0.9385***
	(0.0019)	(0.0020)	(0.0021)	(0.0022)	(0.0026)
Size	1.5174***	1.4470***	1.4821***	1.4092***	1.3816***
	(0.0029)	(0.0031)	(0.0032)	(0.0034)	(0.0040)
Value	0.2862***	-0.0126***	-0.4232***	-0.5264***	-0.6717***
	(0.0021)	(0.0022)	(0.0023)	(0.0024)	(0.0029)
Tobin's q	-0.0423***	-0.0529***	-0.0399***	-0.0324***	-0.0001***
	(0.0011)	(0.0007)	(0.0005)	(0.0003)	(0.0000)
α	0.0621***	0.1115***	0.1248***	0.1147***	-0.0337***
	(0.0015)	(0.0014)	(0.0012)	(0.0012)	(0.0005)
Observations	86165	85782	85726	85726	85508
R-squared	0.8961	0.8936	0.8886	0.8860	0.8476

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table VIII – Summary of excess return on decile/quintile portfolios by sorting on measures of financial distress risk.

Table VIII Panel A: Summary of excess return on decile/quintile portfolios by sorting on measures of financial distress risk.

This table presents a summary of abnormal return differences, i.e. difference between the two extreme rank sorts of each distress risk measure, sorted by deciles as well as quintiles, using the Fama-French 3-factor model. L-H stands for low minus high and captures the difference in abnormal returns for the highest rank sort and the lowest rank sort of each distress risk measure, for decile sorts and quintile sorts. All differences are significant at the 1% level.

Long-short Portfolios after sorting	(1) D1	(2) D10	(3) (L-H)	(4) Q1	(5) Q5	(6) (L-H)
Altman z-score (1=H)	0.0605	0.0312	-0.0293	0.0738	0.0524	-0.0214
Analyst coverage (1=H)	0.0742	0.1354	0.0613	0.0890	0.1319	0.0430
Δ Coverage (1=H)	0.1486	0.1733	0.0246	0.1256	0.1319	0.0064
Lag Coverage (1=H)	0.0933	0.1401	0.0468	0.0973	0.1446	0.0473
O-score (1=L)	0.1270	0.0051	0.1219	0.1324	0.0368	0.0956
Tobin's q (1=L)	0.1306	-0.0002	0.1309	0.1201	0.0171	0.1029

Table VIII Panel B: Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile and quintile portfolios by sorting on measures of financial distress risk.

This table presents a summary of abnormal return differences, i.e. difference between the two extreme rank sorts of each distress risk measure, sorted by deciles as well as quintiles, using the Fama-French 3-factor model supplemented by the respective distress risk measure. L-H stands for low minus high and captures the difference in abnormal returns for the highest rank sort and the lowest rank sort of each distress risk measure, for decile sorts and quintile sorts. All differences are significant at the 1% level.

Long-short Portfolios with measure	(1) D1	(2) D10	(3) (L-H)	(4) Q1	(5) Q5	(6) (L-H)
Altman z-score (1=H)	0.0000	-0.0176	-0.0176	-0.0028	-0.0010	0.0018
Analyst coverage (1=H)	-0.0199	0.0827	0.1026	0.0130	0.0755	0.0625
Δ Coverage (1=H)	0.0726	0.0753	0.0027	0.0507	0.0512	0.0005
Lag Coverage (1=H)	0.0000	0.0818	0.0818	0.0141	0.0969	0.0828
O-score (1=L)	0.0377	-0.1187	0.1564	0.0568	-0.0499	0.1067
Tobin's q (1=L)	0.0000	-0.0468	0.0468	0.0054	-0.0349	0.0622

Table IX – Abnormal return as calculated by intercept of Fama-French 3-factor model for decile portfolios by sorting on measures of financial distress risk for observations with non-missing values for all measures.

This table presents the decile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model) for each of my distress risk measures. In each of the panels, Column 1 presents results for decile 1 and column 10 presents returns for Decile 10. Panel A presents results using Altman z-score as the measure of distress risk; Panel B presents results based on analyst coverage; Panel C presents results based on change in analyst coverage; Panel D presents results based on lagged analyst coverage as the measure of distress risk; panel E uses presents results based on lagged change in analyst coverage; panel F presents results based on Ohlson O-score and panel G presents results based on Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table IX Panel A: Decile portfolios by sorting on Altman z-score for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.8185***	1.0139***	1.3048***	0.7278***	0.8454***	1.3094***	1.2955***	0.8990***	0.9295***	0.9639***
	(0.0096)	(0.0290)	(0.0088)	(0.0073)	(0.0044)	(0.0022)	(0.0078)	(0.0113)	(0.0062)	(0.0197)
Size	-0.8512***	0.4166***	0.4754***	0.3110***	0.7511***	0.7428***	0.7903***	0.4294***	0.4700***	0.5958***
	(0.0204)	(0.0375)	(0.0161)	(0.0139)	(0.0079)	(0.0039)	(0.0139)	(0.0178)	(0.0105)	(0.0351)
Value	-0.1614***	0.6624***	-0.4866***	-0.7323***	-0.6104***	-0.4204***	-0.2905***	-0.7958***	-1.0017***	-1.1988***
	(0.0154)	(0.0680)	(0.0194)	(0.0145)	(0.0092)	(0.0044)	(0.0163)	(0.0259)	(0.0131)	(0.0347)
α	-0.2108***	-0.1368***	-0.0902***	-0.0557***	-0.0370***	-0.0396***	-0.0054***	-0.0256***	0.0035***	-0.0302***
	(0.0021)	(0.0053)	(0.0017)	(0.0013)	(0.0008)	(0.0004)	(0.0014)	(0.0021)	(0.0012)	(0.0036)
Observations	197	639	886	1168	1446	1626	1547	1656	1302	853
R-squared	0.9835	0.8025	0.9864	0.9615	0.985	0.9976	0.9727	0.9489	0.9849	0.8981

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IX Panel B: Decile portfolios by sorting on analyst coverage for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.1894***	1.1410***	0.6227***	0.8871***	1.3765***	0.9881***	0.3559***	0.5945***	0.7906***	0.6487***
	(0.0704)	(0.0939)	(0.0068)	(0.0631)	(0.0991)	(0.0492)	(0.0787)	(0.0221)	(0.0130)	(0.0134)
Size	1.7227***	0.6732**	0.3673***	0.0779	1.6348***	0.6794***	0.1774	-0.4110***	-0.3786***	-0.5373***
	(0.0857)	(0.2585)	(0.0162)	(0.1801)	(0.2734)	(0.1114)	(0.1896)	(0.0598)	(0.0331)	(0.0273)
Value	-0.4661***	-0.1549	-0.5191***	-0.4102***	-0.6859***	-0.3188***	-1.1277***	-0.4153***	-1.0242***	-0.7285***
	(0.0628)	(0.1390)	(0.0108)	(0.0983)	(0.1562)	(0.0707)	(0.1267)	(0.0324)	(0.0208)	(0.0247)
α	-0.0105	-0.0078	-0.0497***	-0.0153	0.0448**	0.0061	0.1112***	0.0108**	0.0633***	0.0378***
	(0.0111)	(0.0202)	(0.0013)	(0.0123)	(0.0216)	(0.0095)	(0.0149)	(0.0046)	(0.0027)	(0.0025)
Observations	146	69	49	71	61	108	107	188	230	792
R-squared	0.8222	0.6992	0.9970	0.7697	0.7983	0.8116	0.6122	0.8778	0.9779	0.9135

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IX Panel C: Decile portfolios by sorting on change in analyst coverage for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.7005***	0.9908***	1.3508***	0.9129	1.1207***	0.8624***	0.8655***	0.9889***	0.5493***	0.3814***
	(0.0087)	(0.0349)	(0.0356)	(0.0000)	(0.0086)	(0.0203)	(0.0009)	(0.0589)	(0.0340)	(0.0435)
Size	0.0005	1.3867***	0.8365***		1.6368***	0.8199***	0.6243***	0.1321	-1.1576***	-1.2578***
	(0.0209)	(0.0607)	(0.0311)		(0.0208)	(0.0987)	(0.0026)	(0.1158)	(0.0812)	(0.0871)
Value	-0.4599***	-0.1952***	-0.6020***		-0.9091***	-0.6726***	-1.0500***	-0.7527***	-0.2788***	-1.3018***
	(0.0144)	(0.0392)	(0.0249)		(0.0087)	(0.0419)	(0.0013)	(0.1062)	(0.0540)	(0.0752)
α	0.0354***	0.0326***	-0.0121***	0.1279	0.0864***	-0.0175***	0.0541***	0.0293**	0.0263***	0.0249***
	(0.0018)	(0.0058)	(0.0036)	(0.0000)	(0.0012)	(0.0044)	(0.0002)	(0.0122)	(0.0064)	(0.0079)
Obs.	383	114	61	18	42	50	52	66	98	323
R-squared	0.9647	0.9045	0.9837	1.0000	0.9986	0.9784	1.0000	0.9360	0.9038	0.7874

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IX Panel D: Decile portfolios by sorting on lag analyst coverage for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.1046***	0.8711***	2.9389	0.8622***	0.8066***	0.9903***	0.6560***	0.6885***	0.7336***	0.6073***
	(0.0497)	(0.0532)	(0.0000)	(0.0277)	(0.0725)	(0.0690)	(0.0442)	(0.0217)	(0.0362)	(0.0134)
Size	1.606***	0.3515***	4.6321	1.3907***	0.5705***	1.0008***	0.1853*	0.1233**	-0.0678	-0.8686***
	(0.0630)	(0.1197)	(0.0000)	(0.0762)	(0.1791)	(0.1660)	(0.1000)	(0.0529)	(0.0805)	(0.0275)
Value	-0.8877***	-0.1435*	-2.0953	-0.4675***	-0.6268***	-0.7854***	-0.8807***	-1.0032***	-0.8707***	-0.1701***
	(0.0460)	(0.0784)	(0.0000)	(0.0410)	(0.1131)	(0.0949)	(0.0744)	(0.0322)	(0.0549)	(0.0227)
α	0.0367***	-0.0303***	0.2491	0.0691***	0.0045	0.0499***	0.0342***	0.0781***	0.0780***	0.0165***
	(0.0077)	(0.0095)	(0.0000)	(0.0060)	(0.0156)	(0.0140)	(0.0075)	(0.0046)	(0.0077)	(0.0025)
Observations	132	85	40	69	78	87	105	139	247	733
R-squared	0.9263	0.7690	1.0000	0.9500	0.7398	0.8011	0.8652	0.9492	0.7899	0.8909

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IX Panel E: Decile portfolios by sorting on o-score for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.7638***	1.0354***	1.2271***	1.0266***	1.1950***	0.6353***	0.9742***	1.2056***	-0.2629***	0.8145***
	(0.0109)	(0.0060)	(0.0189)	(0.0323)	(0.0094)	(0.0069)	(0.0068)	(0.0005)	(0.0503)	(0.0195)
Size	0.6952***	0.4407***	0.9670***	0.8434***	0.2207***	1.0871***	-0.1986***	0.6727***	-1.3469***	-0.3029***
	(0.0205)	(0.0094)	(0.0336)	(0.0562)	(0.0170)	(0.0135)	(0.0113)	(0.0007)	(0.0512)	(0.0295)
Value	-0.3878***	-0.5189***	-0.2031***	-0.2464***	-0.8791***	-1.5617***	-0.5649***	-0.4903***	-3.7957***	-0.7503***
	(0.0200)	(0.0138)	(0.0387)	(0.0664)	(0.0197)	(0.0137)	(0.0144)	(0.0011)	(0.1268)	(0.0396)
α	0.0125***	0.0086***	-0.0150***	-0.0506***	-0.0391***	0.0264***	-0.0849***	-0.0696***	0.0506***	-0.2173***
	(0.0020)	(0.0011)	(0.0035)	(0.0060)	(0.0018)	(0.0013)	(0.0013)	(0.0001)	(0.0092)	(0.0045)
Observations	1830	1826	1914	1391	1403	1075	655	621	404	201
R-squared	0.8435	0.9836	0.8033	0.5966	0.9699	0.9800	0.9906	1.0000	0.9239	0.9686

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table IX Panel F: Decile portfolios by sorting on Tobin's q for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.1230***	1.0446***	1.1733***	0.8559***	1.0349***	0.8182***	0.6750***	0.9840***	1.2340***	0.8767***
	(0.0172)	(0.0041)	(0.0077)	(0.0059)	(0.0077)	(0.0046)	(0.0090)	(0.0071)	(0.0129)	(0.0434)
Size	0.3134***	1.4230***	0.8312***	-0.0197**	0.1725***	0.1993***	0.3408***	0.3796***	0.5500***	1.1858***
	(0.0294)	(0.0080)	(0.0144)	(0.0100)	(0.0143)	(0.0064)	(0.0146)	(0.0124)	(0.0211)	(0.0732)
Value	0.5996***	-0.0782***	-0.4185***	-0.4696***	-0.0636***	-0.5604***	-1.4082***	-1.0666***	-1.5206***	-1.1951***
	(0.0398)	(0.0080)	(0.0146)	(0.0127)	(0.0161)	(0.0107)	(0.0197)	(0.0144)	(0.0287)	(0.0694)
α	-0.0943***	0.0302***	-0.0529***	-0.0172***	-0.0942***	-0.0239***	-0.0414***	-0.0546***	-0.0792***	-0.0702***
	(0.0034)	(0.0008)	(0.0015)	(0.0011)	(0.0015)	(0.0008)	(0.0018)	(0.0013)	(0.0026)	(0.0077)
Observations	714	1285	1335	1580	1686	1273	1144	1106	689	508
R-squared	0.9119	0.9878	0.9690	0.9771	0.9521	0.9925	0.9707	0.9837	0.9822	0.7767

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table X – Abnormal return as calculated by intercept of Fama-French 3-factor model for quintile portfolios by sorting on measures of financial distress risk for observations with non-missing values for all measures.

This table presents the quintile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model) for each of my distress risk measures. In each of the panels, Column 1 presents results for quintile 1 and column 5 presents returns for quintile 5. Panel A presents results using Altman z-score as the measure of distress risk; Panel B presents results based on analyst coverage; Panel C presents results based on change in analyst coverage; Panel D presents results based on lagged analyst coverage as the measure of distress risk; panel E uses presents results based on lagged change in analyst coverage; panel F presents results based on Ohlson O-score and panel G presents results based on Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table X Panel A: Quintile portfolios by sorting on Altman z-score for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8524***	1.0516***	1.0829***	1.0823***	0.9424***
	(0.0128)	(0.0008)	(0.0021)	(0.0065)	(0.0095)
Size	-0.2266***	0.3699***	0.7491***	0.5991***	0.5110***
	(0.0218)	(0.0014)	(0.0037)	(0.0109)	(0.0167)
Value	0.0745***	-0.4985***	-0.5027***	-0.5774***	-1.1356***
	(0.0275)	(0.0016)	(0.0042)	(0.0143)	(0.0184)
α	-0.1579***	-0.0793***	-0.0388***	-0.0133***	-0.0136***
	(0.0025)	(0.0001)	(0.0004)	(0.0012)	(0.0017)
Observations	836	2054	3072	3203	2155
R-squared	0.9164	0.9996	0.9948	0.9632	0.9407

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table X Panel B: Quintile portfolios by sorting on analyst coverage for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.1204***	0.7601***	1.1304***	0.4996***	0.7219***
	(0.0511)	(0.0282)	(0.0462)	(0.0204)	(0.0082)
Size	1.673***	0.3508***	1.0088***	-0.2023***	-0.3871***
	(0.0716)	(0.0755)	(0.1123)	(0.0534)	(0.0177)
Value	-0.6216***	-0.4636***	-0.4419***	-0.6027***	-0.8761***
	(0.0503)	(0.0443)	(0.0686)	(0.0307)	(0.0145)
α	0.0241***	-0.0126**	0.0188**	0.0490***	0.0537***
	(0.0081)	(0.0055)	(0.0093)	(0.0041)	(0.0016)
Observations	215	120	169	295	1022
R-squared	0.8315	0.8883	0.8052	0.8412	0.9597

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table X Panel C: Quintile portfolios by sorting on change in analyst coverage for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.7913***	1.4035***	0.8402***	0.9834***	0.4620***
	(0.0128)	(0.0305)	(0.0153)	(0.0150)	(0.0267)
Size	0.6534***	0.8125***	0.5463***	0.3789***	-1.0053***
	(0.0287)	(0.0371)	(0.0481)	(0.0349)	(0.0558)
Value	-0.2786***	-0.6161***	-0.4661***	-0.6820***	-0.8363***
	(0.0195)	(0.0299)	(0.0243)	(0.0229)	(0.0445)
α	0.0342***	-0.0104**	0.0069**	0.0310***	0.0359***
	(0.0025)	(0.0043)	(0.0029)	(0.0031)	(0.0049)
Observations	497	79	92	118	421
R-squared	0.9051	0.9799	0.9753	0.9823	0.8314

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table X Panel D: Quintile portfolios by sorting on lag analyst coverage for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.0803***	1.0266***	0.8644***	0.6983***	0.7236***
	(0.0380)	(0.0457)	(0.0439)	(0.0121)	(0.0065)
Size	1.5352***	1.0172***	0.7564***	0.1955***	-0.4822***
	(0.0549)	(0.1208)	(0.1072)	(0.0287)	(0.0137)
Value	-0.7640***	-0.6043***	-0.6439***	-0.8729***	-0.5250***
	(0.0393)	(0.0658)	(0.0638)	(0.0190)	(0.0108)
α	0.0323***	0.0603***	0.0272***	0.0563***	0.0383***
	(0.0060)	(0.0088)	(0.0092)	(0.0023)	(0.0012)
Observations	217	109	165	244	980
R-squared	0.8920	0.8450	0.7993	0.9698	0.9673

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table X Panel E: Quintile portfolios by sorting on o-score for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8683***	1.1194***	0.9249***	1.0811***	0.4768***
	(0.0073)	(0.0101)	(0.0029)	(0.0024)	(0.0377)
Size	0.4869***	0.8142***	0.6372***	0.2358***	-0.6544***
	(0.0132)	(0.0178)	(0.0054)	(0.0038)	(0.0479)
Value	-0.5369***	-0.1401***	-1.2113***	-0.5566***	-1.7854***
	(0.0149)	(0.0207)	(0.0059)	(0.0053)	(0.0915)
_cons	0.0112***	-0.0425***	-0.0099***	-0.0754***	-0.1130***
	(0.0013)	(0.0019)	(0.0005)	(0.0005)	(0.0077)
Observations	3656	3305	2478	1276	605
R-squared	0.9098	0.8723	0.9931	0.9981	0.8502

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table X Panel F: Quintile portfolios by sorting on Tobin's q for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.0539***	1.0546***	0.9276***	0.7906***	1.0792***
	(0.0065)	(0.0026)	(0.0044)	(0.0033)	(0.0167)
Size	0.8432***	0.4173***	0.1902***	0.3380***	0.7594***
	(0.0124)	(0.0047)	(0.0074)	(0.0056)	(0.0282)
Value	0.1815***	-0.3496***	-0.3199***	-1.3313***	-1.3158***
	(0.0134)	(0.0053)	(0.0095)	(0.0070)	(0.0309)
α	-0.0256***	-0.0412***	-0.0587***	-0.0418***	-0.0864***
	(0.0012)	(0.0005)	(0.0008)	(0.0006)	(0.0030)
Observations	1999	2915	2959	2250	1197
R-squared	0.9494	0.9914	0.9765	0.9924	0.9269

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XI – Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk for Decile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk for observations with non-missing values for all measures

This table presents the decile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for decile 1 and column 10 presents returns for Decile 10. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XI Panel A: Decile portfolios by sorting on Altman z-score with distress risk measure for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.8194***	1.1017***	1.2739***	0.7599***	0.8241***	1.3064***	1.2922***	0.8618***	0.9228***	0.9666***
	(0.0100)	(0.0275)	(0.0074)	(0.0062)	(0.0039)	(0.0022)	(0.0070)	(0.0115)	(0.0063)	(0.0199)
Size	-0.8528***	0.2947***	0.4839***	0.2539***	0.8057***	0.7665***	0.7060***	0.3735***	0.4498***	0.5950***
	(0.0209)	(0.0359)	(0.0133)	(0.0117)	(0.0072)	(0.0042)	(0.0133)	(0.0180)	(0.0112)	(0.0351)
Value	-0.1571***	0.7167***	-0.4828***	-0.7253***	-0.6318***	-0.4295***	-0.2608***	-0.8179***	-0.9935***	-1.1976***
	(0.0194)	(0.0622)	(0.0161)	(0.0120)	(0.0079)	(0.0043)	(0.0148)	(0.0252)	(0.0131)	(0.0347)
Altman z-score	-0.0004	-0.0688***	0.0435***	-0.0440***	0.0275***	0.0075***	-0.0214***	-0.0120***	-0.0016***	0.0001
	(0.0012)	(0.0061)	(0.0022)	(0.0019)	(0.0012)	(0.0006)	(0.0011)	(0.0011)	(0.0003)	(0.0001)
α	-0.2110***	-0.0395***	-0.1971***	0.0855***	-0.1460***	-0.0754***	0.1193***	0.0697***	0.0219***	-0.0328***
	(0.0022)	(0.0098)	(0.0055)	(0.0062)	(0.0049)	(0.003)	(0.0068)	(0.0092)	(0.0039)	(0.0042)
Observations	197	639	886	1168	1446	1626	1547	1656	1302	853
R-squared	0.9835	0.8359	0.9907	0.9737	0.9890	0.9978	0.9777	0.9522	0.9851	0.8982

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XI Panel B: Decile portfolios by sorting on analyst coverage with distress risk measure for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.1272***	1.141***	0.6227***	0.9367***	1.6393***	1.0102***	0.4782***	0.5930***	0.7886***	0.6476***
	(0.0646)	(0.0939)	(0.0068)	(0.0717)	(0.0914)	(0.0388)	(0.0658)	(0.0203)	(0.0119)	(0.0135)
Size	1.7672***	0.6732**	0.3673***	0.0754	1.5897***	0.7722***	-0.2483	-0.4693***	-0.3665***	-0.5399***
	(0.0778)	(0.2585)	(0.0162)	(0.1787)	(0.2188)	(0.0883)	(0.1638)	(0.0559)	(0.0302)	(0.0275)
Value	-0.5111***	-0.1549	-0.5191***	-0.3301***	-0.2585*	-0.1654***	-1.0989***	-0.4949***	-0.9735***	-0.7294***
	(0.0573)	(0.1390)	(0.0108)	(0.1126)	(0.1454)	(0.0587)	(0.1026)	(0.0328)	(0.0203)	(0.0247)
Analyst cover.	0.1722***			0.0361	0.1769***	0.0584***	-0.0843***	-0.0148***	0.0069***	-0.0002
	(0.0300)			(0.0253)	(0.0307)	(0.0072)	(0.0114)	(0.0025)	(0.0010)	(0.0002)
α	-0.1809***	-0.0078	-0.0497***	-0.1597	-0.8475***	-0.3594***	0.7690***	0.1677***	-0.0369**	0.0419***
	(0.0313)	(0.0202)	(0.0013)	(0.1022)	(0.1560)	(0.0458)	(0.0894)	(0.0271)	(0.0147)	(0.0057)
Observations	146	69	49	71	61	108	107	188	230	792
R-squared	0.8559	0.6992	0.9970	0.7765	0.8732	0.8847	0.7484	0.8971	0.9818	0.9135

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XI Panel C: Decile portfolios by sorting on change in analyst coverage with distress risk measure for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.6982***	1.0365***	1.3508***	0.9129	1.1661	0.1248	0.8714	1.0274***	0.5191***	0.3778***
	(0.0088)	(0.0387)	(0.0356)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0678)	(0.0346)	(0.0457)
Size	-0.0037	1.4078***	0.8365***		1.7246	5.5560	0.6450	0.1352	-1.0036***	-1.2618***
	(0.0212)	(0.0599)	(0.0311)		(0.0000)	(0.0000)	(0.0000)	(0.1156)	(0.0966)	(0.0886)
Value	-0.4601***	-0.2289***	-0.6020***		-0.9266	-3.5697	-1.0572	-0.6652***	-0.3883***	-1.3036***
	(0.0144)	(0.0406)	(0.0249)		(0.0000)	(0.0000)	(0.0000)	(0.1309)	(0.0658)	(0.0757)
Δ Coverage	0.0004	-0.0164**			-0.0185	0.5239	-0.0009	0.0126	-0.0199***	-0.0002
	(0.0003)	(0.0066)			(0.0000)	(0.0000)	(0.0000)	(0.0111)	(0.0073)	(0.0009)
α	0.0373***	0.0196**	-0.0121***	0.1279	0.1091	-0.9735	0.0576	-0.0207	0.1384***	0.0278**
	(0.0023)	(0.0077)	(0.0036)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0457)	(0.0414)	(0.0135)
Observations	383	114	61	18	42	50	52	66	98	323
R-squared	0.9648	0.9097	0.9837	1.0000	1.0000	1.0000	1.0000	0.9373	0.9110	0.7875

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XI Panel D: Decile portfolios by sorting on lag analyst coverage with distress risk measure for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.1046***	0.8711***	2.9389	0.9527***	0.9795***	0.9172***	0.6528***	0.6857***	0.7034***	0.6083***
	(0.0497)	(0.0532)	(0.0000)	(0.0494)	(0.0849)	(0.0684)	(0.0421)	(0.0209)	(0.0362)	(0.0134)
Size	1.606***	0.3515***	4.6321	1.5265***	0.8101***	0.8888***	0.0867	0.1392***	-0.0809	-0.8583***
	(0.0630)	(0.1197)	(0.0000)	(0.0967)	(0.1820)	(0.1598)	(0.0996)	(0.0512)	(0.0785)	(0.0283)
Value	-0.8877***	-0.1435*	-2.0953	-0.4892***	-0.5566***	-0.7237***	-0.8460***	-0.9780***	-0.8155***	-0.1717***
	(0.0460)	(0.0784)	(0.0000)	(0.0410)	(0.1079)	(0.0912)	(0.0716)	(0.0319)	(0.0556)	(0.0227)
Lag coverage				0.0280**	0.0750***	-0.0376***	-0.0231***	0.0112***	0.0088***	0.0003
				(0.0128)	(0.0221)	(0.0111)	(0.0068)	(0.0033)	(0.0024)	(0.0002)
α	0.0367***	-0.0303***	0.2491	-0.0374	-0.3590***	0.2769***	0.1989***	-0.0307	-0.0390	0.0105**
	(0.0077)	(0.0095)	(0.0000)	(0.0491)	(0.1083)	(0.0681)	(0.0492)	(0.0325)	(0.0324)	(0.0047)
Observations	132	85	40	69	78	87	105	139	247	733
R-squared	0.9263	0.7690	1.0000	0.9535	0.7751	0.8257	0.8790	0.9532	0.8013	0.8912

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XI Panel E: Decile portfolios by sorting on o-score with distress risk measure for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	0.7723***	1.0462***	1.1755***	1.1563***	1.1011***	0.7464***	0.9183***	1.2067***	-0.3254***	0.8271***
	(0.0107)	(0.0060)	(0.0200)	(0.0390)	(0.0109)	(0.0064)	(0.0043)	(0.0003)	(0.0517)	(0.0187)
Size	0.6969***	0.4348***	0.9830***	0.8025***	0.2590***	1.0151***	-0.1406***	0.6698***	-1.3985***	-0.2907***
	(0.0201)	(0.0092)	(0.0332)	(0.0560)	(0.0161)	(0.0103)	(0.0069)	(0.0005)	(0.0518)	(0.0282)
Value	-0.3977***	-0.5265***	-0.1978***	-0.1361**	-0.9206***	-1.4746***	-0.5791***	-0.4948***	-4.0585***	-0.7832***
	(0.0196)	(0.0135)	(0.0382)	(0.0683)	(0.0186)	(0.0106)	(0.0085)	(0.0008)	(0.1402)	(0.0383)
O-score	0.3068***	0.0923***	-0.2178***	0.2902***	-0.2219***	0.3588***	-0.3494***	0.0272***	0.9943***	2.2900***
	(0.0340)	(0.0100)	(0.0302)	(0.0501)	(0.0153)	(0.0123)	(0.0099)	(0.0010)	(0.2446)	(0.4828)
α	-0.0012	-0.0084***	0.0625***	-0.2145***	0.1181***	-0.2679***	0.2283***	-0.0952***	-0.9067***	-2.4970***
	(0.0025)	(0.0021)	(0.0113)	(0.0289)	(0.0110)	(0.0101)	(0.0089)	(0.0009)	(0.2357)	(0.4806)
Observations	1830	1826	1914	1391	1403	1075	655	621	404	201
R-squared	0.8502	0.9843	0.8085	0.6062	0.9738	0.9889	0.9968	1.0000	0.9270	0.9719

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XI Panel F: Decile portfolios by sorting on Tobin's q with distress risk measure for observations with non-missing values for all measures

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	1.1228***	1.0052***	1.0892***	0.9206***	0.9282***	0.7650***	0.6479***	1.0136***	1.2054***	0.9208***
	(0.0170)	(0.0040)	(0.0072)	(0.0061)	(0.0083)	(0.0042)	(0.0108)	(0.0071)	(0.0117)	(0.0434)
Size	0.3266***	1.4003***	0.6923***	0.0422***	0.1074***	0.1861***	0.3383***	0.4140***	0.5008***	1.1357***
	(0.0294)	(0.0070)	(0.0132)	(0.0094)	(0.0129)	(0.0051)	(0.0145)	(0.0120)	(0.0191)	(0.0723)
Value	0.6400***	-0.0577***	-0.2911***	-0.5095***	0.0046	-0.5649***	-1.4056***	-1.1024***	-1.3998***	-1.1485***
	(0.0411)	(0.0070)	(0.0131)	(0.0115)	(0.0144)	(0.0086)	(0.0196)	(0.0139)	(0.0271)	(0.0686)
Tobin's q	-0.0843***	-0.1454***	-0.2894***	0.1225***	-0.1683***	-0.0577***	-0.0271***	0.0294***	-0.0268***	0.0013***
	(0.0235)	(0.0072)	(0.0116)	(0.0060)	(0.0075)	(0.0022)	(0.0061)	(0.0024)	(0.0020)	(0.0003)
α	0.0023	0.2241***	0.3674***	-0.2168***	0.2105***	0.0969***	0.0245*	-0.1395***	0.0178**	-0.0998***
	(0.0271)	(0.0096)	(0.0169)	(0.0099)	(0.0136)	(0.0046)	(0.0149)	(0.0071)	(0.0076)	(0.0097)
Observations	714	1285	1335	1580	1686	1273	1144	1106	689	508
R-squared	0.9135	0.9908	0.9788	0.9818	0.9632	0.9952	0.9712	0.9856	0.9859	0.7868

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XII – Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk quintile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk for observations with non-missing values for all measures.

This table presents the quintile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for quintile 1 and column 5 presents returns for quintile 5. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XII Panel A: Quintile portfolios by sorting on Altman z-score with distress risk measure for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8777***	1.0522***	1.0783***	1.0758***	0.9434***
	(0.0124)	(0.0007)	(0.0020)	(0.0063)	(0.0095)
Size	-0.2329***	0.3658***	0.7662***	0.5813***	0.5095***
	(0.0206)	(0.0014)	(0.0037)	(0.0107)	(0.0167)
Value	0.1237***	-0.4997***	-0.5078***	-0.5741***	-1.1352***
	(0.0266)	(0.0015)	(0.0040)	(0.0139)	(0.0184)
Altman z-score	-0.0132***	-0.0022***	0.0057***	-0.0067***	0.0001**
	(0.0013)	(0.0001)	(0.0004)	(0.0005)	(0.000)
α	-0.1452***	-0.0728***	-0.0638***	0.0328***	-0.0154***
	(0.0027)	(0.0004)	(0.0016)	(0.0035)	(0.0019)
Observations	836	2054	3072	3203	2155
R-squared	0.9251	0.9996	0.9952	0.9653	0.9409

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XII Panel B: Quintile portfolios by sorting on analyst coverage with distress risk measure for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.1288***	0.7596***	1.1583***	0.5036***	0.7230***
	(0.0509)	(0.0288)	(0.0427)	(0.0196)	(0.0082)
Size	1.6998***	0.3511***	1.0317***	-0.2436***	-0.3837***
	(0.0722)	(0.0759)	(0.1032)	(0.0521)	(0.0178)
Value	-0.6351***	-0.4645***	-0.3407***	-0.6197***	-0.8763***
	(0.0503)	(0.0453)	(0.0655)	(0.0297)	(0.0145)
Analyst coverage	0.0236**	-0.0007	0.0319***	-0.0075***	0.0002**
	(0.0112)	(0.0069)	(0.0057)	(0.0015)	(0.0001)
α	-0.0078	-0.0100	-0.1676***	0.1201***	0.0483***
	(0.0171)	(0.0254)	(0.0342)	(0.0150)	(0.0030)
Observations	215	120	169	295	1022
R-squared	0.8350	0.8883	0.8368	0.8533	0.9598

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XII Panel C: Quintile portfolios by sorting on change in analyst coverage with distress risk measure for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.7902***	1.299***	0.8346***	0.9911***	0.4551***
	(0.0131)	(0.0375)	(0.0173)	(0.0144)	(0.0271)
Size	0.6517***	0.8149***	0.5327***	0.4345***	-1.0140***
	(0.0290)	(0.0337)	(0.0520)	(0.0366)	(0.0561)
Value	-0.2787***	-0.6095***	-0.4647***	-0.6930***	-0.8366***
	(0.0195)	(0.0271)	(0.0245)	(0.0220)	(0.0445)
Δ Coverage	0.0002	0.0394***	0.0021	-0.0091***	-0.0007
	(0.0004)	(0.0095)	(0.0031)	(0.0025)	(0.0006)
α	0.0349***	-0.0092**	0.0030	0.0606***	0.0433***
	(0.0030)	(0.0039)	(0.0062)	(0.0087)	(0.0074)
Observations	497	79	92	118	421
R-squared	0.9051	0.9837	0.9755	0.9842	0.8321

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XII Panel D: Quintile portfolios by sorting on lag analyst coverage with distress risk measure for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.0752***	1.0746***	0.8948***	0.7007***	0.7240***
	(0.0382)	(0.0454)	(0.0457)	(0.0120)	(0.0065)
Size	1.5276***	1.1001***	0.8046***	0.1819***	-0.4805***
	(0.0551)	(0.1170)	(0.1084)	(0.0289)	(0.0140)
Value	-0.7585***	-0.6378***	-0.6647***	-0.8714***	-0.5251***
	(0.0395)	(0.0631)	(0.0639)	(0.0188)	(0.0108)
Lag coverage	-0.0104	0.0345***	0.0125**	-0.0025**	0.0000
	(0.0083)	(0.0097)	(0.0058)	(0.0010)	(0.0001)
α	0.0471***	-0.0574*	-0.0409	0.0774***	0.0372***
	(0.0132)	(0.0342)	(0.0332)	(0.0087)	(0.0021)
Observations	217	109	165	244	980
R-squared	0.8928	0.8617	0.8048	0.9706	0.9673

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XII Panel E: Quintile portfolios by sorting on o-score with distress risk measure for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8748***	1.1164***	0.9149***	1.0747***	0.4532***
	(0.0073)	(0.0105)	(0.0032)	(0.0021)	(0.0388)
Size	0.4858***	0.8153***	0.6433***	0.2503***	-0.6765***
	(0.0130)	(0.0178)	(0.0054)	(0.0033)	(0.0486)
Value	-0.5461***	-0.1418***	-1.2197***	-0.5503***	-1.8714***
	(0.0147)	(0.0208)	(0.0060)	(0.0045)	(0.0977)
O-score	0.0860***	-0.0092	-0.0261***	-0.0835***	0.4975**
	(0.0090)	(0.0091)	(0.0037)	(0.0038)	(0.2049)
α	0.0015	-0.0384***	0.0101***	0.0010	-0.5972***
	(0.0017)	(0.0045)	(0.0028)	(0.0035)	(0.1996)
Observations	3656	3305	2478	1276	6050
R-squared	0.9120	0.8724	0.9933	0.9986	0.8516

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XII Panel F: Quintile portfolios by sorting on Tobin's q with distress risk measure for observations with non-missing values for all measures

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	1.0448***	1.049***	0.8935***	0.8005***	1.092***
	(0.0067)	(0.0027)	(0.0045)	(0.0033)	(0.0165)
Size	0.8383***	0.4112***	0.1767***	0.3439***	0.7327***
	(0.0123)	(0.0048)	(0.0070)	(0.0055)	(0.0280)
Value	0.1815***	-0.3410***	-0.3057***	-1.3348***	-1.2820***
	(0.0133)	(0.0055)	(0.0090)	(0.0068)	(0.0308)
Tobin's q	-0.0344***	-0.0154***	-0.0451***	0.0090***	0.0009***
	(0.0066)	(0.0024)	(0.0024)	(0.0008)	(0.0001)
α	0.0185**	-0.0174***	0.0282***	-0.0658***	-0.0979***
	(0.0085)	(0.0038)	(0.0046)	(0.0023)	(0.0034)
Observations	1999	2915	2959	2250	1197
R-squared	0.9501	0.9916	0.9790	0.9928	0.9295

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XIII – Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile/quintile portfolios by sorting on measures of financial distress risk for observations with non-missing values for all measures.

Table XIII Panel A: Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile/quintile portfolios by sorting on measures of financial distress risk for observations with non-missing values for all measures.

This table presents a summary of abnormal return differences, i.e. difference between the two extreme rank sorts of each distress risk measure, sorted by deciles as well as quintiles, using the Fama-French 3-factor model. L-H stands for low minus high and captures the difference in abnormal returns for the highest rank sort and the lowest rank sort of each distress risk measure, for decile sorts and quintile sorts. All differences are significant at the 1% level.

Long-Short Portfolios after sorting	(1) D1	(2) D10	(3) (L-H)	(4) Q1	(5) Q5	(6) (L-H)
Altman z-score (1=H)	-0.2108	-0.0302	0.1806	-0.1579	-0.0136	0.1443
Analyst coverage (1=H)	0.0000	0.0378	0.0378	0.0241	0.0537	0.0296
Δ Coverage (1=H)	0.0354	0.0249	-0.0105	0.0342	0.0359	0.0017
Lag Coverage (1=H)	0.0367	0.0165	-0.0202	0.0323	0.0383	0.0060
O-score (1=L)	0.0125	-0.2173	0.2298	0.0112	-0.1130	0.1242
Tobin's q (1=L)	-0.0943	-0.0702	-0.0241	-0.0256	-0.0864	0.0608

Table XIII Panel B: Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile/quintile portfolios by sorting on measures of financial distress risk and after including the measures as additional explanatory factor for observations with non-missing values for all measures.

This table presents a summary of abnormal return differences, i.e. difference between the two extreme rank sorts of each distress risk measure, sorted by deciles as well as quintiles, using the Fama-French 3-factor model supplemented by the respective distress risk measure. L-H stands for low minus high and captures the difference in abnormal returns for the highest rank sort and the lowest rank sort of each distress risk measure, for decile sorts and quintile sorts. All differences are significant at the 1% level.

Long-short Portfolios with measure	(1) D1	(2) D10	(3) (L-H)	(4) Q1	(5) Q5	(6) (L-H)
Altman z-score (1=H)	-0.2110	-0.0328	0.1782	-0.1452	-0.0154	0.1298
Analyst coverage (1=H)	-0.1809	0.0419	0.2228	0.0000	0.0483	0.0483
Δ Coverage (1=H)	0.0373	0.0278	-0.0095	0.0349	0.0433	0.0084
Lag Coverage (1=H)	0.0367	0.0105	-0.0262	0.0471	0.0372	-0.0099
O-score (1=L)	0.0000	-2.4970	2.4970	0.0000	-0.5972	0.5972
Tobin's q (1=L)	0.0000	-0.0998	0.0998	0.0185	-0.0979	0.1164

Table XIV – Outlier test for the sample. Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk tercile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk after running the outlier test.

This table presents the tercile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for base case outlier test 1 and column 2 presents results after 1% drop. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XIV Panel A: Outlier test for Altman z-score

	(1) Base Case Outlier Test	(2) 1% Drop on Altman z-score
Altman z-score	0.000***	-0.001***
	(3.749)	(-23.190)
Market □	0.807***	1.042***
	(179.742)	(191.220)
Size	1.019***	1.391***
	(140.663)	(156.905)
Value	-0.102***	-0.171***
	(-18.841)	(-26.963)
∝	-0.142***	-0.013***
	(-185.036)	(-13.203)
Observations	632,841	626,509
R-squared		0.132
*** p<0.01, ** p<0.05, * p<0.1	*Robust z-statistics in parentheses*	*Robust t-statistics in parentheses*

Table XIV Panel B: Outlier test for analyst coverage

	(1) Base Case Outlier Test	(2) 1% Drop on Analyst Coverage
Analyst Coverage	0.004***	0.003***
	(29.484)	(16.587)
Market □	0.905***	1.029***
	(130.876)	(136.853)
Size	0.671***	0.934***
	(42.829)	(55.839)
Value	-0.073***	-0.129***
	(-8.508)	(-15.096)
∝	-0.137***	-0.022***
	(-78.457)	(-11.329)
Observations	251,995	250,108
R-squared		0.077
*** p<0.01, ** p<0.05, * p<0.1	*Robust z-statistics in parentheses*	*Robust t-statistics in parentheses*

Table XIV Panel C: Outlier test for change in analyst coverage

	(1) Base Case Outlier Test	(2) 1% Drop on Change in Analyst Coverage
Change in Analyst Coverage	-0.006***	-0.000
	(-14.559)	(-1.013)
Market □	0.923***	1.021***
	(121.121)	(124.851)
Size	0.704***	0.899***
	(40.761)	(50.745)
Value	-0.093***	-0.115***
	(-9.085)	(-12.199)
∝	-0.087***	0.007***
	(-69.468)	(4.937)
Observations	220,631	218,976
R-squared		0.070
*** p<0.01, ** p<0.05, * p<0.1	*Robust z-statistics in parentheses*	*Robust t-statistics in parentheses*

Table XIV Panel D: Outlier test for lag analyst coverage

	(1) Base Case Outlier Test	(2) 1% Drop on Lag Analyst Coverage
Lag Analyst Coverage	0.005***	0.002***
	(30.145)	(12.720)
Market □	0.929***	1.031***
	(122.739)	(125.811)
Size	0.684***	0.960***
	(39.956)	(51.548)
Value	-0.075***	-0.142***
	(-7.330)	(-14.792)
∝	-0.131***	-0.009***
	(-73.307)	(-4.504)
Observations	220,631	218,980
R-squared		0.071
*** p<0.01, ** p<0.05, * p<0.1	*Robust z-statistics in parentheses*	*Robust t-statistics in parentheses*

Table XIV Panel E: Outlier test for o-score

	(1) Base Case Outlier Test	(2) 1% Drop on O-score
O-score	-0.199***	-0.126***
	(-59.974)	(-32.815)
Market □	0.692***	0.854***
	(61.739)	(82.141)
Size	1.135***	1.373***
	(99.089)	(110.520)
Value	-0.120***	-0.349***
	(-8.141)	(-21.464)
∝	0.009***	0.097***
	(3.255)	(30.988)
Observations	196,921	195,318
R-squared		0.236
*** p<0.01, ** p<0.05, * p<0.1	*Robust z-statistics in parentheses*	*Robust t-statistics in parentheses*

Table XIV Panel F: Outlier test for Tobin's q

	(1) Base Case Outlier Test	(2) 1% Drop on Tobin's q
Tobin's q	-0.015***	-0.017***
	(-39.618)	(-58.457)
Market □	0.798***	1.038***
	(179.078)	(188.905)
Size	0.992***	1.372***
	(140.069)	(153.240)
Value	-0.087***	-0.169***
	(-16.559)	(-26.544)
∝	-0.094***	0.032***
	(-71.409)	(26.056)
Observations	632,301	626,185
R-squared		0.136
*** p<0.01, ** p<0.05, * p<0.1	*Robust z-statistics in parentheses*	*Robust t-statistics in parentheses*

Table XV – Abnormal return as calculated by intercept of Fama-French 3-factor model for decile portfolios by sorting on measures of financial distress risk after dropping outliers at 1%.

This table presents the decile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model) for each of my distress risk measures. In each of the panels, Column 1 presents results for decile 1 and column 10 presents returns for Decile 10. Panel A presents results using Altman z-score as the measure of distress risk; Panel B presents results based on analyst coverage; Panel C presents results based on change in analyst coverage; Panel D presents results based on lagged analyst coverage as the measure of distress risk; panel E uses presents results based on lagged change in analyst coverage; panel F presents results based on Ohlson O-score and panel G presents results based on Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XV Panel A: Decile portfolios by sorting on Altman z-score after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-5.2692***	-2.6872***	0.9606	-1.0127*	1.0665**	-3.3301***	-3.0479***	-0.7329**	-2.4412***	-0.2798***
	(0.7378)	(0.7699)	(0.5870)	(0.5481)	(0.5043)	(0.6716)	(0.2463)	(0.2952)	(0.2729)	(0.0858)
Size	-8.7732***	-7.9252***	-6.9608***	4.8845***	7.2697***	3.8527***	7.9691***	8.7048***	6.0686***	-0.3037*
	(1.2258)	(1.5246)	(1.0318)	(1.0735)	(0.9591)	(1.1801)	(0.4863)	(0.5053)	(0.5293)	(0.1732)
Value	-7.1340***	-11.9955***	-3.0451***	-8.9124***	-4.5014***	-7.8440***	-5.2074***	-5.9494***	-5.8124***	-1.2758***
	(0.8819)	(1.0686)	(0.7505)	(0.7227)	(0.6742)	(0.8833)	(0.3259)	(0.3851)	(0.3725)	(0.1126)
α	4.6152***	3.3690***	1.4760***	1.6746***	0.9501***	1.9367***	0.5277***	0.5223***	0.6792***	0.0351
	(0.1646)	(0.1951)	(0.1375)	(0.1356)	(0.1337)	(0.1545)	(0.0606)	(0.0708)	(0.0675)	(0.0234)
Observations	605	432	436	392	359	462	411	427	417	275
R-squared	0.2234	0.2504	0.1076	0.3796	0.3636	0.1993	0.6470	0.6509	0.5720	0.3288

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XV Panel B: Decile portfolios by sorting on analyst coverage after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-6.2878***	-40.0212***	-24.0867***	-21.4857***	-18.4034***	-30.6559***	-7.2777***	-6.4848*	-1.1810	-6.1085
	(1.031)	(2.5749)	(5.2826)	(1.8457)	(4.0743)	(4.7235)	(1.4966)	(3.2592)	(2.8448)	(0.0000)
Size	9.7313***	-40.5063***	2.0902	-27.2597***	-23.5405***	-10.0951	14.4048***	-3.1758	-10.6492***	-0.5869
	(1.8353)	(5.6086)	(3.5432)	(1.9142)	(8.0289)	(7.5141)	(2.3039)	(3.951)	(3.0473)	(0.0000)
Value	-3.2399***	-24.9652***	-2.9874	-11.7843***	-10.6663***	-19.0783***	-0.4553	-4.3796**	-5.2097***	-4.5354
	(0.9299)	(1.7524)	(3.4141)	(0.9455)	(2.6377)	(2.8337)	(1.1609)	(1.7705)	(1.4579)	(0.0000)
α	3.6287***	13.0659***	7.5541***	6.5574***	6.2789***	9.1583***	2.8674***	3.7738***	4.9227***	0.8879
	(0.2100)	(0.7896)	(0.9342)	(0.3066)	(1.1102)	(0.9108)	(0.3456)	(0.5124)	(0.4149)	(0.0000)
Observations	227	51	64	68	46	69	101	67	63	39
R-squared	0.2327	0.8852	0.5491	0.7871	0.3289	0.6155	0.3718	0.0927	0.4056	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XV Panel C: Decile portfolios by sorting on change in analyst coverage after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-11.8395***	-32.0982***	-21.4707*	2.7326	-20.0736	-10.3921	16.3155***	-115.9946***	-6.7605**	
	(1.4042)	(1.6644)	(10.8379)	(1.9982)	(17.4698)	(7.1935)	(4.3561)	(38.4911)	(3.0289)	
Size	9.4557***	-18.5242***	5.2301	11.8126***	8.0391*	-22.8246*	13.6462*	-30.0300**	-13.6048***	
	(2.2253)	(1.6847)	(5.0346)	(3.4198)	(4.4128)	(11.7557)	(8.1344)	(12.9471)	(3.3660)	
Value	-8.5277***	-13.8942***	15.7498*	0.0300	-3.6606	-4.2557	5.4085***	37.8762**	-10.0869***	0.9228
	(1.1359)	(0.8319)	(8.1077)	(1.4417)	(12.0827)	(4.4954)	(1.4879)	(17.5887)	(1.6363)	(0.000)
α	4.1128***	5.7494***	5.3281**	2.1881***	4.5885	5.8518***	2.0709***	26.6955***	5.0369***	5.4287
	(0.2298)	(0.2324)	(1.9790)	(0.3078)	(3.059)	(1.4565)	(0.4496)	(7.3848)	(.5111)	(0.0000)
Obs.	230	65	28	98	19	64	66	56	69	27
R-squared	0.4425	0.8710	0.1428	0.1315	0.4695	0.1045	0.2751	0.1730	0.4799	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XV Panel D: Decile portfolios by sorting on lag analyst coverage after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-9.2907***	-18.8109***	-53.7292	8.6482**	-41.0703***	-1.7954	-27.7395***	-5.5812**	-12.8442**	-98.1937***
	(1.6754)	(4.0441)	(0.0000)	(4.1715)	(7.4601)	(3.4649)	(2.4701)	(2.6447)	(6.2560)	(2.0337)
Size	3.0599	-15.7058***	-140.3817	16.4885***	-53.6843***	0.7295	6.5969***	9.9043***	-18.5672*	-8.5955***
	(2.7542)	(2.3880)	(0.0000)	(3.8060)	(10.7847)	(7.1917)	(2.4556)	(3.6354)	(9.4552)	(0.3299)
Value	-5.7848***	-15.4013***	-69.4046	-1.1219	-19.7650***	-7.4197***	-19.6891***	-6.6512***	-10.8285***	32.9623***
	(1.3446)	(2.4168)	(0.0000)	(2.1474)	(4.3298)	(2.4729)	(1.6460)	(1.5090)	(3.7643)	(0.8324)
α	4.3507***	5.4420***	19.5939	3.9968***	10.5242***	3.1124***	6.1772***	2.0607***	4.1764***	17.3066***
	(0.2726)	(0.8480)	(0.0000)	(0.6038)	(1.5022)	(0.6373)	(0.4749)	(0.4965)	(1.2268)	(0.3617)
Observations	218	33	19	71	41	95	65	78	47	37
R-squared	0.2074	0.7306	1.0000	0.3146	0.5149	0.1530	0.7089	0.8749	0.2528	0.9990

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XV Panel E: Decile portfolios by sorting on o-score after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-3.8565***	-6.1194	-11.1502***	-8.3028	-9.1668	-3.3734	-2.2009***	-9.6536	-34.5329	
	(0.3678)	(0.0000)	(0.7114)	(0.0000)	(0.0000)	(0.0000)	(0.0272)	(0.0000)	(0.0000)	
Size	-4.5121***	-4.5051	14.6835***	33.7139	47.0341	0.6766	4.3805***	-10.4613	102.5311	
	(0.5777)	(0.0000)	(1.9696)	(0.0000)	(0.0000)	(0.0000)	(0.0815)	(0.0000)	(0.0000)	
Value	6.8154***		14.3692***	169.7409	396.3762	-6.5052	32.9414***	-38.1753	714.2821	
	(0.9315)		(3.8003)	(0.0000)	(0.0000)	(0.0000)	(0.2496)	(0.0000)	(0.0000)	
α	5.5186***	5.9813	5.2512***	12.9940	26.3922	5.2200	6.6575***	6.6372	44.2470	1.7233
	(0.1049)	(0.0000)	(0.2012)	(0.0000)	(0.0000)	(0.0000)	(0.0104)	(0.0000)	(0.0000)	(0.0000)
Observations	202	102	121	104	116	102	123	106	112	81
R-squared	0.7728	1.0000	0.7226	1.0000	1.0000	1.0000	0.9981	1.0000	1.0000	

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XV Panel F: Decile portfolios by sorting on Tobin's q after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-0.6370	2.5352***	2.2297***	-3.7807***	-7.5990***	-5.8883***	-1.5905***	-2.9989***	-5.8003***	0.0178
	(0.6944)	(0.7646)	(0.7003)	(0.5880)	(0.9061)	(0.5841)	(0.3593)	(0.3909)	(0.4377)	(0.0848)
Size	-7.9929***	-9.5687***	-5.4831***	1.2423	6.8146***	5.7612***	6.2369***	8.3171***	9.8885***	-0.8671***
	(1.2219)	(1.4457)	(1.3147)	(1.0945)	(1.6968)	(1.1383)	(0.6592)	(0.7565)	(0.8270)	(0.1624)
Value	-3.1009***	-2.4316***	-2.7655***	-10.6516***	-11.6949***	-7.7518***	-6.1435***	-5.8436***	-6.8719***	-1.1047***
	(0.7469)	(0.8141)	(0.7340)	(0.6773)	(0.9369)	(0.6230)	(0.4019)	(0.4223)	(0.4565)	(0.0922)
α	3.4603***	2.1831***	1.7586***	2.8095***	3.0342***	1.6123***	1.0171***	0.8720***	1.1263***	-0.1036***
	(0.1600)	(0.1894)	(0.1749)	(0.1469)	(0.2363)	(0.1448)	(0.0890)	(0.1008)	(0.1056)	(0.0254)
Observations	555	414	400	398	376	422	401	390	412	267
R-squared	0.0958	0.1110	0.0866	0.4042	0.3464	0.3405	0.5286	0.4967	0.5178	0.3787

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVI – Abnormal return as calculated by intercept of Fama-French 3-factor model for quintile portfolios by sorting on measures of financial distress risk for observations with non-missing values for all measures.

This table presents the quintile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model) for each of my distress risk measures. In each of the panels, Column 1 presents results for quintile 1 and column 5 presents returns for quintile 5. Panel A presents results using Altman z-score as the measure of distress risk; Panel B presents results based on analyst coverage; Panel C presents results based on change in analyst coverage; Panel D presents results based on lagged analyst coverage as the measure of distress risk; panel E uses presents results based on lagged change in analyst coverage; panel F presents results based on Ohlson O-score and panel G presents results based on Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XVI Panel A: Quintile portfolios by sorting on Altman z-score after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-4.2911***	0.0175	-1.1688***	-1.9511***	-1.6243***
	(0.4642)	(0.3552)	(0.3848)	(0.1815)	(0.1233)
Size	-8.3121***	-1.2947**	5.2409***	8.2311***	3.5466***
	(0.8294)	(0.6528)	(0.6988)	(0.3331)	(0.2427)
Value	-8.721***	-5.9482***	-6.2283***	-5.5103***	-3.7541***
	(0.5886)	(0.4622)	(0.5100)	(0.2387)	(0.1652)
α	4.1723***	1.6574***	1.5373***	0.5537***	0.3930***
	(0.1093)	(0.0849)	(0.0940)	(0.0440)	(0.0317)
Observations	1037	828	821	838	692
R-squared	0.2676	0.1744	0.2619	0.6612	0.5910

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVI Panel B: Quintile portfolios by sorting on analyst coverage after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-7.5949***	-19.1891***	-26.4154***	-5.5809***	-7.3662***
	(0.8650)	(1.8463)	(3.1240)	(1.2170)	(1.9245)
Size	10.4489***	-16.2731***	-24.9627***	7.5866***	-14.7192***
	(1.4448)	(1.9819)	(4.9801)	(1.7178)	(2.2326)
Value	-3.6868***	-11.5131***	-15.3012***	-1.8888**	-7.8935***
	(0.6898)	(0.9643)	(1.9091)	(0.8563)	(1.0015)
α	3.9023***	6.5455***	7.8670***	3.2292***	4.3561***
	(0.1743)	(0.3076)	(0.6651)	(0.2526)	(0.3009)
Observations	278	132	115	168	102
R-squared	0.3590	0.5605	0.4216	0.2085	0.5084

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVI Panel C: Quintile portfolios by sorting on change in analyst coverage after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-13.9122***	1.3006	-9.0143**	11.1333***	-6.3850**
	(1.1796)	(1.4321)	(4.4203)	(2.7859)	(2.5412)
Size	2.1355	9.6791***	-5.9920	12.3548***	-13.0010***
	(1.6933)	(2.4222)	(6.8612)	(3.7351)	(2.8578)
Value	-6.9946***	-0.5888	-2.0530	2.2601	-10.3225***
	(0.8188)	(1.0791)	(2.9412)	(1.8779)	(1.3260)
α	4.0233***	2.2041***	3.9971***	2.2308***	5.2811***
	(0.1893)	(0.2314)	(0.9422)	(0.3998)	(0.4131)
Observations	295	126	83	122	96
R-squared	0.4303	0.1340	0.0920	0.1505	0.4931

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVI Panel D: Quintile portfolios by sorting on lag analyst coverage after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-11.3551***	-3.0144	-4.9571	-15.7645***	-4.8679**
	(1.2052)	(3.8466)	(3.0017)	(1.0061)	(2.2944)
Size	-0.2647	7.6734**	-1.9439	-1.4513	0.5488
	(1.9911)	(3.7374)	(5.5102)	(1.1300)	(3.0848)
Value	-6.1062***	-5.1781**	-4.3721**	-11.9299***	-5.2678***
	(1.0226)	(2.0461)	(1.9564)	(0.5538)	(1.3181)
α	4.2961***	4.7252***	3.4456***	3.8206***	1.8103***
	(0.2088)	(0.5887)	(0.5704)	(0.1678)	(0.4170)
Observations	251	90	136	143	84
R-squared	0.3232	0.2107	0.0613	0.8499	0.4598

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVI Panel E: Quintile portfolios by sorting on o-score after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-4.5115***	-5.3152***	-0.2461**	-4.4511***	-34.4759
	(0.2525)	(0.9942)	(0.1054)	(0.2623)	(0.0000)
Size	-4.3212***	-0.1030	-1.1053***	-5.4953***	102.4139
	(0.4331)	(2.6909)	(0.2368)	(0.7183)	(0.0000)
Value	6.1521***	21.3327***	8.3774***	-10.5236***	713.2803
	(0.7234)	(6.7277)	(1.3489)	(1.9881)	(0.0000)
_cons	5.6425***	7.5582***	5.9756***	5.9430***	44.1896
	(0.0787)	(0.3173)	(0.0819)	(0.0918)	(0.0000)
Observations	304	225	218	229	193
R-squared	0.8436	0.4055	0.3823	0.8405	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVI Panel F: Quintile portfolios by sorting on Tobin's q after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	0.8399*	-0.4786	-6.7948***	-2.3034***	-3.3579***
	(0.4610)	(0.4059)	(0.4700)	(0.2483)	(0.1843)
Size	-8.8938***	-2.3017***	6.3974***	7.2261***	4.5492***
	(0.8374)	(0.7601)	(0.8983)	(0.4674)	(0.3497)
Value	-2.8392***	-6.1817***	-9.9463***	-5.9726***	-4.3588***
	(0.4938)	(0.4452)	(0.4931)	(0.2729)	(0.1962)
α	2.9191***	2.2254***	2.3167***	0.9535***	0.6569***
	(0.1097)	(0.1015)	(0.1191)	(0.0627)	(0.0483)
Observations	969	798	798	791	679
R-squared	0.1194	0.2062	0.4007	0.5405	0.5453

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVII – Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk for Decile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk after dropping outliers at 1%.

This table presents the decile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for decile 1 and column 10 presents returns for Decile 10. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XVII Panel A: Decile portfolios by sorting on Altman z-score with distress risk measure after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-6.1763***	-8.2395***	-2.7985***	-4.9973***	-0.7988	-3.8826***	-3.4631***	-0.7585**	-2.7406***	-0.2932***
	(0.6797)	(0.6547)	(0.4939)	(0.3942)	(0.5077)	(0.6470)	(0.2521)	(0.2962)	(0.2761)	(0.0823)
Size	-8.2782***	-8.8459***	-9.5274***	-1.2043	4.2029***	2.7263**	6.7695***	8.5661***	5.2991***	0.0753
	(1.1218)	(1.1476)	(0.7977)	(0.7429)	(0.9431)	(1.1399)	(0.5261)	(0.5223)	(0.5481)	(0.1827)
Value	-5.3258***	-4.1540***	2.2037***	-5.6225***	-2.2151***	-7.0520***	-4.6876***	-5.9210***	-5.6998***	-1.2568***
	(0.8233)	(0.9123)	(0.6425)	(0.4889)	(0.6688)	(0.8522)	(0.3318)	(0.3860)	(0.3657)	(0.1080)
Altman z-score	-0.0057***	-0.0233***	-0.0141***	-0.0138***	-0.0061***	-0.0013***	-0.0009***	0.0000	-0.0002***	0.0000***
	(0.0005)	(0.0013)	(0.0008)	(0.0006)	(0.0007)	(0.0002)	(0.0002)	(0.0000)	(0.0000)	(0.0000)
α	5.2003***	6.4706***	4.0133***	4.7904***	2.5465***	2.5392***	1.0309***	0.5653***	0.9973***	-0.0415
	(0.1598)	(0.2251)	(0.1769)	(0.1604)	(0.2218)	(0.1729)	(0.1140)	(0.0819)	(0.0990)	(0.0273)
Observations	605	432	436	392	359	462	411	427	417	275
R-squared	0.3518	0.5771	0.4853	0.7406	0.4738	0.2708	0.6686	0.6518	0.5906	0.3852

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVII Panel B: Decile portfolios by sorting on analyst coverage with distress risk measure after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-7.3469***	-39.0430***	-27.7710***	-21.7403***	-17.2503***	-28.2945***	-8.0641***	-12.4090***	-0.4430	-6.1085
	(0.9895)	(3.2702)	(4.5257)	(1.9355)	(3.6533)	(4.3667)	(1.5510)	(2.6816)	(1.5575)	(0.0000)
Size	6.2122***	-37.3776***	-11.8625***	-26.9601***	-23.836***	-15.3956**	15.1940***	-3.2438	-4.9780***	-0.5869
	(1.8436)	(8.5112)	(4.0944)	(2.0302)	(7.1690)	(7.0195)	(2.3270)	(3.0607)	(1.7350)	(0.0000)
Value	-4.1249***	-24.5310***	-8.3931***	-11.6651***	-9.5510***	-18.7559***	-0.4905	-6.5461***	-2.6058***	-4.5354
	(0.8900)	(1.9749)	(3.0819)	(.9851)	(2.3775)	(2.5930)	(1.1496)	(1.4108)	(0.8276)	(0.0000)
Analyst cover.	-0.0664***	0.2357	1.2190***	-0.0900	-0.5357***	-0.0725***	-0.1100*	-0.1456***	-0.1205***	0.0000
	(0.0122)	(0.4793)	(.2439)	(0.1927)	(0.1567)	(0.0196)	(0.0641)	(0.0222)	(0.0102)	(0.0000)
α	4.3255***	11.9432***	3.7403***	6.9519***	9.6726***	10.3759***	3.9195***	6.6494***	6.9379***	0.8879
	(0.2353)	(2.4176)	(1.0982)	(0.8996)	(1.4028)	(0.8955)	(0.7019)	(0.5916)	(0.2841)	(0.0000)
Observations	227	51	64	68	46	69	101	67	63	39
R-squared	0.3235	0.8858	0.6832	0.7878	0.4778	0.6833	0.3905	0.4642	0.8251	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVII Panel C: Decile portfolios by sorting on change in analyst coverage with distress risk measure after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-11.8280***	-33.3055***	135.4109	-8.3365***	110.8988	-26.5427***	9.2820***	-224.7492***	-6.2415	
	(1.4293)	(1.5461)	(0.0000)	(1.9430)	(0.0000)	(5.4681)	(1.9188)	(51.3041)	(4.1773)	
Size	9.4323***	-19.9542***	50.6743	-2.0774	-10.0895	-19.8285**	10.2498***	-39.1221***	-13.7214***	
	(2.2872)	(1.5776)	(0.0000)	(2.9870)	(0.0000)	(8.2909)	(3.5005)	(12.4560)	(3.4513)	
Value	-8.5317***	-14.8558***	19.3991	-4.8828***	-83.4365	-10.3484***	-0.5348	91.0100***	-10.1996***	0.9228
	(1.1418)	(0.7984)	(0.0000)	(1.2062)	(0.0000)	(3.2605)	(0.7328)	(24.2852)	(1.7613)	(0.0000)
Δ Coverage	0.0010	-0.3573***	1.7035	-0.2530***	7.3964	-0.5423***	-0.2560***	1.2128***	0.0217	0.0000
	(0.0221)	(0.0957)	(0.0000)	(0.0287)	(0.0000)	(0.0689)	(0.0154)	(0.4088)	(0.1191)	(0.0000)
α	4.1161***	5.7314***	-27.0192	4.6042***	-25.9039	8.4901***	6.4545***	42.4575***	4.8356***	5.4287
	(0.2417)	(0.2111)	(0.0000)	(0.3568)	(0.0000)	(1.0796)	(0.3274)	(8.6976)	(1.2204)	(0.0000)
Observations	230	65	28	98	19	64	66	56	69	27
R-squared	0.4425	0.8953	1.0000	0.5269	1.0000	0.5629	0.8684	0.2947	0.4802	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVII Panel D: Decile portfolios by sorting on lag analyst coverage with distress risk measure after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-12.3331***	-33.7187***	-35.5915	3.6439**	-27.4456	-10.9102***	-28.9913***	-3.9977*	-12.7574**	-105.1634***
	(1.5444)	(3.2503)	(0.0000)	(1.7347)	(20.4641)	(3.7204)	(2.3889)	(2.1079)	(4.9718)	(0.2316)
Size	-3.4200	-21.0212***		1.5186	-32.9975	-10.0802	3.5978	15.2833***	-10.4595	-9.4353***
	(2.5967)	(1.6414)		(1.7659)	(30.8751)	(6.9329)	(2.5716)	(2.9889)	(7.6801)	(0.0353)
Value	-5.8552***	-17.6151***	21.8850	-3.6149***	-10.1118	-8.8581***	-18.8701***	-3.1879**	-6.8843**	35.8695***
	(1.1967)	(1.5089)	(0.0000)	(0.8923)	(14.1742)	(2.2626)	(1.5908)	(1.3019)	(3.0897)	(0.0953)
Lag coverage	-0.1052***	-1.2167***	-1.8603	-0.1521***	-0.2516	-0.1050***	-0.0350***	-0.0683***	-0.1040***	0.0046***
	(0.0139)	(0.1725)	(0.0000)	(0.0084)	(0.3515)	(0.0230)	(0.0127)	(0.0102)	(0.0204)	(0.0001)
α	5.5901***	11.9891***	19.9852	7.0031***	9.5065***	6.3123***	6.8534***	2.6030***	6.0642***	18.4418***
	(0.2928)	(1.0628)	(0.0000)	(0.2979)	(2.0756)	(0.9080)	(0.5129)	(0.4015)	(1.0427)	(0.0403)
Observations	218	33	19	71	41	95	65	78	47	37
R-squared	0.3751	0.9030	1.0000	0.8862	0.5217	0.3123	0.7418	0.9226	0.5391	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVII Panel E: Decile portfolios by sorting on o-score with distress risk measure after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-3.7971***	-6.1194	-8.5613***	-8.3028	-9.1668	-3.3734	-2.0841***	-9.6536	-34.5329	
	(0.4221)	(0.0000)	(2.4220)	(0.0000)	(0.0000)	(0.0000)	(0.0159)	(0.0000)	(0.0000)	
Size	-4.4679***	-4.5051	11.7530***	33.7139	47.0341	0.6766	5.1031***	-10.4613	102.5311	
	(0.5989)	(0.0000)	(3.2773)	(0.0000)	(0.0000)	(0.0000)	(0.0601)	(0.0000)	(0.0000)	
Value	6.7574***		2.2016	169.7409	396.3762	-6.5052	36.9210***	-38.1753	714.2821	
	(0.9551)		(11.5255)	(0.0000)	(0.0000)	(0.0000)	(0.2646)	(0.0000)	(0.0000)	
O-score	0.0707	0.0000	2.9446	0.0000	0.0000	0.0000	-1.0013***	0.0000	0.0000	0.0000
	(0.2446)	(0.0000)	(2.6336)	(0.0000)	(0.0000)	(0.0000)	(0.0576)	(0.0000)	(0.0000)	(0.0000)
α	5.4694***	5.9813	2.8293	12.9940	26.3922	5.2200	7.5807***	6.6372	44.2470	1.7233
	(0.2001)	(0.0000)	(2.1754)	(0.0000)	(0.0000)	(0.0000)	(0.0534)	(0.0000)	(0.0000)	(0.0000)
Observations	202	102	121	104	116	102	123	106	112	81
R-squared	0.7729	1.0000	0.7256	1.0000	1.0000	1.0000	0.9995	1.0000	1.0000	

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVII Panel F: Decile portfolios by sorting on Tobin's q with distress risk measure after dropping outliers at 1%

	(1) D1	(2) D2	(3) D3	(4) D4	(5) D5	(6) D6	(7) D7	(8) D8	(9) D9	(10) D10
Market β	-1.9842***	-1.3692*	-1.0025	-5.5865***	-13.7972***	-8.6287***	-2.0195***	-4.3747***	-6.2549***	0.0246
	(0.6275)	(0.7429)	(0.6799)	(0.4829)	(0.7058)	(0.5058)	(0.3200)	(0.3681)	(0.4316)	(0.0849)
Size	-8.8064***	-10.2985***	-8.9478***	-1.8283**	-2.0464	-1.2873	3.0624***	4.1990***	9.0877***	-0.8290***
	(1.0887)	(1.2555)	(1.1936)	(0.8944)	(1.2663)	(1.0323)	(0.6547)	(0.7715)	(0.8135)	(0.1654)
Value	-1.4716**	1.6513**	-0.5856	-7.6156***	-8.6639***	-7.4854***	-5.2268***	-5.8042***	-7.2161***	-1.0930***
	(0.6777)	(0.7881)	(0.6727)	(0.5752)	(0.6717)	(0.5032)	(0.3654)	(0.3720)	(0.4461)	(0.0926)
Tobin's q	-0.0913***	-0.1456***	-0.1036***	-0.0774***	-0.1851***	-0.0725***	-0.0259***	-0.0285***	-0.0029***	0.0001
	(0.0075)	(0.0125)	(0.0094)	(0.0051)	(0.0093)	(0.0048)	(0.0024)	(0.0027)	(0.0005)	(0.0000)
α	4.4616***	4.4051***	4.0292***	4.7396***	8.3501***	4.5775***	2.2004***	2.4691***	1.4718***	-0.1173***
	(0.1646)	(0.2516)	(0.2569)	(0.1730)	(0.3151)	(0.2299)	(0.1364)	(0.1749)	(0.1205)	(0.0279)
Observations	555	414	400	398	376	422	401	390	412	267
R-squared	0.2862	0.3328	0.3011	0.6236	0.6823	0.5713	0.6330	0.6103	0.5500	0.3820

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVIII – Abnormal return as calculated by intercept after regressing factors from Fama-French 3-factor model and measures of financial distress risk quintile portfolios by sorting on measures of financial distress risk run on Fama-French 3 factors and measures of financial distress risk after dropping outliers at 1%.

This table presents the quintile-wise abnormal returns (as represented by the intercept of the Fama-French 3-factor model, after adding the respective distress risk measure). In each of the panels, Column 1 presents results for quintile 1 and column 5 presents returns for quintile 5. Panel A presents results after controlling for distress risk proxied by Altman z-score; Panel B presents results after controlling for distress risk proxied by analyst coverage; Panel C presents results after controlling for distress risk proxied by change in analyst coverage; Panel D presents results after controlling for distress risk proxied by lagged analyst coverage; Panel E presents results after controlling for distress risk proxied by lagged change in analyst coverage; Panel F presents results after controlling for distress risk proxied by Ohlson o-score and Panel G presents results after controlling for distress risk proxied by Tobin's q. Each of the measures are defined in Appendix A. Statistical significance (two-sided) at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table XVIII Panel A: Quintile portfolios by sorting on Altman z-score with distress risk measure after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-5.4544***	-3.2458***	-1.6997***	-1.9875***	-1.6189***
	(0.4338)	(0.2963)	(0.3703)	(0.1817)	(0.1233)
Size	-8.0807***	-4.4561***	4.1809***	8.0311***	3.6453***
	(0.7609)	(0.5059)	(0.6740)	(0.3437)	(0.2536)
Value	-6.8154***	-2.3746***	-5.5288***	-5.4684***	-3.7454***
	(0.5567)	(0.3748)	(0.4906)	(0.2388)	(0.1652)
Altman z-score	-0.0060***	-0.0114***	-0.0014***	-0.0001**	0.0000
	(0.0004)	(0.0005)	(0.0001)	(0.0000)	(0.0000)
α	4.8512***	3.9417***	2.0704***	0.6172***	0.3696***
	(0.1113)	(0.1106)	(0.106)	(0.0520)	(0.0362)
Observations	1037	828	821	838	692
R-squared	0.3845	0.5351	0.3334	0.6633	0.5920

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVIII Panel B: Quintile portfolios by sorting on analyst coverage with distress risk measure after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-8.7566***	-19.4580***	-25.9593***	-7.5475***	-5.9425***
	(0.8183)	(1.6510)	(2.8836)	(1.1655)	(1.6071)
Size	6.6234***	-22.4819***	-32.1637***	8.0527***	-10.8685***
	(1.4489)	(2.0734)	(4.8623)	(1.5742)	(1.9336)
Value	-4.6179***	-14.0816***	-15.8750***	-2.3522***	-5.5256***
	(0.6526)	(0.9703)	(1.7656)	(0.7879)	(0.8996)
Analyst coverage	-0.0725***	0.8426***	-0.0749***	-0.1103***	-0.0793***
	(0.0106)	(0.1462)	(0.0166)	(0.0193)	(0.0117)
α	4.6546***	3.4208***	9.2441***	4.7341***	5.7030***
	(0.1951)	(0.6079)	(0.685)	(0.3500)	(0.3186)
Observations	278	132	115	168	102
R-squared	0.4530	0.6516	0.5122	0.3411	0.6665

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVIII Panel C: Quintile portfolios by sorting on change in analyst coverage with distress risk measure after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-13.7888***	-9.8945***	-21.8077***	-1.1643	-4.6469
	(1.1914)	(1.4598)	(3.4590)	(3.1947)	(3.3733)
Size	1.9058	-4.0518*	-1.7862	-2.9648	-13.3652***
	(1.7210)	(2.1530)	(4.9007)	(4.1605)	(2.9010)
Value	-7.0078***	-5.7120***	-6.3760***	-2.8644	-10.7832***
	(0.8196)	(0.9077)	(2.1472)	(1.8585)	(1.4524)
Δ Coverage	0.0145	-0.2480***	-0.5921***	-0.2640***	0.0777
	(0.0189)	(0.0230)	(0.0669)	(0.0441)	(0.0989)
α	4.0617***	4.6259***	6.6871***	6.0440***	4.5640***
	(0.1960)	(0.2791)	(0.7355)	(0.7271)	(1.0023)
Observations	295	126	83	122	96
R-squared	0.4315	0.5586	0.5469	0.3499	0.4965

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVIII Panel D: Quintile portfolios by sorting on lag analyst coverage with distress risk measure after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-14.3395***	-8.1266***	-14.3555***	-16.6330***	-7.4862***
	(1.0602)	(2.6874)	(3.1115)	(1.0751)	(1.8996)
Size	-6.0508***	-7.5109**	-14.8295***	-2.1217*	-0.4243
	(1.7775)	(2.9866)	(5.3731)	(1.1602)	(2.5015)
Value	-6.1858***	-7.6681***	-7.4852***	-11.8664***	-4.5990***
	(0.8634)	(1.4252)	(1.8218)	(0.5478)	(1.0718)
Lag coverage	-0.1016***	-0.1529***	-0.1113***	-0.0151**	-0.0610***
	(0.0101)	(0.0155)	(0.0188)	(0.0071)	(0.0093)
α	5.4700***	7.7384***	6.6430***	4.1838***	3.5386***
	(0.2116)	(0.5056)	(0.7417)	(0.2385)	(0.4281)
Observations	251	90	136	143	84
R-squared	0.5195	0.6333	0.2595	0.8546	0.6504

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVIII Panel E: Quintile portfolios by sorting on o-score with distress risk measure after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-4.5843***	-1.8120	-0.1655	-5.6308***	-34.4759
	(0.2839)	(1.3256)	(0.1067)	(0.2742)	(0.0000)
Size	-4.3628***	-3.3364	-1.4367***	-6.4889***	102.4139
	(0.4398)	(2.7421)	(0.2563)	(0.6462)	(0.0000)
Value	6.2438***	3.8849	8.9203***	-20.4155***	713.2803
	(0.7423)	(7.9442)	(1.3352)	(2.1439)	(0.0000)
O-score	-0.1033	4.6003***	0.6666***	4.8474***	0.0000
	(0.1836)	(1.1942)	(0.2180)	(0.6031)	(0.0000)
α	5.7102***	3.4509***	5.5494***	1.6750***	44.1896
	(0.1438)	(1.1098)	(0.1609)	(0.5372)	(0.0000)
Observations	304	225	218	229	193
R-squared	0.8438	0.4431	0.4083	0.8762	1.0000

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XVIII Panel F: Quintile portfolios by sorting on Tobin's q with distress risk measure after dropping outliers at 1%

	(1) Q1	(2) Q2	(3) Q3	(4) Q4	(5) Q5
Market β	-0.9156**	-2.6584***	-10.2566***	-3.1635***	-3.4324***
	(0.4331)	(0.3535)	(0.3932)	(0.2236)	(0.1821)
Size	-9.4879***	-5.3147***	-0.5773	3.7673***	4.2945***
	(0.7576)	(0.6465)	(0.7576)	(0.4639)	(0.3484)
Value	-0.8696*	-3.8516***	-8.8280***	-5.5135***	-4.4570***
	(0.4656)	(0.3868)	(0.3845)	(0.2401)	(0.1943)
Tobin's q	-0.0862***	-0.0809***	-0.0960***	-0.0260***	-0.0006***
	(0.0058)	(0.0042)	(0.0042)	(0.0017)	(0.0001)
α	4.0243***	4.1224***	5.6929***	2.2726***	0.7579***
	(0.1241)	(0.1291)	(0.1727)	(0.1003)	(0.0521)
Observations	969	798	798	791	679
R-squared	0.2820	0.4600	0.6418	0.6501	0.5600

*Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1*

Table XIX Panel A: Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile/quintile portfolios by sorting on measures of financial distress risk after dropping outliers at 1%.

Table XIX Panel A: Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile/quintile portfolios by sorting on measures of financial distress risk after dropping outliers at 1%.

This table presents a summary of abnormal return differences, i.e. difference between the two extreme rank sorts of each distress risk measure, sorted by deciles as well as quintiles, respectively, using the Fama-French 3-factor model. L-H stands for low minus high and captures the difference in abnormal returns for the highest rank sort and the lowest rank sort of each distress risk measure, for decile sorts and quintile sorts. All differences are significant at the 1% level.

Long-short Portfolios after sorting	(1) D1	(2) D10	(3) (L-H)	(4) Q1	(5) Q5	(6) (L-H)
Altman z-score (1=H)	4.6152	0.0000	-4.6152	4.1723	0.3930	-3.7793
Analyst coverage (1=H)	3.6287	0.0000	-3.6287	3.9023	4.3561	0.4538
Δ Coverage (1=H)	4.1128	0.0000	-4.1128	4.0233	5.2811	1.2578
Lag Coverage (1=H)	4.3507	17.3066	12.9559	4.2961	1.8103	-2.4858
O-score (1=L)	5.5186	0.0000	5.5186	5.6425	0.0000	5.6425
Tobin's q (1=L)	3.4603	-0.1036	3.5639	2.9191	0.6569	2.2622

Table XIX Panel B: Summary of abnormal return as calculated by intercept of Fama-French 3-factor model on decile/quintile portfolios by sorting on measures of financial distress risk and adding the measure as an explanatory variable after dropping outliers at 1%.

This table presents a summary of abnormal return differences, i.e. difference between the two extreme rank sorts of each distress risk measure, sorted by deciles and quintiles, respectively, using the Fama-French 3-factor model supplemented by the respective distress risk measure. L-H stands for low minus high and captures the difference in abnormal returns for the highest rank sort and the lowest rank sort of each distress risk measure, for decile sorts and quintile sorts. All differences are significant at the 1% level.

Long-short Portfolios with measure	(1) D1	(2) D10	(3) (L-H)	(4) Q1	(5) Q5	(6) (L-H)
Altman z-score (1=H)	5.2003	0.0000	-5.2003	4.8512	0.3696	-4.4816
Analyst coverage (1=H)	4.3255	0.0000	-4.3255	4.6546	5.7030	1.0484
Δ Coverage (1=H)	4.1161	0.0000	-4.1161	4.0617	4.5640	0.5023
Lag Coverage (1=H)	5.5901	18.4418	12.8517	5.4700	3.5386	-1.9314
O-score (1=L)	5.4694	0.0000	5.4694	5.7102	0.0000	5.7102
Tobin's q (1=L)	4.4616	-0.1173	4.5789	4.2043	0.7579	3.4464

Appendix

Appendix A: Variable Descriptions

Measure	Definition
Altman z-score	Distress risk measure as presented in Altman (1968). It is calculated as $1.2\left(\frac{\text{Working Capital}}{\text{Total Assets}}\right) + 1.4\left(\text{Retained}\frac{\text{Earnings}}{\text{Total Assets}}\right) + 3.3\left(\frac{\text{EBIT}}{\text{Total Assets}}\right) + 0.6\left(\frac{\text{Market Value of Equity}}{\text{Total Liabilities}}\right) + 1.0\left(\frac{\text{Sales}}{\text{Total Assets}}\right)$
Analyst coverage	Distress risk measure presented in Hong et al. (2000). It is defined as the unique number of analysts covering the firm as at the end of the fiscal year in the previous year
Lagged analyst coverage	Lagged Analyst Coverage is the lagged value of analyst coverage as calculated above
Change in analyst coverage	Distress risk measure as presented in Change in Analyst coverage is Analyst Coverage less Lagged Analyst Coverage
Lagged change in analyst coverage	Lagged change in Analyst coverage is the lagged value of change in analyst coverage, as defined above
Ohlson o-score	Distress risk measure as presented in Ohlson (1980). It is calculated as $-1.32 - 0.407\log\left(\frac{\text{Total Assets}}{\text{GNP}}\right) + 6.03\left(\frac{\text{Total Liabilities}}{\text{Total Assets}}\right) - 1.43\left(\frac{\text{Working Capital}}{\text{Total Assets}}\right) + 0.0757\left(\frac{\text{Current Liabilities}}{\text{Current Assets}}\right) - 1.72\,\text{X} - 2.37\left(\frac{\text{Net Income}}{\text{Total Assets}}\right) - 1.83\left(\frac{\text{Funds from operations}}{\text{Total Liabilities}}\right) + 0.285\,\text{Y} - 0.521\left(\frac{\Delta\text{Net Income}}{\lvert\text{NI}\rvert+\lvert\text{Lagged Net income}\rvert}\right)$, where $\text{X} = 1$ if Total Liabilities $>$ Total Assets, and 0 otherwise; $\text{Y} = 1$ if net loss for past two years, and 0 otherwise
Tobin's q	Market Value of Assets/Book Value of Assets

CHAPTER 5

CONCLUSION

In this dissertation, I study the robustness of robustness of rational expectations equilibrium in the world of behavioral hypothesis by using mutual fund and portfolio management setting. In my first and second essay, I use mutual fund setting to examine rational expectations equilibrium. I examine the racial and ethnic prejudices of mutual fund investors in fund flows. In the third essay, I scrutinize the portfolio of small-growth stocks from Fama French 3-factor model and try to provide a risk based explanation for the abnormal returns calculated as statistically non-zero intercept of the 3-factor model. Overall, I demonstrate in this dissertation that rational expectations equilibrium is robust to any behavioral explanation.

In the first essay, I regress on fund flows on measures for 'foreign-sounding' names along with flows, performance and other fund characteristics. Since fund flows are notoriously noisy, I add benchmark-adjusted return as a control for performance. I do not find any evidence of discriminatory behavior (in-group bias) by investors in fund flows and hence, cannot conclude that investors display racial or ethnic biases while making investment decisions.

In the second essay, I dig deeper in the in-group bias. I construct a measure of race by calculating probabilistic race using Clarifai from photos of mutual fund managers. I also construct a measure of ethnicity by calculating probabilistic ethnicity using Name Prism from names of mutual fund managers. I generate four measures of race (photo based)/ethnicity (name based) for non-white managers namely black, asian, middle eastern and hispanic. I regress net fund-flows on indicator variables representing race (photo based)/ethnicity (name based), black, middle eastern, asian and hispanic and on all the controls for flow, performance, fund characteristics, and manager characteristics as are documented in the literature. I do not find any evidence of differential fund flows and cannot conclude that investors display name based (ethnic) or photo based (racial) discrimination while making investment decisions.

I contribute to the existing literature in four ways. In the first, I try to improve the survey used by KNS, by enforcing certain constraints from fields of sociology and onomastics. In the second, I suggest an objective measure for ethnicity (name based) by calculating probabilistic ethnicities using Name-Prism algorithm. In the third, I suggest an objective measure for race (photo based) by calculating probabilistic race using Clarifai algorithm. In the fourth, I find that KNS are sample-specific. By expanding the sample period and introducing alternative measures, I find results in stark contrast with KNS.

In the third essay, I provide financial distress risk as an explanatory measure for the statistically non-zero intercept of the 3-factor for the universe of small-growth stocks. I sort the universe of firms with small market value – small stocks and low ratio of book equity to market equity – low BE/ME stocks, on the measures of financial distress. I demonstrate that the long low distress risk – short high distress risk portfolio (L-H) constructed on decile and quintile sorting of distress risk produces positive and significant return. I can also observe that the intercept of the 3-factor model reduces significantly for portfolios with high financial distress risk illustrating that it was the mis-capturing of financial distress risk that caused the intercept to gain statistical significance, at least in part. The long-short portfolio produces the abnormal return ranging from 0.0246 percent to 0.1309 percent which is statistically significant at 1% confidence level. These results are robust to changes of measure and changes in sorting. This presents opportunities for the long-short portfolios within the universe of small growth stocks with average abnormal return of 0.0771 percent and hence, would be of interest to the portfolio managers.