

Diversity and Investment Performance

A Summary of the Research

The Bottom Line

- There is strong evidence that female investors (or firms owned by women) perform at least as well as their male counterparts.
- There is strong evidence that women take less risk in their personal accounts than do men. The evidence with regard to risk-taking by professional investors is more mixed.
- There is strong evidence that women trade less in their personal accounts than men, though it is unclear whether gender or some other factor is driving the lower level of trading. The evidence is insufficient to draw conclusions about the trading of female professional investors.
- There are very few studies that consider diversity based on minority status and socioeconomic background; all of these studies address investment performance. The findings of these few studies are consistent with the findings of studies examining gender effects (i.e., they suggest that investments managed by minorities (or by firms owned by minorities) perform at least as well as other funds).

About This Research Brief

This research brief summarizes and tabulates the studies that seek to answer the following questions:

- Do investments managed by women or minorities (or by firms owned by women or minorities) outperform or underperform?
- Are the investments made by women or minorities (or by firms owned by women or minorities) more or less risky than average?
- Do women or minorities (or firms owned by women or minorities) have a different approach to investing?

To answer these questions, this brief summarizes 46 studies, including 6 recurring studies that were published in multiple years using overlapping data. All of these studies reach their conclusions through the examination of actual investment results or through analysis of actual portfolio positioning; studies based on experiments or surveys were excluded.

The oldest of these studies was published in 1995; the newest in 2021. Combined, they examine almost 50 years of data (ranging from 1973 to 2021).

Most (40 of 46 studies) look at gender diversity only. Of the remaining studies:

- 4 examine both gender and minority status,
- 1 examines socioeconomic background, and
- 1 examines both socioeconomic background and minority status.

Most (42 of the 46 studies) look at the gender or minority status of the investor or portfolio manager. Of the remaining studies:

- 2 look at the ownership of the firm hired to manage the fund, while
- 2 consider both the portfolio manager and the firm's ownership.

Of the 46 studies, 28 were written by an academic author and, with limited exceptions, were published in an academic journal. The other 18 studies were sponsored by industry participants (including media outlets).

While the studies are largely focused on the United States, 9 specifically address other countries or global trends (i.e., roughly 1 in 5).

The studies look at a wide range of investment types, as follows:

<i>Investment Type</i>	<i>Number of Studies</i>
Mutual funds	20
Personal accounts	14
Hedge funds	6
Private equity	3
Venture capital	3
Institutional managers	2
Real estate	1
Trading accounts	1

Note that two of the studies examine more than one type of investment; therefore, the total is greater than 46.

Investment Performance

To summarize:

- **Outperform.** 22 studies conclude that investments managed by women or minorities outperform.
- **No difference or mixed.** Out of a total of 19 studies, 15 studies conclude that there is no difference in performance between results achieved by diverse managers and other managers, while 4 studies conclude that diverse managers outperform in some circumstances but not others.
- **Underperform.** 6 studies conclude that women or diverse teams underperform in some or all circumstances.

Note that some studies reach multiple conclusions about performance because they were published in multiple years (in a series of publications) or cover multiple investment types. On the other hand, some studies do not reach a conclusion about performance (because they focus on risk or other characteristics).

Taking a closer look at each category:

Outperform. Of the 22 studies in this category, nearly two-thirds (14 of 22) focused on hedge funds or private equity. In addition, three-fourths (17 of 22) were industry sponsored.

No difference or mixed. Of the 19 studies in this category, two-thirds (13 of 19) focused on mutual funds. Most (16 of 19) were from academic sources. The 4 studies with mixed conclusions found as follows:

- Hedge funds with all female managers perform no differently than funds managed by all male managers. Funds of funds managed by all female teams and gender diverse teams perform similarly to funds of funds managed by all male managers. However, single style funds managed by mixed gender teams underperform funds managed by all male teams on both a raw and risk-adjusted basis. (Aggarwal Boyson, 2016)
- Female mutual fund managers outperform when results are measured by raw returns, but there is no difference in performance on a risk-adjusted basis. (Bliss Potter, 2002)
- Mixed gender teams managing mutual funds outperform on both a raw return and risk-adjusted basis. However, male-only teams outperform female-only teams (more significantly on a raw return than on a risk-adjusted basis). (Citywire, 2018)
- Gender is not significantly related to fund return rankings except for 1-month performance periods, when female managers outperform. (Rau Wang, 2021)

Underperform. The studies in this category found as follows:

- A higher proportion of men achieved top mutual fund rankings. (Citywire, 2016)
- Traders exposed to higher levels of prenatal testosterone outperformed. Note that this study is based on a small sample (44 traders) that was entirely male. (Coates Gurnell Rustichini, 2009)
- Investments by female venture capital investors have significantly lower success rates; however, “this difference is largely attributable to female investors receiving less benefit from the track record of their colleagues. However, performance differences disappear in older, larger firms and firms with other female investors.” (Gompers Mukharlyamov Weisburst Xuan, 2021)
- Gender diversity has a negative effect on the performance of Chinese mutual funds. (Liu Yang Zhou, 2014)
- Men had a “slight edge” in performance in their personal accounts. Note that the two studies in this series are based on overlapping time periods. (Young, 2015; Young Young, 2019)

Overall, the evidence in the category of “no difference or mixed” is strongest. The studies in this category are largely peer-reviewed academic studies based on standardized mutual fund data.

However, the large number of the studies that fall into the category of “outperform” argue for a more positive overall assessment of the effect of diversity on investment performance, even though these studies are less likely to be peer-reviewed and focus on more difficult to measure investment types. Also supporting a more positive conclusion, the studies in the “underperform” category report weak or mixed conclusions or are based on small samples.

Therefore, the weight of the evidence supports the conclusion that female investors perform at least as well as male investors.

Because of the small number of studies looking at minority status and socioeconomic background, it is difficult to draw firm conclusions about their relationship to investment performance. However, the evidence that is available is consistent with the conclusion drawn for female investors.

Risk

Nearly two-thirds of the studies (29 studies) address the issue of risk; these include 12 of the 14 studies of investments in personal accounts.

To summarize their conclusions:

- **Lower risk or outperform in down market.** 14 of the 29 studies conclude that investments managed by women or minorities have lower risk or outperform in declining markets. Two-thirds of these studies (10 of 14) were from academic sources. 7 of these 14 studies focus on personal accounts.
- **No difference.** 9 studies conclude that there is no difference in the risk of investments managed by women and those managed by others. 5 of these 9 studies focus on personal accounts.
- **Mixed.** 3 studies have mixed results. All 3 of these studies focus on professional investors.
- **Higher risk.** 3 studies find evidence that diverse teams take more risk or that women take more risk.

Distinguishing between professional investors and personal accounts is helpful in this category.

The evidence that female professional investors take less risk is mixed. As mentioned, 3 studies find that women take more risk, while 3 find that women or diverse teams take less risk only in some circumstances. At the same time, 2 of the studies suggesting that female professional investors take less risk reach their conclusions based on down-market performance over a limited period.

The evidence that female individual investors take less risk in personal accounts is stronger. The studies looking at personal accounts draw from large data sets (i.e., accounts at a large brokerage firm), and, while each study generally examines risk only at a single point in time, similar studies have been produced periodically since 1995, with generally consistent results.

On the other hand, as the authors of the studies looking at personal accounts have pointed out, even though there is a strong correlation between gender and the level of risk, factors other than gender may be determinative. While many of the studies of personal accounts control for income and marital status, which have a strong influence on the propensity to take risk, researchers argue that an individual's risk tolerance or level of financial knowledge, along with the degree of gender inequality in society at large, can affect risk-taking in personal accounts. Unfortunately, controlling for these factors is more difficult.

Overall, there is strong evidence that women take less risk in their personal accounts than do men. The evidence with regard to risk-taking by professional investors is more mixed.

All of the studies looking at risk consider gender only.

Other Characteristics

In addition, 14 studies look at other characteristics of the portfolios of female investors. Studies in this area do not address other types of diversity.

- **Turnover.** 8 studies find that there is less turnover in accounts managed by women; 7 of these 8 studies focus on personal accounts. Note that of the studies focusing on personal accounts, 2 are based on allocations in defined contribution plans; the authors note that women are less likely to trade in these accounts partly because they are more likely to invest in target date funds and balanced funds. 1 study finds that the turnover of mutual funds managed by women is no different from that of mutual funds managed by men.
- **Style.** 2 studies find that professional women investors have "less extreme" or "more reliable" styles, while 1 study finds no difference in investment approach between men and women. With regard to investment skills, 1 study finds no differences between men and women. On the other hand, 1 study finds general differences in style and skills between men and women.

- **Costs.** A study of Taiwanese mutual funds finds that women managers control costs better.

Overall, there is strong evidence that women trade less in their personal accounts than men. However, no conclusions can be drawn about female professional investors.

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Is there a study that should be added to this summary? Contact the author at www.versanture.com/contact.

Research Summaries

Year	2020
Title	Gender Discrimination as a Consequence of Team Failure
Author(s)	Renée B. Adams, Min S. Kim
Publication	SSRN
Data	1990 to third quarter of 2015; U.S. open end equity funds
Conclusion	<p>"We find no supporting evidence that female managers underperform male managers."</p> <p>"The results show no statistically significant differences in the alphas between the aggregate portfolios of male-only funds and diverse funds (not tabulated)."</p>
Tags	gender, mutual funds, academic

Year	2016
Title	The performance of female hedge fund managers
Author(s)	Rajesh Aggarwal, Nicole M. Boyson
Publication	<i>Review of Financial Economics</i> 29(1): 23-36
Data	Thomson-Reuters hedge fund database for 1994-2013 adjusted for survivorship bias
Conclusion	<p>"Funds with all female managers perform no differently than all male-managed funds and have similar risk profiles. For single-style funds, those with mixed teams of both genders underperform male-only funds on both a raw and risk-adjusted basis, although mixed funds incur less risk and their Sharpe ratios do not differ. For funds of funds, both all-female and mixed funds have similar performance to male-managed funds."</p> <p>"We then consider the failure rate across all fund styles. Funds with at least one female manager fail at higher rates, driven by difficulty in raising capital—these funds are smaller and are less likely to be closed to new investment. Surviving funds with at least one female manager have better performance than male-managed surviving funds, consistent with the idea that female managers need to perform better for their funds to survive. Yet, female-managed surviving funds have fewer assets under management than surviving male-managed funds."</p> <p>"Using media mentions as a proxy for investor interest, female-managed funds receive proportionately less attention."</p> <p>"Our results suggest that there are no inherent differences in skill between female and male managers, but that only the best performing female managers manage to survive."</p>
Tags	gender, mutual funds, academic

Year	2003
Title	Do Female Mutual Fund Managers Manage Differently?
Author(s)	Stanley M. Atkinson, Samantha Boyce Baird, Melissa B. Frye
Publication	<i>Journal of Financial Research</i> 26: 1-18
Data	5 years ending 2000; taxable fixed income funds
Conclusion	<p>"We find that male- and female-managed funds do not differ significantly in terms of performance, risk, and other fund characteristics."</p> <p>"We find that the net asset flows into funds managed by females are lower than for males, especially for the manager's initial year managing the fund."</p>
Tags	gender, mutual funds, academic

Year	2015
Title	Gender, style diversity, and their effect on fund performance
Author(s)	Vassilios Babalos, Guglielmo Maria Caporale, Nikolaos Philippas
Publication	<i>Research in International Business and Finance</i> 35: 57-74
Data	358 European diversified equity mutual funds from January 2006 to December 2011
Conclusion	<p>"[G]ender does not influence fund performance and more interestingly women are not more risk averse than men. . . In terms of market timing we document that women exhibit a worse record than men. . . With respect to portfolio quality, both female and male managed funds appear to be sufficiently diversified. As for investment strategies, male managers seem to favour small size stocks whereas female managers prefer more growth-oriented strategies."</p>
Tags	gender, mutual funds, academic

Year	1999
Title	Gender differences in defined contribution pension decisions
Author(s)	Vickie L. Bajtelsmit, Alexandra Bernasek, Nancy A. Jianakoplos
Publication	<i>Financial Services Review</i> 1: 1-10
Data	1989 Survey of Consumer Finances
Conclusion	"We find that women exhibit greater relative risk aversion in their allocation of wealth into defined contribution pension assets."
Tags	gender, personal accounts, academic

Year	1995
Title	Risk Aversion and Pension Investment Choices
Author(s)	Vickie L. Bajtelsmit, Jack L. VanDerhei
Publication	<i>Wharton Pension Research Council Working Papers</i> 580
Data	20,000 employees at a large U.S. employer in 1993
Conclusion	"[T]he women in this sample are significantly more likely to invest in fixed-income securities and are less likely to invest in employer stock. However, since we are missing important information on household wealth and marital status, this result does not necessarily imply that elderly women will be worse off in retirement."
Tags	gender, personal accounts, academic

Year	2011
Title	Is a Team Different from the Sum of its Parts? Evidence from Mutual Fund Managers
Author(s)	Michaela Bär, Alexander Kempf, Stefan Ruenzi
Publication	<i>Review of Finance</i> 15(2): 359-396
Data	U.S. equity funds from January 1994 to December 2003 (12,339 yearly observations from 652 management companies)
Conclusion	"With the exception of momentum, women follow significantly less extreme investment styles with respect to all style dimensions. They also hold less industry concentrated portfolios. These differences are also reflected in less extreme performance outcomes among female managers than among male managers."
Tags	Gender, mutual funds, academic

Year	2013
Title	Is the willingness to take financial risk a sex-linked trait? Evidence from national surveys of household finance
Author(s)	Nataliya Barasinska, Dorothea Schäfer
Publication	Deutsche Bundesbank Discussion Paper No. 05/2013
Data	Austrian Survey of Household Financial Wealth 2004; Italian Survey of Household Income and Wealth (SHIW) Wave 2004; Spanish Survey of Household Finances (EFF) Wave 2005; DNB Household Survey Wave 2004
Conclusion	"[T]he difference between men and women in actual risk-taking is most pronounced in Italy – the country with the greatest gender inequality compared to the other three countries. In particular, we find that in Italy women are less likely to invest in risky assets than men, even if they report equal risk tolerance. In contrast, in Austria, the Netherlands and Spain, men and women with equal risk tolerance levels are equally likely to hold risky financial assets in their portfolios. The results for Austria, the Netherlands and Spain, the countries with relatively high degrees of gender equality, reject the hypothesis that actual risk-taking, shown by holdings of risky assets, is a sex-linked trait. In those countries, it is not gender that is a strong predictor for the readiness to invest in risky assets, but rather self-reported risk tolerance."
Tags	gender, personal accounts, academic

Year	2001
Title	Boys will be Boys: Gender, Overconfidence, and Common Stock Investment
Author(s)	Brad M. Barber, Terrance Odean
Publication	<i>Quarterly Journal of Economics</i> 116(1): 261-292
Data	Account data for over 35,000 households; common stock investments for men and women from February 1991 through January 1997
Conclusion	"Men trade more than women and thereby reduce their returns more so than do women. Furthermore, these differences are most pronounced between single men and single women."
Tags	gender, personal accounts, academic

Year	2020
Title	Performance Isn't Everything: Personal Characteristics and Career Outcomes of Mutual Fund Managers
Author(s)	Brad Barber, Anna Scherbina, Bernd Schlusche
Publication	SSRN
Data	CRSP mutual fund data (January 1992 through December 2016). Entire Morningstar dataset (July 1924 to March 2017).
Conclusion	"[W]hen analyzing in detail the performance of sole managers of active equity funds, we find no significant difference between the performance of male and female fund managers, in terms of both returns and fund flows. Moreover, female managers' returns are less volatile than the returns of other funds in the same investment category."
Tags	gender, mutual funds, academic

Year	2011
Title	Affirmative Investing: Women and Minority Owned Hedge Funds
Author(s)	Barclays Capital
Publication	<i>Hedge Fund Pulse</i> , June 2011
Data	Hedge fund performance indexes created using the Hedge Fund Research (HFR) database for April 2006 through March 2011
Conclusion	"Performance, both in terms of absolute returns and risk-adjusted returns is substantially stronger for women and minority owned hedge funds than for the hedge fund universe at large." "Risk aversion . . . seems to play a role . . . with women and minority owned funds outperforming their non-diversity peers in market downturns."
Tags	gender/minority, hedge funds, industry

Year	2002
Title	Mutual Fund Managers: Does Gender Matter?
Author(s)	Richard T. Bliss, Mark E. Potter
Publication	<i>Journal of Business and Economic Studies</i> 8(1): 1-15
Data	Morningstar data for 10 years to September 2000
Conclusion	"[W]e found evidence that women fund managers – both domestic and international – hold portfolios with marginally more risk than men, depending on the risk measure used. We also found no statistical difference in turnover for domestic fund managers between the two groups. Measures of raw return show that female fund managers outperform their male counterparts consistent with popular periodical articles. However, after controlling for risk and other potential influences, we found no significant differences for domestic funds."
Tags	gender, mutual funds, academic

Year	2021
Title	Hedge Funds Run by Women, Minorities Outperform Market Peers
Author(s)	Bloomberg
Publication	<i>Bloomberg Hedge Fund Chartbook</i>
Data	Hedge funds for 3 years to September 30, 2021
Conclusion	"Funds with minorities represented in management had a median one-year total return of 29.6% and those with women represented in management returned 21.6%. Fund managers without those attributes had a 12.7% gain in that period." "Over a three-year annualized period, women and minority managers posted a total return of 10.6% and 7.8%, respectively. Non-diverse managers had a 6.4% return."
Tags	gender/minority, hedge funds, industry, ownership/management, series
Notes	From summary in November 8, 2021 article in <i>Bloomberg News</i> by Alan Mirabella

Year	2020
Title	These hedge funds are rare but they're starting to shine
Author(s)	Bloomberg
Publication	<i>Bloomberg</i>
Data	Bloomberg hedge fund data: 2,934 funds. 3 years ending Sept. 30, 2019
Conclusion	"[F]unds owned or managed by people who are not white men significantly outperformed their peer groups in the last three years." "Over a five-year time horizon, all types of diverse hedge funds outperformed their peers by an average of 1.25% on an annualized basis, for a total return of 4.30%, vs. 3.05% for the broader industry."
Tags	gender/minority, hedge funds, industry, ownership/management, series
Notes	From summary in April 2, 2020 article in <i>Bloomberg News</i> by Cara Slear and James Munro

Year	2010
Title	Gender difference and job replacement for mutual fund
Author(s)	Jo-Hui Chen
Publication	<i>Quality and Quantity</i> 44(4): 661-671
Data	Taiwanese mutual funds from January 2001 to August 2005
Conclusion	<p>"[P]erformance difference is not quite obvious."</p> <p>"Female fund managers tend to be more aggressive in holding risky portfolios and facing moral hazard problems."</p>
Tags	gender, mutual funds, academic

Year	2016
Title	Family Descent as a Signal of Managerial Quality: Evidence from Mutual Funds
Author(s)	Oleg Chuprinin, Denis Sosyura
Publication	<i>NBER Working Paper Series</i> 22517
Data	482 unique U.S. equity funds spanning 1975 to 2012
Conclusion	"[M]anagers from poor families deliver higher alphas than managers from rich families."
Tags	socioeconomic status, mutual funds, academic

Year	2018
Title	Alpha Female 2018
Author(s)	Citywire
Publication	n/a
Data	three years ending May 2018; database of 16,000 fund managers
Conclusion	<p>"[M]ixed-gender teams produce three-year returns that are 4.3% higher on average than the returns of female-only teams. Mixed teams also outperform male-only teams by 0.5% over the same timeframe."</p> <p>"[M]ixed-gender teams produce three-year returns that are 4.3% higher on average than the returns of female-only teams. Mixed teams also outperform male-only teams by 0.5% over the same timeframe."</p> <p>"Female-only teams tend to have lower risk, while male-only teams have higher risk. Mixed teams provide balance, with risk increased above the level of female-only teams and in some cases below male-only teams."</p> <p>"For every unit of risk a mixed team takes, 2.82% in returns is generated, which compares with 2.76% for male-only teams and 2.57% for female-only teams. In simple terms, mixed teams return more money over a three-year period than both male- and female-only units."</p>
Tags	gender, mutual funds, industry

Year	2016
Title	Alpha Female
Author(s)	Citywire
Publication	n/a
Data	Citywire database of 15,229 fund managers around the world
Conclusion	<p>“Citywire Manager Ratings data show that a slightly higher proportion of men than women currently achieve top performance. Given the small numbers it isn’t possible to make a judgement on the statistical significance, if any. But here are the raw numbers:”</p> <p>“Of the 1,562 women fund managers in our database, 334 received a Citywire rating for good investment performance, based on their individual, three-year, risk-adjusted returns at the end of March. That’s just over 21%.”</p> <p>“The proportion of men with a Citywire rating was slightly higher: 3,180 of the 13,488 male fund managers we track achieved a performance rating at the end of March, or 23.5%.”</p> <p>“Similarly, 30 women achieved a top Citywire AAA rating. That’s 1.9% of 1,562 female fund managers. However, 321 men received an AAA rating, which is 2.4% of the 13,488 male managers we follow.”</p> <p>“If there were just seven more women fund managers with a Citywire AAA rating they would be neck and neck with the men.”</p>
Tags	gender, mutual funds, industry

Year	2009
Title	Second-to-fourth digit ratio predicts success among high-frequency financial traders
Author(s)	John M. Coates, Mark Gurnell, Aldo Rustichini
Publication	<i>PNAS</i> 106(2): 623-628
Data	Profit and loss statements for 20 months for 44 London traders
Conclusion	“[A] marker of prenatal testosterone levels predicts a trader’s long-term profitability. . . . [T]he traits signaled . . . are likely to confer the greatest advantage in noise or high-frequency trading, an occupation that requires, in addition to the ability to take risks, heightened vigilance and quick reactions.”
Tags	gender, trading, academic

Year	2018
Title	The gender composition of firms and risk-taking behavior: Evidence from mutual funds
Author(s)	Cristian L. Dezsö, Evan Rawley, David Gaddis Ross
Publication	<i>Leadership Excellence and Gender in Organizations</i> 2(7): Article 3
Data	CRSP 1993 to 2011
Conclusion	"[T]he presence of female fund managers is associated with more risk-taking, by other managers in the same family of funds. Male and, especially, female fund managers take on significantly more idiosyncratic risk—a measure of a fund manager's unique investment style—and their funds exhibit a higher market beta. . . when they have a higher proportion of female fund manager colleagues. Our results are consistent with a 'safe haven' effect, whereby the presence of female managers encourages their colleagues to express their investing individuality by taking on more risk. We also find that risk-adjusted performance does not change, suggesting that the safe haven effect operates along an efficient frontier."
Tags	gender, mutual funds, academic

Year	2002
Title	Gender differences in revealed risk taking: evidence from mutual fund investors
Author(s)	Peggy D. Dwyer, James H. Gilkeson, John A. List
Publication	<i>Economic Letters</i> 76: 151-158
Data	1995 survey by the Office of the Comptroller of the Currency and the SEC of 2,000 randomly selected mutual fund investors
Conclusion	"[W]omen take less risk than men in their mutual fund investments. We find, however, that the observed difference in risk taking is significantly attenuated when we include a financial investment knowledge control variable in the regression model, suggesting that the gender effect found in previous studies that employ less specific knowledge controls may be biased upward."
Tags	gender, personal accounts, academic

Year	2017
Title	Who's the Better Investor: Men or Women
Author(s)	Fidelity Investments
Publication	Fidelity.com
Data	8 million retail customers from January 2016 to December 2016 (average of monthly annualizing returns over 12 months)
Conclusion	"[W]omen performed better than men."
Tags	gender, personal accounts, industry

Year	2021
Title	2021 Women and Investing Study
Author(s)	Fidelity Investments
Publication	Fidelity.com
Data	5.2 million self-directed retail accounts from January 2011 to December 2020
Conclusion	"[O]n average, women outperformed their male counterparts by 40 basis points or 0.4%."
Tags	gender, personal accounts, industry, series

Year	2020
Title	Empowering Women: How COVID-19 has Affected the Gender Gap
Author(s)	Goldman Sachs
Publication	As reported in Chris Flood, "Female-managed US funds outperform all-male rivals," <i>Financial Times</i> , September 6, 2020
Data	Large cap mutual funds; performance for 2020 YTD through August 26
Conclusion	"So far this year, female managed funds on average delivered returns of -57 basis points compared with their benchmarks. All male run funds performed worse, with average returns of -164bp." "Even after adjusting for risk, female managed funds outperformed their male counterparts amid the coronavirus-related market swings," said David Kostin, Goldman Sachs' chief US equity strategist."
Tags	gender, mutual funds, industry

Year	2021
Title	Gender Gaps in Venture Capital Performance
Author(s)	Paul A. Gompers, Vladimir Mukharlyamov, Emily Weisburst, Yuhai Xuan
Publication	<i>Journal of Financial and Quantitative Analysis</i> (2021)
Data	VentureSource data from 1973 to 2003
Conclusion	"Investments by female venture capital investors have significantly lower success rates than investments by their male colleagues when controlling for personal characteristics, including employment and educational history, and portfolio companies' characteristics. The gender differences in investment outcomes are not due to female investors being less skilled but, rather, are largely attributable to female investors receiving less benefit from the track records of their colleagues. Performance differences disappear in older, larger firms and firms with other female investors."
Tags	gender, venture capital, academic

Year	2016
Title	The cost of friendship
Author(s)	Paul A. Gompers, Vladimir Mukharlyamov, Yuhai Xuan
Publication	<i>Journal of Financial Economics</i> 119(3): 626-644
Data	VentureSource data from 1973 to 2003 (12,577 portfolio companies)
Conclusion	"The adverse effect of affinity based on prior employment, educational background, or ethnicity is economically and statistically significant, in many cases lowering the probability of investment success by more than 20%. . . [T]he effect is most likely attributable to poor decision-making by high-affinity syndicates after the investment is made. The detrimental nature of affinity is especially prominent for early-stage investments."
Tags	ethnicity/socioeconomic, venture capital, academic

Year	2017
Title	And the Children Shall Lead: Gender Diversity and Performance in Venture Capital
Author(s)	Paul A. Gompers, Sophie Q. Wang
Publication	<i>Harvard Business School Working Paper</i> 17-103
Data	1990 through mid-2016. Venture capitalists on the board of directors of venture capital investments in VentureSource.
Conclusion	"The parenting of a daughter relative to a son by venture capital partners, especially by senior partners, leads to a significant increase in the proportion of female partners hired. We also saw . . . that there is significant improvement in the firm's performance, where performance is measured in a variety of ways at both the deal and the fund level. . . [T]he economic magnitude of the estimated coefficients is also substantial." "These results provide convincing evidence in a real business setting that performance is improved with greater gender diversity."
Tags	gender, venture capital, academic

Year	2021
Title	HFR Women Access Index
Author(s)	HFR (Hedge Fund Research, Inc.)
Publication	HFR Index Factsheet
Data	HFR Women Access Index (global, equal-weighted index of single-manager funds that report to the HFR Database and where a woman has significant risk-taking responsibility). Minimum \$80 million under management and 12-month track record. Index inception: October 31, 2019
Conclusion	"Since inception through July 2021, the HFR Women Access Index has had an annualized return of 15.2%, compared to 13.7% for the HFRI Fund Weighted Composite Index and 10.3% for the HFRI Fund of Funds Composite Index. Annualized standard deviation and maximum drawdown were lower."
Tags	gender, hedge funds, industry

Year	1996
Title	Are Women Conservative Investors? Gender Differences in Participant-Directed Pension Investments
Author(s)	Richard P. Hinz, David D. McCarthy, John A. Turner
Publication	<i>Wharton Pension Research Council Working Papers</i> 578
Data	1990 survey of participants in the federal government's Thrift Savings Plan (TSP)
Conclusion	"Women appear to invest their pension assets more conservatively than men. A large percentage of women invested in the minimum-risk portfolio available to them. A portion of the pattern is explained by women's lower incomes, but the result persists after controlling for economic and demographic variables. Nonetheless, married women also invest less in common stock than married men, holding constant age and income."
Tags	gender, personal accounts, academic

Year	2012
Title	Manager Attributes and Fund Performance: Evidence from Taiwan
Author(s)	Jin-Li Hu, Hsueh-E. Yu, Yi-Ting Wang
Publication	<i>Journal of Applied Finance and Banking</i> 2(4): 85-101
Data	60 mutual funds in Taiwan from 2006 to 2010
Conclusion	"[F]emale managers perform better than male managers on cost control (lower costs) and risk management. . . [W]e further find a significantly positive relation between gender and performance."
Tags	gender, mutual funds, academic

Year	2020
Title	The same but different: Gender and investor behavior in Vanguard retail accounts
Author(s)	Jennie Huang, Thomas J. De Luca
Publication	Vanguard Research
Data	Over 4 million self-directed Vanguard retail investors as of year-end 2019
Conclusion	"Gender differences in aggregate portfolio risk are negligible." "[W]omen, at the margin, choose more balanced funds and target-date funds. The most dramatic differences appear in measures of attention and trading, with women half as (digitally) active as men and trading at least 34% less than men."
Tags	gender, personal accounts, industry, series

Year	1998
Title	Are Women More Risk Averse?
Author(s)	Nancy Ammon Jianakoplos, Alexandra Bernasek
Publication	<i>Economic Inquiry</i> 36(4): 620-630
Data	Survey of Consumer Finances: 1989 sample of 3,143 households
Conclusion	"We find that single women exhibit relatively more risk aversion in financial decision making than single men. Using U.S. sample data, we examine household holdings of risky assets to determine whether there are gender differences in financial risk taking. As wealth increases, the proportion of wealth held as risky assets is estimated to increase by a smaller amount for single women than for single men. Gender differences in financial risk taking are also influenced by age, race, and number of children."
Tags	gender, personal accounts, academic

Year	1997
Title	If you don't believe this, read it again: Women fund managers outdo men
Author(s)	Jeanhee Kim
Publication	<i>Money</i> 26: 25-56
Data	2,562 Morningstar mutual funds for 3 years ended August 1997
Conclusion	"[F]unds managed by one woman or a pair of women performed somewhat better over the three years that ended Aug. 31, 1997 than those run by one or two men in each of five broad categories." "[W]omen's three-year average annual returns beat those of men in seven out of the nine categories of U.S. diversified stock funds. . . The performance gap was especially wide between male and female managers of small-company funds."
Tags	gender, mutual funds, industry

Year	1997
Title	The path forward for women in alternatives
Author(s)	KPMG
Publication	<i>Women in Alternative Investments</i>
Data	Hedge Fund Research Women Index (funds owned or managed by women)
Conclusion	"Women-owned and -managed hedge funds have outperformed both the HFRI and HFRX composites of hedge fund performance nearly every year since 2007, the first year HFR launched diversity indices."
Notes	Previous author of publications in series was Rothstein Kass Institute
Tags	gender, hedge funds, industry, series

Year	2019
Title	Diversifying Investments: A Study of Ownership Diversity and Performance in the Asset Management Industry
Author(s)	Josh Lerner
Publication	Knight Foundation Executive Report
Data	Mutual funds: eVestment data from 2011 to 2017 Hedge funds: Hedge Fund Research data from 2005 to 2018 Private equity: Preqin from 2006 to 2015 Real estate: Preqin with hand compiled lists. 2006 to 2015
Conclusion	Mutual funds: “[W]e find no evidence that women or minority ownership affects the returns of U.S. mutual funds.” Hedge funds: “[L]ittle evidence that women or minority ownership has any effect on fund performance. Minority-owned funds outperform women-owned funds when comparing the average unadjusted and risk-adjusted returns, although the differences in performance are small.” Private equity: “[N]o convincing evidence that women ownership significantly impacts returns. Interestingly, there is some mixed evidence that minority ownership increases PE returns. Of the three asset classes, PE has the smallest sample size.”
Tags	gender/minority, mutual funds, hedge funds, private equity, real estate, academic, ownership, series

Year	2017
Title	Diverse Asset Management Firm Assessment
Author(s)	Josh Lerner, Ann Leamon, Meagan Madden, Jake Ledbetter
Publication	Bella Research Group report
Data	Mutual funds: Q1 2011 through Q4 2016. eVestment Hedge funds: January 2011 through December 2016. HFR Private equity: Hand compiled lists. Vintage years 2006 to 2016 Real estate: Preqin with hand compiled lists. 2006 to 2016
Conclusion	“Performance of Diverse-Owned Mutual Funds: As a whole, the evidence suggests that the performance of funds managed by diverse-owned firms is statistically no different than the performance of those managed by non-diverse firms.” “Performance of Diverse-Owned Hedge Funds: We find no conclusive evidence that the performance of diverse-owned hedge funds differs significantly from the performance of non-diverse funds.” “Performance of Diverse-Owned PE and Real Estate Funds: Among the PE asset managers, there is no significant difference in performance between funds managed by diverse-owned firms and those managed by non-diverse firms. Though we find no evidence of differential performance on average, there are a number of top-performing diverse-owned funds—33% of women-owned funds and 20% of minority-owned funds are top quartile. Through careful manager selection, outsized returns are possible with women- and minority-owned PE firms.”
Tags	gender/minority, mutual funds, hedge funds, private equity, real estate, academic, ownership, series

Year	2014
Title	The Effect of Management Team Characteristics on Performance and Style Extremity of Mutual Fund Portfolios
Author(s)	Qiong Liu, Kuan Yang, Yinggao Zhou
Publication	<i>Journal of Industrial Engineering and Management</i> 7(1); 294-310
Data	Funds managed by 57 fund management companies in China from 2003 to 2012
Conclusion	Gender diversity has a negative effect on performance
Tags	gender, mutual funds, academic

Year	2019
Title	Examining the Returns: The Financial Returns of Diverse Private Equity Firms
Author(s)	NAIC (National Association of Investment Companies)
Publication	n/a
Data	Private equity funds. 1994 through 2018
Conclusion	<p>"Diverse PE funds (represented by NAIC member funds in the NAIC Private Equity Index) performed better than the Burgiss Median Quartile in 78.6 percent of the vintage years studied."</p> <p>"Based on Internal Rate of Return (IRR), diverse private equity funds, represented by the NAIC Member Funds, outperformed not only the average fund in the Burgiss benchmark group, but also those in the upper quartile."</p> <p>"NAIC member firms produced higher Distributed to Paid-In (DPI) 64.3% of the time since 2000, and diverse PE funds outperformed in roughly 56.3 percent of all vintage years available."</p> <p>"Diverse private equity funds 'outkicked their multiple on investment capital (MOIC) coverage' in the various periods measured. Roughly 54 percent of the diverse PE funds (the NAIC Private Equity Index) reporting appeared in the top quartile based on MOIC for the full period, while approximately 57 percent of the funds in the 2011-2018 period produced top quartile performance."</p>
Tags	gender/minority, private equity, industry, ownership, series

Year	2017
Title	Examining the Returns: The Financial Returns of Diverse Private Equity Firms
Author(s)	NAIC
Publication	n/a
Data	Financial returns of a representative sample of diverse private equity firms, as well as those focused on Emerging Domestic Markets within the continental U.S. Audited financial statements for 1995 to 2015. Cambridge Associates Benchmark for comparison.
Conclusion	<p>“On an aggregate basis, diverse-owned firms generated an impressive 16.15% internal rate of return (IRR) for the ten-year reporting period ending in December 2015, compared to 11.3% (IRR) for the Cambridge US Buyout benchmark for the same period.”</p> <p>“One of the consistent trends uncovered in the NAIC Private Equity Index data is that while funds may not outperform over every vintage year, they have dependably outperformed over long time horizons.”</p> <p>“[F]or the full 20-year period of the study, Diverse PE Funds outperformed not only the average fund in the Cambridge index, but also those in the upper quartile, too.”</p>
Tags	gender/minority, private equity, industry, ownership, series

Year	2012
Title	Recognizing the Results
Author(s)	NAIC
Publication	The Financial Returns of NAIC Firms: Minority and Diverse Private Equity Managers and Funds Focused on the U.S. Emerging Domestic Market
Data	2011 year-end audited financial statements. 1998-2011. Compared to Thomson Reuters' Venture Economics benchmarks.
Conclusion	“NAIC Firms have produced superior investment returns over a sustained period benchmarked against the general PE industry, including the buyout subset.”
Tags	gender/minority, private equity, industry, series

Year	2021
Title	Do Investors Pay Less Attention to Women (Fund Managers)?
Author(s)	P. Raghavendra Rau, Jinhua Wang
Publication	SSRN
Data	Random sample of user investments into stock funds supplied by a large anonymous fintech platform based in China with 3,515 manager-fund-month observations for the period from August 2017 to July 2019.
Conclusion	“Across all fund performance specifications (except for the 1-month return ranking measure), manager gender is not significantly related to fund return rankings after controlling for manager tenure, education, the previous quarter fund size and aggregate-level flow, fund sales fee, fund transaction fee, fund management fee and fund objectives. When measuring fund performance in terms of 1-month fund performance, female managers perform 4.24 percentage points better than male managers, which is statistically significant at the 1% level. We do not detect significant differences in idiosyncratic or systematic risks or excess returns per unit of systematic or idiosyncratic risk between funds managed by male and female managers. Furthermore, male-managed funds do not exhibit superior stock selection or market timing abilities. . . Overall, gender appears to be unrelated to the fund’s performance, risk, market timing ability or stock selection ability.”
Tags	gender, mutual funds, academic

Year	2018
Title	Sex Matters: Gender Bias in the Fund Industry
Author(s)	Alexandra Niessen-Ruenzi, Stefan Ruenzi
Publication	<i>Management Science</i> 65(7): 2947-3448
Data	Single managed U.S. equity mutual funds from 1992 to 2009
Conclusion	“We find no gender differences in performance.” “[F]emale fund managers follow more reliable investment styles.”
Tags	gender, mutual funds, academic

Year	2013
Title	A Marathon, Not a Sprint: For women fund managers, endurance trumps pace (Third Annual Survey)
Author(s)	Rothstein Kass Institute
Publication	<i>Women in Alternative Investments</i>
Data	82 funds selected based on “individual knowledge of women-owned or -managed status, or based on the presence of female principals listed in the Hedge Fund Research diversity category listing.” No adjustment for survivorship. 5 years ending September 2012.
Conclusion	“For the six and a half years ending June 2013, the Rothstein Kass Women in Alternative Investments (WAI) Hedge Fund Index returned 6 percent, while the S&P 500 gained 4.2 percent and the HFRX Global Hedge Fund Index dropped -1.1 percent during the same period.” “Although performance comparisons are more difficult in the private equity space, a small sample of women-owned or -managed private equity funds reported net returns of 14.8 percent in 2012, topping the Cambridge Associates LLC U.S. Private Equity Index® return of 13.8 percent.”
Tags	gender, hedge funds, private equity, industry, series

Year	2012
Title	Building Momentum in 2013 and Beyond (Second Annual Survey)
Author(s)	Rothstein Kass Institute
Publication	<i>Women in Alternative Investments</i>
Data	67 funds believed to qualify as women-owned “diversity funds.” No adjustment for survivorship. 5 years ending September 2012.
Conclusion	“[F]or the five-year period ending September 2012, the Rothstein Kass WAI Hedge Index outperformed both the HFRX Global Hedge Fund Index and the S&P 500. . . [T]he standard deviation for the Rothstein Kass WAI Hedge Index was slightly higher . . . [The index] produced the lowest maximum drawdown.”
Tags	gender, hedge funds, industry, series

Year	2016
Title	Fund Managers by Gender: The Global Landscape
Author(s)	Madison Sargis, Laura Lutton
Publication	Morningstar
Data	26,340 managers of funds registered in 56 countries
Conclusion	"Women fund managers hold on to their investment holdings longer than men fund managers."
Tags	gender, mutual funds, industry

Year	2018
Title	Fund Managers by Gender: Through the Performance Lens
Author(s)	Madison Sargis, Kathryn Wing
Publication	Morningstar Research
Data	Actively managed U.S.-based equity and fixed-income funds since 2003
Conclusion	"[W]e find no significant performance difference between male and female fund managers, nor differences in fund performance for offerings run by mixed-gender teams."
Tags	gender, mutual funds, industry

Year	2018
Title	Are Women Better Investors? Stash Data Flips Gender Stereotypes
Author(s)	Stash
Publication	StashLearn
Data	Stash users
Conclusion	<p>"Roughly 50% of women have invested in higher-risk investments on Stash – the same as men."</p> <p>On two volatile days (February 5 and 8, 2018):</p> <p>"Men were 87% more likely than women, on average, to sell an investment.</p> <p>"And that behavior continued into the following week, with male users still being 76% more likely than women to sell an investment, compared to female users."</p>
Tags	gender, personal accounts, industry

Year	2018
Title	Are women better investors than men?
Author(s)	Neil Stewart
Publication	<i>Core Insights: Behavioral Science</i> , Warwick Business School
Data	2,800 Barclays investors over 36 months
Conclusion	<p>"[W]omen. . . traded nine times a year on average, compared to 13 times for men..."</p> <p>"[F]emale investors were less likely to indulge in the 'lottery style' of investment that appealed to men..."</p> <p>"The Warwick Business School analysis defines 'lottery style' investing as a tendency to invest in more speculative, lower priced shares that might increase in value substantially, along with a desire to keep to shares that show a loss while selling off their winners."</p>
Tags	gender, personal accounts, academic

Year	1998
Title	Differences in the Allocation of Assets in Retirement Savings Plans
Author(s)	Annika E. Sundén, Brian J. Surette
Publication	<i>American Economic Review</i> 88(2): 2017-211
Data	1992 and 1995 Surveys of Consumer Finances
Conclusion	"[I]nvestment decisions seem to be driven more by a combination of gender and marital status. . . [W]omen and men do not differ. . ."
Tags	gender, personal accounts, academic

Year	2021
Title	The Portfolio Management Gender Gap is Big and Investors are Losing Out
Author(s)	Scott Treacy, Cady Ridall, Damian Handzy
Publication	Investment Metrics
Data	224 asset managers; 7 years through June 2021
Conclusion	"[W]omen portfolio managers outperform their benchmarks proportionately to their male counterparts."
Tags	gender, institutional managers, industry

Year	2016
Title	Gender Differences in Performance at Wells Fargo Advisers
Author(s)	Wells Fargo Wealth and Investment Management (WIM) Analytics
Publication	As summarized in <i>Women and Investing: Building on Strengths</i> (Wells Fargo Investment Institute, January 2019)
Data	More than 900,000 investment accounts with investable assets of \$50,000 or more from December 2010 to December 2015.
Conclusion	<p>"[W]omen investors in the study led men by a small absolute margin for the five-year period. Controlling for risk, however, led to higher average returns for the women investors."</p> <p>"[W]omen investors, on average, took approximately 94% of the risk that men took."</p> <p>"[W]omen appear to have benefited from their lower trading activity."</p>
Tags	gender, personal accounts, industry

Year	2020
Title	Diversity in the Asset Management Industry
Author(s)	Willis Towers Watson
Publication	n/a
Data	400 products across a number of asset classes over several years, including benchmark-relative returns, tracking error and diversity
Conclusion	"[I]nvestment teams with diversity, in particular ethnic diversity, tend to generate better excess returns."
Tags	gender/minority, institutional managers, industry

Year	2015
Title	Women versus men in DC plans
Author(s)	Jean A. Young
Publication	Vanguard Research
Data	Vanguard recordkeeping clients that completed nondiscrimination testing by March 2015 (380 plans and 720,000 participants and eligible nonparticipants)
Conclusion	<p>"Women and men take similar levels of portfolio risk, in part due to the growing use of target-date funds as defaults. Men at the margin are more likely to hold aggressive equity allocations and to trade."</p> <p>"[A]nnualized five-year investment returns were similar for both women and men, with men slightly edging out women."</p> <p>"[W]omen traded about one-third less frequently than men. We know that participants holding only target-date funds trade very infrequently, and women are more likely than men to hold a single target-date fund."</p>
Tags	gender, personal accounts, industry, series

Year	2019
Title	Women versus men in DC plans
Author(s)	Galina Young, Jean A. Young
Publication	Vanguard Research
Data	Vanguard recordkeeping clients that completed nondiscrimination testing by March 2015 (1,000 plans and 2.3 million participants and eligible nonparticipants)
Conclusion	<p>“Women and men take similar levels of portfolio risk, in part due to the growing use of target-date funds as defaults. Men at the margin are more likely to hold aggressive equity allocations and to trade.”</p> <p>“[A]nnualized five-year investment returns were similar. . . with men holding a slight edge.”</p> <p>“[W]omen traded about 45% less frequently than men. We know that participants holding only target-date funds trade very infrequently, and women are more likely than men to hold a single target-date fund.”</p>
Tags	gender, personal accounts, industry, series

Additional Industry Studies

Details on the following studies were not available from the authors, so these studies are not included in the summary and tabulations. The recaps are based on press accounts:

- *AsiaHedge (January 2008)*. Women managers in the AsiaHedge Composite index had a median total return of 153.26% between January 2000 and December 2007 versus 88.82% for the index as a whole.
- *HFR (2009)*. Women-owned hedge funds averaged an annual return of 9.06% between January 2000 and May 2009, versus 5.82% for the composite hedge fund index. In the second half of 2008, when the market dropped sharply, women-managed funds lost only -9.61% versus -19.03% for the composite.
- *SigFig (2015)*. In 2014, the women among 75,000 SigFig investors outperformed the men (14.7% versus 14.1%). Only 20.4% of the women lost money, versus 25.8% of the men, though only 14.9% beat the S&P 500 (versus 15.7% of the men). Men had higher turnover (14% versus 9%). Men are more likely to invest through a brokerage firm with a name ending in -trade.
- *Vanguard (2010)*. During the financial crisis of 2008 and 2009, among Vanguard brokerage customers, men were much more likely than women to sell at stock market lows.
- *Vanguard (2011)*. A review of 2.7 million IRA investors during 2007 to 2009 showed that men were 10% more likely to move out of stocks in times of great volatility. Women are a bit more diversified. In 2007 through 2010, slightly more women than men had account balances that either rose or stayed flat.

Note that the conclusions of these studies, as reported, are consistent with those of studies included in the summary and tabulations.