

Hedge Fund Hold'em*

Yan Lu[#], Sandra Mortal[^] and Sugata Ray⁺

Abstract

We find that hedge fund managers who do well in poker tournaments have significantly better fund performance. This effect is stronger for tournaments with more entrants, larger buy-ins, larger cash prizes and for managers who win multiple tournaments, suggesting poker skills are correlated with fund management skills. Investors appear cognizant of this as after a manager wins a poker tournament, net flows to the manager's fund increase significantly. These increases are concentrated in cases where there is media coverage of the manager's poker playing, when the tournament win is bigger, and before the JOBS Act (which allowed hedge funds to advertise) was passed. In conjunction with higher net flows, fund alpha also decreases significantly following the tournament win, especially in cases where net inflows are highest, suggesting decreasing returns to scale erode the informativeness of the poker win signal. Given this, hedge fund investors would be better off investing in an otherwise similar manager without poker tournament success.

Keywords: Poker; Hedge funds; Investor flows; Alpha erosion

JEL Classification: G11; G12; G14; G23

[#] Yan Lu is from the University of Central Florida, College of Business, Box 161400, Orlando FL 32816, USA. E-mail: yan.lu@ucf.edu. Tel: +1-407-823-1237.

[^] Sandra Mortal from the University of Alabama, Culverhouse College of Business, Box 870224, Tuscaloosa, AL 34587, USA. E-mail: smortal@cba.ua.edu. Tel: +1-205-348-7076

⁺ Sugata Ray is from the University of Alabama, Culverhouse College of Business, Box 870224, Tuscaloosa, AL 34587, USA. E-mail: sugata.ray@cba.ua.edu. Tel: +1-205-348-5726.

*We have benefitted from helpful comments and suggestions from Brandon Adams, Vikas Agarwal, Aaron Brown, Russell Jame, Kevin Mullally and Reid Walker. We are especially thankful to Hamilton Bailey, Parker Steed and Will Stewart and Luqi (Emma) Xu for excellent research assistance.

*"You've got to know when to hold 'em
Know when to fold 'em
Know when to walk away
And know when to run."*

–From “The Gambler,” Don Schilitz

Introduction

The link between poker and hedge fund management has been highlighted in various contexts recently. Several high-profile poker players have been recruited by established hedge funds,¹ under the belief that poker skills translate well to fund management.² In line with this, established fund managers have recorded significant success in poker tournaments.³ Finally, the role of poker playing in hedge fund circles has also been highlighted by a variety of popular movies and books, such as the Wall Street Poker Night Tournament, as described in the Introduction of “The Quants” (Patterson, 2010) and hedge fund manager fund managers who played in Molly’s Game (Sorkin, 2017).

In this study, we formally explore this link. We study two questions: (1) Is there a correlation between skill in poker and skill in hedge fund management; and (2) how do investors respond to visible evidence of skill in poker in fund managers? From anecdotal evidence, it appears that the answer to the first question is yes, and that poker skill and hedge fund skill may be

¹ See, for example, “This is why poker players do so well on Wall Street,” which writes about “A top pro poker player [that] has joined the world’s largest hedge fund.” <https://www.marketwatch.com/story/what-poker-sharks-have-in-common-with-wall-street-traders-2018-01-18>. Also see “What Professional Poker Players Bring To The Hedge Fund Industry” (<https://hedgenordic.com/2017/06/poker-players-in-the-hedge-fund-industry/>).

² Poker, more so than other games such as chess and bridge, captures the mix of luck and skill essential to success in investing. As per CMU Professor of game theory, Kevin Zollman, “Investing has a lot of the same features as poker...” in that it “is a game of incomplete information,” unlike “chess, [which has full knowledge regarding] where all the pieces are located ... [and] bridge, [which is somewhere] between poker and chess.” (see “Why Playing Poker, Chess or Bridge Can Make You a Better Investor,” April 6th 2018, Michelle Lodge, *The Street*)

³ See, for example, “Hedge Fund Manager Beats World’s Best at Poker” (<https://www.mirror.co.uk/features/poker/hedge-fund-manager-beats-worlds-1778854>) and “Einhorn Finishes Third in Poker Tournament, With \$4.35 Million” (<https://dealbook.nytimes.com/2012/07/04/einhorn-finishes-third-in-poker-tournament-with-4-35-million/>)

correlated. Vanessa Selbst, a former poker pro who recently joined Bridgewater Associates, the largest hedge fund in the world, said in a Facebook post announcing her career change, her new job “feels a lot like poker ... -- a bunch of nerdy kids collaborating to try to beat our opponents at a game.”⁴ Steve Cohen, a hedge fund manager who also played poker throughout his life, attributes poker as “the biggest determinant in [his] learning to take risks.”⁵ On an institutional level, Susquehanna International Group, an options “trading firm ... has made the card game a central part of its training program. New hires are given copies of "The Theory of Poker" and "Hold 'Em Poker" and spend one full day a week studying the game by playing it.”⁶ For our second question, if investors do believe there is a link between poker skill and fund management as these anecdotes suggest, we may expect them to allocate additional capital to hedge fund managers who demonstrate tangible evidence of their poker skill by, say, winning a poker tournament, increasing net inflows to funds managed by these managers.

We attempt to empirically answer the two questions above by looking at the tournament poker winnings of hedge fund managers, obtained from Global Poker Index’s Hendon Mob website, and merging this data in with hedge fund performance and flow data from a set of commercial hedge fund databases. We examine whether fund managers who win poker tournaments perform better in their funds. We find that hedge fund managers who have “cashed”⁷

⁴ See <https://www.bloomberg.com/news/articles/2018-01-09/poker-s-winningest-woman-joins-hedge-fund-grind-at-bridgewater>

⁵ See <https://www.businessinsider.com/the-fabulous-life-of-steve-cohen-2012-12>, which quotes Vanity Fair.

⁶ See “Trading firms put their money on poker experts,” which states, “A new breed of Wall Street recruit gets ahead not through connections or business experience, but through demonstrating a head for numbers, quick thinking and risk-taking – skills from the card table.” (<http://articles.latimes.com/2010/may/16/business/la-fi-poker-traders-20100516>)

⁷ The Hendon Mob database records results for all players receiving payouts from tournaments they track. On average tournaments typically have payouts for the top 10% of finishers. Tournament players who win a payout from a tournament are said to have “cashed” in that tournament. (see <https://www.pokernews.com/news/2011/12/pokernews-debate-paying-more-or-fewer-players-in-tournament-11654.htm>) In our sample, the hedge fund managers who cashed in tournaments finished, on average, in the top 6.2% of entrants for the tournaments they were playing in.

in at least one poker tournament significantly outperform managers who have no cashes in the Hendon Mob database, with monthly return and alpha measures that are between 10-40 bp higher than their non-poker playing peers. While this result suggests that skilled poker players are better at hedge fund management, this finding does not perfectly answer our first research question, as we simply observe tournament wins, rather than all tournament entries. It is possible that a manager who indiscriminately enters tournaments and wins a few due to luck is misidentified as a skilled poker player using our identification technique. To mitigate this concern, we analyze whether cashes in tournaments reflecting greater poker skill are associated with even better fund performance. Specifically, we examine winning results in tournaments with more entrants, larger buy-ins, and ultimately higher cash prizes and find that in each of these cases, better cashes and cashes in more difficult tournaments are associated with better fund performance. We interpret this as confirming evidence that skill in poker is correlated with skill in fund management.

To answer our second research question regarding investor response to evidence of poker skill, we examine how investor flows to fund managers who win poker tournaments are different compared to other, matched, managers who do not win a tournament.⁸ We find that fund managers experience an economically and statistically significant increase in net inflows after cashing in a poker tournament. Their average monthly inflows are 1.6-1.9% higher than average net inflows to their matched peers who do not experience poker tournament success. Investors appear to be

⁸ Consistent with the significant positive correlation between fund performance and manager poker tournament cashes, we find that better performance is a significant determinant of poker cashes. In order to control for potential autocorrelation in flows and returns, we use matched samples, matching on fund size and net flows to conduct analysis on the effects of poker cashes. For robustness, we also conduct similar analysis using propensity score matches, using propensity scores from the analysis of the determinants of poker cashes. Results using propensity score matches are qualitatively similar.

responsive to visible evidence of poker skill, deploying additional capital to managers who win poker tournaments.

To provide further evidence for the hypothesis that poker tournament cashes are likely to be the proximate cause of the increase in investor net inflows, we perform several subsample analyses. Examining subsamples, we find that the documented increases in net inflows are concentrated in subsamples of managers who (1) have media coverage of their poker playing (3.3-3.8% increase in monthly net inflows), (2) win cash prizes higher than the median tournament win in our sample, i.e. place better in tournaments, win in larger tournaments, or cash in tournaments with higher buy ins (2.0-2.1% increase in monthly net inflows)⁹ and (3) who experience poker tournament wins before the passage of the 2012 JOBS Act, which lifted the restriction on hedge fund advertising (1.6-2.1% increase in monthly net inflows). The first two subsample analyses are intuitive as media coverage of poker playing and larger poker winnings increase the visibility and strength of the poker signal to potential investors. The third subsample uses the passage of the JOBS Act as a natural experiment and relies on the argument that investors were more likely to be swayed by alternative forms of “advertising,” such as poker tournament wins, before formal advertising of hedge funds was allowed (see Lu, Mitra, Musto, & Ray, 2018, for another hedge fund context in which the JOBS Act was used as a natural experiment).

Finally, a natural question arising from these results is how do these hedge fund investors fare after poker tournament cashes? To answer this, we use the matched sample to examine how the performance of funds is affected by poker tournament cashes. Our results suggest that while

⁹ Another potential explanation for this result might be that managers invest the poker winnings in their fund, leading to the increase in AUM we interpret as increased investor inflows. We consider this explanation and argue it is unlikely to be the case given the magnitude of poker winnings is generally significantly lower than the dollar increase corresponding to the increased net inflows.

returns are not significantly different after cashes, alpha decreases significantly after cashes, and such funds underperform their matched peers to the tune of 40-60bp a month. This finding, along with the increased net inflows to these funds, suggest that this may be a function of the decreasing returns to scale highlighted in Berk & Green, 2004. To further test this hypothesis, we examine how performance changes for funds that obtain above median levels of increases in net inflows after tournament cashes compared to funds that obtain below median levels of increases in net inflows. Consistent with decreasing returns to scale, the decrease in alpha is concentrated in funds that are receiving the highest net inflows.¹⁰

Our study contributes to several areas of the academic literature. Most directly, our study adds to the growing literature on using personal characteristics to gain additional information on manager performance. While this literature is broad, and examines both corporate and fund managers, our study is most closely linked to studies that examine leisure activities of managers. For example, Biggerstaff, Cicero, & Puckett, 2017, examine CEO golfing and use it to document evidence of shirking behavior. Anecdotally, shirking has also been associated with card-playing. David Cayne, CEO of Bear Stearns, was characterized as being “asleep at the wheel” during the crisis that led to its demise, as he joined a “crucial call late, because he was busy playing bridge at a professional tournament in Detroit.”¹¹ To our knowledge, we are the first to study potential positive spillovers between skills honed through a leisure activity and professional pursuits,¹²

¹⁰ These results are even more striking given the fact that there is generally a positive contemporaneous relationship between flows and performance over a twelve month period due to performance earlier in the period positively affecting flows later in the period (see Lim, Sensoy, & Weisbach, 2016). Additionally, as a robustness test, we also refine our matched sample to include fund size, past flows and past performance when generating matched peers and our results remain significant under this specification.

¹¹ See <http://stylemagazine.com/news/2018/mar/16/stunning-downfall-bear-stearns-and-its-bridge-play/>

¹² We do note that Agarwal, Qin, Sing, & Zhang, 2018 show positive impact of golfing on real estate developers bidding on land prices in Singapore, but they attribute these effects to social interactions during the golf rounds, rather than any intrinsic link between golfing skills and professional pursuits.

adding to the list of potential alternative signals, such as academic achievements (Chaudhuri, Ivkovich, Pollet, & Trzcinka, 2018), personal real estate transactions (Cheng, Raina, & Xiong, 2014), vehicle choices (Brown, Lu, Ray, & Teo, 2018), in choosing outperforming fund managers.

Our study is also linked to the literature examining capital formation in the asset management industry. Most relevant is Choi, Kahraman, & Mukherjee, 2016, which examines the response of flows to a fund, given how the fund’s manager is performing in other funds. In our case, rather than deriving a signal from another manager’s skill in managing another fund, investors appear to be responding to a signal regarding skill from a non-fund management context – poker. More generally, this behavior is consistent with the fast speed of learning by hedge fund investors documented in Schwarz & Sun, 2018. In our case, hedge fund investors are learning fast in responding quickly after the fund manager cashes in a poker tournament, but this “learning” is suboptimal, as too much capital flows into such managers’ funds, leading to a decrease in alpha due to decreasing returns to scale.

Data

We hand collect data on hedge fund managers poker wins from The Hendon Mob website, the largest live poker database.¹³ We start with a list of all poker manager names from the Lipper TASS database and exclude funds with no manager names. We collect data on poker wins by doing a name match. In cases where name searches result in multiple matches, we look at if the location

¹³ From their website, they “include all major poker tournaments which take place as part of a festival, together with special one-off events as well as recurring (regular daily, weekly or monthly) tournaments. The tournament buy-in is not a consideration. The most important thing is to get complete set of results (names of all players who cashed) for each event and [they do not] upload single cashes/results.” Additionally, the Hendon Mob database claims to be “the most comprehensive database of poker players, venues, festivals, events and results to be found anywhere on the Net. It is kept constantly up to date with the latest results as they arrive.”

matches. If there are still multiple matches, then we drop the observation. This happens for example, for fund managers with very common names. We obtain data on hedge fund characteristics and returns from Lipper TASS database. Our sample starts in 2001, the first year Hendon Mob starts collecting data, and ends in 2015, the last year for which we have data from Lipper TASS database.

Table 1 presents summary statistics. Panel A presents data on fund characteristics and performance sorted by whether or not the hedge fund manager won a poker tournament. We term funds with managers who have cashed in at least one poker tournament as poker funds and the rest as non-poker funds. Our dataset contains 3,017 funds whose managers didn't win any poker tournaments and 220 funds whose managers won at least one poker tournament. Most fund characteristics are identical across poker and non-poker player managed funds, suggesting that the sample of funds whose managers play poker is representative of a typical fund. For example, the average management fee for poker funds and non-poker funds is 1.44% and 1.43% respectively, the difference of 0.01% is statistically insignificant. The average incentive fee is 14.33% and 14.70% for poker funds and non-poker funds respectively, and the difference of 0.37% is also statistically insignificant.

There are some notable differences in fund characteristics across the two groups of managers. Poker funds have a longer longevity: the average age for poker funds over our sample is 3.72 years vs. 3.02 for non-poker funds, suggesting a lower mortality rate. In terms of fund performance, poker player-managed funds have stronger performance, as measured using raw returns and alpha. Average monthly raw returns is 0.67% and 0.58% for poker-managed and non-poker managed funds, respectively. The difference of 0.09% is statistically significant at the 1% level. We also compute fund alpha using the Fung & Hsieh, 2004 seven factor model, estimated

out-of-sample using a 14-month rolling regression. Fund alpha is 0.11% higher for poker-managed funds, a value that is also statistically significant at the 1% level. Net fund flows are also higher for poker-player managed funds, the difference of 0.23% is statistically significant at the 10% level.¹⁴ These results suggest that poker-player hedge fund managers are more skilled at managing money, as evidenced by their performance and longevity, and receive more fund flows, consistent with expectations.

We might have expected poker-player hedge fund managers to have a higher tolerance for bearing risk. Interestingly, poker-managed funds are not any riskier compared to their non-poker counterparts. Total risk and idiosyncratic risk are identical for both types of funds, indicating that poker players are not more risk seeking than their non-player counterparts.

Panel B presents frequency of hedge fund manager poker tournament cashes by year, and Panel C presents summary statistics for poker tournament cashes. The average cash award for a poker tournament cash is \$7,739 (USD), the hedge fund manager's poker win is covered by the media 4.5% of the time, and 53.4% of tournaments in our sample take place before JOBS act passed.

Results presented in this section are only summary statistics, in subsequent analysis we analyze fund performance, risk and fund flows after controlling for possible confounding effects.

¹⁴ Fund flows are computed as follows: $[AUM(t) - (1+R(t)) \times AUM(t-1)]/AUM(t-1)$, where AUM is assets under management, R is the funds' return, and t refers to the month.

Results

Characteristics of hedge fund managers who win poker tournaments vs. those who don't

To study the risk and performance characteristics of funds with poker winning managers, we estimate a logistic regression that predicts whether a hedge fund manager won a poker tournament. We present results in Table 2. In regressions 1 and 2 we run cross-sectional regressions where the dependent variable is an indicator variable for whether the fund manager won a poker tournament during the sample period, and the independent variables are average monthly return for the manager-fund (specification 1) or portfolio alpha (specification 2), fund net flows, and an appropriate measure of fund risk. We also control for the fund characteristics variables presented in Table 1, Panel A, but do not present coefficients on these variables for brevity. Results show that hedge fund managers who win poker tournaments display stronger performance, but their portfolios are no riskier than their counterparts.

In regressions 3 and 4 we run panel regressions where the dependent variable is an indicator for the hedge fund manager having won a tournament in a given month. The independent variables are measures of performance and risk for the previous year. We continue to find that stronger performance is a significant determinant of poker tournament wins.

Our results suggest that hedge fund managers who cash at poker tournaments are more skilled at managing hedge funds. Our results are consistent with the belief that poker skill is correlated with skills for running a hedge fund. Unfortunately, since we are only able to observe events where the poker manager won a tournament, and we do not know how many times a person entered a tournament, it is possible that cashing in a poker tournament is not the result of skill at poker. If a manager entered many tournaments indiscriminately, it is possible that s/he cashed in a tournament due to luck and not skill.

To mitigate concerns that the poker cashes in our sample are due to luck, we investigate whether cashes in tournaments reflecting greater poker skill are associated with increased fund performance. We also investigate if investors recognize this association and react to greater poker skill with increased investment (flows) to such funds. We measure poker skill with amount of cash prize, number of entries in tournament, total amount of buy-ins and number of times the manager wins a poker tournament during the sample period. In Table 3, we present cross-sectional means for fund returns, alpha and flows, for a sample of poker winning managers, sorted on poker skill. For funds sorted on cash prize: Mean return is 0.86% if prize is above median, 0.48% if below median, and the difference between the two is statistically significant at the 5% level. Alpha is 0.53% if prize is above median, 0.29% if below median, and the difference is statistically significant at the 5% level. Fund flows are 3.43% if prize above median, 0.81% if below median, and the difference is statistically significant at the 1% level. Results indicate that greater prize awards are associated with greater fund performance and flows, suggesting a positive association between skill, performance and flows.

Similarly, funds with managers cashing at tournaments with above median number of entries and buy-in amounts are associated with larger returns, alphas and fund flows. A tournament with more entries and larger buy-ins is more difficult and competitive, and thus winning at those tournaments suggests more skill. Once again, these results suggest a positive association between skill, performance and flows. Finally, we measure poker skill using the number of times a manager wins a poker tournament during our sample period, and observe similar patterns as for the other proxies for skill. We interpret our results as providing suggestive empirical evidence that poker skill and fund management skills are correlated. It appears that the anecdotal evidence linking poker skills and fund management skills is supported in the empirical data used in our dataset.

Fund flows for hedge funds whose managers have won a poker tournament

In this section we examine investors' response to evidence of poker skill. If investors believe that skill in poker translates into skill in hedge fund management (as noted anecdotally and documented in the suggestive evidence above), they may increase allocations to hedge funds when the fund manager demonstrate skill in poker by winning a poker tournament. To analyze this question, we use a matched sample approach, to account for possible variations in the fund flows that are unrelated to our event of interest. We create two matched samples. In the first matched sample, we match each fund manager who wins a poker tournament to a manager who does not win a poker tournament with the closest fund flows during the 1-year period before the poker manager wins the poker tournament. This matching technique accounts for autocorrelation in flows, and more cleanly identifies the effects poker wins on fund net flows.

For robustness we also build a matched sample using a propensity score matching technique (PSM), where we estimate the probability (i.e. the propensity score) of a fund being managed by a poker winning manager using the logistic regression presented in Table 2, model 3.¹⁵ We then match each fund with a manager who won a poker tournament to a fund with a manager who did not win a poker tournament, with the closest propensity score. This is our second matched sample.

In Table 4, we present results for a differences-in-differences (DiD) analysis where we compare the difference in net flows one year before and one year after the manager won a poker tournament to comparable difference for the matched sample of hedge fund managers who did not

¹⁵ Using propensity score matches from Table 2, model 4 yields qualitatively similar results.

win a poker tournament.¹⁶ Panel A presents results for univariate analysis, which reports average net flows before and after the manager won a poker tournament for the treatment group and the two matched samples, the difference in fund flows before and after the poker tournament event and the DiD. Net fund flows increase after the fund manager wins a poker tournament from 1.48% average monthly flows one year before to 2.87% one year after. For the sample matched on lagged fund flows, net fund flows drop from 1.49% to 1.03%. The DiD is 1.85% (computed as $(2.87\% - 1.48\%) - (1.03\% - 1.49\%)$) which is statistically significant at the 1% level. Fund flows also drop for the propensity score matched sample, from 0.88% to 0.44% before and after the event respectively, and the DiD is 1.83%, also statistically significant at the 1% level.

In Table 4, Panel B we present results for multivariate regressions, to control for additional characteristics that might affect fund flows. We include monthly data for the 12 months following the month the manager won the poker tournament for treated and control firms. Note that we do not require funds in the treatment or matched samples to have data for the full one-year period after the event. This mitigates any concerns regarding potential survivorship bias. We regress monthly net fund flows on an indicator variable taking a value of one if the fund manager wins a poker tournament and zero for the matched peers. This variable is the key independent variable of interest. The coefficient on this variable can be interpreted as the effect of the poker tournament cashes on fund flows. We control for net flows for the previous year, past and future raw returns, and fund strategy and year dummies. We also control for the fund characteristics variables presented in Table 1, Panel A.

Results for multivariate regressions are consistent with those for univariate statistics. Net fund flows are 1.69% higher for poker tournament winning managers compared to their matched

¹⁶ The month of the win is included in the before period. Results are qualitatively similar if instead we omit the month of the win.

peers for the control group matched on lagged net fund flows (model 1). Net fund flows are 1.93% higher for hedge fund winning managers when the control sample is matched using propensity scores (model 2). These results suggest investors increase allocations to hedge funds after the fund manager wins a poker tournament.

Fund flows: sub-sample analyses

To provide further evidence that poker tournament cashes are associated with, and likely the proximate cause of, an increase in investor net flows, we perform several subsample analyses. In one subsample analysis, we examine whether the increase in fund flows is stronger for cases where the hedge fund manager's poker playing is covered in the media. Media coverage should increase the visibility and strength of the poker signal to potential investors, and thus should increase investors' reaction to the poker event. In Table 5, we perform a triple DiD analysis (DiDiD). We compute average fund flows for one year before and one year after the poker tournament for the treatment and control groups and partition the analysis by whether or not the hedge fund poker win was covered by the media.

In panel A the control group is matched on fund flows the year before the poker tournament win. We find that for poker wins covered by the media, the average monthly net fund flows increase from 0.27% to 3.41%. For the control group, net fund flows actually decline, from 0.27% to -0.40%. The DiD is 3.81%, and is statistically significant at the 1% level. For poker wins not covered by the media, fund flows for the treatment group increase from 1.57% to 1.87% and for the control group fund flows decline from 1.51% to 1.36%. The DiD is 0.45% and is statistically indistinguishable from zero. The triple DiD, the difference between these two DiDs is 3.36%, statistically significant at the 1% level.

In panel B we present analyses similar to that presented in panel A, except that the control group is matched on propensity scores. The row presenting mean fund flows for the treatment group is identical to that presented in Panel A, but the row presenting statistics for the control group is now different. For the control group for the poker wins with media coverage the mean net fund flows drop from -0.30 to -0.47. The DiD is 3.31%, statistically significant at the 1% level. For funds with no media coverage the fund flows also drop from 1.35% to 0.48% and the DiD is 1.17%, now statistically significant at the 10% level. The triple DiD is 2.14% statistically significant at the 5% level. Our results are consistent with expectations, and provide further evidence that investors react to the news of a hedge fund manager cashing at a poker tournament, by showing that investor reaction is particularly strong when the event is made more salient to investors through the news media.

Another sample partitioning we consider is whether investor reaction to hedge fund manager poker cashes differ with the size of the cash award. Managers can win larger cash awards if they place better in tournaments, win in larger tournaments, or win in tournaments with higher buy ins. Larger cash awards suggest more skill, and thus, to the extent investors believe that skill in poker translates into skill in hedge fund management, then we would expect investors to increase their investment in funds where managers won higher awards. Another reason to expect stronger reaction to higher poker awards, from investors, is that higher awards are also more visible, and thus more salient to investors.

In Table 5, panel A we partition the sample by hedge fund poker tournament prizes that are above and below median. Results are what we would expect. For managers winning prizes above median, fund flows increase from 2.33% to 3.92%. For the control group, fund flows drop from 2.32% to 1.77%. The DiD is 2.14%, significant at the 1% level. For managers winning prizes

below the median cash award, fund flows increase from 1.25% to 1.62%. For the control group, fund flows increase from 1.08% to 1.29%. The DiD is 0.16%, which is statistically indistinguishable from zero. Most importantly, the triple DiD is 1.98%, statistically significant at the 5% level. In Table 5, panel A the control group is matched on previous year fund flows. Results are very similar if instead we obtain the control group using propensity score matching (see panel B). Our results indicate that investors have a stronger reaction when managers win larger cash awards, suggesting that investors are sensitive to a stronger demonstration and a more visible signal of skill.

An alternative explanation for fund flows being higher when managers win poker tournaments, is that managers invest the poker winnings in their fund, leading to the increase in assets under management (AUM). This alternative explanation would also explain the larger increase in fund flows when the size of the poker award is large. We consider this explanation and argue it is unlikely to be the case given the magnitude of poker winnings is significantly lower than the dollar increase corresponding to the increased net inflows. The average size of the award is 7,739USD, while the increase in fund flows for the year after the tournament could be in the millions of dollars, an order of magnitude many times larger than the size of the award.¹⁷

For our third and final subsample analysis, we examine change in fund flows before and after the passage of the 2012 JOBS Act, which lifted the restriction on hedge fund advertising. Before 2012 hedge funds were prohibited from soliciting or advertising to potential investors. We argue that the effect on fund flows of a manager winning a poker tournament should be stronger before the passage of the Act, as investors were potentially more swayed by this alternative form

¹⁷ For example, with a mean fund size of \$234 million, and 12 months of flows that are 1.98% higher, the increased net flows would amount to \$55 million. Of course, the mean fund size is likely skewed. However, even using median numbers, the increase in dollar inflows dwarfs the magnitude of the cash prize won in the tournament.

of advertising (see Lu, Mitra, Musto, & Ray, 2018, for another hedge fund context in which the JOBS Act was used as a natural experiment to identify alternative methods of advertising used by the hedge fund industry prior to the JOBS Act).

Panel A shows that before JOBS act was passed, fund flows increase from 1.85% to 3.13% as a result of the fund manager having won a poker tournament. Fund flows for the corresponding control group (matched on fund flows) decrease from 1.95% to 1.09%. The DiD is 2.14%, statistically significant at the 1% level. After the passage of the JOBS act, fund flows increase from 0.71% to 1.43% with the poker tournament win. For the corresponding control group, fund flows also increase from 0.67% to 1.55%. The DiD is a statistically insignificant -0.16%. The triple DiD is 2.3% indicating that hedge fund investors response to poker tournaments cashes is in fact stronger before the passage of the JOBS act, consistent with the poker tournaments working as an alternative form of advertising. When we benchmark change in fund flows using propensity score matching for the control group, the DiD is 1.61% (statistically significant at the 1% level) and 0.91% (statistically insignificant) before and after JOBS act passed respectively. The triple DiD is 0.70%, but is statistically insignificant.

In Table 5, Panel C, we examine fund flows sorted by the three subsamples considered above, but in a multivariate regression setting. The sample is a panel of monthly data after the poker tournament win for the treatment and a control group matched on fund flows the year before in regressions (1) – (3) and a control group matched on propensity score in regressions (4) – (6). We regress net fund flows on a number of independent variables. The variable *PT Win* captures the difference in fund flows after the poker tournament event between the treatment and control groups. *Media* is an indicator variable for the manager poker win having been covered by the media or for corresponding control firm. *Prize* is an indicator variable for prize being above media

or for corresponding control firm. And *Pre JOBS* is an indicator variable for the event having happened before JOBS act passed or for the corresponding control firm.

Our main variables of interest are the interactions, between *PT Win* and each of these 3 variables: *Media*, *Prize* and *Pre JOBS*. These interactions capture the DiD between the subsamples of firms covered by these variables and their respective control group vs. the subsamples not covered by these variables and their respective control group. For example, the interaction between *Media* and *PT Win*, captures the DiD in fund flows for the subsample of firms covered by media and the respective control group vs. the subsample of firms not covered by media and their respective control group.

Our regression analysis indicates that for the treatment group benchmarked using net fund flows the year before the poker tournament win (regressions (1) – (3)), the DiD for poker tournament cashes covered by media receive fund flows that are 4.233% larger relative to respective control group, compared to poker tournament cashes not covered by media relative to control group. The prize value interacted with the dummy variable *PT Win* is also significant and positive (coefficient of 0.064). Finally, poker tournament wins pre JOBS also have a significantly stronger positive effect on flows (coefficient of 2.698). All the interaction coefficients are statistically significant at the 1% level. Managers who won a poker tournament but were not covered by the media, or the size of the prize was below median, or won the poker tournament after JOBS act passed, did not see their net fund flows change significantly. The coefficients on *PT Win* for each of the three regressions are 0.254, 0.262 and -0.647, all statistically insignificant at conventional levels.

Results are qualitatively similar if instead we benchmark the treatment group using propensity score matching (regressions (4) – (6)). The DiD for the subsample of poker tournament

cashies covered by media is 3.905% (significant at the 10% level), 0.072% (significant at the 1% level) for prize size above median, and 4.574% (significant at the 1% level) for tournaments cashies before JOBS act passed. Interestingly, net fund flows for managers winning poker tournaments in complementary subgroups are lower than control groups for managers who won prizes below median or won prizes after JOBS act passed.

Our results suggest there is a causal link between managers who win poker tournaments and net fund flows. We interpret our results as evidence that fund investors believe fund managers' skill at playing poker, as evidenced by managers winning poker tournaments, translates into skill at money management, and therefore investors choose to allocate additional capital to those funds after the poker tournament win. A natural question that arises is whether this is a good decision for the new investors, i.e. if investors earn the superior returns they expect. This is the question we turn to next in the subsection.

Post-tournament win performance

A natural question arising from these results is how do new investors do after poker tournament cashies? In this section we examine hedge fund raw returns and alphas the year after poker tournament cashies. As in previous analyses, we use two control groups as benchmarks for the treatment group. The first control group matches on performance the year before the poker tournament win, and the second control group matches on propensity score, and comprises the same firms used in the fund flows analyses.

In Table 6, Panel A we perform a DiD analysis in a univariate setting. Average monthly fund raw returns drop from 0.83% the year before to 0.25% the year after the poker tournament win. Raw returns also drop for the control group matched on previous year returns from 0.81% to

0.12% for the before and after periods. The DiD is 0.11%, statistically insignificant at conventional levels. We also present results for alpha, using a seven factor model to adjust for risk. Alpha drops from 0.65% to -0.05% for the treatment group before and after the poker event. The control group also drops, but by a smaller amount from 0.64% to 0.54% in the pre- and after-periods. The DiD is -0.58%, significant at the 5% level, suggesting that, after adjusting for risk factors, fund performance drops after managers win a poker tournament. Results using propensity score matching as control group provide qualitatively similar results.

Table 6, Panel B analyzes fund performance using multivariate regression analysis. The sample includes the treatment and control groups for the 12 month period after the poker event. Regressions (1) – (2) include a control group matched on average raw returns the year before the poker event, and regressions (3) – (4) use a control group matched on propensity score. The dependent variable is raw returns and alpha in month t , and includes returns for one year after the poker tournament win. The main independent variable of interest *PT WIN* is an indicator variable for the manager having won a poker tournament and captures the difference in performance between poker winning managers and control group.

Our results indicate that the difference in raw returns for treatment and control groups is indistinguishable from zero, but alphas are significantly lower for the treatment groups, suggesting poorer hedge fund performance after managers win poker tournaments. This result is robust to the control group we use to benchmark performance, and to different sets of control variables. This result is also similar to what we document in Panel A for univariate analysis.

One possible explanation for this poor performance is that the additional fund flows that result from the poker tournament win make it difficult for hedge fund managers to implement their trading strategies – diseconomies of scale. We explore this possible explanation in Table 7. We

compute DiD for fund alpha one year before and after the poker event, for the treatment and control groups. To form the control group, each treatment firm is matched to a fund in the complementary group by minimizing the sum of the absolute differences in performance, net fund flows and percentage difference in size one year before the poker tournament. We present results for the full sample, and for two subsamples sorted on fund flows the year after the poker event. If diseconomies of scale can explain our results we would expect lower performance from the treatment group to be isolated among funds that experienced the largest fund flows after the poker win. That is indeed what we find. The DiD between alphas for firms that experience above median net flows is -1.65% and significant at the 1% level. The DiD for funds that experience fund flows below median, is statistically indistinguishable from zero. The DiD for the whole sample is -0.42%, statistically significant at the 5% level, consistent with results presented in Table 6.

Our results in this subsection suggest that investors investing in hedge funds after the manager wins a poker tournament experience poorer performance than if they had invested in an otherwise identical hedge fund. The poorer performance is isolated among the funds that attracted the most flows after they win the poker tournament, suggesting that the poorer performance may be the result of diseconomies of scale as highlighted by Berk & Green, 2004.

Discussion

In this section we consider, and reject, several alternative explanations for our results. We also discuss why we examine poker, rather than some other games of skill, such as chess or bridge. Finally, we discuss whether poker skills can *ever* be a useful signal for investors.

Alternative explanations

There are several alternative, intuitive, explanations that may be driving some of the links between poker and hedge fund management. First, we may expect hedge fund managers who play

poker to have a higher tolerance for risk, which in turn leads to better performance due to a positive risk-return tradeoff. We find no evidence for this as funds managed by poker playing managers do not exhibit higher return risk.

Second, perhaps the higher returns documented for poker playing managers are a result of exchanging information with other poker playing fund managers, or even corporate executives. We believe this is unlikely to be the case as the typical tournament poker player in our study is unlikely to be a fund manager or corporate executive.¹⁸ Even if there are opportunities to exchange information, we would expect to observe performance improving after such tournaments, rather than the cross-sectional pattern we observe. Our data suggests that performance (alpha) actually decreases after tournament wins, suggesting it is unlikely that such information exchange is driving our performance differentials.

Relatedly, perhaps it is possible that the increase in flows we observe after poker tournament cashes are the result of networking with potential investors at the tournament poker tables, rather than a result of existing or outside investors responding to managers' tournament wins. We do not distinguish our story from this explanation, and argue that, in both cases, investors are responding to visible evidence of manager skill in allocating capital to managers and this in turn leads to alpha erosion due to decreasing returns to scale.

Why poker?

Next, we discuss why we look at poker, as opposed to say bridge or chess. Chess and bridge are both clearly games of skill and there are asset managers who are avid fans of both. For example, Rex Sinquefeld, co-founder of Dimensional Fund Advisors, loves chess “so much he's put tens of

¹⁸ The majority of tournaments in our sample do not have prohibitively large buy-ins, allowing regular non-executive working people the chance to enter. Talberg, 2018 even suggests that students may be a significant demographic in poker playing circles.

millions of dollars into the game,” and according to Grandmaster Yasser Seirawan, “he's entirely responsible ... for the renaissance in American chess.” David Einhorn, in addition to his poker playing, is also a tournament bridge player.¹⁹

However, the ratio of luck to skill in poker is likely to more closely mirror the world of hedge fund investing. Kevin Zollman, a game theorist and Associate Professor of Philosophy at Carnegie Mellon, contends that “playing poker is the best off-time activity to improve investing skills... ‘Investing has a lot of the same features as poker... Poker is a game of incomplete information. In chess, I know where all the pieces are located. In theory, I could calculate all I need to know about chess. With poker, there's still randomness. Bridge lives between poker and chess. In bridge, all the cards are dealt out in the beginning. While you don't know where they are, you can make educated guesses.’” Echoing these sentiments, professional poker player Annie Duke says “poker players make better investors than chess players. With poker... there are unknown factors, such as the opponents' cards, which add an element of luck and uncertainty, which is more like investing in companies' stocks. With chess... chance doesn't factor into your decision making.”²⁰ This, together with the anecdotal evidence linking poker and hedge funds discussed in the introduction guides our choice of looking at poker, rather than bridge, chess, or other games.

Is poker skill ever a useful signal?

Finally, given the rather unpromising results for investors increasing allocations on the basis of demonstrated fund manager poker skill, we ask whether signals regarding poker skills could ever be useful to investors. Certainly, it is possible that private signals observed in cash

¹⁹ See “Creating the world's new chess capital,” by David Edmonds, BBC Magazine section, 12th May 2016 and “Hedge Fund Manager Who Plays His Cards Right,” by Jenny Anderson, *The New York Times*, 11th Aug 2006.

²⁰ See “ Why Playing Poker, Chess or Bridge Can Make You a Better Investor.” 6th April 2018 at TheStreet.com (<https://www.thestreet.com/story/14543254/1/why-playing-poker-and-chess-can-make-you-a-better-investor.html>)

games may be informative. However, we do not have data on such cash game outcomes. Another potential source of an informative signal is looking at fund managers who have cashed in poker tournaments before starting their funds. This is what we do in Table 8. We regress fund performance for a sample of funds whose managers cashed at a poker tournament before fund inception (treatment sample) and a control sample. The dependent variables are lifetime averages of monthly returns (regression 1) and alphas (regression 2). For the control sample, we use cross-sectional average returns and alphas for funds with the same inception year and no winning records before inception. We find that fund returns and alphas are greater for the treatment group. Our results, together with the fact the managers with poker tournament wins before starting their funds actually begin with less assets under management than their peers (\$46.8MM average AUM at inception for poker funds vs \$75.5MM average AUM at inception for their peers) suggest that poker cashes at tournaments before fund inception could potentially provide an informative signal that investors can benefit from.

Conclusions

Together our findings suggest that skilled poker players are, on average, better fund managers. Additionally, investors seem to be aware of this and increase investment in fund managers who demonstrate poker skill by cashing in a poker tournament. However, the signal coming from the poker tournament cash does not provide any additional information over and above the past performance of the fund (which tends to be better, consistent with poker and fund management skill being correlated) as such funds experience a decline in alpha after the poker cash. We interpret the decline in alpha, together with the increase in net flows, and the fact that the alpha decline is concentrated in funds experiencing the largest net inflows as evidence consistent with decreasing returns to scale. It appears that investors allocate additional capital into

the funds of a managers with poker tournament cashes, which strains the funds' capacities, reducing alpha. Put another way, in this case, investors in hedge funds *do not* know when to hold'em.

References

- Agarwal, S., Qin, Y., Sing, T. F., & Zhang, X. (2018). Information Sharing through Informal Interactions: Evidence from the Golf Course. *Working Paper*.
- Berk, J. B., & Green, R. C. (2004). Mutual Fund Flows and Performance in Rational Markets. *Journal of Political Economy*, 1269-1295.
- Biggerstaff, L., Cicero, D. C., & Puckett, A. (2017). FORE! An Analysis of CEO Shirking. *Management Science*, 2049-2395.
- Brown, S., Lu, Y., Ray, S., & Teo, M. (2018). Sensation Seeking and Hedge Funds. *Journal of Finance*, 2871-2914.
- Chaudhuri, R., Ivkovich, Z., Pollet, J. M., & Trzcinka, C. (2018). A Tangled Tale of Training and Talent: PhDs in Institutional Asset Management. *Working Paper*.
- Cheng, I.-H., Raina, S., & Xiong, W. (2014). Wall Street and the Housing Bubble. *American Economic Review*, 2797-2829.
- Choi, D., Kahraman, B., & Mukherjee, A. (2016). Learning about Mutual Fund Managers. *Journal of Finance*, 2809-2860.
- Fung, W., & Hsieh, D. A. (2004). Hedge Fund Benchmarks: A Risk-Based Approach. *Financial Analysts Journal*, 65-80.
- Lim, J., Sensoy, B. A., & Weisbach, M. S. (2016). Indirect Incentives of Hedge Fund Managers. *Journal of Finance*, 871-918.
- Lu, Y., Mitra, D., Musto, D., & Ray, S. (2018). Can Brands Circumvent Marketing Regulations? Exploiting Umbrella Branding in Financial Markets. *Forthcoming, Marketing Science*.
- Patterson, S. (2010). *The Quants: How a New Breed of Math Whizzes Conquered Wall Street and Nearly Destroyed It*. Crown Business.
- Schwarz, C., & Sun, Z. (2018). How Fast do Investor Learn? Asset Management Investors and Bayesian Learning. *Working Paper*.
- Sorkin, A. (Director). (2017). *Molly's Game* [Motion Picture].

Table 1: Summary statistics

This table reports the summary statistics of 220 hedge funds with poker-playing managers and 3017 hedge funds without poker-playing managers. Panel A reports the means of fund-level variables. *High-water mark* is an indicator variable for the hedge fund using a high-water mark and zero otherwise. *Lockup period* is in days, conditional on non-zero records. This table also reports the fraction of funds with lockups. Time-varying fund-level variables include monthly fund raw returns, seven factor alphas, net flows, total risk, idiosyncratic risk and assets under management. Panel B displays the frequency of poker tournaments by hedge fund managers. Panel C reports summary statistics for poker tournaments. *Prize* is the dollar prize won by the hedge fund manager. *Media* is a dummy variable which takes a value of one if the tournament has media coverage, and zero otherwise. *Jobs Act* is a dummy variable which takes a value of one if the tournament takes place after the passage of the Jobs Act, and zero otherwise.

Panel A: Summary Statistics of Fund-level Variables

	Not poker	Poker	Difference
<i>Fund Characteristics</i>			
N	3017	220	
Management Fee (%)	1.43	1.44	0.01
Incentive Fee (%)	14.70	14.33	-0.37
High Water Mark	0.65	0.63	-0.02
Proportion with Lockups	0.30	0.14	-0.16
Mean Lockups (days)	262.96	301.31	38.35
Redemption Period (days)	50.36	44.75	-5.61
Fund Age(years)	3.02	3.72	0.70***
<i>Time series data</i>			
Raw return (%)	0.58	0.67	0.09***
Alpha (%)	0.23	0.34	0.11***
Flow (%)	1.34	1.57	0.23*
Total Risk (%)	3.20	3.06	-0.14
Idiosyncratic Risk (%)	2.21	2.06	-0.15
Mean Assets (MM\$)	228.13	234.83	6.70

Panel B: Frequency of Poker Tournaments by Hedge Fund Managers

Year	Freq.	Percent	Cum.
2001	2	0.35	0.35
2002	3	0.52	0.86
2003	13	2.25	3.11
2004	23	3.97	7.08
2005	28	4.84	11.92
2006	31	5.35	17.27
2007	30	5.18	22.45
2008	40	6.91	29.36
2009	31	5.35	34.72
2010	47	8.12	42.83
2011	49	8.46	51.30
2012	56	9.67	60.97
2013	79	13.64	74.61
2014	86	14.85	89.46
2015	61	10.54	100.00
Total	579	100.00	

Panel C: Summary Statistics of Poker Tournaments

Variable	Obs.	Mean	Std. Dev.
Prize (\$)	579	7739.44	33773.36
Media (Dummy)	579	0.045	0.207
Pre JOBS (Dummy)	579	0.534	0.499

Table 2: Determinants of poker tournaments

Logistic regressions analyzing the determinants of poker tournament cashes by hedge fund managers. Columns (1) and (2) present results for cross-sectional regressions, while columns (3) and (4) present results for panel regressions. For cross-sectional regressions, the dependent variable is $Poker_{i,t}$, which takes a value of one if the portfolio manager of fund i won a poker tournament. For panel regressions, the dependent variable is $PT Win_{i,t}$, which takes a value of one if the portfolio manager of fund i wins a poker tournament in month t . Explanatory variables are as defined in Table 1, Panel A. Control variables are the set of variables listed under fund characteristics in Table 1, Panel A. Standard errors are clustered at the fund and/or time levels. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Cross-sectional		Panel	
	(1)	(2)	(3)	(4)
Avg. Return	0.191*			
	(1.81)			
Avg. Alpha		0.412**		
		(2.37)		
Avg. Flow	-0.019	-0.008		
	(-1.62)	(-0.53)		
Total Risk	0.026			
	(0.72)			
Idio. Risk		-0.054		
		(-0.75)		
Return $_{t-1, t-12}$			0.245***	
			(3.27)	
Alpha $_{t-1, t-12}$				0.309***
				(3.31)
Flow $_{t-1, t-12}$			-0.023*	-0.012
			(-1.91)	(-0.52)
Total Risk $_{t-1, t-12}$			0.073	
			(0.84)	
Idio. Risk $_{t-1, t-12}$				-0.036
				(-0.28)
Control Variables	Yes	Yes	Yes	Yes
Year Dummies	NA	NA	Yes	Yes
Strategy Dummies	Yes	Yes	Yes	Yes
Cluster by Fund	Yes	Yes	Yes	Yes
Cluster by Time	NA	NA	Yes	Yes
R-squared	0.050	0.086	0.040	0.042
N	1,686	752	111,952	79,399

Table 3: Fund performance and flow for poker tournament winning managers sorted on poker skill

This table reports performance and flows for 220 hedge funds with poker tournament winning managers, sorted on poker skill. *Prize won* is the dollar prize won by poker-winning managers in the tournament. *Number of entries* is the total number of entries in the poker tournament. *Buy-in* is the total number of buy-ins purchased by poker players in this tournament. *Total win* is the total number of winning records for the poker manager during our sample period. Difference between two groups are reported. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Prize won			Number of entries			Buy-in			Total win		
	>median	<=median	Difference	>median	<=median	Difference	>median	<=median	Difference	>median	<=median	Difference
Return	0.86	0.48	0.38**	1.07	0.27	0.80***	0.92	0.42	0.50**	0.88	0.46	0.42**
Alpha	0.53	0.29	0.24**	0.47	0.31	0.16*	0.54	0.28	0.26**	0.50	0.32	0.18*
Flow	3.43	0.81	2.62***	3.57	0.13	3.44***	3.14	0.65	2.49***	2.83	1.05	1.78***

Table 4: Flow effects of poker tournaments

This table reports the results of the effects of poker tournament cashes on net flows using a matched-sample approach. For lagged flow matching, each fund in the treatment group is matched with a fund in the control group by minimizing the absolute difference of flows one year before the poker tournament win. For propensity score matching, each fund in the treatment group is matched with a fund in the control group by minimizing the absolute difference of the propensity score obtained from table 2. Reported variables are net flows one year before and one year after the poker tournament win. Panel A reports univariate results which show difference-in-differences (DiD) before and after poker tournament win for PT Win funds and non-PT Win funds. Panel B reports results from multivariate regressions. *PT Win* takes the value of one the month the fund manager wins a poker tournament. Control variables are the set of variables listed under fund characteristics in Table 1, Panel A. Standard errors are clustered both at the fund and time levels. T-statistics are reported in parentheses below the slope coefficients. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Univariate results

	Lagged flow matching		Propensity score matching	
	Before	After	Before	After
PT Win	1.48	2.87	1.48	2.87
Non-PT Win	1.49	1.03	0.88	0.44
DiD	1.85 ^{***}		1.83 ^{***}	

Panel B: Multivariate results

	Lagged flow matching	Propensity score matching
PT Win	1.686 ^{**} (2.43)	1.926 ^{***} (3.21)
Flow $_{t-1, t-12}$	0.073 (1.12)	-0.040 (-1.40)
Return $_{t-1, t-12}$	0.770 ^{***} (2.79)	0.665 ^{***} (2.72)
Return $_{t+1, t+12}$	0.121 (0.47)	-0.007 (-0.02)
Strategy Dummies	Yes	Yes
Year Dummies	Yes	Yes
Cluster by Fund	Yes	Yes
Control Variables	Yes	Yes
R-squared	0.098	0.071
N	1,412	1,412

Table 5: Flow effects sorted on poker tournament characteristics

This table reports the flow effects sorted on poker tournament characteristics. *Media* is an indicator for the poker tournament having had media coverage. *Prize>median* means the winning prize of the poker tournament is greater than the median value. *Pre Jobs* means the poker tournament takes place before April 2012. Panel A reports univariate results matched on lagged one year flows. Panel B reports univariate results matched on propensity score obtained from table 2. Panel C reports multivariate results. *Poker* takes the value one if the fund manager wins a poker tournament in that month, and zero otherwise. *Media* \times *PT Win*, *Prize* \times *PT Win* and *Pre Jobs* \times *PT Win* are interaction terms. Control variables are the set of variables listed under fund characteristics in Table 1, Panel A. We also include interactions of control variables with the tournament characteristic of interest. Standard errors are clustered at the fund level. T-statistics are reported in parentheses below the slope coefficients. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Univariate results (lagged flow matching)

	Media		No media		Prize>Median		Prize<=Median		Pre JOBS Act		Post JOBS	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
PT Win	0.27	3.41	1.57	1.87	2.33	3.92	1.25	1.62	1.85	3.13	0.71	1.43
Non-PTWin	0.27	-0.40	1.51	1.36	2.32	1.77	1.08	1.29	1.95	1.09	0.67	1.55
DiD	3.81***		0.45		2.14***		0.16		2.14***		-0.16	
DIDID	3.36***				1.98**				2.30***			

Panel B: Univariate results (propensity score matching)

	Media		No media		Prize>Median		Prize<=Median		Pre JOBS Act		Post JOBS Act	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
PTWin	0.27	3.41	1.57	1.87	2.33	3.92	1.25	1.62	1.85	3.13	0.71	1.43
Non-PTWin	-0.30	-0.47	1.35	0.48	3.24	2.79	1.71	1.92	2.15	1.82	1.95	1.76
DiD	3.31***		1.17*		2.04**		0.16		1.61**		0.91	
DiDiD	2.14**				1.88**				0.70			

Panel C: Multivariate results

	Lagged flow matching			Propensity score matching		
	(1)	(2)	(3)	(4)	(5)	(6)
PT Win	0.254 (0.35)	0.262 (0.38)	-0.647 (-0.72)	0.129 (0.21)	-1.388** (-2.41)	-2.571*** (-2.85)
Media	-1.450 (-1.61)			1.151 (1.65)		
Media x PT Win	4.233*** (2.84)			3.905* (1.79)		
Prize		-0.012 (-0.97)			-0.009 (-0.86)	
Prize x PT Win		0.064*** (3.86)			0.072*** (6.20)	
Pre Jobs			-2.299 (-1.44)			-5.352*** (-3.15)
Pre Jobs x PT Win			2.698** (2.46)			4.574*** (4.09)
Flow $t-1, t-12$	-0.042 (-1.46)	-0.046* (-1.90)	-0.041 (-1.41)	0.075 (1.14)	0.074 (1.05)	0.068 (1.03)
Return $t-1, t-12$	0.682*** (2.82)	0.577** (2.56)	0.635** (2.58)	0.787*** (3.03)	0.608** (2.46)	0.757*** (2.74)
Return $t+1, t+12$	-0.009 (-0.03)	-0.093 (-0.32)	-0.057 (-0.18)	0.133 (0.52)	0.127 (0.50)	0.109 (0.41)
Strategy Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Fund	Yes	Yes	Yes	Yes	Yes	Yes
Control and Interaction Terms	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.066	0.071	0.068	0.094	0.095	0.098
N	1,412	1,412	1,412	1,412	1,412	1,412

Table 6: Performance effects of poker tournaments

This table reports the results for the effects of poker tournament cashes on raw returns and seven-factor alphas using a matched-sample approach. For lagged performance matching, each fund in the treatment group is matched with a fund in the control group by minimizing the absolute difference of performance one year before poker tournaments. For propensity score matching, each fund in the treatment group is matched with a fund in the control group by minimizing the absolute difference of propensity score obtained from table 2. Reported variables are raw returns and seven-factor alpha one year before and one year after the poker tournament. Panel A reports univariate results, which show difference-in-differences (DiD) before and after poker tournament win for PT Win funds and non-PT Win funds. Panel B reports multivariate results. *PT Win* takes the value of one if the fund manager wins a poker tournament in that month, and zero otherwise. Fund-level control variables are defined in Table 1, Panel A. Standard errors are clustered at the fund level. T -statistics are reported in parentheses below the slope coefficients. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Univariate results

	Lagged performance matching				Propensity score matching			
	Return		Alpha		Return		Alpha	
	Before	After	Before	After	Before	After	Before	After
PT Win	0.83	0.25	0.65	-0.05	0.83	0.25	0.65	-0.05
Non-PT Win	0.81	0.12	0.64	0.54	1.08	0.45	0.58	0.37
DiD	0.11		-0.58**		0.05		-0.49**	

Panel B: Multivariate results

	Lagged performance		Propensity score	
	Return	Alpha	Return	Alpha
PT Win	-0.089	-0.452**	-0.180	-0.370*
	(-0.50)	(-2.02)	(-1.11)	(-1.90)
Flow $_{t-1, t-12}$	-0.002	-0.023	-0.016*	-0.007
	(-0.09)	(-1.34)	(-1.92)	(-0.34)
Return $_{t-1, t-12}$	0.117		0.114	
	(1.05)		(1.39)	
Alpha $_{t-1, t-12}$		0.058		0.287**
		(0.27)		(2.06)
Strategy Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Cluster by Fund	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes
R-squared	0.039	0.052	0.042	0.061
N	1506	1199	1506	1199

Table 7: Alpha effects of poker tournaments sorted on future flows

This table reports the results of the effects of poker tournament cashes on seven-factor alphas using a matched-sample approach. Each fund in the treatment group is matched with a fund in the control group by minimizing the absolute percentage difference of performance, flow and size one year before poker tournaments. The table reports the univariate results which show difference-in-differences (DiD) before and after poker tournament for poker funds and non-poker funds. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Full sample		Flow $_{t+1, t+12} > \text{Median}$		Flow $_{t+1, t+12} \leq \text{Median}$	
	Before	After	Before	After	Before	After
PT Win	0.58	-0.01	0.72	-1.03	0.55	0.3
Non-PT Win	0.64	0.47	0.76	0.66	0.59	0.42
DID	-0.42**		-1.65***		-0.08	

Table 8: The effects of poker tournament cashes on hedge fund performance: evidence from cashes before fund inception

This table presents cross-sectional performance for a sample of funds with poker winning managers and a control sample. Before is an indicator variable for the fund’s manager having cashed at a poker tournament before fund inception. The dependent variables are one-year average monthly returns and alphas for the one year after fund inception. For the control sample, we use cross-sectional average returns and alphas, for all funds with the same inception year, but no poker winning records. We include strategy dummies and the same control variables included in Table 4, Panel B. Standard errors are in parentheses. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Return	Alpha
Before	1.002*	0.722*
	(1.67)	(1.87)
Control Variables	Yes	Yes
Strategy Dummies	Yes	Yes
R-squared	0.090	0.114
N	136	136