The Impact of Experience on Risk Taking, Overconfidence, and Herding of Fund Managers: Complementary Survey Evidence[*]

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Abstract

Empirical research has shown that inexperienced fund managers yield significantly higher returns than their more experienced colleagues. If the portfolios of inexperienced are not more risky, this result would contradict the hypothesis of market efficiency. Therefore, it is an important question whether inexperienced fund managers tend to taker higher risks. Higher risk taking may be explained by a higher degree of overconfidence, less herding behavior, or a lower degree of risk aversion. Since the results concerning the relationship between experience and risk taking in previous studies are rather contradictory we provide complementary survey evidence of 117 German fund managers which can improve our understanding in this field. In line with the results of previous studies, we find that herding is decreasing with experience while the evidence concerning risk taking and overconfidence is mixed. Nevertheless, our results provide some support for the hypothesis that inexperienced managers do indeed take higher risks.

JEL-Classification: G 23, G 14

Key words: overconfidence, herding, fund managers

1 Introduction

Recent empirical studies have shown that young and inexperienced fund managers earn significantly higher returns than their older and more experienced colleagues [see e.g. Chevalier and Ellison (1999a), Liang (1999), and Edwards and Caglayan (2001)]. This systematic difference challenges the hypothesis of market efficiency in two respects. First, consumers buying shares of older fund managers may not act rational. Second, young managers may be able to identify undervalued stocks which would contradict pricing efficiency. If the portfolios of young managers are, however, more risky, the difference in returns can be regarded as risk premium consistent with the hypothesis of market efficiency. Several empirical studies analyzed the question whether risk taking in the financial sector does indeed decrease with experience and/or age of managers. The evidence is, however, contradictory. Whereas some studies observe a negative relation between risk taking and experience [cf. Graham (1999), Li (2002), Boyson (2003)] other studies come to opposite results [cf. Chevalier and Ellison (1999b), Hong et al (2000), and Lamont (2002)]. Also from a theoretical viewpoint it is not clear whether managers should increase [as suggested by the work of Avery and Chevalier (1999)] or decrease [see Prendergast and Stole (1996)] risk taking during the career.

This discussion has raised some general interest into the question how fund managers´ behavior changes during the career. One finding in this context is that young managers tend to exhibit a higher degree of herding [cf. Chevalier and Ellison (1999b)]. The discussion of herding provides a link to the behavioral economics literature which is also concerned with the impact of experience. It has been observed that some behavioral irregularities disappear or at least weaken with sufficient experience of the subjects. A well-known example in this context is the fact that a substantial disparity between maximal buying prices and minimal selling prices contradicting standard utility theory can be observed in the first rounds of experiments. In later rounds this disparity, however, disappears [cf. Shogren et al. (2001), Loomes et al. (2003)]. Another example, somewhat more related to the present paper, is given by the study of Fox et al. (1996) which shows that experienced option traders do not exhibit probability distortions in the case of risk usually observed in experiments with student subjects. However, also here the evidence is somewhat mixed as some irregularities (such as overbidding in first-price auctions or probability distortions in the Fox et al. study if uncertainty instead of risk is considered) remain persistent even with experienced subjects. Behavioral irregularities particularly relevant for the investigation of fund managers are those

reported in the behavioral finance literature. Besides the above mentioned herding behavior, one main topic in this literature is the phenomenon of overconfidence. Odean (1998) has shown that investors with a higher degree of overconfidence choose in general more risky portfolios than those with a lower degree of overconfidence. Suppose that, analogously to the other behavioral irregularities, also overconfidence would decrease with experience. In this case young inexperienced funds mangers would be more overconfident and would choose, therefore, riskier portfolios, what could explain their higher returns mentioned above. There is some empirical evidence that overconfidence of investors indeed decreases with experience [see Locke and Mann (2001), Christoffersen and Sarkissian (2002)]. However, some psychological studies show that experts are more likely to be overconfident than relatively inexperienced subjects [see e.g. Heath and Tversky (1991) and Frascara (1999)]. This result is confirmed by the analysis of experimental asset markets of Maciejovsky and Kirchler (2003) where the degree of overconfidence increases during the experiment. Also the study of Glaser et al. (2003) has somewhat similar results since in their experiments professional traders have a higher degree of overconfidence than students in the two tasks analyzed, namely trend recognition and forecasting of stock price movements. A rather comprehensive comparison of various measures of overconfidence between professional and lay men is reported in Glaser et al. (2004a). Again, professionals are significantly more overconfident for most of the tasks and not for any task significantly less overconfident. While this result is very unambiguous, it does not necessarily justify to draw conclusions about the comparison between less and more experienced professionals.

In summary, the evidence concerning the impact of experience on the behavior of fund managers is not very clear-cut. One reason for these mixed results may be the fact that the concepts of risk taking, overconfidence, and herding are defined heterogeneously in the single studies. The motivating question of the present paper is whether complementary survey data can improve our understanding in this field. Therefore, we conducted a questionnaire survey concerning risk taking, overconfidence and herding with 117 German fund managers. As fund managers are a rather influential investor group on many financial markets, studying their behavior is particularly interesting, at least compared to studies among lay men or students [see e.g. Haigh and List (2004)]. The next section gives some information on our survey. Section 3 presents the hypotheses and contains the results. Finally, some concluding observations appear in section 4.

2 Survey

This survey addresses all fund management companies in Germany that were believed to manage equity and/or bond funds. In total, 64 companies were approached between August 15 and December 12, 2002. Of this total, five companies declared that they did not belong to our target group. Of the remaining 59 companies, 35 participated in the survey, with at least one appropriate questionnaire each. This resulted in a response rate of 59% concerning participating fund management companies. Altogether, we received 117 usable questionnaires which means that on average three to four managers participated from each company.

It is important to formulate appropriate questions in the language of fund managers. We thus conducted several intensive interviews with fund managers in advance of the survey. Moreover, in later stages the questionnaire was used in a pretest with several fund managers as a final check of its acceptance and appropriateness. In summary, the feedback indicates that the response was useful for our research purposes.

Table 1: Descriptive statistics on the survey respondents

Item asked	Reponses (in per cent)					
Age (in years)	< 35:	50.9%	35-45:	46.5%	> 45:	2.6%
Profess. experience	< 5:	22.3%	5-15:	59.8%	> 15:	17.9%
Gender	male:	92.1%			female:	7.9%
Share of variable compensation	mean:	25.8%			std. dev.:	14.5
University degree	yes:	84.8%			no:	15.2%
Superior position	yes:	36.9%			no:	63.1%
Kind of fund management*	active:	93.7%			passive:	6.3%
Kind of securities managed**	stocks:	66.5%			bonds:	33.5%

* The question asks for the primarily conducted kind of fund management.
**4.2% of the respondents managed stocks and bonds to the same degree. These respondents were added with half weight to stocks as well as bonds, so that the sum adds up to 100%.

The descriptive statistics in Table 1 provides more information on the fund managers. A superior position was defined as being a supervisor of other fund managers where the precise number of supervised managers was left open. From Table 1 we can infer that the typical fund manager is about 35 years old, has 10 years of professional experience, is male, receives a bonus of 25%, holds a university degree, works in a non-superior position in active fund management and manages stocks rather than bonds. This data is largely consistent with the information from similar surveys in Germany such as Arnswald (2001) or Gehrig and Menkhoff (2004).

3 Results

At the beginning of the questionnaire we asked for tenure and professional experience in fund management with the possible response categories "less than 5 years", "5-15 years", and "over 15 years". Consequently, we can split our respondents into three groups which will be referred to as "inexperienced", "experienced", and "very experienced" fund managers in the following. Our goal is to analyze differences between these groups with respect to risk taking, overconfidence, and herding behavior. Therefore, we will analyze 10 selected questions from our questionnaire which are presented in Table 2.

Table 2: The questions

no.	Question	Categories[1]
1	How do you evaluate your own performance compared to other fund managers?	5 categories: from "much better" (coded as 1) to "much worse" (coded as 5)
2	The majority of economic news is not surprising for me.	6 categories: from "complete approval" (coded as 1) to "complete contradiction" (coded as 6)
3	Give an estimation of the DAX in one month. Determine a lower and an upper bound such that the quote of the DAX in one month from now will be inside the resulting interval with a probability of 90%.	lower and upper bound in points of the DAX
4	How important are colleagues (from your own company) for you as source of information?	6 categories: from "very important" (coded as 1) to "not important at all" (coded as 6)
5	How important are other market participants (not from your own company) for you as source of information?	see no. 4
6	How intensive do you use the momentum strategy?	amount in percent
7	How intensive do you use other strategies different to the strategies momentum, contrarian, and buy-and-hold?	amount in percent
8	Also fund managers exhibit herding behavior.	see no. 2
9	After profitable investments fund managers tend to take on additional positions.	see no. 2
10	Imagine someone offers you a bet and the odds are fifty-fifty. You will have to pay € 100, if you lose. What would be the minimum amount to win to lure you into accepting the bet?	monetary amount in €

For qualitative questions we use in general six categories in order to force respondents to go into one direction. However, for question 1 we use five categories only in order to allow respondents to evaluate their abilities precisely as average.

The second column in Table 2 gives the precise wording of each question, whereas the response categories and our coding can be taken from the third column.

The results for each question are given in Table 3. The number and content of the single questions are recalled in the first two columns. The third and fourth columns report the overall means and medians of responses whereas columns 5-7 give the means among the inexperienced, experienced, and very experienced fund managers, respectively. For each question we ran an ordered probit or tobit regression with professional experience as independent variable. The coefficients of these regressions are reported in the eighth column where the stars indicate the significance level (see note at the bottom of the table). The ninth and tenth columns finally report the adjusted measure of determination and the number of usable responses for each regression.

Table 3: Results

No.	Content	Mean	Median	Inexperienced	Experienced	Very experienced	Regression coefficient[1]	R^2	N[2]
1	Own performance	2.34	2.00	2.67	2.28	2.11	-0.233***	0.032	108
2	News not surprising	3.20	3.00	3.48	3.17	2.93	-0.157*	0.012	111
3a	Relative size of DAX interval	0.29	0.22	0.25	0.29	0.32	0.017	0.002	107
3b	DAX interval too small[3]	0.47	0.00	0.58	0.46	0.35	-0.144	0.015	90
4	Colleagues	3.18	3.00	2.72	3.18	3.85	0.226***	0.023	112
5	Market participants	3.73	4.00	3.40	3.78	4.10	0.161**	0.012	112
6	Momentum strategy	26.27	25.00	31.66	24.50	26.20	-1.771	-0.007	104
7	Other strategies	13.69	0.00	4.57	13.34	24.07	12.953**	0.050	104
8	Herding	2.02	2.00	2.36	1.99	1.85	-0.115	0.007	112
9	Additional positions	2.92	3.00	3.56	2.88	2.40	-0.293***	0.096	112
10	Minimal gain	182.38	105.00	183.67	167.29	229.82	9.569	-0.002	105

[1] The table gives the univariate coefficients of ordered probit regressions with level of experience (no. 1, 2, 3b, 4, 5, 8, and 9) and – in case of censored variables – of tobit regressions with level of experience (no. 3a, 6, 7, 10). Stars refer to level of significance: *** 1%, ** 5%, * 10%.

Of course we are also interested in the impact of the other explanatory variables listed in Table 1. Therefore we also ran multivariate regressions (see Table 4) where insignificant variables were excluded in order to increase the number of usable responses for each regression. Table 4 shows that experience is overall the most influential explanatory variable. In particular, experience has a more robust impact than age although both variables are cleary correlated (the correlation coefficient equals 0.617 and is highly significant). Due to this high correlation, we show in Table 4 regressions where the age variable is defined as residuals of the regression with experience.

The qualitative results with respect to experience are rather similar in the multivariate and in the univariate regressions. In the following discussions we therefore restrict attention mostly to the results presented in Table 3. Let us now comment on the single results. Since risk taking is related to overconfidence and herding we will investigate risk taking at the end and start with overconfidence and herding.

(i) overconfidence

Overconfidence is a rather robust phenomenon in the psychology of judgment [see Odean (1998) and, more recently, Glaser et al. (2004b) for a broad overview over the relevant literature]. In the finance literature, overconfidence is usually modeled as a systematic overestimation of the precision of own knowledge which leads to an underestimation of the variance of random variables. This type of overconfidence is often referred to as miscalibration [Lichtenstein et al. (1982)]. An additional manifestation of overconfidence is given by unrealistically positive self-evaluations [Greenwald (1980)]. A well-known example is the study of Svenson (1981) who asked a sample of students to assess their own driving safety: 82% of the students judged themselves to be in the top 30% of the group. A third stream of literature regards overconfidence as illusion of control [Langer (1975)] and unrealistic optimism which means that people overestimate personal success probabilities.

In the context of financial markets, overconfidence is one of the most prominent explanations for the excess trading volume [DeBondt and Thaler (1985)] since overconfident investors tend to trade too much [Odean (1999), Barber and Odean (2000)]. This latter conclusion has been challenged by the empirical study of Glaser and Weber (2004) and the experiment of Biais et al. (2004) which both show that trading volume and overconfidence defined as miscalibration are unrelated. However, if overconfidence is regarded as unrealistically positive self-evaluation, Glaser and Weber (2004) find a positive correlation between overconfidence and trading volume.

Table 4: Multivariate Analyses

	More experienced	Higher age	Female	Higher bonus	No university degree	No superior position	Passive management	Managing bonds	Constant	R²	N
Own performance	-0.141*** (0.007)						0.508* (0.070)		2.193*** (0.000)	0.068	104
News not surprising	-0.186** (0.046)			0.014* (0.097)		0.543** (0.039)			3.470*** (0.000)	0.049	77
DAX interval too small	-0.152* (0.063)				0.591* (0.060)	0.548** (0.011)			-0.462 (0.218)	0.066	80
Colleagues	0.278*** (0.003)		-1.329*** (0.010)				1.060** (0.038)		2.660*** (0.000)	0.099	106
Market participants	0.188** (0.017)	0.225* (0.056)	-1.493*** (0.001)				1.177*** (0.006)		3.552*** (0.000)	0.151	105
Momentum strategy							-18.192** (0.033)		45.159*** (0.000)	0.016	103
Other strategies	12.953*** (0.010)								-55.929*** (0.002)	0.050	104
Herding					-0.593** (0.027)	0.495** (0.024)			2.745*** (0.000)	0.052	100
Additional positions	-0.252*** (0.001)					-0.790*** (0.005)			4.573*** (0.000)	0.145	110
Minimal gain			141.125* (0.072)				141.375* (0.072)		-120.582 (0.231)	0.050	101

Table note: The table gives the coefficients of the ordered probit and tobit regressions (see footnote to Table 3) with the p-values in parentheses – the respective dependent variables are listed in the first column. Due to high correlation between experience and age, we define here the age variable as residuals of the regression with experience. Stars refer to level of significance: *** 1%, ** 5%, * 10%.

As mentioned in the introduction, the evidence concerning the impact of experience on overconfidence is rather ambiguous. Since there are different methods to measure the degree of overconfidence, this issue was addressed in our questionnaire with different items, namely with questions no. 1, 2, and 3. We are aware of the fact that three questions are by far not sufficient for a comprehensive measurement of overconfidence. A comprehensive measurement of overconfidence for both, professionals and lay men, has been exerted by Glaser et al. (2004b). In this study, each definition of overconfidence is tackled by different tasks which allows for robustness checks and, building upon psychological research of e.g. Stanovich and West (1998), (2000) and Parker and Fischhoff (2001), the identification of individual differences in overconfidence. However, the focus of our work is not a comprehensive measurement of overconfidence but just its dependence on experience. Moreover, since our survey is not devoted to overconfidence alone and fund managers have a very tight time budget, we had to content ourselves with a limited number of questions in order to ensure a satisfactory response rate.

Let us first regard overconfidence as unrealistically positive self-evaluation analyzed with question 1. In the absence of overconfidence one would expect that the respondents judge their own performance compared to that of other fund managers on average as "equally good" which is coded as three. The overall mean of 2.34 (see Table 3) indicates that fund managers tend to evaluate themselves as above average and, hence, that overconfidence can be well observed within our sample. Moreover, Table 3 shows that the response to question 1 is significantly decreasing with experience which means that overconfidence is significantly increasing with experience. Since experience may indeed lead to better fund management abilities we included as control variables the question whether the respondent holds a superior position and the relative size of variable salary into the regression which are, however, both insignificant (see also Table 4). A similar picture arises from the analysis of question 2 which can be related to illusion of control: more experienced fund managers find the majority of economic news significantly less surprising than their less experienced colleagues. Thus, we can confirm the results of Heath and Tversky (1991), Frascara (1999) and Maciejovsky and Kirchler (2003) if overconfidence is regarded as unrealistically positive self-evaluation or illusion of control.

Let us now analyze overconfidence with respect to miscalibration. Miscalibration is usually identified by too narrow subjective confidence intervals. Although psychological research has

shown that the extent of miscalibration depends on the way in which these intervals are elicited and also on the domain of knowledge they refer to [Klayman et al. (1999) and Soll and Klayman (2004)], we tackled miscalibration for reasons outlined above with only one question. In question 3 respondents had to state a 90% confidence interval for the quote of the DAX (the major German stock index) one month later. We first analyzed the relative size of this interval given by (upper bound – lower bound) / actual quote. Table 3 (no. 3a) shows that the relative size is on average 29% of the actual quote. Although the relative size is monotonously increasing with experience the regression is not significant. However, a t-test confirms that the value for the very experienced fund managers is significantly higher than the value for the inexperienced fund managers at a significance level of 5%. Thus, the degree of overconfidence seems to decrease with experience. This impression is reinforced if we consider the relative frequency of fund managers who stated too small DAX intervals, i.e. the real quote of the DAX after one month was actually outside the stated interval. Table 3 (no. 3b) shows that 47% of the managers stated too small intervals which has to be regarded as a high degree of overconfidence since one would expect only a value of 10% for 90% confidence intervals. The relative frequency of too small intervals is monotonously decreasing with experience and in the multivarate regression this influence is significant at the 10% level. Additionally, according to a t-test, the relative frequency among the very experienced fund managers is significantly lower at the 10% level than the relative frequency among the inexperienced managers. Obviously, our results concerning question 3 may have been influenced by the volatility and the trend of the DAX during the period of data collection. However, several regressions confirmed that neither past realized or expected volatility (modeled by various GARCH specifications) nor trend have a robust impact. Finally, let us mention that for both analyses concerning the DAX interval we did not observe a significant difference between managers who focus on stocks and those who focus on bonds.

In summary, we get mixed results concerning the impact of experience on overconfidence: if overconfidence is interpreted as unrealistically positive self-evaluation or illusion of control, it is significantly increasing with experience whereas overconfidence is decreasing with experience if it is defined in terms of miscalibration, as commonly done in financial models.

Let us finally analyze whether the measures of overconfidence are correlated. Corresponding information is given by Table 5 which reports correlations in pairs, their significance levels (in parentheses), as well as the underlying number of observations (N). For calculating the

correlations we have multiplied the responses to questions 1, 2, and 3a with minus one such that a higher value in all four cases corresponds to a higher degree of overconfidence.

It is clear that both variables derived from the DAX interval are positively correlated since a smaller interval obviously implies a higher frequency of actual quotes falling outside this interval. Apart from this, there is only a significant correlation between the responses to questions 1 and 2. This means that miscalibration is unrelated to the other measures of overconfidence. Since identical results were obtained by related studies, e.g. Deaves et al. (2003), Oberlechner and Osler (2003), Glaser and Weber (2004), Glaser et al. (2004a), and Régner et al. (2004), we think that our measurement of overconfidence is, despite the small number of questions, rather robust.

Table 5: Correlation of Overconfidence Measures

		Own performance	News not surprising	Relative size of DAX interval	DAX interval too small
1	**Own performance**	1			
2	**News not surprising**	0.210** (0.027) [N=110]	1		
3a	**Relative size of DAX interval**	-0.015 (0.880) [N=107]	0.041 (0.669) [N=109]	1	
3b	**DAX interval too small**	-0.079 (0.412) [N=111]	-0.098 (0.298) [N=115]	0.381*** (0.000) [N=111]	1

Table note: p-values in parentheses; ***: significance level of 1%, **: 5%, *: 10%, no star: insignificant.

(ii) herding

Herding behavior occurs if market participants base their trading decisions on observed aggregate market activity leading to a major shift into or out of a particular asset. In many circumstance such herding behavior can be regarded as rational in financial markets [see e.g. Devenow and Welch (1996) for an overview]. From a theoretical perspective, fund managers, or more generally institutional investors, may have an incentive to herd due to the following reasons: (i) reputational risk of acting differently from other managers [Scharfstein and Stein (1990), Trueman (1994), Zwiebel (1995), Prendergast and Stole (1996), Avery and Chevalier (1999), and Effinger and Polborn (2001)], (ii) receipt of correlated private information [Froot et al. (1992)], (iii) following the prior trade of better-informed investors [Bikhchandani et al.

(1992)], (iv) shared aversion to stocks with certain characteristics such as lower liquidity [Falkenstein (1996)], and/or reward schemes based on relative performance [Eichberger et al. (1999)]. In particular point (i) is related to experience since reputational risk usually changes during the career. For instance, the model of Avery and Chevalier (1999) shows that more experienced fund managers have a lower incentive to herd. This conclusion is empirically confirmed not only for fund managers [Chevalier and Ellison (1999b)] but also for security analysts [Hong et al. (2000)] and macroeconomic forecasters [Lamont (2002)]. In contrast, the model of Prendergast and Stole (1996) implies that herding will increase with experience. Empirical evidence in favour of this implication has not yet been reported for fund managers but for security analysts [Li (2002)] and investment newsletters [Graham (1999)].

In our questionnaire we addressed herding with questions no. 4-8. Herding obviously implies that colleagues and other market participants are important sources of information. Table 3 (no. 4 and 5) shows that both sources become significantly less important with increasing experience at a significance level of 1% and 5%, respectively. Thus, herding seems to decrease with experience. One reason for observed herding of funds may be the joint use of momentum strategies [see e.g. Grinblatt et al. (1995)]. Table 3 (no. 6) does not show a significant relationship between experience and use of the momentum strategy, although inexperienced fund managers rely clearly most on this strategy. The lack of a significant relationship may have been caused by the fact that we did not give a precise definition of what a momentum strategy actually is with respect to the length of the period for which positive returns are identified. However, we left the length of this period open on purpose, as otherwise one has to ask for the use of different types of momentum strategies which may be too complicated and time-consuming.

The use of other strategies, i.e. strategies different to momentum, contrarian, and buy-and-hold, is significantly increasing with experience (see no. 7) which also supports our conclusion that herding decreases with experience. Finally, our respondents had to evaluate in question no. 8 the statement that herding behavior is observable among fund managers. Approval of this statement is increasing with experience, though not significantly. This result may be interpreted as follows: experienced fund managers tend to be more aware of and, therefore, tend to be less prone to herding. Altogether, our analysis provides relatively strong support for the conclusion of Avery and Chevalier (1999) and Chevalier and Ellison (1999b), namely that experienced fund managers herd less than their inexperienced colleagues.

(iii) risk taking

In the empirical literature risk taking of funds is usually measured in two ways, either by the standard deviation of returns or by the degree of herding behavior. In this context a higher degree of herding is interpreted as lower risk taking behavior. Based on theoretical justifications of e.g. Diamond (1991) and Hirshleifer and Thakor (1992), this interpretation has been used in the empirical studies of Graham (1999) and Hong et al. (2000). For our results concerning herding, this interpretation would imply that – due to less herding – risk taking is increasing with experience. However, the identification of risk taking by the degree of herding should, in our view, be adopted only with some caution since the relation of herding and experience is relatively unambiguous whereas the relation between experience and risk taking seems to be more complicated. For instance, the results concerning question no. 3 (discussed in the subsection on overconfidence) show that experienced fund managers are more aware of risk which should result in portfolios with lower risk. This point is further supported by question no. 9: more experienced fund managers are at a significance level of 1% more aware of the danger of increased risk taking due to the well-known house money effect.

Additionally we tried to get an impression of the relation between experience and the degree of risk and/or loss aversion. There exist sophisticated techniques for the elicitation of utility functions [e.g. Wakker and Deneffe (1996)] as well as for the degree of loss aversion [Abdellaoui and Bleichrodt (2004] which would allow for a rather precise comparison of risk and loss aversion of respondents. However, these techniques involve by far too many questions for our purposes. Therefore, we analyzed risk and loss aversion by the responses to question no. 10 (the response of one outlier who answered 10000 was excluded). The results show that the degree of risk aversion is tentatively but not significantly increasing with experience (see also Table 4). Table 4 reveals moreover that female fund managers and those applying a passive kind of fund management show higher risk aversion. The result concerning female managers is in line with other studies which have shown that women often have a higher degree of risk and loss aversion than men [cf. Brachinger et al. (1999) and Schmidt and Traub (2002)].

Altogether, if risk taking is not identified with herding behavior, we tend to conclude from our results that the degree of risk taking is, in line with the studies of Graham (1999), Li (2002), Boyson (2003), decreasing with experience.

4 Conclusions

Our study presents survey evidence concerning the impact of experience on overconfidence, herding and risk taking of fund managers. With respect to herding, our evidence is rather clear-cut and supports the result of other studies that herding is decreasing with experience. In contrast, our results concerning overconfidence are, similarly to the preceding literature, somewhat contradictory as overconfidence is decreasing with experience for some tasks while it is decreasing for others. However, if we define overconfidence as miscalibration, as commonly done in the finance literature, overconfidence is decreasing with experience. In other words, experienced fund managers are more aware of the true volatility of asset prices which might lead to better investment decisions. If the decisions of experienced managers are indeed better than those of their less experienced colleagues, the more positive self-evaluations of experienced managers might in fact not be interpreted as overconfidence. However, the question whether experienced managers are better than less experienced ones can be answered unambiguously only with market data and not with our questionnaire approach.

Concerning risk taking we found some evidence in our data that the degree of risk taking is decreasing with experience. However, the opposite result holds if risk taking is derived from herding behavior.

A possible conclusion from our results might be based on the importance of learning: Experience gained from a learning process helps to better estimate the true volatility in asset prices which may lead to a comparatively more risk averse behavior. In this sense, experienced fund managers are less overconfident and take lower risks. If individuals "learn" from this experience that their advantage is due to their personal competence, they may regard their own performance as superior and may feel competent to deviate from the herd.

Altogether, our data provide some support to the hypothesis that risk taking of fund managers is indeed decreasing with experience which could explain the higher returns of less experienced managers. However, for a final answer on the question whether the higher returns

of inexperienced managers are compatible with market efficiency and rational financial market theory additional research based on market data is required.

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