ONLINE APPENDIX

1 A Note on Hedge Fund Contracts

As we described in Section 2, a typical hedge fund contract specifies a pair (w, β) which represents a watermark w and a share β of profits above watermark that managers keeps for himself. We will show below that, if $\beta \geq \bar{\beta} > 0$[1], then there exists an equilibrium in which all the funds are invested in the risky project.

We will show that we can sustain an equilibrium in which both managers propose contract with $w = R_r$, $\beta \in [\bar{\beta}, 1]$ and invest in the risky project.

First, similarly to the Result 1, if $w > w^*$ then a manager will prefer to invest in the risky project because

$$\begin{aligned} \Pi^{\text{manager}}_{w,\beta,\text{safe}} &< \Pi^{\text{manager}}_{w,\beta,\text{risky}} \Leftrightarrow p_s\beta(R_s - w) < p_r\beta(R_r - w) \\ &\Leftrightarrow w > w^* = \frac{p_sR_s - p_rR_r}{p_s - p_r} \end{aligned}$$

Thus, when an investor gives his funds to a manager that promised $w = R_r$, his funds will be invested in the risky project.

To sustain the equilibrium proposed above, the only deviation that we need to rule out is the one in which one of the managers proposes $w = w^*$ and $\beta' \in [\bar{\beta}, 1]$. If this proposal attracts the investor, then it is clearly beneficial for the manager because it gives him/her positive expected profits, as opposed to the zero profits which is what he/she earns following strategy $w = R_r$ and $\beta \in [\bar{\beta}, 1]$. However, this deviation will attract the investor only if $\Pi^{\text{investor}}_{w=R_r,\beta} < \Pi^{\text{investor}}_{w=w^*,\beta'}$. Thus, to rule out this deviation we need to make sure that $\Pi^{\text{investor}}_{w=R_r,\beta} \geq \Pi^{\text{investor}}_{w=w^*,\beta'}$. But:

$$p_r \cdot R_r \geq p_s \cdot \left[w^* + (1 - \beta')(R_s - w^*)\right] \Leftrightarrow \beta' \geq \beta^* = \frac{p_sR_s - p_rR_r}{p_s(R_s - w^*)}$$

Thus if $\beta^* < \bar{\beta}$ then for any $\beta' \in [\bar{\beta}, 1]$, there exists an equilibrium in which all the funds received from an investor are allocated to the risky project. We interpret therefore the assumption that $\beta = 1$, which we adopted in the paper, as a simplification of the analysis.

[1] In fact, in the hedge fund markets, managers typically keep $15 - 25\%$ of returns exceeding the watermarks. Thus, we will focus on the situation in which this share β is bounded away from zero.

2 Individual Behavior Analysis

We present here regression analysis that investigates individual behavior of subjects playing the roles of managers and investors in order to detect learning that occurs during the course of the experiment. In particular, we ask how the decisions in a current round depend on the experience of each party in the preceding round(s).

Recall that managers compete for the scarce investment opportunity by choosing two features of the contract: (1) the share of profits, or the watermark that represents investor's profits in case investment is successful, and (2) the type of the project (safe or risky) in which funds will be invested. To understand the determinants of the contract proposed by a manager, we run two regressions for each treatment. The first regression is the linear OLS regression, in which we regress watermark w (or share β) offered by manager i in period t on the type of investment manager i chose in periods t and $t-1$, returns promised to an investor by manager i and his competitor j in the previous period as well as the dummy variables that capture whether manager i received funds in the previous period and if yes whether the project he invested in defaulted or not. The second regression is the Probit regression in which the dependent variable takes value 1 if manager i chose risky project in period t and zero otherwise. We do this separately for each contractual environment and cluster observations by session. The results are reported in Tables 1 and 2.

We perform a similar exercise to study individual behavior of investors. In all treatments, an investor observes returns promised by two competing managers and chooses whom to give his investment chip. Depending on the treatment, an investor can or cannot observe the type of the project his funds will be invested in in addition to the promised returns. To understand investors' decision-making process, we run Probit regression for each treatment separately. The dependent variable takes value 1 if an investor chose to allocate funds to manager i and zero otherwise; the right-hand side variables include all observables of proposed contracts. The results are reported in Table 3.

While there is some variation between contractual environments, the main determinants of managers' and investors' decisions remain relatively stable. We start with the behavior of managers. In all environments except the Cap on Watermark one, managers tend to offer higher returns to an investor following higher shares they offered in the previous period, as well as higher shares their competitor offered in the previous period. Moreover, in the Baseline and Transparency treatments, managers partially compensate investor for choosing risky projects by offering a premium over the returns they offer in case they plan to invest funds in the safe project. Interestingly, while in all treatments managers adjust down promised returns and the likelihood of making risky investment in period t after winning the competition for funds in period $t-1$, managers *do not* in general change their behavior after defaulting in period $t-1$ which happens primarily if they chose risky in the previous period.[2] In other words, high default rates associated with the risky investments in the past do not discourage managers to choose risky projects in the future. Finally, we note that time trend is relatively weak in all treatments compared to other forces that determine managers' choices.[3]

Next, we investigate behavior of investors summarized in Table 3. In all four contractual environments, investors observe the returns promised by two competing managers before making their choice. In addition, in the Transparency treatment investors also observe whether their funds will be invested in the safe or risky project. With an exception of Cap on Watermark treatment in which both managers propose the highest possible returns of $w = 3$, in all other treatments investors choose to allocate their funds to a manager who promises higher returns. The ability to observe investment type in the Transparency treatment gives investors the opportunity to indicate their preferred project type and at least partially control the level of risk they are willing to incur. As regressions indicate, investors use this channel extensively, by allocating the funds to a manager that commits to the safe project. In fact, variables that capture the project types have the biggest magnitude among all other determinants of investors decisions. This, coupled with the above presented above evidence about inability of managers to resist the competition and restrain from making risky investments, explains why we observe such a low level of risky investments in the Transparency treatment compared to the other ones.

[2] The only exception is the likelihood of choosing risky investment in period t if manager defaulted in period $t-1$ in the Baseline treatment.

[3] Time trend is significant only in Cap on Watermarks treatment and in one of the two regressions in Transparency and Risk Sharing treatments.

Linear Regression: dependent variable is watermark w offered by manager i in period t ($w_i(t)$)
Probit: dependent variable = 1 if manager i chose risky project in period t and 0 otherwise

	Baseline		Transparency		Cap on Watermark	
	$w_i(t)$	risky project	$w_i(t)$	risky project	$w_i(t)$	risky project
Period t	0.002 (0.004)	0.001 (0.005)	**0.028**** (0.008)	-0.010 (0.014)	**0.003**** (0.001)	**0.015**** (0.007)
$w_i(t-1)$	**0.600**** (0.046)	-0.015 (0.020)	**0.398**** (0.069)	-0.037 (0.105	0.255 (0.092	**-0.376**** (0.134)
$w_j(t-1)$	**0.198**** (0.054)	**0.094**** (0.040)	**0.080**** (0.021)	0.022 (0.028)	0.092 (0.045)	-0.175 (0.192)
i received funds at $t-1$	**-0.235**** (0.037)	-0.042 (0.106)	**-0.133**** (0.024)	**-0.172**** (0.057)	-0.005 (0.010)	**-0.144**** (0.071)
i received funds and defaulted at $t-1$	0.059 (0.066)	**-0.295**** (0.146)	0.018 (0.078)	0.167 (0.099)	-0.013 (0.018)	0.076 (0.229)
i chose risky project at $t-1$	**-0.388**** (0.096)	**1.451**** (0.263)	**-0.762**** (0.149)	**0.876**** (0.201)	-0.027 (0.015)	**1.085**** (0.248)
i chose risky project at t	**0.687**** (0.091)		**1.447**** (0.107)		**0.033**** (0.007)	
Const	1.038 (0.373)	-0.872 (0.473)	**2.121**** (0.174)	-0.769 (0.590)	**1.908**** (0.235)	**0.738**** (0.168)
# of obs	912	912	950	950	798	798
# of clusters	4	4	4	4	4	4
(pseudo) R-squared	0.57	0.20	0.54	0.08	0.19	0.13
Root MSE	0.72		0.65		0.17	
Log Likelihood		-490.62		-462.03		-455.41

Table 1: Regressions for managers in Baseline, Transparency and Cap on Watermark
Robust std errors are in the parentheses. We cluster observations by session.
** indicates significance at 5% level.

Linear Regression: dependent variable is share β (in %) offered by manager i in period t ($\beta_i(t)$)
Probit: dependent variable = 1 if manager i chose risky project in period t and 0 otherwise

	Risk Sharing	
	$\beta_i(t)$	risky project
Period t	**0.307**** (0.086)	-0.007 (0.010)
$\beta_i(t-1)$	**0.459**** (0.015)	0.004 (0.003)
$\beta_j(t-1)$	**0.237**** (0.024)	0.005 (0.003)
i received funds at $t-1$	-0.383 (0.456)	**-0.139**** (0.068)
i received funds and defaulted at $t-1$	0.368 (0.649)	**-0.319**** (0.110)
i chose risky project at $t-1$	0.365 (1.100)	**1.220**** (0.118)
i chose risky project at t	-1.060 (0.907)	
Const	**17.386**** (2.467)	**-1.115**** (0.215)
# of obs	988	988
# of clusters	4	4
(pseudo) R-squared	0.51	0.15
Root MSE	9.07	
Log Likelihood		-562.96

Table 2: Regressions for managers in Risk Sharing treatment
Robust std errors are in the parentheses. We cluster observations by session.
** indicates significance at 5% level.

Probit: dependent variable = 1 if investor allocated his investment chip to manager i in period t and 0 if he allocated his chip to manager j

	Baseline	Transparency	Cap on Watermark	Risk Sharing
$\text{Promise}_i(t) \geq \text{Promise}_j(t)$	**0.896**** (0.313)	**2.018**** (0.213)	0.945 (0.0.793)	**1.056**** (0.272)
$\text{Promise}_j(t) > \text{Promise}_i(t)$	**-1.181**** (0.207)	**-0.711**** (0.199)	-0.680 (0.793)	**-0.853**** (0.166)
$\text{Promise}_i(t)$	-0.0040 (0.109)	**0.848**** (0.077)	1.339 (0.980)	0.022 (0.018)
$\text{Promise}_j(t)$	**-0.183**** (0.053)	**-0.614**** (0.078)	-0.679 (0.751)	-0.025 (0.020)
i chose safe project and j chose risky one		**3.604**** (0.434)		
i chose risky project and j chose safe one		**-3.396**** (0.129)		
Const	-0.586 (0.488)	**-2.108**** (0.458)	-1.817 (1.128)	0.056 (0.457)
# of obs	480	500	420	520
# of clusters	4	4	4	4
(pseudo) R-squared	0.29	0.58	0.11	0.42
Log Likelihood	-236.81	-146.46	-243.16	-207.47

Table 3: Regressions for investors in all treatments

Robust std errors are in the parentheses. We cluster observations by session.

** indicates significance at 5% level.

Promise of the manager is the watermark w in Baseline, Cap on Watermark and Transparency treatments and it is share β in Risk Sharing treatment.