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Abstract

We examine the simultaneous management of hedge funds and funds of hedge funds. Hedge fund firms can choose to simultaneously offer a fund of hedge funds. Similarly, fund of hedge fund firms can simultaneously offer a hedge fund. We find that while superior past performance and larger size drive the decision to become simultaneous for hedge fund firms, past flows drive the decision for funds of hedge fund firms. The effects of simultaneity are also different. When hedge fund firms start funds of hedge funds, we find evidence of value creation, driven by better management of economies of scale and cross learning. In contrast, fund of hedge fund firms starting hedge funds destroy value due to expansion beyond core competencies and agency problems. We find that firms learn about their competencies in the two business lines and discontinue underperforming simultaneity arrangements to focus on the business where they perform better.

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Around a quarter of hedge funds and about a half of funds of hedge funds (FOFs) are managed by firms that simultaneously offer hedge funds and FOFs. Yet, despite the prevalence of simultaneous management of hedge funds and FOFs, little is known about this practice in the extant academic literature on hedge funds. To fill this gap, we examine the rationale for firms to engage in simultaneity, and the effect of simultaneity for hedge funds, FOFs, and management firms.[1]

We test two hypotheses regarding the effects of simultaneity in the hedge fund industry. Our first *value creation* hypothesis relates to the benefits of simultaneity accruing to both hedge funds and FOFs. These benefits can arise through several channels. First, simultaneity can enable management firms to better manage decreasing returns to scale associated with active portfolio management. If hedge fund-only firms simultaneously offer FOFs, they can continue to accept new money when their own hedge funds experience decreasing returns to scale. This is possible as the firms can direct incoming capital into their newly started FOFs, which can, in turn, invest the capital in external hedge funds. At the same time, these firms retain the option of investing internally in their own hedge funds in the future. Second, simultaneity can allow the firms to perform better in both their offerings through cross learning. For instance, hedge funds in simultaneous firms can enhance their performance through learning about the investments and operations of external hedge funds in which their affiliated FOFs invest.

Our second *value destruction* hypothesis predicts that simultaneity can lead to worse performance through channels including expansion beyond core competencies and agency problems. Hedge fund firms may not necessarily excel when they offer FOFs, and vice versa. Expanding into a new business line can result in poor performance for not just the newly started entity but also for the original business line.[2] In addition, there can be agency problems associated with simultaneity that can manifest in the form of strategic management of flows. For example, simultaneous firms can prop up their poorly performing hedge funds through allocations from the

[1] We define simultaneity as a hedge fund and a FOF sharing a management firm. As long as a management firm has at least one hedge fund and one FOF, all hedge funds and FOFs run by that firm (and the management firm itself) are considered simultaneous.

[2] Boyson (2009) documents similar finding when hedge fund firms start new hedge funds which employ trading strategies that are different from the existing funds in the firms.

affiliated FOFs. This may result in poor performance of both hedge funds and FOFs offered simultaneously by the same firm. A similar phenomenon has been documented for funds of mutual funds (see Sandhya 2012; Bhattacharya, Lee, and Pool 2013).

We test these two hypotheses using performance and fund characteristics data on hedge funds and FOFs from the Lipper TASS database. Since simultaneity can result from either a hedge fund firm offering FOFs or a FOF firm venturing into hedge funds, we differentiate between these two cases when testing the hypotheses. We refer to these two cases of simultaneity as "HF-first" and "FOF-first".[3] Although simultaneity is likely to be a firm-level decision, this decision can also be driven by the characteristics of individual funds within a firm. Therefore, we analyze the determinants and effects of simultaneity at both the fund level and firm level.

We find that a number of determinants of simultaneity are common across both HF-first and FOF-first firms. Firms with greater offshore presence, firms housing a star fund, and firms with a larger number of funds are all more likely to become simultaneous. Additionally, for the case of HF-first simultaneity, we find that good performance and large size are the key factors driving simultaneity at the fund-level as well as at the firm-level.[4] In contrast, for FOF-first simultaneity, higher flows are the main driver of simultaneity for both funds and firms. This evidence is consistent with several motives behind firms choosing to become simultaneous: (i) attracting flows to new business lines as old business lines mature and likely to face decreasing returns to scale; (ii) opportunistically offering new products subsequent to periods of superior performance and higher flows; and (iii) attracting flows into new funds, riding on the performance of in-house star funds.

The effects of simultaneity should help us distinguish between these different rationales for simultaneity. For instance, if the firms are simply opting for simultaneity after good performance to opportunistically attract flows and generate revenues, we should not expect better performance for the funds and the firms subsequent to

[3] David Einhorn's Greenlight Capital is a good example of HF-first firm setting up a FOF named Greenlight Masters. Highbridge Capital is an example of a FOF-first firm that became simultaneous by offering multi-strategy hedge funds. For additional details, see http://en.wikipedia.org/wiki/Glenn_Dubin and http://www.institutionalinvestor.com/Article/1029930/Inside-Highbridge.html?ArticleId=1029930).

[4] Prior literature has also documented good performance being associated with the initiation of side-by-side arrangements in other contexts: side-by-side management of mutual funds and hedge funds (Cici, Gibson, and Moussawi 2010; Nohel, Wang, and Zheng 2010), multitasking by mutual fund managers (Agarwal and Ma 2012), and multiple offerings within mutual fund families (Nanda, Wang, and Zheng 2004).

simultaneity. In contrast, if the firms are using simultaneity to manage decreasing returns to scale, it should help to improve or maintain the performance of funds that existed prior to simultaneity by controlling flows. Ultimately, simultaneity can be associated with both *value creation* (e.g. through management of decreasing returns to scale) and *value destruction* (e.g. through opportunistic behavior after hot performance). In addition to understanding the motives for simultaneity, our analysis of the effects of simultaneity should help shed light on some of the channels through which simultaneity can lead to value creation or destruction.

We find that the effects of simultaneity are markedly different across HF-first and FOF-first firms. While investors in HF-first firms do well after simultaneity, consistent with the *value creation* hypothesis, those in FOF-first firms experience worse post-simultaneity performance, consistent with the *value destruction* hypothesis. We find that simultaneous hedge funds in the HF-first firms significantly outperform a matched sample of non-simultaneous hedge funds by about 19 basis points (bp) per month after simultaneity. As discussed before, this value creation can arise from better management of economies of scale, and learning between hedge fund managers, as facilitated by their affiliated FOFs. We find evidence supporting both these channels. First, flows to hedge funds decrease after simultaneity while flows to the newly created FOFs are higher. There is also a greater likelihood of simultaneous hedge funds being closed to new investment compared with a matched sample of non-simultaneous hedge funds. Together, these findings suggest that simultaneous firms manage their hedge funds' diseconomies of scale by allocating the investors' capital to the FOFs that they start. Second, we observe a significantly greater change in the risk exposures of simultaneous hedge funds around the simultaneity event as compared to their matched non-simultaneous counterparts. This is consistent with learning from other hedge funds in the portfolios of the affiliated FOFs.

In contrast to the value creation associated with HF-first simultaneity, we observe that FOF-first simultaneity leads to value destruction. Simultaneous FOFs underperform a matched sample of non-simultaneous FOFs by 41 bp a month. The new hedge funds started by FOF-first firms also significantly underperform other hedge funds started at the same time by 23 bp per month. This value destruction seems to be driven by FOF-first firms' expansion beyond their core competencies and potential agency problems. In particular, value destruction seems to be more pronounced in the FOF-first firms (i) with higher simultaneity intensity (as measured by the

assets in the new business divided by the total of the assets in the new and old businesses); and (ii) that start non-multi-strategy hedge funds, which are inherently different from FOFs. These two pieces of evidence suggest that one of the contributing factors to the value destruction is expansion beyond FOF-first firms' core competencies. We also find that FOFs that invest internally attempt to prop up poorly performing affiliated hedge funds by diverting investors' flows from other non-affiliated hedge funds. This evidence is symptomatic of agency problems.

Together, these findings show that simultaneity is associated with value creation in the case of HF-first firms but value destruction for FOF-first firms. A natural question is what explains this asymmetry in the effects of simultaneity. We conjecture that there are perhaps three potential explanations. First, there is a large literature that shows that FOFs underperform hedge funds, suggesting inferior managerial ability in FOFs (e.g., Amin and Kat 2003; Brown, Goetzmann, and Liang 2004). Second, it is possible that skills of a hedge fund manager are more "transferrable" to a FOF compared to those of the FOF managers' skills to run a successful hedge fund. Whereas FOF managers should be able to evaluate the ability of hedge fund managers, hedge fund managers need to be able to produce superior performance by trading financial securities. This setting is akin to a successful chef becoming a successful food critic more easily than the other way around. Third, and finally, FOFs are a more intermediated form of investments that are arguably more prone to agency problems and are associated with worse performance (e.g., Inderst and Ottaviani 2009, 2012; Stoughton, Wu, and Zechner 2011; Agarwal, Nanda, and Ray 2012).

In well-functioning capital markets with rational agents, we cannot expect value-destroying behavior to continue. Thus, we also examine the termination of simultaneity arrangements by studying switchbacks (i.e., simultaneous firms returning to the original business line) and switchovers (i.e., simultaneous firms ceasing original operations and switching over to the other business). We find that both these decisions are largely driven by the (i) poor overall performance of the management firms, and (ii) poor performance of the terminated business relative to the other business line. Thus, it appears that firms learn about their competencies in the two business lines (hedge funds and FOFs) and focus on the business in which they perform better.

I. Literature Review

Our paper contributes to several strands of literature. Our paper is perhaps most closely related to the research on the side-by-side management of mutual funds and hedge funds. Nohel, Wang, and Zheng (2010) show that side-by-side mutual funds managers significantly outperform their peers based on various performance metrics, which proves that this privilege is primarily granted to star performers. This evidence is consistent with two other studies. Deuskar et al. (2011) find that mutual funds can retain their top performers in a side-by-side arrangement. Chen, Chen, and Cyree (2009) also find that mutual fund managers that simultaneously manage hedge funds perform better than those that completely switch to hedge funds. In contrast to these positive aspects of side-by-side management, Cici, Gibson, and Moussawi (2010) find evidence consistent with conflicts of interest and document opposite results for performance. They show that side-by-side management firms significantly underperform their counterparts which share similar characteristics. Chen and Chen (2009) show that conflicts of interest arise only when hedge fund managers start offering mutual funds simultaneously but not in the converse case of mutual fund managers initiating hedge funds. Finally, Agarwal, Boyson, and Naik (2009) find that hedge fund managers that offer mutual funds which mimic hedge fund strategies (i.e., hedged mutual funds) perform better than the traditional mutual fund managers that simultaneously offer hedged mutual funds.

Our paper complements the literature on side-by-side management by studying the cause and effects of the hitherto unexplored hedge fund–FOF simultaneity phenomenon. Specifically, we document distinctive channels of value creation (cross learning and management of decreasing returns to scale) and value destruction (expansion beyond core competencies) in this form of simultaneity. We also document asymmetric effects of hedge fund-FOF simultaneity, with value creation for HF-first firms and value destruction for FOF-first firms, despite the final entity having the same organizational structure in both cases. Fee

To the extent that hedge funds and FOFs run by the same management firm have different fee structures, our paper also complements recent studies on fee changes in the hedge fund industry (Schwarz 2007; Ramadorai and Streatfield 2011; Agarwal and Ray 2012; Deuskar et al. 2012). Our paper contributes to this literature by

uncovering an indirect way for firms to increase fees by diverting flows to newly started FOFs when they close their hedge funds for new investment.[5]

Finally, our paper also extends the literature on funds of hedge funds. Amin and Kat (2003) and Brown, Goetzmann, and Liang (2004) show that FOFs underperform due to the second layer of fees. Agarwal and Kale (2007) find that FOFs underperform multi-strategy funds even on a gross-of-fee basis and attribute their finding to the managers with superior ability self-selecting into multi-strategy funds. Ang, Rhodes-Kropf, and Zhao (2008) present some plausible conditions under which the additional layer of fees can be justified in FOFs, which can make FOFs sensible investments compared to hedge funds. Brown, Fraser, and Liang (2008) document economies of scale in FOFs attributing better performance of larger FOFs to better due diligence. Sialm, Sun, and Zheng (2012) show that FOFs which overweight their investment in hedge funds located in the same geographical region exhibit superior performance. Aiken, Clifford, and Ellis (2012) find that FOFs add value not through hedge fund selection but through effective monitoring by analyzing the holdings of FOFs. They argue that monitoring is important as hedge funds are exposed to significant operational risks (Brown, Goetzmann, Liang, and Schwarz 2009, 2012). We contribute to this literature by examining the FOFs involved in a simultaneity arrangement and their role in management firms.

II. Data Description

We use data from Lipper TASS for our empirical analysis. Our sample period is from January 1994 through December 2011. In our study, we match hedge funds, FOFs, and their associated management firms using company identifiers provided in the Lipper TASS database. We define simultaneity as a hedge fund and a FOF sharing a management firm. As long as a firm has at least one hedge fund and one FOF in a given month, all hedge funds and all FOFs run by the firm (and the firm itself) are considered simultaneous. The date a firm with either only hedge funds or only FOFs starts a fund of the other type is called the simultaneity date, or *s*-date. We

[5] There are several advantages of this indirect manner of increasing fees rather than directly raising the fees for existing hedge funds. First, it obviates the hassle of altering the contracts with the existing investors which can be cumbersome. Second, it helps the firms to better control the flows into the hedge funds in order to manage varying economies and diseconomies of scale at the hedge fund level.

test our hypotheses by examining the determinants and effects of simultaneity across hedge funds and FOFs. We start by computing the summary statistics for the funds and firms, stratified into the following three groups:

(1) Simultaneous hedge funds (SHFs) and non-simultaneous hedge funds (non-SHFs)

(2) Simultaneous funds of hedge funds (SFOFs) and non-simultaneous funds of hedge funds (non-SFOFs)

(3) Simultaneous management firms (SMFs) and non-simultaneous management firms (non-SMFs). We additionally distinguish between simultaneous firms starting hedge funds first (HF-first firms) and simultaneous firms starting FOFs first (FOF-first firms)

We present the summary statistics on simultaneity in Table I. Panels A and B compare non-SHFs with SHFs, and non-SFOFs with SFOFs, respectively. There are 11,173 hedge funds and 6,176 FOFs in the Lipper TASS database during our sample period. Of these, 2,928 (about 26%) hedge funds and 2,843 (about 46%) FOFs are simultaneous at some point. At the management firm level, 461 out of 4,554, or about 10% of firms in our sample are involved in simultaneous management during their existence (see Panel D).[6] Of the firms that are simultaneous, 46% are HF-first firms and the complement, 54%, are FOF-first firms.

In Table I, we compare fund characteristics across the simultaneous and non-simultaneous funds and firms. Panels A and B compare SHFs to non-SHFs and SFOFs to non-SFOFs, respectively. We find that SHFs have significantly lower incentive fees, are less likely to use the HWM feature, have shorter lockups, and larger size than non-SHFs. SFOFs have higher incentive fees and larger size compared to non-SFOFs. In both cases of simultaneity, simultaneous entities are more likely to be domiciled offshore and denominated in a non-USD currency compared to non-simultaneous entities. Given these findings, we later control for differences in fund characteristics in our multivariate analysis. Panel C presents the comparison of strategies used by non-SHFs and SHFs. The largest differences are for long-short equity hedge funds and multi-strategy funds. In particular, we find that SHFs are much less likely to be long-short equity funds and much more likely to be multi-strategy funds. Panel D presents the comparison of non-SMFs and SMFs, as well as a comparison of the HF-first firms and the FOF-first firms. The proportion of SMFs is much lower with only 461 simultaneous firms out of a total of 4,554

[6] When weighted by the assets under management, prevalence of simultaneity is 27% for hedge funds, 68% for FOFs, and 31% for management firms.

firms. This is consistent with the larger number of funds per SMF compared to the number of funds per non-SMF. We also find that the assets under management at inception are significantly higher for SMFs than for non-SMFs. Moreover, HF-first SMFs are smaller than FOF-first SMFs at inception.

III. Determinants of simultaneity

Firms can choose to become simultaneous for different reasons. Simultaneity can be used by the firms to attract capital to their new business lines as old business lines mature, that is, they face decreasing returns to scale. Another rationale for simultaneity can be for the firms to behave opportunistically by offering new products subsequent to a period of superior performance. Furthermore, simultaneity can be used by the firms as a tool to attract flows into new funds by riding on the performance of their in-house star funds. We investigate these different possibilities by estimating the following logistic regression:

$$\begin{aligned} S\_date_{i,t} &= \beta_0 + \beta_1 Returns_{i,t-1,t-24} + \beta_2 Flows_{i,t-1,t-24} + \beta_3 Management\ Fee_i \\ &+ \beta_4 Incentive\ Fee_i + \beta_5 High\ Water\ Mark_i + \beta_6 Lockup\ period_i + \beta_7 Age_{i,t} \\ &+ \beta_8 USDomicile\ Dummy_i + \beta_9 Size_{i,t-24} + Strategy\ Dummies + Year\ Dummies + \varepsilon_{i,t} \end{aligned} \quad \textbf{(1)}$$

where the dependent variable $S\_date_{i,t}$ is set to 1 if a fund *i* becomes simultaneous in month *t*, and 0 otherwise. Only investment vehicles that are not simultaneous, or have just turned simultaneous are included in the sample. In other words, we exclude all observations of simultaneous entities from this sample after the *s*-date. Our key explanatory variables are returns and flows over the preceding 24 months. Our control variables include management fee, incentive fee, high-water mark, lockup period, domicile, fund size, and age.[7] Since fee provisions may change over time, we mitigate concerns about reverse causality by using pre-simultaneity fee levels in our empirical analyses.[8]

As the decision to engage in simultaneity may be driven by both fund-level concerns (e.g. managing diseconomies of scale) and firm-level concerns (e.g. promoting cross learning among managed funds and

[7] We use the logarithm of fund size 24 months prior to the *s*-date so that it is independent of the returns and flows over the two-year period prior to simultaneity.

[8] We use a proprietary dataset of fee changes from TASS to compute the pre-simultaneity fees in cases where they have changed since the *s*-date. This affects only 3.6% of the funds in our sample.

potentially managing flows across funds), we conduct our determinants analysis separately at the fund level and the firm level. Further, for robustness, in our fund-level analysis, in addition to fund-level control variables in our baseline specification, we also include a specification with firm-level controls (equally-weighted values of the fund-level controls). For regressions at the firm level, we include equally-weighted fund-level performance, flow, and control variables.[9] In addition, we include *Top Return Dummy* and *Funds Managed*. *Top Return Dummy* is an indicator variable that takes the value of 1 if the firm has a hedge fund (FOF) that is in the top 5% among all hedge funds with the same strategy (all FOFs), and 0 otherwise. In line with Nanda, Wang, and Zheng (2004), we use this variable as a proxy for the presence of a star fund within a firm. *Funds Managed* is defined as the number of funds managed by the firm at time *t-1*. We include year dummies in all specifications and include strategy dummies for hedge fund regressions. We cluster the standard errors at the fund (firm) level for fund-level (firm-level) regressions.

We report results of the regression in equation (1) in Table II. Columns (1) to (6) present the results for hedge funds (columns (1) and (2)), FOFs (columns (3) and (4)), HF-first firms (column (5)), and FOF-first firms (column (6)), respectively. We find that superior past performance is strongly associated with hedge funds becoming simultaneous (coeff. = 0.224, see column (1)). This result holds at the firm level too (coeff. = 0.165, significant at the 10% level, see column (5)).[10] Size is also a significant determinant of hedge fund simultaneity both at the fund level and the firm level (coeff. = 0.159 and 0.234, see columns (1) and (5) respectively). This evidence supports our hypothesis that one of the motivations for firms becoming simultaneous is to manage decreasing returns to scale that larger funds are more likely to face. Our findings are similar when we replace the fund-level controls with firm-level controls in column (2) for hedge fund level regressions.

For FOFs, high past flows are significantly associated with simultaneity (coeff. = 5.289, see column (3)). This result holds at the firm level as well (coeff. = 4.458, see column (6)). Positive association between net flows and starting a hedge fund by FOF-first firms can be due to the need to create suitable investment vehicles to

[9] We repeat our analysis using AUM value-weighted variables and our findings are qualitatively similar (including those for the effects of simultaneity, presented later in the paper). In the interest of brevity, we do not present these results.

[10] Kolokolova (2011) and Fung et al. (2013) document similar finding for firms offering multiple funds subsequent to superior performance of their flagship funds.

absorb the higher flows from investors while generating greater fee revenue for the firms. Our finding of a significant negative relation between incentive fee and FOF simultaneity (coeff. = –0.028, see column (3)) further corroborates the desire of these FOFs to earn a higher incentive fee by launching hedge funds. Again, our findings are qualitatively similar when we replace fund-level controls with firm-level controls for FOF-level regressions in column (4). These results can also be consistent with opportunistic behavior of the FOF-first firms to offer new, higher-fee, products after period of high flows. If this is indeed the case, FOF-first simultaneity should be associated with worse future performance. We test for this possibility in our analysis of the effects of simultaneity in the next section.

We also find several common determinants of simultaneity for both hedge funds and FOFs: (i) offshore funds are more likely to be simultaneous (*US Domicile Dummy* coeff. = –0.613 for hedge funds, and coeff. = –0.815 for FOFs, see columns (1) and (3) of Table II). We interpret this finding as simultaneity being used to achieve geographical and associated regulatory structure diversification by offering both onshore and offshore products; (ii) both hedge fund and FOF firms with star funds are more likely to become simultaneous (*Top Return Dummy* coeff. = 0.607 for HF-first firms and 0.945 for FOF-first firms, see columns (5) and (6) respectively). This resonates well with Nanda, Wang, and Zheng (2004), who find that mutual fund families engage in star-creation strategies to benefit from the spillover effects for other funds from the presence of star funds within the families; (iii) firms that manage more funds are more likely to become simultaneous (*Funds Managed* coeff. = 0.038 for HF-first firms and 0.044 for FOF-first firms, see columns (5) and (6) respectively). This seems intuitive as firms engaging in fund proliferation are more likely to proliferate business lines.

In the following section, we study the effects of simultaneity on the future performance and flows in the hedge funds, FOFs, and firms, taking into account the drivers of simultaneity explored in this section.

IV. Effects of simultaneity

IV.A. Construction of matched sample

Since simultaneity is a choice made by firms and/or funds, we need to appropriately control for the drivers of simultaneity when analyzing its effects. To this end, we perform a matched sample analysis that allows us to appropriately control for the factors driving the simultaneity decision discussed in the previous section. In the matched sample analysis of SHFs, we match each hedge fund which becomes simultaneous on a given *s*-date to a non-SHF. When choosing the matched sample of non-SHFs, we are careful to only consider the information available at the time of match, i.e., the matched non-SHF on a given *s*-date needs to be non-simultaneous on that date, but can become simultaneous at a later point. This avoids forward-looking bias in our matching procedure. The matching process for simultaneous FOFs and non-simultaneous FOFs is similar.

We use the propensity scores computed from estimating equation (1) in our matching procedure. We choose a non-SHF (non-SFOF) with the closest propensity score to the newly simultaneous hedge fund (FOF) on the *s*-date. Once we have our matched sample, we compare the post-simultaneity flows and performance of simultaneous funds (i.e., treatment group) with that of the matched non-simultaneous funds (i.e., control group).

To mitigate concerns about potential survivorship bias (i.e., excluding funds that fail to survive shortly after the *s*-date), we do not impose the requirement of funds to survive for 24 months after the *s*-date. Specifically, we use a window of 6 to 24 months after the *s*-date, requiring funds to have at least 6 months and up to 24 months of return and assets data after the *s*-date to be included in our sample.[11] Recently, Linnainmaa (2013) documents reverse survivorship bias in mutual funds where performance estimates of failed funds are downward biased due to some skilled funds disappearing on account of negative idiosyncratic shocks (bad luck). We also test if this bias affects our results. For this purpose, we compute and compare the survival horizons after the *s*-date for the funds in the treatment group with those of the funds in the control group. We find no significant difference in the mean and standard deviation of the survival lengths of the two groups. Furthermore, the probabilities of fund mortality over different survival lengths are also not significantly different for the two groups, suggesting that reverse survivorship bias should not materially affect our findings.

[11] It turns out that survivorship bias is not a concern for our analysis as our results are qualitatively similar when we require funds to have 24 months of returns data after the *s*-date.

In addition to survivorship bias, extant hedge fund literature has documented several other biases that include instant history or backfilling bias (Fung and Hsieh 2000; Edwards and Caglayan 2001) self-reporting bias (Agarwal, Fos, and Jiang 2013; Aiken, Clifford, and Ellis 2013), and return modification bias (Patton, Ramadorai, and Streatfield 2014). To the extent that there is no reason to believe that these biases should differentially impact the treatment (simultaneous) and matched control (non-simultaneous) funds, they should not affect our findings.

IV.B Univariate Analysis

Table III reports the results of our univariate analysis. Panel A presents the results for effects of simultaneity for hedge funds. After simultaneity, the funds that become simultaneous have net outflows of 0.46% a month. The matched sample of hedge funds that does not become simultaneous has net inflows of 1.14% a month. Thus, hedge funds that become simultaneous (i.e., SHFs) have significantly lower net flows (–0.46% – 1.14% = –1.60%) going forward compared with matched non-SHFs. This evidence is consistent with hedge funds managing economies of scale by using the newly created FOFs to hold investors' capital until the hedge funds have capacity for additional capital. In the univariate results, newly created FOFs have higher net inflows (although insignificant) compared to non-simultaneous FOFs. In multivariate results discussed later in Section IV.C, this higher net inflow for the newly created FOFs is significant at conventional levels.

We next examine the effect of simultaneity on the performance of hedge funds and FOFs. We use four measures for computing performance: (returns, Fung and Hsieh (2004) seven-factor alphas, style-adjusted returns, and Sharpe ratios).[12] For all performance measures, we observe that simultaneous hedge funds perform significantly better compared to their matched non-simultaneous peers. We also find some evidence of newly started simultaneous FOFs performing better than the non-simultaneous FOFs. All the differences in performance are positive though statistically significant for only two out of the four performance measures (returns and alphas).

[12] We estimate the factor loadings for the Fung and Hsieh (2004) seven-factor model using the 24-month window prior to the *s*-date. We use the alpha estimated from this regression as the alpha before the *s*-date. Using the betas from this regression along with factor returns and fund returns after the *s*-date, we estimate alphas after the *s*-date, as long as there are at least 6 months of returns after the *s*-date.

These results provide support for our *value creation* hypothesis that simultaneity arrangements add value to both the existing hedge funds and the newly started FOFs of HF-first firms.

Panel B of Table III presents the results for the effects of simultaneity when FOF-first firms start hedge funds. For three of the four performance measures, FOFs significantly underperform their matched counterparts after becoming simultaneous. Additionally, the newly started simultaneous hedge funds also significantly underperform on all measures except in the case of Sharpe ratio. These results do not support the *value creation* hypothesis when FOF-first firms start hedge funds. In fact, these findings for the FOF-first firms starting hedge funds support our second hypothesis: simultaneity results in *value destruction* for both the SFOFs and the newly created SHFs.

We next describe the univariate results at the management firm level, for which we use equally-weighted values of fund-level performance and flows. Panel C of Table III reports the findings for HF-first firms starting a FOF. We observe that for three out of the four performance measures, HF-first firms significantly outperform a matched sample of non-simultaneous HF-only firms after the *s*-date. Panel D of Table III presents the results for FOF-first firms starting a hedge fund. We observe that for three of the four performance measures, simultaneous FOF-first firms significantly underperform the matched sample of non-simultaneous FOF-only firms.

Overall these results for the firms resonate well with those at the fund level, i.e., hedge fund firms venturing into FOFs seem to be able to create value, but FOF firms starting hedge funds are more likely to destroy value. In the following section, we estimate multivariate regressions to test if these univariate findings are robust to controlling for both fund and firm characteristics.

IV.C. Multivariate analysis of the effects of simultaneity on flows and performance

We estimate a series of multivariate OLS regressions using the propensity-score-matched samples. We then estimate the following regression separately for performance and flows after the *s*-date:

$$Y_{i,t+1,t+24} = \beta_0 + \beta_1 s - dummy_i + \beta_2 Y_{i,t-1,t-24} + \beta_3 X_{i,t} + \varepsilon_i \qquad \textbf{(2)}$$

where the t is the *s*-date and the dependent variable $Y_{i,t+1,t+24}$ is the performance (returns, alpha, style-adjusted returns, or Sharpe ratios) or flows for fund *i* for up to two years after the *s*-date. The key explanatory variable of interest is an indicator variable, *s-dummy*, set to 1 for the simultaneous funds, and 0 for the matched non-simultaneous funds. The coefficient on this variable captures the difference in the post-simultaneity performance or flows across the simultaneous and matched non-simultaneous funds. In all specifications, we control for past performance or flows by including the lagged values of the dependent variable over the 24-month period prior to simultaneity ($Y_{i,t-1,t-24}$). In addition, for fund-level regressions, control variables $X_{i,t}$ include the fund characteristics (management fee, incentive fee, high-water mark, and lockup period) measured on the *s*-date and fund size measured two years prior to the *s*-date (to avoid overlap with past flows and returns). For firm-level regressions, we include equally-weighted fund-level performance, flow, and control variables.

We present the regression estimates from equation (2) in Table IV, focusing only on the coefficient on our key variable of interest, *s-dummy*. The panels mirror the structure of Table III. Specifically, Panels A and B present the findings for simultaneous hedge funds (SHFs) and simultaneous FOFs (SFOFs), while Panels C and D present the findings for the HF-first and FOF-first management firms, respectively. Since we use both fund-level and firm-level control variables in the regressions involving SHFs and SFOFs, we report the results separately in Panels A1 and A2 for SHFs, and Panels B1 and B2 for SFOFs.

From Panel A1, we observe that hedge funds that become simultaneous have significantly lower flows than their counterparts (monthly flows 120 bp lower). Simultaneous hedge funds also significantly outperform their monoline peers by 19 bp to 34 bp per month across three out of the four performance measures. These findings resonate well with those from our earlier univariate analysis and are consistent with the *value creation* hypothesis for HF-first firms. Additionally, the lower flows into simultaneous hedge funds after the *s*-date are consistent with mitigation of diseconomies of scale as a channel of value creation. Findings using the firm-level controls, presented in Panel A2, are qualitatively similar.

Panel B1 shows that simultaneous FOFs have significantly worse performance compared to the matched sample of monoline FOFs after the *s*-date for two of the four performance measures (returns: coeff. = –0.408;

alphas: coeff. = –0.134). Results in Panel B2 using the firm-level controls turn out to be stronger, with simultaneous FOFs underperforming their matched counterparts for all the performance measures. These findings echo those from our earlier univariate analysis earlier and are consistent with the *value destruction* hypothesis for FOF-first firms.

Panels C and D of Table IV present the results for the HF-first and FOF-first management firms. We find that the HF-first firms have significantly better performance across all performance measures after the *s*-date, again confirming earlier results from our univariate analysis. In contrast, we find that the FOF-first firms have significantly worse performance in all specifications after the *s*-date.[13]

We next compare the flows and performance of newly created simultaneous funds and matched newly created non-simultaneous funds. We do this by estimating a modified version of equation (2), where the controls do not include lagged dependent variables as these are newly started funds. Table V presents the results. As in Table IV, Table V includes specifications with both fund-level and firm-level control variables. Panels A1 and A2 present the results for newly started FOFs, and Panels B1 and B2 show the findings for newly started hedge funds.

Panel A1 reports the findings for a sample of newly created simultaneous FOFs (SFOFs) that are started by the HF-first firms. The sample in this analysis includes these funds, along with all other non-simultaneous FOFs that start at the same time as the SFOFs. From the results in Panel A1 of Table V, we observe significantly higher flows for the FOFs started by the HF-first firms (coeff. = 1.393). The newly created SFOFs also perform significantly better for two out of the four performance measures (return: coeff. = 0.109; and alpha: coeff. = 0.184). When we use the firm-level controls in Panel A2, we find similar results.[14] Panel B1 of Table V presents analogous results for hedge funds started by the FOF-first firms. We find that for three out of the four performance measures, these simultaneous hedge funds have significantly lower performance than their non-

[13] In firm-level results, we note that post-simultaneity, the treated simultaneous firms differ from the control non-simultaneous firms in that they include a fund of a different type. For example, simultaneous HF-first firms include a FOF after simultaneity, while their matched peers do not. As such, the effects of simultaneity on performance are inclusive of the performance of the other business line.

[14] There is a large literature that shows that hedge funds outperform FOFs (e.g., Amin and Kat 2003; Brown, Goetzmann, and Liang 2004), which suggests superior managerial ability in hedge funds. Thus, the FOFs started by hedge funds will likely benefit from hedge fund managers' superior abilities and outperform other non-simultaneous FOFs started at the same time.

simultaneous counterparts (returns: coeff. = –0.232; alphas: coeff. = –0.202; style-adjusted returns: coeff. = –0.282). Again, Panel B2 shows similar results with the firm-level controls.

Taken together, these findings from the multivariate analysis corroborate our univariate results and continue to support the *value creation* hypothesis for HF-first simultaneity, and the *value destruction* hypothesis for FOF-first simultaneity. There are three potential explanations for the asymmetric effects of simultaneity. First, FOFs have been shown to underperform hedge funds, suggesting a relatively lower level of skill for FOF managers. Second, it is conceivable that in addition to FOFs having lower skills, their skills might also be less relevant to managing a successful hedge fund that requires superior security selection abilities. Finally, FOFs may be more prone to agency problems due to the additional layer of intermediation.

V. Channels of value creation and destruction

Next we examine the data for evidence of specific channels of value creation and destruction associated with simultaneity. We acknowledge that examined channels are by no means exhaustive. Our choice of pursuing these specific channels is motivated by the availability of data required for our empirical tests.

V.A Value creation channels

We look for evidence of two specific channels of value creation associated with HF-first simultaneity: cross learning and management of economies of scale.

To examine cross learning, we look at the changes in investment styles of hedge funds and FOFs after they become simultaneous.[15] In particular, we estimate the Fung and Hsieh (2004) seven-factor model 24 months before and after the *s*-date. Following a methodology similar to Lynch and Musto (2003), we then compute the

[15] We acknowledge that given the competitive nature of the hedge fund industry, funds are unlikely to divulge detailed information regarding their trading strategies. However, it is not unusual for funds to disclose some non-public information regarding their investments to their larger investors. For example, David Einhorn, who simultaneously manages Greenlight Capital (hedge fund) and Greenlight Masters (FOF), documents numerous exchanges regarding investment strategies with managers of external hedge funds in his FOF portfolio (see http://www.valuewalk.com/2011/11/gm-semiannual-2011/). Such an arrangement between hedge fund managers is likely to involve an exchange, rather than a transfer, of alpha-generating ideas (see for example, Gray, Crawford, and Kern 2012).

average absolute percentage change in the factor loadings for SHFs and matched non-SHFs as $\sum_{i=1}^{7} \frac{1}{7} \left| \frac{\beta_{i,after}}{\beta_{i,before}} - 1 \right|$.

In results not tabulated, we find that SHFs have 22.95% absolute change in factor loadings, which is significantly higher than 5.50% for matched non-SHFs (*p*-value = 0.05). We repeat the test for average change in factor loadings for SFOFs and matched non-SFOFs. In this case, the absolute change in factor loadings for SFOFs is not significantly different from that for matched non-SFOFs (7.35% and 4.19% respectively, *p*-value = 0.31). These findings suggest that in case of HF-first simultaneity, simultaneous hedge funds change their investment strategies after the *s*-date, consistent with cross learning. However, this is not true for FOF-first simultaneity.

There are two potential concerns regarding our test of cross learning. First, since FOF introductions are associated with fund closures, volatility of cash holdings can change after fund closures, which can affect the factor loadings. Hence, we repeat our analysis by focusing only on the funds that are open to new investment, and find similar results. Second, there can be changes in the liquidity risk of the hedge funds before and after simultaneity that are not accounted for in the Fung and Hsieh (2004) seven-factor model. Thus, following Teo (2011), we include Pastor and Stambaugh (2003) aggregate monthly innovation in liquidity measure as a proxy for the liquidity risk factor, along with the seven factors to estimate an eight-factor model. Even after controlling for liquidity risk, we continue to find significant changes in other factors. SHFs have a 13.15% absolute change in factor loadings, which is significantly higher than 3.72% for matched non-SHFs (*p*-value = 0.025).

We next examine whether management of economies of scale can be a potential channel for value creation. Earlier, we found some evidence in support of this channel. Specifically, we found that size and past performance were significant determinants of HF-first simultaneity. Since larger funds are more likely to face decreasing returns to scale, simultaneity may be used to manage economies of scale. Also, in our analysis of the effects of simultaneity, we found lower flows into hedge funds and higher flows into FOFs started by HF-first firms, which suggests that simultaneity is being utilized to manage economies of scale. As an additional test of management of economies of scale, we use a data field in the Lipper TASS database that indicates whether a hedge fund has listed itself as being "closed to new investment" along with the date on which the fund closed to new investment. Comparing the fraction of SHFs and non-SHFs that are closed to new investment, we find that

the fraction of SHFs (which start as non-SHF and become SHFs when HF-first firms start a FOF) closed to new investment is significantly higher than the corresponding fraction for non-SHFs (SHF closed fraction = 10.77%, non-SHF closed fraction = 5.83%, *t*-stat for difference = 3.86). Also, 31.58% of the closing dates for the SHFs occur within 6 months of the *s*-date. This evidence further corroborates that HF-first firms use simultaneity arrangements, in conjunction with closing funds to new investment, to better manage economies of scale.

Finally, we disentangle whether simultaneity has an impact on flows into hedge funds and FOFs independent of the hedge funds closing to new investment. We split the sample of SHFs into those that are closed and those that are open to new investment. We repeat our effects analysis separately for these two subsamples, using a control sample of non-SHFs that share the same fund closure status as that of the SHFs. In untabulated results, we continue to find that simultaneity results in better performance for both open and closed SHFs compared to their non-simultaneous counterparts. This suggests that simultaneity creates value regardless of fund closure. Additionally, while simultaneity does not significantly impact flows for closed funds, we continue to observe a significant decline in hedge fund flows and an increase in the flows of newly-started FOFs post simultaneity for hedge funds that remain open to new investment. This suggests that simultaneity helps in managing decreasing returns to scale, independent of the effects of the hedge funds closing to new investment.[16]

Together, this evidence on both cross learning and management of economies of scale sheds light on two potential channels associated with value creation in form of better performance of HF-first simultaneity cases.

V.B. Value destruction channels

In contrast to the *value creation* in HF-first simultaneity, FOF-first simultaneity is associated with *value destruction,* as evidenced by worse performance for both the SFOFs and the newly started SHFs. We examine two potential causes of value destruction: (1) expansion beyond core competencies, and (2) agency problems.

[16] We can think of two potential reasons for the decline in flows of simultaneous hedge funds that are open to new investment. First, HF-first firms that become simultaneous may divert the flows from hedge funds to newly started FOFs even without formally closing their hedge funds. Second, the hedge fund investors may themselves anticipate the decreasing returns of scale for the hedge funds and proactively direct their money to the FOFs started by these firms. Both of these explanations are also consistent with the increased flows experienced by FOFs started by the HF-first firms.

To analyze whether expansion beyond core competencies is responsible for some of the value destruction, we conduct two tests. First, we examine multi-strategy hedge funds involved in simultaneity arrangements. Since multi-strategy hedge funds are more similar to FOFs than other hedge funds as both investment vehicles seek to diversify across multiple hedge fund strategies (see Agarwal and Kale 2007), expansion beyond core competencies should not affect these cases of simultaneity as much as other cases of simultaneity. Second, we test whether greater deviation from the core business (as measured by simultaneity intensity, i.e., the ratio of new businesses to old businesses) leads to higher levels of value destruction.

To test if simultaneity arrangements involving multi-strategy hedge funds have different effects from those that do not involve multi-strategy hedge funds, we estimate the following regression, similar to that in equation (2), after adding two interacting indicator variables, *Multi* and *Non-Multi*. *Multi* (*Non-Multi*) that take a value of 1 (0) if the hedge fund involved in the simultaneity arrangement is a multi-strategy hedge fund, and 0 (1) otherwise. We interact all independent variables in equation (2) with these two indicator variables. Other variables are as defined in equation (2).

$$\begin{aligned} Y_{i,t+1,t+24} = {} & \beta_0 + \beta_1 Multi + \beta_2 Multi \times s-dummy_i + \beta_3 Non-Multi \times s-dummy_i \\ & + \beta_4 Multi \times X_i + \beta_5 Non-Multi \times X_i + \beta_6 Multi \times Y_{i,t-1,t-24i} \\ & + \beta_7 Non-Multi \times Y_{i,t-1,t-24} + \varepsilon_i \end{aligned} \quad \textbf{(3)}$$

In results presented in Table VI, we find that value destruction at the FOF level is concentrated in the cases when FOF-first firms start non-multi-strategy (or single strategy) hedge funds. In particular, the FOFs starting non-multi-strategy hedge funds significantly underperform other FOFs across all performance measures (see Panel A of Table VI). In contrast, there is limited evidence of value destruction in FOFs when the FOF-first firms start multi-strategy hedge funds as only one coefficient on *Multi* x *s-dummy* is significantly negative. Comparing the coefficients on *Multi* x *s-dummy* and *Non-multi* x *s-dummy*, two performance measures show the *Non-multi* x *s-dummy* coefficient to be significantly lower than the *Multi* x *s-dummy* coefficient. This suggests that extending beyond the core competencies can result in value destruction when FOF-first firms diversify into hedge funds. However, at the hedge fund level, we observe no evidence of differential value destruction between the newly created multi-strategy and non-multi-strategy hedge funds (see Panel B of Table VI).

Even in the case of value creation associated with HF-first firms starting FOFs, the benefits of simultaneity are somewhat more pronounced when multi-strategy hedge funds are involved. The raw returns of multi-strategy hedge funds are significantly better than those of their non-simultaneous counterparts after the *s*-date (see Panel C of Table VI). This is not the case for non-multi-strategy SHFs. Similarly, the performance for the newly created FOFs by multi-strategy hedge funds is marginally better than that of FOFs created by non-multi-strategy hedge funds (see Panel D of Table VI).

As a second test of expansion beyond core competencies as a channel of value destruction, we construct a measure of simultaneity intensity, based on the number of new types of funds relative to the number of old types of funds. Specifically, simultaneity intensity (SI) is equal to assets managed in the new business divided by total assets managed in the old and new businesses together. We split our sample into high (above-mean) and low (below-mean) SI subsamples using the means of the SI measure (see panel A of Table VII for summary statistics of the SI measure).[17] We examine the effects of simultaneity separately for the two SI subsamples, and report the results in Panels B and C of Table VII. Panel B presents the subsample analysis for HF-first simultaneity. In Panel B1 that reports the findings for the hedge funds, we observe that the improvement in performance is driven by the lower-SI subsample. Moreover, the difference in the performance of higher-SI and lower-SI subsamples is significant for two out of the four performance measures (style-adjusted returns and alphas). Panel B2, which presents results for the newly created FOFs similarly shows two performance measures (returns and Sharpe ratio) as being significantly higher for lower-SI subsample compared to the higher-SI subsample. Finally, from Panel B3, which reports findings at the firm level, we observe two performance measures (returns and style-adjusted returns) as being significantly higher for the lower-SI cases compared to the higher-SI cases.

Panel C of Table VII reports the corresponding results for FOF-first simultaneity. In all three subpanels, two of the four performance measures are significantly lower for the higher-SI cases compared to the lower-SI cases. In sum, we find that value creation is more pronounced when HF-first firms deviate less from their core

[17] Our results are qualitatively similar when separating subsamples based on the median, as well as when we compute count-based SI measures using the number of funds (instead of assets managed) in the new business divided by the total number of funds managed in the old and new businesses together.

competence of offering hedge funds. Similarly, value destruction is more prominent among FOF-first firms that deviate more from their core competence of running FOFs.[18]

We next test for agency problems as another channel of value destruction. Specifically, we examine the flow-performance relation for hedge funds around the *s*-date. We compare the flow-performance relation before and after the *s*-date for the SHFs and propensity-score-matched non-SHFs by estimating the following regression:

$$Flow_{i,t} = \beta_0 + \beta_1 Return_{i,t-1} + \beta_2 Return_{i,t-1} \times After_i + \beta_3 s-dummy_i + \beta_4 Return_{i,t-1} \times s-dummy_i + \beta_5 Return_{i,t-1} \times s-dummy_i \times After_i + \beta_6 Age_{i,t} + \varepsilon_i \quad \textbf{(4)}$$

The coefficient of interest to us is, β_5, which measures the difference-in-differences of the flow-performance sensitivity before and after the *s*-date across the SHF and matched non-SHF samples. In results reported in Table VIII, for the sample of hedge funds in HF-first firms, we find higher flow-performance sensitivity following the *s*-date (coeff. = 5.822, *t*-stat = 4.782; see column (1) labeled *All HF 1st*). Recall that the presence of agency problems should manifest in lower flow-performance sensitivity, due to the FOFs supporting affiliated, underperforming hedge funds. This does not seem to be the case for the HF-first firms. This is to be expected as we find value creation, rather than value destruction when such firms become simultaneous.

For FOF-first firms starting hedge funds, we estimate the flow-performance relation for the newly started SHFs after the *s*-date and compare it to all newly started non-SHFs (same sample as used earlier in the effects analysis in Panel B of Table V). We estimate the following regression:

$$Flow_{i,t} = \beta_0 + \beta_1 Return_{i,t-1} + \beta_2 Return_{i,t-1} \times s-dummy_i + \varepsilon_i \quad \textbf{(5)}$$

Note that in the case of FOF-first firms starting hedge funds, we can only compare the flow-performance relation for the hedge funds after the *s*-date as the performance figures before the *s*-date do not exist. We present the results for in column (2) labeled *All FOF 1st* of Table VIII. We observe that the coefficient of interest, β_2, is

[18] We acknowledge that the SI measure can and do vary over time in our sample as simultaneous firms expand and reduce their original and new business lines. For robustness, we estimate a pooled regression of future fund performance on SI that allows for time-series variation in simultaneity intensity. Further, to allow for nonlinearities in the effects of simultaneity on fund performance, we include both linear and quadratic terms for SI. In untabulated results, we find negative coefficients on the two SI terms for the FOF-first firms. In contrast, for the HF-first firms, the linear SI term is positive but the quadratic term is negative. Taken together, this evidence suggests that simultaneity in FOF-first firms is associated with worse performance regardless of the extent of simultaneity while for the HF-first firms, simultaneity helps improve performance up to a certain level of simultaneity. These findings are consistent with our main results on the effects of SI on fund performance.

negative, although not statistically significant (coeff. = –1.917; *t*-stat = –1.062). This indicates that the flow-performance relation of hedge funds started by the FOF-first firms is not significantly different from non-SHFs.

Although evidence for strategic diversion of flows to poorly performing hedge funds in the firm due to agency problems is weak for the overall sample, we note that such diversion is only relevant when FOFs invest in hedge funds in their own firms. Therefore, we divide cases of simultaneity into "internal" and "external" referring to the subsamples of FOFs that invest internally (i.e., within the same parent firm) and FOFs that invest externally (i.e., outside the parent firm). Unfortunately, holdings of FOFs are not disclosed publically except for a relatively small sample of registered FOFs (Aiken, Clifford, and Ellis 2013).[19] Thus, we use the covariance of the returns of the hedge funds and FOFs after the *s*-date to determine whether the newly SFOF overweights holdings in hedge funds managed by the same firm. To this end, we follow a technique similar to that used by Sialm, Sun, and Zheng (2012), and estimate the following regression to classify SFOFs into internal and external subsamples:

$$Return_{SFOF,it} - Avg.Return_{FOF,t} = \alpha + \beta_1 Return_{Affiliated\ SHF,t} + \beta_2 Return_{Other\ HF,t} + \varepsilon_i \qquad \textbf{(6)}$$

Internal FOFs are those with a positive coefficient, β_1, while all other FOFs are considered as external. We expect agency problems to be more severe for internal FOFs. To test this possibility, we estimate regressions in equations (4) and (5) separately for internal and external funds and report our findings in columns (3) to (6) of Table VIII. We observe that for FOF-first firms starting hedge funds, the lower flow-performance sensitivity is concentrated in internal funds (coefficient = –3.720, *t*-stat = –2.295). Note that opposite is the case when HF-first firms start FOFs that are internal (coefficient = 6.140, *t*-stat = 4.786). These findings indicate presence of agency problems when FOF-first firms start hedge funds and predominantly invest in internal hedge funds.

Taken together, the evidence in this section suggests that expanding beyond areas of core competencies and the presence of agency problems are two channels of value destruction in situations where FOF-first firms start offering hedge funds.

[19] We can match only 22 registered FOFs with the FOFs in the Lipper TASS database, out of which only 8 turn out to be simultaneous. Only 1 of these 8 FOFs invests internally precluding any rigorous statistical analysis using this data.

VI. Termination of simultaneity

Our findings so far show that simultaneity arrangements in some instances can be suboptimal, especially for the FOF-first firms. In well-functioning capital markets with rational agents, such outcomes should not persist as agents should learn over time. To test this conjecture, we next analyze the termination of simultaneity arrangements at the firm level, focusing on two possible outcomes: (1) *switchback*, where the firm reverts to its original business line before simultaneity, and (2) *switchover*, where the firm ceases operations in its original business line and switches over to the other business line. We further separate such cases by whether the firm was a HF-first or a FOF-first firm.

We analyze the determinants of switchbacks and switchovers by estimating the following logistic regression:

$$Change_{i,t} = \beta_0 + \beta_1 Returns_{i,t-1,t-24} + \beta_2 Flows_{i,t-1,t-24} + \beta_3 Management\,Fee_i + \beta_4 Incentive\,Fee_i + \beta_5 HighWater\,Mark_i + \beta_6 Lockup\,period_i + \beta_7 Size_{i,t} + Year\,Dummies + \varepsilon_{i,t} \quad \textbf{(7)}$$

The dependent variable is $Change_{i,t}$, an indicator variable that takes a value of 1 when the firm *i* terminates the simultaneity arrangement during month *t*, and 0 otherwise. These terminations are further classified into *switchback* and *switchover* terminations. Switchbacks occur when simultaneous HF-first firms terminate their FOF business (*HF-HF* switchbacks) or when FOF-first firms terminate their hedge fund business (*FOF-FOF* switchbacks). Similarly, switchovers result from simultaneous HF-first and FOF-first firms terminating their original business lines and switching over to the new business, labeled as *HF-FOF* and *FOF-HF* respectively. The key explanatory variables include $Return_{t-1,t-24}$, and $Flow_{t-1,t-24}$, average returns and flows at the firm level for the two years prior to the period being analyzed. Control variables are as defined earlier in equation (1). As with previous firm-level regressions, we use equally-weighted averages of these variables across all funds in a firm. The sample used in estimating these regressions includes all simultaneous-firm-months.

Panel A of Table IX reports the results. We find that termination of simultaneity (both switching back and switching over) is largely a function of poor overall performance. Coefficients on $Return_{t-1,t-24}$ are uniformly negative and significant at the 5% level or better. In addition to the overall performance and flows at the firm level, the decision to switch back or switch over should depend on the relative performance in the two

simultaneously managed businesses of hedge funds and FOFs. Therefore, we estimate equation (7) with separate measures of return and flow for the hedge fund and FOF constituents of the simultaneous management firms. This results in four explanatory variables in the regressions that correspond to the average returns and flows for hedge funds ($Return_{t-1,t-24}$ (HF) and $Flow_{t-1,t-24}$ (HF)), and to the average returns and flows for FOFs ($Return_{t-1,t-24}$ (FOF) and $Flow_{t-1,t-24}$ (FOF)).

In the results reported in Panel B of Table IX, we observe underperformance in the business line that is terminated to end the simultaneity arrangement. This is true for both switchbacks and switchovers. For HF-first firms that switch back to a monoline hedge fund business, we find the coefficient on $Return_{t-1,t-24}$ (FOF) to be negative and significant (coeff. = –28.308, *t*-stat = –3.628 for HF-HF switchback), indicating underperformance of the FOF business that gets terminated. Similarly, FOF-first firms switching back to a monoline FOF business exhibit a negative and significant coefficient on $Return_{t-1,t-24}$ (HF) (coeff. = –22.740, *t*-stat = –2.750 for FOF-FOF switchback) indicating poor performance of the hedge fund business that is terminated.

We find the same theme in our findings for switchovers. In the case of HF-first firms switching over to a FOF business, we observe a negative and significant coefficient on $Return_{t-1,t-24}$ (HF) (coeff. = –73.185, *t*-stat = –4.262 for HF-FOF switchover) suggesting that these firms switch over to the FOF business when hedge funds perform poorly. Similarly, for FOF-first firms switching over to the hedge fund business, we find a negative and significant coefficient for $Return_{t-1,t-24}$ (FOF) (coeff. = –13.208, *t*-stat = –3.984 for FOF-HF switchover). This suggests that these firms switch over to the hedge fund business when their FOF business is not doing well.

Overall, these findings suggest that firms learn over time about their competitive advantage, and act to curtail the performance decline from their unsuccessful simultaneity arrangements.

VII. Conclusion

In this study, we examine the simultaneity arrangement in the hedge fund industry to show evidence of both value creation and destruction. We find that when hedge fund firms offer funds of hedge funds, value is created for both types of investment vehicles now simultaneously offered by the firms. The principal channels of

value creation appear to be through cross learning and mitigation of diseconomies of scale in simultaneously managed hedge funds.

In contrast, our results unequivocally indicate that funds of hedge funds which expand into hedge funds experience destroy value. Both the fund of hedge funds and the newly created hedge funds experience sub-par performance and lower net flows. Channels of this value destruction include expansion beyond core competencies and conflicts of interest that manifest in the form of flow diversion to the newly started hedge funds that perform poorly.

We conjecture that the asymmetric effects associated with hedge fund-first and FOF-first cases of simultaneity are potentially driven by lower skill of FOF managers, less transferability of FOF skills to running hedge funds, and the additional layer of intermediation and agency problems in FOF-first firms. The puzzle of why funds of hedge funds keep attempting to start hedge funds, despite evidence of probable failure, remains. We speculate it may be due to over-confidence coupled with greed and opportunistic behavior, given that high flows precede the simultaneity decision for funds of hedge funds. A more benign explanation could involve funds of hedge funds scrambling to create investment vehicles to deal with large influx of capital from investors. However, firms discontinue poorly performing simultaneity arrangements. We find evidence consistent with learning as simultaneous firms terminate underperforming business lines, and revert to a monoline business.

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Table I
Summary Statistics

Panels A and B list the characteristics of hedge funds and fund of hedge funds (FOFs). SHF and Non-SHF (SFOF and non-SFOF) denote simultaneous and non-simultaneous hedge funds (funds of hedge funds), respectively. Management fee and incentive fee are in percentages (%). High-water mark is an indicator variable and therefore shows the percentage of the sample that has this feature. Lockup period is in years. USD denominated and US domicile are indicator variables that take a value of 1 if the currency of the fund is US dollars and the fund is domiciled in the US, respectively. The indicator variables take a value of 0 otherwise. Size is the assets under management of the funds, measured in logarithm of millions of US dollars. Funds that are not denominated in US dollars have their assets under management converted to US dollars using the exchange rates from *Datastream.* Panel C provides the percentage of hedge funds in each of the Lipper TASS primary strategy categories for both SHFs and non-SHFs. Panel D compares the characteristics of (a) simultaneous management firms (SMFs) with those of the non-simultaneous management firms (non-SMFs), and (b) HF-first SMFs with FOF-first SMFs. Characteristics include the average number of funds owned by the firms (*Average Funds Owned*) and logarithm of the firm's size at inception. The last columns of each panel present the differences and its statistical significance from the *t*-test. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level.

Panel A: Comparison of the characteristics of hedge funds

	SHF (2,928)	non-SHF (8,245)	Difference test
Variable	(1)	(2)	(1)–(2)
Management Fee	1.53	1.50	0.03***
Incentive Fee	15.36	17.92	–2.56***
High-water Mark	0.45	0.65	–0.20***
Lockup Period	1.53	3.16	–1.63***
USD denominated	40.95	75.96	–35.01***
US domicile	8.13	29.72	–21.59***
Log Size (Inception)	15.63	15.42	0.21***

Panel B: Comparison of the characteristics of FOFs

	SFOF (2,843)	non-SFOF (3,333)	Difference test
Variable	(1)	(2)	(1)–(2)
Management Fee	1.36	1.37	–0.01
Incentive Fee	8.25	7.08	1.17***
High-water Mark	0.45	0.44	0.01
Lockup Period	1.12	1.08	0.04
USD denominated	40.80	48.36	–7.56***
US domicile	5.49	11.34	–5.85***
Log Size (Inception)	15.77	15.37	0.40***

Panel C: Fund category comparison			
Primary Category (percent)	SHF	non-SHF	Difference test
Convertible Arbitrage	1.95	2.64	–0.69***
Dedicated Short Bias	0.20	0.59	–0.39***
Emerging Markets	7.55	9.41	–1.86***
Equity Market Neutral	5.05	6.21	–1.16***
Event Driven	4.99	7.88	–2.89***
Fixed Income Arbitrage	4.78	3.58	1.2***
Global Macro	7.45	7.74	–0.29
Long/Short Equity Hedge	22.71	37.22	–14.51***
Managed Futures	7.17	10.35	–3.18***
Multi-Strategy	33.64	10.02	23.62***
Options Strategy	0.14	0.51	0.37***
Other	4.37	3.85	0.52

Panel D: Firms' Characteristics Comparison						
	SMF (461)	non-SMF (4,093)	SMF HF 1st (209)	SMF FOF 1st (252)	Difference test	
Variable	(1)	(2)	(3)	(4)	(1) – (2)	(3) – (4)
Average Funds Owned	13.13	2.50	12.82	13.38	10.63***	–0.56
Total Log Size (Inception)	71.38	25.73	63.49	81.69	45.65***	–18.20***

Table II: Determinants of simultaneity

This table reports the results of the panel logistic regressions of the determinants of simultaneity. The dependent variable is the simultaneous date (*s*-date), which takes a value of 1 if a fund or firm becomes simultaneous on that date, and 0 otherwise. Only observations for investment vehicles that are not simultaneous, or have just turned simultaneous are included in the sample, i.e., all observations of simultaneous entities after the *s*-date are excluded. $Return_{t-1,t-24}$ and $Flow_{t-1,t-24}$ are the returns and flows 24 months prior to the *s*-date. Fund-level regressions are estimated both with fund-level control variables (columns (1) and (3)) and firm-level control variables that are equally-weighted values of fund characteristics over all funds managed by the firm (columns (2) and (4)). Firm-level regressions include equally-weighted fund-level performance, flow, and control variables (columns (5) and (6)). *Top Return Dummy* is an indicator variable that takes the value of 1 if the firm has a hedge fund (FOF) that is in the top 5% among all hedge funds with the same strategy (all FOFs), and 0 otherwise. *Funds managed* is the number of funds managed by a management firm in the month prior to the *s*-date. Strategy and year dummies control for the strategy and time fixed effects. Other variables are as defined in Table I. Standard errors are clustered at the fund level for regressions at the fund level and at the firm level for firm-level regressions. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level.

	HFs in HF-first firms that become simultaneous		FOFs in FOF-first firms that become simultaneous		HF-first firm	FOF-first firm
	Fund level w/ fund level controls	Fund level w/ firm level controls	Fund level w/ fund level controls	Fund level w/ firm level controls	Firm level w/ firm level controls	Firm level w/ firm level controls
	(1)	(2)	(3)	(4)	(5)	(6)
$Return_{t-1,t-24}$	0.224***	0.199***	0.161	0.122	0.165*	0.347**
	(2.875)	(2.594)	(1.298)	(1.049)	(1.723)	(2.496)
$Flow_{t-1,t-24}$	–1.734	–0.887	5.289***	5.481***	–2.462	4.458***
	(–1.278)	(–0.663)	(5.937)	(6.022)	(–0.756)	(3.631)
Management Fee	–0.125	0.075	0.161*	0.237**	0.144***	–0.065
	(–0.887)	(0.570)	(1.731)	(2.067)	(3.612)	(–0.372)
Incentive Fee	–0.005	–0.003	–0.028**	–0.035**	–0.002	0.007
	(–0.248)	(–0.167)	(–1.966)	(–2.053)	(–0.054)	(0.327)
High-water Mark	0.164	0.385*	0.128	0.141	0.269	0.301
	(0.796)	(1.773)	(0.735)	(0.624)	(0.829)	(1.026)
Lockup Period	0.011	0.009	–0.025*	–0.046**	0.002	0.000
	(0.786)	(0.710)	(–1.856)	(–2.187)	(0.079)	(0.011)
US Domicile Dummy	–0.613***	–0.593***	–0.815***	–0.745***	–0.958**	–0.635*
	(–3.031)	(–2.971)	(–3.558)	(–3.243)	(–2.558)	(–1.681)
Age	–0.006*	–0.005*	–0.000	–0.001	–0.004	–0.005*
	(–1.910)	(–1.777)	(–0.190)	(–0.456)	(–1.087)	(–1.683)
$Log(Assets)_{t-24}$	0.159***	0.166***	0.035	0.046	0.234***	0.041
	(2.834)	(2.959)	(0.805)	(1.047)	(2.838)	(0.540)
Top Return Dummy		0.536**		0.574**	0.607*	0.945***
		(2.266)		(2.548)	(1.839)	(2.611)
Funds Managed					0.038***	0.044***
					(4.657)	(4.078)
Strategy Dummies	Yes	Yes	N/A	N/A	N/A	N/A
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.047	0.049	0.036	0.040	0.055	0.033
N	216295	216295	73574	73574	135802	39203

Table III
Effects of simultaneity: Univariate analysis of flows and performance

This table reports the results of the difference between the post-simultaneity flows and performance of simultaneous hedge funds and funds of hedge funds (FOFs), i.e., treatment group (*Treat*), and those of the propensity-score-matched sample of non-simultaneous hedge funds and FOFs, i.e., control group (*Cont.*). The performance results are reported for four performance measures: returns, Fung and Hsieh (2004) seven-factor alphas, style-adjusted returns, and Sharpe ratios. We estimate the factor loadings for the Fung and Hsieh (2004) seven-factor model using the 24-month window prior to the *s*-date. We use the alpha estimated from this regression as the alpha before the *s*-date. Using the betas from this regression, we estimate alphas after the *s*-date, as long as there are at least 6 months of returns after the *s*-date. Superscripts *, **, and *** indicate statistical significance of differences at the 10%, 5%, and 1% level, respectively.

Panel A: Hedge Funds and FOFs of HF-first firms after simultaneity

	Flows			Returns			Alphas			Style-Adjusted Returns			Sharpe Ratios		
	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.
Existing HFs	–0.460	1.140	–1.600***	0.602	0.467	0.135***	0.804	0.606	0.202***	–0.158	–0.345	0.187***	0.510	0.352	0.158***
New FOFs	5.530	4.790	0.740	0.591	0.492	0.099*	0.749	0.564	0.185***	0.033	–0.001	0.034	0.592	0.503	0.089

Panel B: FOFs and Hedge funds of FOF-first firms after simultaneity

	Flows			Returns			Alphas			Style-Adjusted Returns			Sharpe Ratios		
	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.
Existing FOFs	0.528	–0.196	0.724	0.138	0.442	–0.304***	0.510	0.824	–0.314***	–0.189	0.116	–0.305***	0.262	0.267	–0.005
New HFs	4.480	5.590	–1.110	0.588	0.860	–0.272***	0.862	1.060	–0.198**	–0.265	0.047	–0.312***	0.579	0.577	0.002

Panel C: HF-first management firms after simultaneity

	Flows			Returns			Alphas			Style-Adjusted Returns			Sharpe Ratios		
	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.
HF-first firms	2.450	1.330	1.120	1.030	0.511	0.519***	0.956	0.730	0.226**	0.316	–0.290	0.606***	0.401	0.373	0.028

Panel D: FOF-first management firms after simultaneity

	Flows			Returns			Alphas			Style-Adjusted Returns			Sharpe Ratios		
	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.	Treat	Cont.	Diff.
FOF-first firms	0.766	1.431	–0.665	0.300	0.688	–0.388***	0.465	0.586	–0.121	–0.133	0.069	–0.202***	0.292	0.338	–0.046

Table IV
Effects of simultaneity: Multivariate analysis of flows and performance for existing funds and firms

This table reports the results of multivariate regressions estimating the effects of simultaneity on flows and performance of hedge funds, funds of hedge funds (FOFs), and management firms. The sample includes funds which become simultaneous (treatment group) and the matched sample of funds. Dependent variables include post-simultaneity flow and performance measures for both groups. Flows and performance are as defined in Table III. All specifications include either fund-level or firm-level control variables but for the sake of brevity, the table reports the coefficients on only the key variable of interest, *s*-dummy, which is an indicator variable that takes a value of 1 when the fund or firm is simultaneous, and 0 otherwise. Fund-level control variables include fund characteristics (management fee, incentive fee, high-water mark, lockup period, and size). Firm-level control variables are equally-weighted averages of the fund characteristics. All dependent variables are in percentage terms. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: HFs in HF-first firms that become simultaneous

	Flows	Returns	Alphas	Style adj. ret.	Sharpe
Panel A1: With fund-level controls					
s-dummy	–1.200**	0.188**	0.338***	0.199***	0.044
	(–2.559)	(2.148)	(3.645)	(3.336)	(1.132)
R-squared	0.167	0.100	0.287	0.056	0.173
N	328	580	328	574	542
Panel A2: With firm level-controls					
s-dummy	–1.579***	0.299***	0.341***	0.269***	0.046
	(–3.315)	(3.340)	(3.696)	(4.400)	(1.158)
R-squared	0.172	0.103	0.317	0.045	0.208
N	328	580	328	574	542

Panel B: FOFs in FOF-first firms that become simultaneous

Panel B1: With fund-level controls					
s-dummy	0.450	–0.408***	–0.134**	–0.080	–0.076
	(1.241)	(–3.534)	(–2.353)	(–1.416)	(–1.599)
R-squared	0.088	0.133	0.169	0.036	0.072
N	356	472	356	472	472
Panel B2: With firm level-controls					
s-dummy	–0.240	–0.456***	–0.278***	–0.146***	–0.078*
	(–0.401)	(–4.042)	(–5.566)	(–3.016)	(–1.699)
R-squared	0.045	0.133	0.129	0.070	0.073
N	354	472	356	472	472

Panel C: HF-first firms

s-dummy	1.185	0.446***	0.504**	0.316**	0.106*
	(1.338)	(2.705)	(2.115)	(2.459)	(1.758)
R-squared	0.067	0.115	0.188	0.173	0.162
N	106	154	112	154	152

Panel D: FOF-first firms

s-dummy	–0.359	–0.402***	–0.189**	–0.214**	–0.130**
	(–0.749)	(–3.566)	(–2.044)	(–2.466)	(–2.538)
R-squared	0.076	0.152	0.122	0.142	0.157
N	148	244	196	244	242

Table V
Effects of simultaneity: Multivariate analysis of flows and performance for newly started funds

This table reports the results from the multivariate regressions for the effects of simultaneity on the flows and performance of newly started simultaneous hedge funds and simultaneous FOFs after the *s*-date. The sample includes all newly started simultaneous hedge funds and FOFs as well as a matched sample of all other non-simultaneous funds that have the inception date as newly started simultaneous funds. For hedge funds, we also require the matched non-simultaneous funds to have the same strategy as the simultaneous hedge funds. The dependent variables include flows and the four performance measures after the *s*-date. Flows and performance are as defined in Table III. All specifications include either fund-level or firm-level control variables but for the sake of brevity, the table reports the coefficients on only the key variable of interest, *s*-dummy, which is an indicator variable that takes a value of 1 when the hedge fund or FOF is simultaneous, and 0 otherwise. Fund-level control variables include fund characteristics (management fee, incentive fee, high-water mark, lockup period, and size). Firm-level control variables are equally-weighted averages of the fund characteristics. All dependent variables are in percentage terms. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: FOFs started by HF-first firms

Panel A1: Fund-level controls

	Flows	Returns	Alphas	Style adj. ret.	Sharpe
s-dummy	1.393**	0.109*	0.184***	0.060	0.024
	(2.005)	(1.769)	(2.781)	(1.256)	(0.491)
R-squared	0.009	0.021	0.006	0.019	0.010
N	1505	3800	2890	3800	3800

Panel A2: Firm-level controls

	Flows	Returns	Alphas	Style adj. ret.	Sharpe
s-dummy	1.332*	0.124**	0.124*	0.053	0.090***
	(1.913)	(2.473)	(1.935)	(1.258)	(3.360)
R-squared	0.011	0.033	0.007	0.032	0.031
N	1505	3800	2890	3800	3800

Panel B: HFs started by FOF-first firms

Panel B1: Fund-level controls

	Flows	Returns	Alphas	Style adj. ret.	Sharpe
s-dummy	–0.396	–0.232***	–0.202**	–0.282***	–0.054
	(–0.466)	(–2.727)	(–1.966)	(–3.405)	(–0.742)
R-squared	0.017	0.031	0.014	0.037	0.008
N	1625	3388	2278	3388	3387

Panel B2: Firm-level controls

	Flows	Returns	Alphas	Style adj. ret.	Sharpe
s-dummy	–0.403	–0.203**	–0.187*	–0.241***	–0.072
	(–0.512)	(–2.518)	(–1.889)	(–3.082)	(–0.925)
R-squared	0.017	0.031	0.014	0.037	0.008
N	1625	3388	2278	3388	3387

Table VI
Test of the effects of expansion beyond core competencies: Effects of simultaneity across multi-strategy and non-multi-strategy hedge funds

This table reports the results from multivariate regressions analyzing the effects of simultaneity involving multi-strategy and non-multi-strategy hedge funds. The sample includes funds which become simultaneous and a matched sample of funds that do not become simultaneous. Dependent variables include flow and performance measures for both types of funds after the *s*-date. Flows are measured as average net inflows and performance measures include: raw returns, Fung and Hsieh (2004) seven-factor alphas, style-adjusted returns, and Sharpe ratios. The key independent variables of interest are interaction terms: *Multi×S-dummy* and *Non-Multi×S-dummy*. These are the interactions of multi-strategy and non-multi-strategy dummies with *s*-dummy respectively. *Multi (Non-Multi)* takes a value of 1 (0) if the hedge fund involved in the simultaneity arrangement is a multi-strategy hedge fund, and 0 (1) otherwise. Panel A presents results for the effect of simultaneity for FOFs starting hedge funds, focusing on the effects on the FOFs. Panel B presents results for the newly started hedge funds. Panel C reports results for the effect of simultaneity on hedge funds starting FOFs, focusing on the effects for the hedge funds. Panel D presents results for the newly started FOFs by the hedge funds. All regressions include appropriately interacted control variables listed in the legend of Table IV. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: FOFs in FOF-first firms that become simultaneous

	SFOF_flow	SFOF_return	SFOF_alpha	SFOF_style adj.	SFOF_Sharpe
Multi×S-dummy	0.228	-0.359**	0.071	-0.027	0.178
	(0.165)	(-2.024)	(0.465)	(-0.167)	(1.207)
Non-Multi×S-dummy	-0.743	-0.392***	-0.172***	-0.154***	-0.131***
	(-1.397)	(-6.782)	(-4.060)	(-2.654)	(-3.315)
R-squared	0.040	0.057	0.034	0.136	0.084
N	356	472	356	472	472
F-statistic	0.43	0.03	2.33	0.54	4.11
p-value	0.51	0.86	0.13	0.46	0.04

Panel B: HFs started by FOF-first firms

	SHF_flow	SHF_return	SHF_alpha	SHF_style adj.	SHF_Sharpe
Multi×S-dummy	0.519	-0.133	-0.395***	-0.219**	-0.191
	(0.323)	(-1.390)	(-4.544)	(-2.205)	(-1.270)
Non-Multi×S-dummy	0.547	-0.309**	-0.359**	-0.234	-0.103*
	(0.435)	(-1.994)	(-2.430)	(-1.245)	(-1.737)
R-squared	0.027	0.058	0.053	0.015	0.059
N	1625	3388	2278	3388	3387
F-statistic	0.00	0.93	0.04	0.01	0.30
p-value	0.99	0.34	0.83	0.94	0.59

Panel C: Hedge Funds in HF-first firm that become simultaneous

	SHF_flow	SHF_return	SHF_alpha	SHF_style adj.	SHF_Sharpe
Multi×S-dummy	-1.499	0.629***	0.390**	0.069	0.258*
	(-0.858)	(3.154)	(2.282)	(0.304)	(1.885)
Non-Multi×S-dummy	-1.679***	0.063	0.081	0.098	0.089**
	(-3.601)	(0.676)	(1.008)	(1.095)	(2.541)
R-squared	0.106	0.043	0.058	0.222	0.431
N	328	580	328	574	542
F-statistic	0.01	6.54	2.65	0.01	1.45
p-value	0.92	0.01	0.10	0.90	0.23

Panel D: FOFs started by HF-first firms

	SFOF_flow	SFOF_return	SFOF_alpha	SFOF_style adj.	SFOF_Sharpe
Multi×S-dummy	-0.011	0.239	0.197	0.280*	0.133
	(-0.006)	(1.610)	(1.519)	(1.689)	(0.823)
Non-Multi×S-dummy	1.295*	-0.017	-0.037	0.142	-0.051
	(1.938)	(-0.240)	(-0.615)	(1.586)	(-0.794)
R-squared	0.013	0.037	0.031	0.015	0.004
N	1505	3800	2890	3800	3800
F-statistic	0.42	2.43	2.68	0.54	1.11
p-value	0.52	0.12	0.10	0.46	0.30

Table VII
Tests for value destruction through expansion beyond core competencies: Effect of simultaneity across the simultaneity intensity spectrum

This table reports the results from multivariate regressions analyzing the effects of simultaneity involving firms with higher (above median) and lower (below median) simultaneity intensity (SI). Simultaneity intensity is defined as the assets managed in the new business divided by the total assets managed. Panel A provides the summary statistics of the simultaneity intensity measure. Panels B and C present the effects of simultaneity intensity on performance for HF-first and FOF-first simultaneity cases, respectively. Panels B and C each have three separate sub-panels, analyzing the effects of simultaneity across higher and lower SI cases, for funds in the original business line (Panels B1 and C1), newly created funds of the other type (Panels B2 and C2), and for the management firms (Panels B3 and C3). Dependent variables include changes in performance for both funds and firms. Different performance measures include raw returns, Fung and Hsieh (2004) seven-factor alphas, style-adjusted returns, and Sharpe ratios. Only the coefficient on the *s*-dummy variable is presented, as well as the magnitude and statistical significance of the difference between the performance of higher and lower SI subsamples. All regressions include appropriately interacted control variables listed in the legend of Table IV. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Summary statistics of simultaneity intensity

	Mean	Median	Std. Dev.
SMF HF-first	0.249	0.159	0.260
SMF FOF-first	0.191	0.126	0.200

Panel B: HF-first simultaneity

		Return	Alpha	Style	Sharpe
Panel B1: Existing HFs	Higher SI	0.312	0.167	–0.032	0.023
		(1.468)	(1.015)	(–0.273)	(0.231)
	Lower SI	0.124	0.347***	0.276***	0.049
		(1.284)	(3.001)	(3.857)	(1.149)
	Higher - Lower	0.188	–0.180*	–0.308**	–0.026
	F-statistic	0.648	3.204	5.031	0.058
Panel B2: Newly started FOFs	Higher SI	–0.058	0.162	–0.096	–0.116
		(–0.310)	(0.740)	(–0.771)	(–0.877)
	Lower SI	0.123*	0.177***	0.076	0.037
		(1.908)	(2.581)	(1.518)	(0.710)
	Higher - Lower	–0.181*	–0.015	–0.172	–0.153**
	F-statistic	3.345	0.004	1.643	4.631
Panel B3: HF-first management firms	Higher SI	–0.301	0.294	–0.201	–0.078
		(–1.042)	(0.807)	(–0.751)	(–0.755)
	Lower SI	0.801***	0.516	0.616***	0.161
		(3.095)	(1.269)	(3.519)	(1.572)
	Higher - Lower	–1.102***	–0.222	–0.817***	–0.239
	F-statistic	8.071	0.166	6.528	2.699

Panel C: FOF-first simultaneity

		Return	Alpha	Style	Sharpe
Panel C1: Existing FOFs	Higher SI	–0.143	–0.219***	–0.086	–0.169*
		(–0.951)	(–2.946)	(–1.055)	(–1.946)
	Lower SI	–0.309	–0.195*	–0.081	0.099
		(–1.326)	(–1.770)	(–0.749)	(1.390)
	Higher - Lower	0.166	–0.024***	–0.005	–0.268***
	F-statistic	0.359	9.703	0.001	5.693
Panel C2: Newly started HFs	Higher SI	–0.974***	–0.173	–0.937***	–0.283
		(–3.152)	(–1.609)	(–3.043)	(–1.507)
	Lower SI	–0.143	–0.446	–0.196**	–0.029
		(–1.399)	(–1.420)	(–1.981)	(–0.375)
	Higher - Lower	–0.831***	0.273	–0.741***	–0.254
	F-statistic	6.518	0.676	5.249	1.565
Panel C3: FOF-first management firms	Higher SI	–0.529***	–0.287*	–0.386***	–0.137**
		(–3.356)	(–1.902)	(–3.020)	(–2.151)
	Lower SI	–0.352**	0.011	–0.090	–0.094
		(–2.069)	(0.100)	(–0.727)	(–1.000)
	Higher - Lower	–0.177	–0.298**	–0.296***	–0.043
	F-statistic	0.582	3.885	7.156	0.144

Table VIII
Test for agency problems:
Effect of simultaneity on the flow-performance relationship

This table reports the results from the cross-sectional multivariate regressions for the flow-performance relation of simultaneous (treatment) and propensity-score matched non-simultaneous (control) hedge funds before and after the *s*-date. The sample consists of flows and returns for simultaneous and non-simultaneous hedge funds, both before and after the *s*-date. The dependent variable in the regressions is *Flow*, which is the cumulative annual capital flow for the hedge funds for a 12-month period, either before or after the *s*-date. *Return* is the cumulative return over the 12-month period prior to the year over which flows are measured. *s*-dummy is an indicator variable which takes a value of 1 when the fund is a SHF, and 0 otherwise. *After* is an indicator variable which takes a value of 1 when the observation is after the *s*-date, and 0 otherwise. *Age* is the age of the fund from the inception to the *s*-date, calculated in months. Interactions of *s*-dummy and *after* dummy produce four variables of interest: return, return×*s*-dummy, return×after, and return×*s*-dummy×after, reflecting flow-performance sensitivities for treatment and control groups, before and after the *s*-date, respectively. of hedge funds for cases where HF-first firms start FOFs and the flows 12 to 24 months after inception in the cases where FOF-first firms start hedge funds. Column (1) presents the results of the flow-performance regression for HF-first firms starting FOFs before and after the *s*-date. Columns (3) and (4) present the results for the same regression, separating cases by whether the newly started FOF is internal or external (funds are classified as internal or external based on the description in Section V.B). Column (2) shows the results from the flow-performance regression for hedge funds started by FOF-first firms. Columns (5) and (6) present the results of the same regression after separating cases by whether the newly started simultaneous FOF is internal or external. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	All HF 1st (1)	All FOF 1st (2)	HF 1st – FOFs are internal (3)	HF 1st – FOFs are external (4)	FOF 1st – FOFs are internal (5)	FOFs 1st – FOFs are external (6)
Return	1.251*	4.720***	2.021**	–4.953**	6.218***	0.756
	(1.679)	(3.571)	(2.482)	(–2.265)	(3.811)	(0.402)
Return×After	–4.676***		–4.946***	–13.807**		
	(–4.999)		(–4.995)	(–2.299)		
s-dummy	–2.241***		–1.989***	–5.046***		
	(–5.924)		(–5.133)	(–3.279)		
Return×*s*-dummy	–1.444	–1.917	–2.265*	5.090*	–3.720**	3.029
	(–1.243)	(–1.062)	(–1.763)	(1.883)	(–2.295)	(0.715)
Return×*s*-dummy×After	5.822***		6.140***	14.099**		
	(4.782)		(4.786)	(2.149)		
Age	–0.006**		–0.007*	–0.004		
	(–2.061)		(–1.889)	(–0.804)		
R-squared	0.124	0.190	0.124	0.339	0.321	0.131
N	516	88	460	56	48	40

Table IX
Determinants analysis of switching business after simultaneous management

This table reports the results from the logistic regressions analyzing the determinants of the termination of the simultaneity arrangement. The sample includes all simultaneous management firms, split by HF-first firms (columns (1) and (3)) or FOF-first firms (columns (2) and (4)). The dependent variable is *Change*, which is an indicator variable which takes a value of 1 when the management firm terminates the simultaneity arrangement, and 0 otherwise. These terminations are further classified into *switchback* terminations, where the management firm switches back to its original business line (columns (1) and (2) for switchback to HF and FOF business, labeled *HF-HF* and *FOF-FOF*, respectively) and switchover terminations, where the management firm switches over to the other business line (columns (3) and (4) for switchover to FOF and hedge fund business, labeled *HF-FOF* and *FOF-HF*, respectively). There are 81 switchbacks and 66 switchovers for HF-first firms and 88 switchbacks and 78 switchovers for FOF-first firms. Explanatory variables include: $Return_{t-1,t-24}$, $Flow_{t-1,t-24}$,which are measured from the beginning of the simultaneity arrangement or starting 24 months before the period being analyzed, whichever is later. Panel A combines performance and flow variables across all of the management firms' funds. Panel B separates these variables for hedge funds and FOFs in the management firms' portfolio. Standard errors are clustered at the firm level. Control variables include management fee, incentive fee, high-water mark, lockup period and domicile dummy, aggregated at the firm level, using equally-weighted values across all funds in a firm. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A

	Switchback		Switchover	
	HF-HF	FOF-FOF	HF-FOF	FOF-HF
$Return_{t-1,t-24}$	–22.599**	–39.754***	–27.455***	–28.902***
	(–2.394)	(–4.809)	(–3.004)	(–3.283)
$Flow_{t-1,t-24}$	–0.003	–0.002	–0.021	–0.040*
	(–0.296)	(–0.192)	(–1.294)	(–1.649)
Controls + Year Dummies	Yes	Yes	Yes	Yes
R-squared	0.065	0.098	0.063	0.088
N	13,055	11,313	12,580	12,226

Panel B

	Switchback		Switchover	
	HF-HF	FOF-FOF	HF-FOF	FOF-HF
$Return_{t-1,t-24}$ (HF)	–0.133*	–22.740***	–73.185***	–8.870
	(–1.927)	(–2.750)	(–4.262)	(–1.628)
$Return_{t-1,t-24}$ (FOF)	–28.308***	–3.907	10.073	–13.208***
	(–3.628)	(–0.882)	(1.366)	(–3.984)
$Flow_{t-1,t-24}$ (HF)	–0.001	–0.044	–0.004	0.001
	(–0.181)	(–1.424)	(–0.434)	(0.184)
$Flow_{t-1,t-24}$ (FOF)	–0.025	0.014*	–0.010	–0.077*
	(–1.375)	(1.790)	(–0.685)	(–1.846)
Controls + Year Dummies	Yes	Yes	Yes	Yes
R-squared	0.058	0.110	0.112	0.089
N	8,869	7,546	7,861	7,661

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