Performance Persistence in Real Estate Private Equity

Abstract

This study investigates performance persistence across real estate private equity funds. We apply a combination of non-parametric and parametric tests to assess the relationship between past fund performance and subsequent fund performance of non-listed real estate funds. Based on a large global sample of value-added and opportunistic real estate private equity funds raised between 1990 and 2009, we use contingency tables, cross-product ratios, rank correlation statistics, and regression analyses to investigate whether there is persistence in the performance across consecutive funds. We find strong evidence for performance persistence across directly consecutive funds. However, we find little support for a relationship between the performance of other prior funds and the focal fund, suggesting that performance persistence is a short-term phenomenon.

Keywords: Performance persistence, real estate private equity funds

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1 Introduction

Opportunistic real estate private equity funds are typically structured as closed-ended partnerships. Investors in these funds (so-called Limited Partners or LPs) commit capital upfront and are restricted in their ability to withdraw capital for several years until the fund liquidates. Consequently, the initial decision to commit capital to a fund or not becomes especially important for investors.

Investors typically consider the track record of a fund manager as an important factor in this investment decision. For instance, according to a survey of LPs by Preqin (2014), investors consider the past performance (25% of respondents) and the length of the track record (31% of respondents) as the most important factors when deciding to invest in a fund or not. Investors apparently implicitly assume that past performance is an indicator of future performance; they implicitly assume that performance persists. Clearly, then, it is important for investors to know whether there actually is evidence for performance persistence across real estate private equity funds. In this study we comprehensively analyse whether there is persistence in the performance of real estate private equity funds. The results of our analysis will influence the investment strategies of investors, how they evaluate the performance of investment managers, and the way in which they allocate capital to funds.

Performance persistence is not only an interesting topic because of the potential practical impact of the findings, but also due to its academic relevance. Although performance persistence has been thoroughly researched for mutual funds, and to some extent hedge funds and private equity funds, research on this topic for real estate private equity funds is very limited.

This study will contribute to existing knowledge by conducting a comprehensive analysis of performance persistence across real estate private equity funds. We will investigate a large dataset of 201 pairs of consecutive funds covering an extended time period (1990 - 2009) and we will consider persistence in relative fund returns. We use non-parametric tests – contingency tables, cross-product ratios, and rank correlation statistics – as well as parametric tests (regression analyses) to investigate the relationship between predecessor fund performance and focal fund performance of non-listed real estate funds. Based on a sample of value-added and opportunistic real estate private equity funds raised between 1990 and 2009 collected by Preqin, we analyse whether there is persistence in the performance across funds in a fund series.

We find strong evidence for performance persistence between directly consecutive funds. However, we find little support for a relationship between the performance of other predecessor funds and the focal fund, suggesting that performance persistence is a short-term phenomenon.

Our finding of short-term performance persistence is in line with findings reported in the buyout and venture capital fund literature. Nevertheless, our analysis not only adds to the private equity literature by

investigating the under-researched field of real estate private equity, but also by conducting a more comprehensive analysis and using a more robust methodology than prior studies on buyout and venture capital funds. Most papers in the private equity literature have only looked at persistence in absolute performance, while we rank the funds within their vintage year peer group and study persistence in relative fund performance.

In the following section we discuss the academic literature. We then discuss the dataset and descriptive statistics. We explain the methodology used in the analysis and report the results of our analysis, before concluding.

2 Literature review

The phenomenon of performance persistence has been studied across asset classes. Research has focused primarily on mutual funds, and studies have generally found evidence for performance persistence in the short-run, while the relationship disappears over longer time periods (see e.g.: Bollen & Busse, 2004).

Similarly, for hedge funds, Fung, Hsieh, Naik, and Ramadorai (2008) report that outperforming funds are less likely to liquidate than those that perform relatively less well, and experience greater capital inflows than their lower performing counterparts. In turn, these capital inflows limit their ability to continue to deliver alpha in the long run. Jagannathan, Malakhov and Novikov (2010) find significant performance persistence among superior hedge funds, but little evidence for persistence among inferior hedge funds.

Recently, some studies have looked at performance persistence across private equity funds. Kaplan and Schoar (2005) find that there is persistence in the performance of private equity partnerships. They observe persistence for different measures of fund performance (including the IRR) and at both ends of the performance distribution. Their results were puzzling; why do limited partners not readjust their capital allocations and do general partners not adjust their fees so that persistence disappears? Kaplan and Schoar (2005) argue that top-performing funds restrict their fund size, which would then cause performance persistence. Phalippou (2010) analyses performance persistence for venture capital funds and finds that performance persistence is primarily concentrated in underperforming funds, which is contrary to the findings of Kaplan and Schoar (2005). He suggests that poorly performing funds tend to be backed by unsophisticated investors, as opposed to outperforming funds. Sophisticated investors allocate their capital to well-performing funds, thus eliminating performance predictability, assuming decreasing returns to scale. Chung (2012) investigates performance persistence for private equity and venture capital funds based on performance data by Preqin. He finds that performance persistence is a short-term phenomenon, primarily between consecutive funds. Harris, Jenkinson, Kaplan, and Stucke

(2014) use a dataset on buyout fund and venture capital fund performance provided by Burgiss to study performance persistence across funds in a fund series. Harris et al. (2014) find evidence for performance persistence in buyout and venture capital funds with a pre-2000 vintage year. While they also report performance persistence for venture capital funds with a post-2000 vintage year, they find that performance persistence for buyout funds with a post-2000 vintage year is concentrated in the lower end of the performance distribution. In summary, previous studies on performance persistence in the field of private equity have generally found evidence for short-term performance persistence between consecutive funds. However, this persistence may be primarily concentrated in underperforming funds.

While performance persistence has been extensively researched for mutual funds and to some extent hedge funds and private equity funds, research on performance persistence across real estate private equity funds has been very limited. We can distinguish between two types of performance persistence in the literature: persistence in performance across funds in a fund series, and persistence in year-on-year performance of a fund.

First of all, researchers have analysed persistence across funds in a fund series. Hahn, Geltner and Gerardo-Lietz (2005) were the first to investigate performance persistence across real estate private equity funds. They investigate a relatively small dataset provided by the Pension Consulting Alliance which consists of 43 fund managers with 110 funds between 1991 and 2001. Their dataset includes information on both the gross and net of fees IRRs. Hahn et al. (2005) find that there is performance persistence across real estate private equity funds. However, the relative performance seems to be mean-reverting or even reversing in the long run. They report that there is less persistence in returns net of management fees, suggesting that successful managers are able to charge higher management fees on subsequent funds, while less successful managers charge lower fees (relative to successful fund managers). However, their study was based on a relatively small sample of 110 funds between 1990 and 2001, a time period which covers neither the ‘boom’ in real estate private equity over the past decade nor the financial crisis.

Tomperi (2010) analyses Preqin's real estate private equity dataset of funds raised during 1980-2009, and also finds evidence for performance persistence in real estate private equity funds. He reports that the IRR of the predecessor fund is positively and highly significantly related to the realised IRR of the focal fund. However, in his analysis Tomperi (2010) only considers persistence in absolute performance rather than in relative fund returns.

In their working paper, Farrelly and Stevenson (2015) analyse performance persistence across real estate private equity funds based on a dataset provided by The Townsend Group. They report evidence for short-term performance persistence across funds in a fund series. However, they do not consider persistence in within vintage year peer group ranked performance.

Second, studies have investigated persistence in the year-on-year performance of funds. Bond and Mitchell (2010) investigate whether fund managers investing in the direct real estate market can systematically and persistently deliver superior risk-adjusted returns, and find little evidence of performance persistence in fund returns or risk-adjusted fund returns in the medium or long-term. Their research draws on a dataset of commercial real estate funds collected by the Investment Property Databank (IPD), covering up to 280 funds over the period 1981 to 2006.

Recently, INREV (2016) published a research report investigating performance persistence across real estate private equity funds. They investigate a sample of core open-ended European real estate funds and find evidence for persistence in year-on-year performance, but only in the short run. Furthermore, they find that performance persistence lasts longer in bottom quartile funds, but they also report that top half performers maintain their position for longer than bottom half performers.

In summary, there is some evidence for short-term performance persistence across real estate private equity funds in a fund series. However, looking at year-on-year fund returns, there is mixed evidence on persistence in performance, with Bond and Mitchell (2010) finding little evidence for persistence and INREV (2016) reporting some evidence for short-term persistence. In our study we will focus on persistence of performance across funds in a fund series.

The existing research on performance persistence in real estate private equity funds is limited in terms of scope, methodology and / or the dataset used in the analysis. This study will significantly contribute to existing knowledge by conducting a comprehensive analysis of performance persistence across real estate private equity funds in a fund series based on a large dataset and using a methodology that considers persistence in the relative performance within the vintage year peer group rather than in absolute performance.

3 Data and Descriptive Statistics

The data used in this study comes from a dataset maintained by Preqin. It consists of a global sample of returns delivered by value-added and opportunistic unlisted real estate funds raised between 1990 and 2009. In total, we collected 313 observations that have data on all variables required for the analysis, out of which 112 are first-time funds. Our dataset thus includes 201 pairs of consecutive funds. The dataset includes the following variables: the fund name, the fund vintage year, the fund's internal rate of return, its geographic investment focus, the fund size, and the fund's sequence number. The IRR is a net IRR earned by a Limited Partner after fees and carried interest. It is based on the realised fund cash flows and, if the fund is not yet liquidated, an exit valuation of the remaining interest in the fund.

One limitation of the data provided by Preqin is that funds that have been raised relatively recently may not have fully liquidated yet. The IRR will then not only be based on the performance of liquidated investments, but also (partially) on fund manager estimates of the value of residual assets, which may be subjective. We have attempted to mitigate this issue by looking at two separate time periods. First of all, we investigate the entire dataset (vintage years: 1990 - 2009) in our analyses. Second, we also look at the 1990 - 2004 sub-period. Funds raised in this sub-period are expected to have been fully liquidated, which would leave no room for any valuation bias. We have included the 1990 - 2004 sub-period in our analyses to ensure the robustness of our results.

Table 1 shows the correlation matrix as well as descriptive statistics for all relevant variables. Size is negatively correlated to the performance of the fund, while fund sequence number is positively related to fund performance. The measures for predecessor fund performance and focal fund performance are positively correlated.

Furthermore, Table 2 gives an overview of the descriptive statistics for funds classified as 'winner' (top half performance) and those classified as 'loser' (bottom half performance). As expected, top performing funds have a higher average IRR (15.3%) compared to underperforming funds (-4.0%). Interestingly, the performance of the predecessor fund is on average also better for outperforming funds (12.8%) than for underperforming funds (5.9%).

[Table 1]

[Table 2]

4 Methodology

We follow the approach taken by Hahn, Geltner and Gerardo-Lietz (2005) and analyse the relative performance of these funds within each fund's vintage year cohort. To allow us to compare fund performance between different vintage years, we rank the fund performance within each vintage year group. Within each vintage year cohort, funds were ranked from 1 for best performing fund to *n* for the lowest performing fund based on the final fund IRRs provided by Preqin. Subsequently, we normalised the resulting fund ranking to a zero-one scale, using the following formula;

Normalised ranking = (n - r) / (n - 1)

where *n* = the total number of funds in the vintage year cohort and *r* = the absolute rank of the fund. Then, we analysed fund performance based on this normalised ranking rather than on the absolute fund performance or the performance relative to a benchmark.

In line with the mutual fund performance literature, the primary statistical tests used in our analysis are non-parametric tests. We conduct four of such tests, two of which are based on contingency tables and two that are based on rank correlation statistics. Furthermore, we perform a series of regression analyses of focal fund performance on predecessor fund performance.

The contingency table test was first proposed by Brown and Goetzmann (1995) in their study of mutual fund performance, and has since been used in many studies on performance persistence. Based on their normalised ranking, funds can be classified as either 'winner' or 'loser'. We use the same methodology as Hahn, Geltner and Gerardo-Lietz (2005) and use three different cut-off points for the distinction between 'winner' and 'loser', namely ranking in the top half (NR > 0.5), the top third (NR > 0.66), or the top quartile (NR > 0.75) of the relevant vintage year group. For each fund manager, pairs of sequential funds are identified, and then sorted into a matrix based on their rankings within their respective vintage year cohort (win/win, win/lose, lose/win, lose/lose). Any one fund manager can be associated with multiple pairs of funds. The values of the resulting matrix are then compared to the expected frequencies, which are based on the assumption that fund performance is independent of prior fund performance, using chi-square tests. Carpenter and Lynch (1999) reported that this is a robust test of performance persistence even in the presence of survivorship bias.

We also conduct a second analysis using contingency tables, namely the cross-product ratio test. The cross-product ratio test was first suggested by Brown and Goetzmann (1995). Essentially, the cross-product ratio reports the odds ratio of the number of repeat performer fund pairs to the number of fund pairs that do not have repeat performance. The ratio is computed as follows:

Cross-product ratio = (Win,Win * Lose,Lose) / (Win,Lose * Lose,Win)

The ratio can be tested statistically by computing the Z-statistic, which is the log odds ratio divided by its standard error (Kat & Menexe, 2003). The null hypothesis that the performance of a predecessor fund is unrelated to the performance of the focal fund corresponds to an odds ratio of one.

Additionally, we use two rank correlation tests to investigate performance persistence. First of all, we analyse performance persistence using the Spearman rank correlation coefficient. The pairs of funds are first ranked based on their normalised rank in their vintage year cohort. The normalised rankings of the predecessor fund and the focal fund are respectively the first and second variable in our Spearman rank correlation analysis. We then use a t-statistic to test the null hypothesis of no association between the performance of consecutive funds (Sprent & Smeeton, 2001; Hahn et al., 2005).

Second, we use Kendall's tau as a correlation test. We first match the normalised rank of funds with the normalised rank of their predecessor funds. We then determine Kendall's tau based on the number of concordant and discordant pairs in this ranking. In turn, Kendall's tau is used to compute a t-statistic, which is used to test the null hypothesis of no association between the performance of consecutive funds (Chen & Popovich, 2002; Hahn et al., 2005).

Finally, next to non-parametric tests, we will also use regression analyses to test for persistence in real estate private equity fund returns. We will analyse the relationship between focal fund performance and the performance of the predecessor fund or other funds by the same fund manager. Regression analyses have been widely used in the extant literature to study performance persistence (e.g. Hahn et al., 2005; Tomperi, 2010). Furthermore, the results of the regression analyses provide a robustness check for the results from the non-parametric tests.

5 Results and Discussion

In this section, we will report and discuss the results of the analyses using contingency tables, cross-product ratios, and rank correlation statistics, as well as the results of the regression analyses. Finally, we will consider a mean-based approach instead of the median-based approach we have been using so far.

5.1 Contingency tables

The results of the contingency table analysis are summarised in panel A of Table 3. We find strong evidence for a relationship between focal fund performance and the performance of its predecessor fund. For instance, for all fund vintage years (1990-2009) and winning performance defined as above median performance, the probability of finding the realised matrix distribution if performance of consecutive funds was truly independent is less than 0.01%. The results show that there is a relationship between the performance of consecutive funds significant at the 1% level, except for 'above median' in the 1990 – 2004 time period, which is only significant at a 10% level.

We also analysed whether performance persistence differs between U.S. real estate funds and non-U.S. funds. The results of this analysis are presented in panel B of Table 3. Funds were classified as either having a geographic focus on North America or having a different investment focus ('other'). The 'other' category includes funds investing primarily in for instance Europe or Asia. For each geographic focus three separate analyses were conducted, using the three different definitions of a winning performance (above median, top third, top quartile performance). In this case all analyses cover all fund vintage years (1990-2009), since restricting the time period reduces the sample sizes too much.

For U.S. real estate private equity funds, we find strong evidence for performance persistence with chi-square probabilities all below the 5% significance level. For funds with a different geographic focus we also find evidence for performance persistence, but only significant at the 5% significance level for the 'top third' winning performance threshold, and at the 10% level for 'above median' and 'top quartile'.

Additionally, we investigated whether there is a relationship between a focal fund's performance and the performance of all of the manager's previous funds. Here we defined previous fund performance as the average normalised rank of all previous funds of the fund manager available in our dataset. As before, we looked at different time periods (1990 - 2004 and 1990 - 2009) and we used different definitions of a winning performance. The results of this analysis are summarised in Table 3 (panel C).

When looking at the 1990 - 2009 time period, we can reject the null hypothesis of no persistence of returns at a confidence level of 99% for all three definitions of a winning performance. For the 1990 - 2004 vintage years, we can reject the null hypothesis at a confidence level of 90% for above median and top third performance; when using top quartile performance the results are insignificant (p-value: 0.1340).

Finally, we looked at the relationship between the performance of the focal fund, and the performance of other predecessor funds by the same fund manager ('two funds before' and 'three funds before'). Suppose the fund manager has launched a fourth fund in a fund series, then we would compare the performance of that fund to the second fund in the series ('two funds before') and the first fund in the series ('three funds before'). The results of this analysis are summarised in Table 3 (panel D). Interestingly, coefficients are all very insignificant, indicating no relationship between the performance of older predecessor funds and the focal fund. This indicates that although there is performance persistence in the short run, in the long run there is no clear relationship between prior fund performance and focal fund performance.

[Table 3]

5.2 Cross-product ratios

The results of the analysis using cross-product ratios are included in panels A to D of Table 4. As reported in Table 4 (panel A), the null hypothesis that there is no relationship between the performance of consecutive funds is rejected in all 6 cases at a significance level of 10%, and can be rejected at a 1% significance level in 5 cases. The result is the least significant for the 1990-2004 vintage period and above median ranking as the definition of a winning performance, with a p-value of 0.0975.

We again find strong evidence that U.S. funds exhibit performance persistence across consecutive funds; the null hypothesis can be rejected at a 5% significance level in all three cases (see Table 4B). However, for non-U.S. real estate funds the results are more ambiguous, which may be caused by the relatively small sample size. With above median ranking as winning performance, we find a p-value of 0.1270, meaning that we cannot reject the null hypothesis at the 10% significance level. For the other two winning performance definitions (p-values: 0.0203 and 0.0472) we can reject the null hypothesis at a 5% level for non-U.S. funds.

Using the average normalised rank of all of the fund manager's previous funds as the predecessor fund performance variable, we find that for the entire dataset (1990 - 2009) there is a clear relationship between prior performance and the performance of subsequent funds, with confidence levels above 99% (see Table 4C). The results for the 1990 - 2004 subperiod are more ambiguous; we can only reject the null hypothesis at a confidence level of 90% when using top third performance as our definition of winning performance, in the other two cases the results are insignificant.

Finally, we also looked at the relationship of between the performance of the focal fund, and the performance of other predecessor funds by the same fund manager ('two funds before' and 'three funds before') using cross-product ratios. The results of this analysis are reported in Table 4 panel D. The results are broadly the same as for the contingency table analysis. We again find no significant relationship between the performance of older predecessor funds and the focal fund.

Overall, the contingency tables and cross-product ratios provide strong evidence for performance persistence across consecutive real estate private equity funds. In the analysis of all funds, performance persistence is reported in both the 1990-2009 and 1990-2004 periods, as well as for all three definitions of 'winning' performance. U.S. funds show stronger return persistence across consecutive funds, but this may be caused by the relatively small sample size of funds with a different geographic focus. We find evidence for a relationship between the average performance of previous funds of a fund manager and the focal fund performance, but this relationship is the weaker in the 1990 - 2004 sub-sample. Although we do find strong evidence for performance persistence in the short run, in the long run this relationship does not hold.

[Table 4]

5.3 Rank correlation statistics

We also use rank correlation statistics to test for performance persistence. The null hypothesis is that there is no association between the returns of consecutive funds. First, we calculate Spearman rank correlation statistics, which are presented in Table 5. We again test for different time periods as well as different geographic focuses. The results indicate a significant positive correlation between the returns of consecutive funds. The null hypothesis of no performance persistence can be rejected in all four cases at around the 99% confidence level. We also investigated performance persistence using the average normalised rank of all the predecessor funds of a fund manager (see Table 5). Again, we find a significant positive correlation; the null hypothesis of no performance persistence can be rejected at the 95% confidence level.

Finally, as with the contingency tables and cross-product ratios, we look at the relationship between the performance of the focal fund and older predecessor funds by the same fund manager ('two funds before' and 'three funds before'). The results are in line with those based on the contingency tables and cross-product ratios. Although we do find evidence for performance persistence between the focal fund and the fund prior to the immediate predecessor fund ('two funds before'), the relationship is weaker than for consecutive funds. For 'three funds before' we find no significant relationship. In fact, Spearman's rho is even negative in this case, suggesting a reversal of relative performance. Based on these results, we conclude that there is performance persistence in the short run between consecutive funds, but that the relationship weakens in the long run.

The second rank correlation we use is Kendall's tau. The results of the analysis are summarised in Table 6. Using the normalised rank method, the results are highly significant for both time periods considered, and the null hypothesis of no performance persistence can be rejected at the 95% confidence level in all cases. Using the average normalised rank of predecessor funds yields a highly significant result for the 1990 - 2009 time period, but an insignificant one for the 1990 - 2004 time period. For the 'two funds before' ranking method, we find evidence of some performance persistence, but the relationship is not as strong as for directly consecutive funds and only significant at the 90% confidence level. Using the 'three funds before' ranking method, we find no evidence of performance persistence. In fact, although insignificant, the coefficient is again slightly negative, suggesting some minor reversal of performance. These results are in line with the results based on the contingency tables, cross-product ratios, and the Spearman rank correlation coefficients.

[Table 5]

[Table 6]

5.4 Regression analyses

In addition to the non-parametric tests discussed in the previous sections, we also conducted regression analyses to test for performance persistence. In our regressions the normalised rank of the focal fund is the dependent variable. We regress the dependent variable onto the investment performance of the predecessor fund, the average performance of all predecessor funds, the performance of 'two funds before' (i.e. the prior fund with sequence number *n - 2*), the performance of 'three funds before' (i.e. the prior fund with sequence number *n - 3*), or a combination of these variables.

The regression results are summarised in Table 7. NR is the focal fund's normalised rank, NR_{PRED} is the normalised rank of the predecessor fund, NR_{PRED2} is the normalised rank of the fund with sequence number *n - 2*, NR_{PRED3} is the normalised rank of the fund with sequence number *n - 3*, and Average NR is the average normalised rank of all predecessor funds by the same fund manager. We run regressions for two separate time periods, namely for all vintage years (Panel A) and for the sub-period 1990 - 2004 (Panel B).

The regression results are in line with the results of the non-parametric tests. First of all, we observe that the positive coefficient of the ranking of the predecessor fund is in all cases except one significant at the 99% confidence level (in the other case it is significant at the 95% level). This supports our conclusion that there is strong evidence for performance persistence across directly consecutive funds. Similarly, the average ranking of all of the fund manager's previous funds is also positively related to the fund performance, and in this case the null hypothesis can also be rejected at the 99% confidence level for all vintage years and the 90% level for the 1990 - 2004 sub-period.

We do not find a significant relationship between the performance of other predecessor funds and the performance of the focal fund. As before, we find some indication for a negative relationship (though insignificant) for the 'three funds back' variable. Performance persistence thus seems to be present only between directly consecutive funds.

5.5 Mean-based approach: contingency tables and cross-product ratios

In the previous sections we have followed the approach of Hahn, Geltner and Gerardo-Lietz (2005). We ranked the funds within each vintage year cohort, and normalised the ranking using the following formula:

$$\text{Normalised ranking} = (n - r) / (n - 1)$$

where n = the total number of funds in the vintage year cohort and r = the absolute rank of the fund. Basically, this is a median-based approach. We look at the relative position of each fund in its vintage year cohort. However, we do not consider the underlying distribution of the IRRs across these funds. Although the median-based approach adjusts for any ‘extreme’ outliers, a disadvantage of this approach is

that some information on the distribution of IRRs is lost when we normalise the ranking using the before mentioned formula.

The alternative is a mean-based approach, which we will use in this section. We again categorise funds by their vintage year, and compute the mean IRR in each vintage year. The funds are then classified as either 'winner' or 'loser' depending on their IRR compared to the mean IRR in the relevant vintage year cohort. We use three different 'win' thresholds, namely above the mean IRR, above the mean IRR plus half a standard deviation, and above the mean IRR plus one standard deviation. Based on a normal distribution, these thresholds correspond with respectively top half, top 31% and top 16% performance.

The results of the contingency table analysis and cross-product ratio analysis using this mean-based approach are summarised in Table 8 and Table 9, respectively. We again find strong evidence for performance persistence for both time periods, with all results significant at the 5% level. Furthermore, when categorising the funds based on geographic focus, we also find some evidence for performance persistence. However, for more strict definitions of a winning performance the results are insignificant. Finally, we also looked at the relationship between the performance of the focal fund, and the performance of older predecessor funds by the same fund manager using the mean-based approach (Table 8C). The relationship is only significant at the 5% level for ‘three funds before’ using an above mean winning performance threshold. Overall, we again find little evidence for a long term persistence relationship.

Our conclusions using the median-based approach are confirmed by the results of the mean-based approach. While we find strong evidence for performance persistence across directly consecutive funds, we find little support for a relationship between the performance of other predecessor funds and the focal fund, suggesting that performance persistence is a short-term phenomenon.

[Table 7]

[Table 8]

[Table 9]

6 Conclusion

In this study we investigated persistence in the performance across real estate private equity funds in a fund series. Performance persistence refers to the positive relationship between the returns of a fund and the returns of its successor fund. Since investors in closed-ended real estate private equity funds typically cannot withdraw their committed capital during the life of a fund, the initial decision to commit capital to a fund or not becomes particularly important. Investors in real estate private equity funds typically base their investment decision on several factors such as the fund's strategy and, importantly, its track record. Essentially, this means that most LPs implicitly assume there is some degree of performance persistence. However, is there empirical evidence for persistence in real estate private equity fund performance? It is this question that we investigated in this study.

Prior research on performance persistence has focused on mutual funds, and to a certain extent hedge funds and private equity funds. Most studies have found evidence for short-term performance persistence in fund management across these asset classes. However, existing studies on performance persistence for real estate private equity funds have been limited in terms of methodology and / or the datasets that were analysed.

This study contributes significantly to existing knowledge by expanding the limited research on performance persistence across real estate private equity funds. Building primarily on the research of Brown and Goetzmann (1995) on mutual funds, Kaplan and Schoar (2005) on private equity funds, and Hahn, Geltner and Gerardo-Lietz (2005) on real estate private equity funds, we further look into whether there is persistence in the performance of real estate private equity funds. Using a dataset of 201 pairs of consecutive value-added and opportunistic real estate private equity funds from across the globe raised between 1990 and 2009, we conduct both parametric analyses (regression analyses) and non-parametric analyses (contingency tables, cross-product ratios, and rank correlation statistics) to investigate persistence in performance across consecutive funds. We find strong evidence for performance persistence between directly consecutive funds. However, we find little support for a relationship between the performance of other predecessor funds and the focal fund, suggesting that performance persistence is a short-term phenomenon.

Our findings not only contribute to existing knowledge by expanding the limited research on persistence in real estate private equity, but also add to the wider private equity literature by using a more robust and comprehensive methodology to investigate the performance persistence phenomenon. Whereas existing studies on persistence across private equity and venture capital funds have focused on persistence in absolute performance, we rank funds within their vintage year peer group and analyse persistence in relative fund performance.

Our findings are not only relevant academically, but also have important implications for investors in real estate private equity funds. The finding of short-term performance persistence influences the investment strategies of investors, how they evaluate the performance of fund managers, and the way they allocate capital to funds. Investors should consider a fund manager's track record in their fund manager selection process. Our results imply that the performance of the immediate predecessor fund is the most relevant in selecting a fund manager, while the extended track record is less important. This result is not only relevant for investors in unlisted real estate funds, but is also important for emerging fund managers with a limited track record.

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