

Top quartile persistence in private equity

MANAGER SELECTION

Do general partners perform consistently over several funds? Christophe Rouvinez studies the evidence.

INTRODUCTION

'Past performance is no guarantee of future results' – everyone knows that. However, many private equity investors seem to pay a lot of attention to the 'top quartile' label proudly exhibited by a continuously growing number of general partners.

This is despite the fact that many studies focusing on mutual funds have demonstrated the very limited persistence of superior performance over long time periods. Is there a reason to believe that private equity is different?

This article investigates serial persistence in the world of private equity managers and the relevance of a 'top quartile' qualification for a successful investment strategy.

Our findings show that there is significant top quartile persistence coupled with strong survivor bias. Contrary to common belief, serial performers have no advantage over first-time achievers. Given that top quartile performance is not reliably visible before investors have to make their next commitment, we conclude that due diligence including proper understanding of the drivers of past returns is far more important than the quartile itself.

A TOP QUARTILE WORLD

A top quartile fund by definition belongs to the 25 percent best funds in its peer group, which erroneously leads to the conclusion that only 25 percent of the funds may legitimately be qualified as such. The fact is that many more funds in the market are being labelled 'top quartile'. One reason is that except for the 25 percent ratio itself, nothing else in this definition is cast in stone. Whether 'best performance' refers to total value or internal rate of return, net or gross, realised or not, is open to interpretation, as is the question of who are the 'peers'.

To analyse whether private equity managers perform persistently, we apply simple definitions across a large dataset. For performance, we use the unrealised internal rate of return after fees. The peer group of a given fund is determined by its geography, strategy and vintage year. We form four broad peer groups and differentiate between European and American funds, buyout funds and venture capital vehicles.

By choosing these broad categories, we obtain large datasets for each market, which we can further break into 20 different transition

types. A transition is described by the quartile of the predecessor fund (Q1, Q2, Q3 and Q4) and the quartile of the successor fund, provided there is one. In case there is none, we use the label \emptyset . Many studies do not account for the probabilities of managers disappearing from the market. Here we choose to look at them so as to better understand the overall dynamics of the private equity market and also to assess the importance of showing good performance for fundraising purposes.

Our data set comprises 2777 funds from the Venture Economics database as per December 2005, for which we can identify geography, strategy, vintage and manager on an anonymous basis. The unrealised internal rate of return after fees as at that date is used to rank the funds and determine the quartiles. To obtain a more stable picture of transitions, we only consider transitions from funds with vintages earlier than 2000. Our choice to set the cut-off date in that year has a twofold motivation. Firstly, we want to wait until the performance of the funds has stabilised before we assign a specific quartile. As is well known it may take several years until the quartile of a fund can be precisely assessed. The ranking over the first years is highly dependent on the relative conservatism of the GP valuations of

their unrealised portfolio. Secondly, we want to make sure that we do not exclude transition effects over longer fundraising cycles than the typical three to four years.

PERSISTENCE AND PRIVATE EQUITY

Figure 1 shows the transition probabilities measured on the 2063 transitions in our data set. The top line shows the probability of a fund ending up in each quartile, given that the predecessor fund is top quartile. The second line focuses on second quartile, the third on third quartile and the fourth on the bottom quartile. The sum of all probabilities on each line is 100 percent. The colour coding highlights the largest probabilities in red, the medium one in orange and the smaller ones in beige.

At first sight, it is obvious that transition probabilities on the diagonal are higher than on the cross diagonal, which is an indication of persistence. The largest probabilities – or likeliest transitions – are the ones where the lower quartiles do not raise a successor fund (Q3 → ∅ and Q4 → ∅): there is about 40 percent probability that managers with lower quartile funds do not come back to market. This clearly highlights the difficulty of convincing investors to re-up when showing mediocre performance. The high attrition rate is also one of the reasons why investors only meet top quartile managers, others tending to disappear from the market over time.

The other cluster of high probabilities is the upper left corner of the matrix, describing all the transitions between Q1 and Q2. The likeliest transition is from Q1 to Q1, showing that top quartile performers are the ones with the best odds to continue to achieve

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top quartile performance in the future. All transitions Q1 → Q2, Q2 → Q1 and Q2 → Q2 have a similar probability, suggesting that serial persistence is likely to extend beyond top quartile to top half.

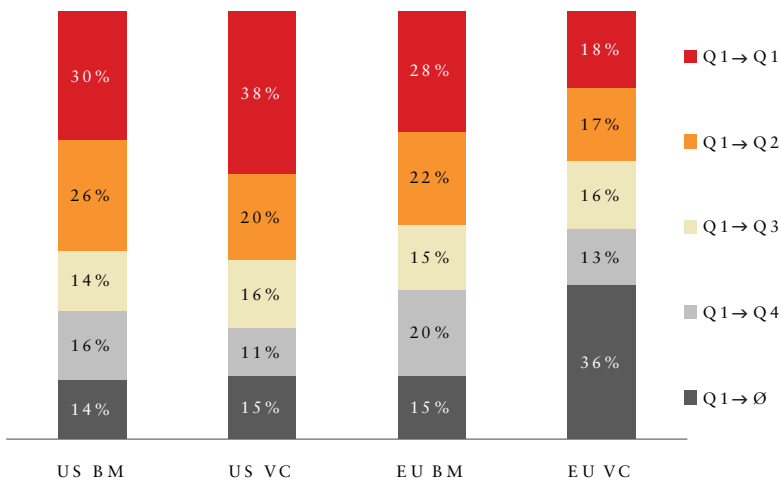
Thus a high attrition rate combined with a likely repetition of

upper performance seems to be the signature characteristic of the asset class. To verify to which extent these results are market dependent, we ran the same analysis for the different geographies and strategies separately. Figure 2 summarises the results focusing on the transitions starting with top quartile funds only. Each bar stands for the probabilities on the top line of a full transition matrix for a given market. The colour coding is related to the quartile of the successor fund only. Whereas the European and US buyout markets yield results similar to the pooled numbers, venture capital is showing the largest variability: top quartile serial persistence is by far the highest for venture capital in the USA and the lowest in Europe. Furthermore, 36 percent of the European VC managers with top quartile funds did not raise a next fund, which points to the difference in maturity between these two markets.

Figure 1: Transition matrix: probability of transition from one quartile to another when considering two successive funds by the same manager. Most probable event for a top quartile is to achieve top quartile again. Most probable event for lower quartile funds (Q3, Q4) is a transition to ∅, which means that no successor fund was raised.

	→ Q 1	→ Q 2	→ Q 3	→ Q 4	→ ∅
Q 1	33%	22%	15%	14%	16%
Q 2	20%	21%	15%	16%	27%
Q 3	12%	17%	17%	15%	39%
Q 4	11%	9%	16%	22%	43%

Figure 2: Transition probabilities from top quartile by geography and strategy. US venture capital (US VC) shows the highest serial persistence of superior return, while European venture capital (EU VC) shows the lowest persistence and the highest probability of not coming back to market.



RELEVANCE FOR INVESTORS

So what is the probability of achieving top quartile twice in a row? To answer this question, we have to discard those transitions where no successor fund is raised. If a fund manager is not coming back to market, he does not stand as an investment alternative. Recomputing all probabilities after eliminating these transitions yields an even higher likelihood of top quartile performance being repeated. The resulting 39 percent probability is significantly higher than the 25 percent that would be observed for a purely random process with equal chances. One would expect that this probability may even be higher for fund managers with a long track record.

Figure 3 represents the transition probabilities from top quartile to other quartiles as a function of the ranking of the fund within the sequence of funds invested by the same manager. The first bar stands for the transition probabilities for the second fund given that the first was top quartile etc. One might expect that the transition probability Q1 → Q1 grows with the experience of the manager. However, what is striking on that graph is that the probability stays close to 40 percent and does not vary with the ranking in the sequence. Focusing on the transitions Q1 → Q1 and Q1 → Q2, it seems as if selecting a top quartile performer results in about a two in three chance to achieve a top half (Q1 or Q2) return at any point in time during the life of a manager. Both the 40 percent for top quartile and the 66 percent for top half are much higher than the theoretical 25 percent and 50 percent for a random process, pointing to some long-term persistence in generating higher performance.

Figure 3: Transition probabilities from top quartile to all quartiles as a function of the ranking in the sequence of funds by the same manager. There is a 39% probability that the 5th fund by a manager who achieved top quartile return with his 4th fund is top quartile again.

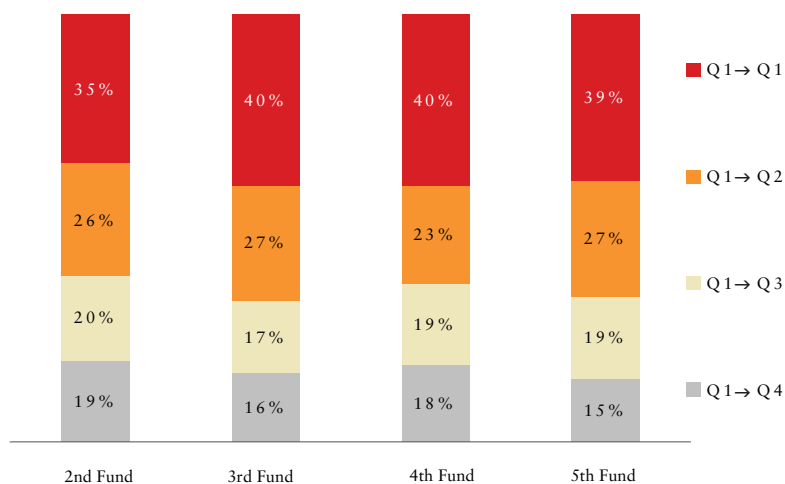
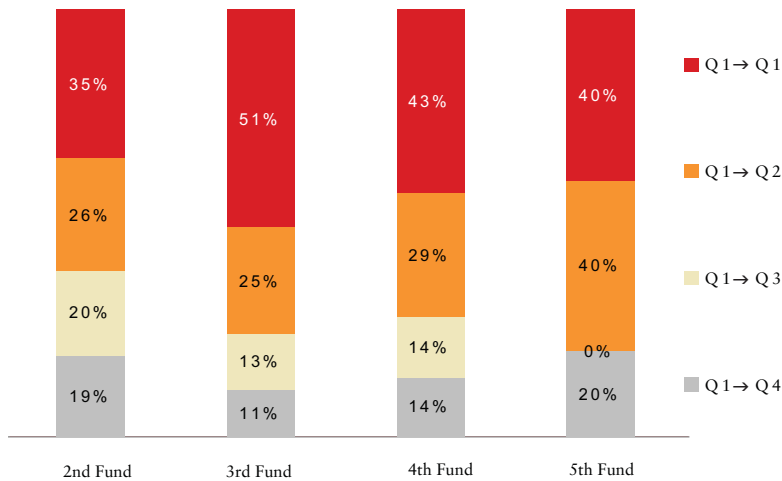


Figure 4: Transition probabilities from top quartile to all quartiles as a function of the ranking in the sequence of funds by the same manager, given that all predecessor funds are top quartile. There is a 40 percent probability that the 5th fund by a manager who achieved a top quartile return with all previous 4 funds is top quartile again.



Despite the significance of the probabilities compared to a random process, a pure top quartile manager selection strategy still results in an approximately one in three chance to invest with a lower performer. Is there any way to improve on the odds? Are the probabilities higher for managers with a track record of top quartile funds only? Figure 4 shows the probabilities of achieving top quartile return with a specific fund in the sequence given that all predecessor funds are top quartile. For the second fund in the sequence, the probability is of course the same as on the previous chart. For the third fund it increases to 51 percent, but for the fourth and fifth funds it reverts back to 40 percent, showing that this strategy bears no clear advantage either. The stability of these probabilities is highly surprising, given the restricted number of managers in the market that raise more than four funds and achieve top quartile returns with all four of them.

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CONCLUSION

As opposed to the world of mutual funds, there is strong evidence for serial persistence of a higher return in private equity. The probability of a manager hitting top quartile with the successor fund of a top quartile

fund is remarkably high compared to a random process. Furthermore, the probability is stable and not dependent on the ranking in the sequence of funds or the number of successive top quartile funds invested previously.

Does this mean that re-upping with top quartile funds is a successful strategy? Not quite. It definitely beats random investing, but still results in a one in three chance to end up with bottom three performance. And in real life, the situation is even worse. With this analysis, we are in a very privileged situation where we can rank the performance of mature funds. In reality, fund managers will come back to market before the last fund has shown a significant number of realisations, meaning that investors have to make a decision based either on the short-term development of immature investments, or on the performance of the previous funds - provided there are any.

The only way to really improve the odds is to focus on forward-looking indicators and not on lagging ones. Understanding how and why a manager achieved superior performance with its previous funds and whether the conditions for such success are likely to be met again in the future is crucial to the investment decision, not the top quartile label. Did anyone mention due diligence? ■

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