Private Equity Fund Performance around the World*

Sara Ain Tommar[a] Serge Darolles[b] Emmanuel Jurczenko[c]

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Abstract

We construct a novel and comprehensive dataset to formally explore the returns of private equity funds in non-North American focused markets. We investigate a range of stylized facts on private equity performance and persistence, and compare the findings to the extensive evidence on North American funds. We find that European private equity funds have performed at least similarly to their North American peers throughout the sample period. European funds' performance declines over time even though funds continued to deliver above par with a range of public market indices. Funds focused on Asia Pacific, or Latin America, Middle East and North Africa, and other parts of the world have outperformed in only a few of the sample vintages, both relative to the broad US public market and other regional equity markets. Inconsistent with the "money chasing deals" hypothesis, fund performance does not seem to be driven by the capital infusions into the industry, but by a rather maturing market for profitable deals. Non-North American funds show evidence of return persistence in Europe only, as does a sample of US-backed funds that are diversified globally. Persistence is random outside the European and Global groups, and declines over time, with some variation across regions and investment styles.

Keywords: private equity funds, international markets, performance, return persistence

JEL classification: G2, G11, G15

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[a] NEOMA Business School, Paris – France. sara.ain-tommar@neoma-bs.fr
[b] Université Paris Dauphine – PSL Research University, Paris – France. serge.darolles@dauphine.psl.eu
[c] EDHEC Business School, Nice – France. emmanuel.jurczenko@edhec.edu

1 Introduction

The private equity industry has considerably grown to over six trillion dollars of assets under management as of 2021, multiplying its value three folds compared to ten years prior. This is now the largest segment in private markets, surpassing the size of other alternative asset classes, and increasingly developing in markets other than North America, with a share of half the value of assets under management worldwide[1]. Notwithstanding the growing importance of private equity as an alternative asset class, very little is known about the characteristics and distribution of private equity returns in other geographies, mainly due to data availability and limitations. In this paper, we exploit and combine newly available LP-sourced data on fund characteristics and cashflows in non-North-American focused geographies, and offer a first look into how they compare to North American-focused funds.

Our paper contributes to the nascent literature on the performance and economics of private equity internationally. As of the late 90s, perspectives of higher returns and increasingly competitive local markets have driven private equity allocations internationally (Gompers and Lerner, 2000; Strömberg, 2008; Leeds and Satyamurthy, 2015). Earlier literature has broadly documented significant differences in performance given the investment geographies for a wide range of asset classes. Teo (2009) shows that hedge funds with an international physical presence have a local information advantage and perform better than distant hedge funds. Coval and Moskowitz (2001) show that mutual fund managers earn higher returns from nearby investments compared to distant investments. Malloy (2005) shows that US equity analysts are better at earnings forecasts

[1] McKinsey Global Private Markets Review, 2022.

for nearby firms than for distant firms. Similarly, Bae et al. (2008) show that local analysts issue better earnings forecasts than geographically distant analysts, with data on 32 countries. Specifically for private equity, previous studies show that geographical and cultural elements are important component of venture capital contracting in the US (Bengtsson et al., 2009), performance outcomes (Chen et al., 2010), and, internationally, exit success (Johan and Zhang, 2016), and industry performance (Bernstein et al., 2017). Early evidence also shows that deal-level or IRR returns are dependent on investment geography (Teo, 2012; Lerner and Baker, 2017; Mingo et al., 2018), on the institutional and regulatory settings (Cumming and Walz, 2010; Cumming and Johan, 2013), and, specifically for emerging markets, on the order of entry of new market participants (Sannajust and Groh, 2020). Earlier studies also tried to circumvent the data availability by using listed proxies to study private equity performance in international markets (Hanby et al. 2022). Many of the efforts aiming to understand private equity performance in other markets have long been hindered by the availability of fund-level cashflows, or when available, limitations in the extent of geographical coverage, hence allowing to study one geographical group (Harris et al., 2016). We contribute to this important question by offering early insights into the net-of-fee performance of private equity internationally. We use new, LP-derived data on private equity partnerships from Eurekahedge, a historical alternative investment data provider which recently extended their coverage to a wider range of private markets, including private equity. The data spans a large set of funds and geographies, and counts more than 1,700 partnerships directed towards corporate financing. We combine these newly available data with fund cashflow data from Preqin, another specialist data provider, to form a significantly representative sample of funds. Importantly, there is a small overlap between Preqin and

Eurekahedge, subsequently allowing for a larger coverage of funds worldwide. As private equity performance research has been subject to debate around the reliability of the data used (Stücke, (2011), Harris et al. (2014)), we perform several checks to ensure the quality of our combined dataset. We start by looking at whether stylized facts on fund performance in North America are verified in our sample. This would relatively certify the quality of the data before extending the sample to other geographies. For these analyses, we replicate in our sample the main findings of Harris et al. (2014), who comprehensively overview and compare the evidence on North American-focused fund performance. Then, for the performance persistence results, we test whether our sample of funds provides results in line with a follow-on paper (Harris et al., 2022). Our subsample of North American-focused funds covers their universe of funds by about 70% in terms of number of funds, and about 95% in terms of committed capital, between 1990 and 2015. Overall, we qualitatively and statistically confirm the alignment of the results in our sample with the evidence in the literature on North American funds, and proceed to extending the analyses to other world locations. For the reader's reference, we report and discuss the replication results in the internet appendix, section S1.

Our sample of non-North American funds comprises 614 partnerships, representing more than 70 institutional investors and more than a trillion dollars in committed capital between 1990 and 2017. Out of the 614 funds, 162 funds are invested in the Asia Pacific region, with 21% of the total commitments for the sample period. Europe has the largest share of commitment interests, with 73% of the total committed capital and 376 funds. Other world locations count for only 6% of the commitment interests for the sample period, these funds are mainly invested in Latin America, the Middle East and North Africa, in addition to a few, geographically-agnostic funds. Importantly, 83% of the

partnerships in our sample are sponsored by a local private equity firm, in addition to having a local or regional investment focus. In our sample, North American-based firms count for a small fraction of funds invested overseas[2]. To get a meaningful geographical representation of funds, we group the funds by investment focus into regions, following MSCI's market classification[3]. We find that the dominant strategy in terms of committed capital is, by far, buyout funds, with more than 90% of capital inflows. In non-tabulated results, we also find the compensation structure largely similar to that in North America, with fund managers charging 2% in management fee and 20% in carry on average across funds and through the sample period. Interestingly, we do not find different compensation structures between local or regional managers compared to US-based ones, neither do the fees vary by investment style or investment geography. Other characteristics follow the traditional organization of private equity funds, although we partially confirm that non-North American focused funds have shorter lifespans than typically known for funds in North America (Fang, 2019). Prior to 2008, fund performances based on money multiples, show at least similar levels to those in North America for European funds, but relatively decline on average after the financial crisis even though they continue to deliver above par. These patterns also hold using the PME measure, both against the broad US stock market and a wide array of size-, and geographically-adjusted benchmarks. Until 2008, fund PMEs for European funds are higher on average than what is documented for North American funds, and although they relatively decline in the aftermath of the financial crisis, the European PME levels still remain higher compared to their North

[2] We formally test in Table 4 how a group of global funds in our sample compare to pure-North American funds' performance. These global funds are backed by a US-based sponsor, and have a geographically diversified investment strategy, including North America. They are not included in our baseline sample of internationally invested funds.

[3] https://www.msci.com/our-solutions/indexes/market-classification

American peers across the same vintages. However, funds in the Asia Pacific, Latin America/MENA regions performed generally below par with the public equities across the sample period, with the PME levels being above one only 5 times out of 20 vintages in each region. By investment style, fund underperformance does not recover from the dot-com squeeze for venture capital funds until 2006, while it seems to maintain strong resilience levels through the financial crisis for buyout funds. We find using robust regression analyses that these patterns are mainly driven by a potentially maturing local market, where investment opportunities grow relatively scarce, pressuring time to exit investments and fund durations. This is verified in the Asia Pacific and European regions, while aggregate capital infusions into the industry seem to greatly explain the overall disappointing fund performances in other parts of the world. We also find strong evidence of performance persistence at both ends of the return distribution, where top performing funds consistently outperform and the worse performing funds consistently underperform. Interestingly, average funds are more likely to repeat among the best performers than they are to repeat among the worst performers, especially if they are less geographically restricted and target more mature companies. Persistence is stronger prior to the financial crisis in the overall sample, and significantly decreases for the post-2007 vintages. However, top performing funds still deliver above par with the public market and above median, however small the margins compared to pre-2008. We test and confirm the robustness of these conclusions across several performance measures, controlling for GP skill, time and style effects across geographies. The rest of the paper is organized as follows: Section 2 details the data and methodology used, and presents the sample statistics. Section 3 discusses the fund performance relative to public equities.

Section 4 explores the relationship between fund performance and fund characteristics, while Section 5 presents the performance persistence results.

2 Data and Methodology

The data are first sourced from Eurekahedge, a historical hedge fund data provider which, through 2019, extended their coverage to other asset classes, including private equity. According to Eurekahedge, the data are sourced directly from their LP clients, and are thoroughly extended and completed with information collected using FOIA requests or their equivalent in other geographies. We use the fund level cash flow data as of March 2020. All the return and performance results we report are net of fees. To form a geographically representative set of funds, we merge the Eurekahedge data with Preqin, another specialist private equity data provider. The Preqin data are mainly sourced from large investors using FOIA requests, and also voluntarily from GPs. We start by name-matching the funds with available cashflow data in both datasets using Jaccard similarity scores, then verify the correct correspondence of the overlapping funds by manually checking the available legal information and characteristics of matched funds, such as the backing firm, the fund investment style and location, fund commitments and available reported returns. We limit the sample to the 2018 vintages to focus on mostly realized funds, and express all values in 2018 dollars. We carefully harmonize the variable conventions in both datasets and make sure that funds and firms are uniquely identified. The final merged dataset comprises 2,692 unique funds with available cashflow information all geographies combined, including one set of common funds to both

datasets (880 funds). In the particular use of Eurekahedge and Preqin, the overlap of funds is relatively small, thereby ensuring a wider representation of funds across regions.

A considerable issue in private equity performance research is the data coverage and quality (Harris et al. (2010), Harris et al. 2014)). Harris et al. (2014) review and compare the existing sources for private equity performance, namely the LP-sourced data from Burgiss, to other FOIA-, service-based and GP-sourced data providers: Preqin, Pitchbook, Cambridge Associates and Venture Economics. They conclude that the latter suffers considerable quality issues, while the other datasets yield relatively similar results to Burgiss. They also conclude that the datasets providing similar conclusions on fund performance are unlikely to bear quality issues. Another challenge is the differences in the data access conventions, whereby one would contend with either better quality but completely anonymized data (as in Burgiss), or identified investors and funds but limited (geographical) coverage (as with using one individual vendor dataset). One common characteristic to all the available databases with regards to our research question is their limited coverage of non-North American focused funds when taken individually. We find the coverage relatively higher using a combined dataset[4]. To overcome some of the data quality concerns around using a new dataset, we follow the methodology of Harris et al. (2014) in comparing the results yielded by our sample, to the evidence in the literature using the other databases. For this test, we replicate the main analyses in Harris et al. (2014) using the covered North American focused funds in our sample. Our merged sample spans more than 2,600 partnerships with available cash flow data, involving at least 300 limited partners, representing 2.18 trillion dollars in committed capital, and

[4] For comparison, we have a relatively higher coverage of European funds to Harris et al. (2016), who provide a first glimpse into European fund performance using a sample of 300 funds from Burgiss.

investing in 34 countries. We only consider equity strategies and focus on corporate private equity. Credit funds, timber, infrastructure, fund of funds, secondaries, co-investments and real estate strategies are excluded from the analysis. With these filters, our sample totals 2,179 funds, 1,565 of which are North American-focused, including 863 buyout funds and 702 venture capital funds. We use this subsample to replicate the results in Harris et al. (2014), as well as some of the updated findings in Harris et al. (2022)[5]. We tabulate and discuss the findings in the Internet Appendix, Tables 1 to 3 in Section S1. We find that the fund reported performance measures are qualitatively aligned, as are the conclusions on the performance of North American funds relative to the public market and their persistence over time. Additional tests for the difference in sample means and medians of the overlapping vintages in our sample and Harris et al. (2014) are not statistically significant. We thereby conclude that our data produce similar conclusions to those in the literature on North-American focused funds, and do not present any particular upward or downward performance biases.

With these results in hand, we proceed with extending the analyses to other geographical locations. Applying the same filters as described above, the non-North American sample comprises 614 funds, taking into account corporate private equity only, and excluding non-equity based investment styles. To get a meaningful geographical representation of the funds in the sample, we group their investment focuses by region, following the market classification of MSCI[6]. The geographical focus of the fund is provided by Eurekahedge and Preqin for the respective covered funds. We end the sample at the 2017

[5] Harris et al. (2014) do not report the transition probabilities shown in Table 3 of the Internet Appendix for the performance persistence calculations. We use their follow-on paper, Harris et al. (2022), as a reference paper to benchmark our persistence findings.
[6] https://www.msci.com/our-solutions/indexes/market-classification

vintages as funds beyond that year are still largely fundraising. Table 1 shows, in more detail, the distribution of funds by vintage, investment region and investment strategy.

[Table 1 about here]

Commitments in non-North American markets totaled more a trillion dollars between 1990 and 2017. Importantly, about 83% of the funds in the sample are local or regional, both across investment strategies and investment locations[7]. The dominant investment strategy in terms of committed capital is by far buyout funds, with about 90% of capital inflows. Across regions, buyout funds also account for 51% of the number of funds investing in the Asia Pacific region, 77% of funds in Europe, and 54% of the funds invested in other world locations. On the contractual aspects, we find in non-tabulated results that the compensation structure of the partnerships is largely similar to that in North America, where the management fee and the carry average 2% and 20% respectively, across all investment styles and regions. Funds hold investments for a minimum of three to four years on average, across investment strategies and regions[8]. The typical fund lifespan[9] is around 8.5 to 9 years for buyout funds and venture capital funds alike, with slight differences across the investment regions. Funds investing in the Asia Pacific region span the shortest lifespan with an average (median) 7.5 (7.0) years,

[7] US-sponsored funds investing overseas account for a small fraction of funds in our sample, we present tests of how these funds' performances compare to pure North American players in the following sections.
[8] We have access to the information on the compensation structure and holding periods in the Eurekahedge sample of funds only.
[9] We do have the fund's status but do not have the funds' effective liquidation dates. We approximate the fund lifespan by calculating the difference in years between the fund's last distribution date and the fund's first capital call date.

followed by European funds at 8.6 (9.5) years. Geographically diversified funds[10] have an average (median) lifespan of 9.5 (9.2) years, while funds investing in Latin America and the MENA regions seem closest to the North American conventions, with an average (median) duration of 10.4 (10.1) years. Buyout funds are significantly larger, with an average fund size of 2.3 billion dollars throughout the sample period, compared to earlier stage investment strategies (i.e. venture capital and growth), with a combined average size of 486 million dollars. Finally, Europe has been the primary investment destination with more than 70% of fund commitments, followed by Asia-Pacific (about 21%). Latin America, the Middle East and North Africa, as well as other sparse world locations, have accounted for a combined 6% of the total commitments of the period. We group these locations under the ROW group throughout the paper to have a meaningful group of funds.

[Table 2 around here]

We show in Table 2 fund money multiples by vintage year. We present the average and median Total Value to Paid In (TVPI), calculated as the sum of all investor distributions and the fund's residual value, to the sum of fund contributions. We further split these measures by investment strategy and region, as shown in panels A and B respectively. We rather focus on this dollar to dollar metric rather than fund IRRs as it is less

[10] These are US-backed funds which extend their investments overseas. They are not included in the baseline sample of interest but are included in some tests to provide comparison with pure North American funds.

susceptible to suffer reporting issues (Phalippou, 2008; Larocque et al., 2022), especially in an international context (Cumming and Walz, 2010).

We do not have fund realization rates in the combined sample, but according to fund status information in both our datasets, funds raised prior to 2010 are mostly realized. About half to two thirds of fund investments of the 2014 and 2015 vintages have been realized, while the rest of the follow-on vintages are relatively immature. This is true across all geographical regions and investment styles, although younger venture capital funds have a higher fraction of realized funds compared to buyout funds of the same vintages in the data. For the TVPI measure, these realization rates help get a sense of the extent to which money multiple calculations rely on estimated residual values, rather than on their actual liquidation values. Across mostly realized vintages (up to 2010), non-North American buyout funds have returned 1.53 times the invested capital on average to their investors. This figure has been relatively stable for the 90s and the 2000s but has dropped in the year after the 2008 financial crisis. Compared to North American funds[11], the drop has occurred in the 2000s in the period before the financial crisis, after maintaining an average money multiple of 2.0 during the 90s. As for venture capital funds, North American focused funds scored higher in the 90s, with about 3.6 times the capital invested compared to only 1.56 times in non-North American funds. In the following years until 2006, non-North American venture capital funds performed poorly at values below par for the money multiple, unlike their North American counterparts where TVPIs have averaged the value of 1 throughout the same period. Venture Capital funds recover significantly for the rest of the vintages, while buyout funds performance seems to have maintained at least on par values on average until 2012. Growth funds

[11] For North American funds, the comparison figures cited here are drawn from Harris et al. (2014).

show largely similar results to those of buyout funds, although they only outperform in about half of the covered vintages.

By geographical focus, fund money multiples do not particularly stand out in Asia Pacific and other parts of the world, where funds delivered in only 8 (respectively 5) of the 18 (respectively 19) covered vintages. It is worth noting, however, that Asia Pacific focused funds have outperformed in terms of money multiple during the financial crisis years (2007 through 2009), but did not sustain. European funds have delivered above par money multiples throughout the sample period, although performances grow weaker over the decades (1.83 on average in the 1990s, 1.58 in the 2000s, and 1.23 until 2012, focusing on mostly invested funds). The decline in money multiples starts in the few years prior to the 2008 credit crunch but shows relative resilience in the follow-on vintages.

Overall, private equity returns measured by the fund's money multiples seem to be better for buyouts and in the European region, even though they seem to decline over time. We present more analyses of the fund performances relative to the public market in the following section.

3 Fund performance relative to public equities

As is customary in private equity performance research, we rely on the Public Market Equivalent (PME) methodology introduced by Kaplan and Schoar (2005) to compare investments in non-North American funds to equivalently-timed investments in public equities. To this end, we discount fund distributions in addition to the fund net asset values at the total public equity market return (following a buy-and-hold strategy), then do the ratio of that amount to a similarly discounted value of fund contributions at the total return

of the public market. The PME is interpreted as the surplus (compared to one), investors get over the fund duration compared to a similarly held investment in the considered public market index[12]. For the purposes of these calculations, we present the PME using the regional and international MSCI indices to measure fund performance relative to a similarly timed exposure to the relevant regional or international public market index. We also present the PME measure using a number of US public market indices, first because they are widely considered by investors as major reference benchmarks for public equity investing, and second to see how the funds in our sample partially compare to North American equities. An additional reason is to test for the sensitivity of the PME to the used benchmark by using these alternatively adjusted or "tailored" PMEs (Robinson and Sensoy, 2016, 2013), to relatively account for differences in risk. We report the results by vintage year and investment strategy in Table 3 (Panel A), as well as by vintage year and geographical focus (Panel B).

[Table 3 around here]

We start by looking at the performance of non-North American funds against the broad public market using the international and regional MSCI indices as benchmarks. We start by these indices to allow for observational comparisons with similar exposures to geographically relevant public equities, before testing the performance of the funds in our sample relative to other broadly used US indices.

[12] See Sorensen and Jagannathan (2015) for a discussion of the PME as a performance measure.

The first three columns of Table 3 show fund performances relative to the MSCI indices by vintage and by investment style. Buyout funds consistently outperforms the relative MSCI index throughout the covered vintages, by an average PME of 1.26, or an annualized excess return of 2.4%. For earlier investment stages, non-North American focused funds have outperformed the MSCI index across the sample vintages in only half the time (in 8 out of the 17 covered vintages for growth funds, and 12 out of the 25 covered vintages for venture capital funds). These funds still yielded an average 1.3% annualized return on top and above the MSCI indices over the sample period. We relatively find this same contrast between buyouts and venture capital funds in studies of North American funds, where the latter have outperformed considerably and only up to the late 90s. venture capital funds in our sample seem to consistently recover from the dot-com bust as of the 2006 vintages. For both styles, the latter vintages do not allow drawing any firm conclusions as many funds from this period are still investing. These patterns are heterogenous across regions, where only European funds and a few fund vintages elsewhere have delivered higher returns than public equities over the years. Relative to the their respective regional MSCI benchmarks, European funds have performed on average above par with the public market almost all the time, whereas funds invested in the Asia Pacific did so only in few vintages of the 2000s, whereas in other parts of the world, returns have been generally disappointing relative to the broad world index. We reach similar conclusions looking at the PME performance results compared to the US broad public market index (proxied by the S&P500).

The results on fund performance in the above analyses may suggest differences in risk or other factors across the funds in the sample. We analyze the relationship between fund performance and other factors in the following section, but show in the latter columns in

Table 3 further results using the Russell indices, as it is customary for investors to use them to proxy for size and value effects. We consistently reach the same above conclusions, and partially conclude that the performance results are unlikely to be driven by size or value effects.

Overall, focusing on mostly realized funds, i.e. up to the 2012 vintages, the general takeaway is that non-North American buyouts have overperformed the public market across all vintages. This is also true for European funds relative to other world regions. Venture capital funds have only outperformed in the 90s and through the financial crisis. Evidence on North American buyouts shows that private equity performance has declined over the years but remained relatively at par with the US equities markets, though at lower levels than do European funds. the literature also shows that North American venture capital did not overperform overall relative to the S&P500 after the dot-com period, but has provided better margins than non-North American funds. This suggests that while the globalization of private equity investments held some promise in the early 2000s, performances failed both compared to public equities and to North American funds in the years following the financial crises in all regions other than Europe. In the next section, we examine formally whether the changes in performance over the years are explained by fund characteristics and capital inflows across investment styles and regions, and how these performance compare to those in North America. For these following analyses, and to allow for an intuitive readability of the results, we present our tests using the PME measure relative to the broad US equities market (i.e. S&P500). Our conclusions below are unchanged using other measures and public market benchmarks. Table S2-1 in Section S2 of the internet appendix replicates these results with respect to using the

regional and international MSCI indices, the Russell size and value indices, as well as the TVPI as alternative performance measures.

4 The relationship between fund performance and fund characteristics

It has been shown in the literature that considerable capital flows into private equity funds result in poorer subsequent performances, as demand drives up valuations and leaves little room for fund managers to create value (Gompers and Lerner (2000), and Harris et al. (2014), Robinson and Sensoy (2016)). We test this hypothesis by including fund capital commitments as a variable in our regressions. Following Kaplan and Schoar (2005), we also test potential effects of other fund characteristics, including fund sequence, fund age (approximated by the difference in years between the fund's last distribution date and its first capital call date), potential effects of geographical proximity (Teo, 2012), while neutralizing the effects of time, GP skill, and investment styles across the explored geographies. For the latter, we include vintage and firm dummies, as well as, where applicable, investment style dummies. We regress the fund PMEs relative to the S&P500, on the natural logarithm of fund size, the fund's sequence number, the approximated fund's age, and a dummy variable for whether the is backed by a regional or local sponsor. We include a test for how non-North American focused funds compare to North American-focused ones across investment styles, and another test for how the latter compare to global, US-sponsored but geographically diversified funds. We double cluster the standard errors by vintage and firm throughout the analyses, and report the results in Table 4.

[Table 4 around here]

For the total sample, Column 1 in Panel A of table 4 shows that, controlling for GP skill, style and time effects, non-North American focused funds do not significantly yield higher returns compared to pure North American funds for the overall sample, nor, surprisingly, do local GPs significantly have higher advantage. Interestingly, larger fund sizes do not drive performances both for the overall sample and across investment styles and regions, inconsistent with the conventional wisdom in North America. We do find, however, that funds with shorter life spans are significantly and negatively associated with lower performances, as, surprisingly, do subsequent funds compared to previous funds. The respective coefficient estimates show a relative decrease in the PMEs of shorter duration funds by 0.047 in the overall sample, significant at the 1% level, and a reduction of subsequent partnership PMEs by 0.249 on average, also significant at the 1% level. This is verified across all investment styles, except for growth funds where subsequent partnerships show positive potential to repeat higher PMEs on average, although the point estimate is not significant. Across regions in Panel B, these patterns are particularly true for European funds, where increased fund durations and sequences are significantly and negatively associated with an increase in fund PMEs. Consistent with the observed PME patterns in Table 3, these results particularly suggest that there is little room for potential returns to scale, as subsequent funds have on average lower potential to repeat higher than historical PME levels. This could also highlight a potential maturing of the industry, whereby the set of available investment opportunities grows narrower over time, making, if competition also increases, profitable deal sourcing harder, and time needed to create value longer. The negative and significant point estimate

on fund age seems to consistently support this hypothesis, as does the absence of local GP advantage compared to foreign GPs. For Asia Pacific-focused funds, the coefficient estimate on subsequent funds is also negative but insignificant, potentially highlighting random GP skill in this subsample. In other world locations (last column in Table 4 Panel B), we do find results in line with the evidence in the literature on North American funds, whereby increased fund flows are negatively associated with performance ex-post. For this geographical group, the results suggest that more capital flows are associated with significantly and economically large declining performances, as highlighted by the coefficient estimate on the size variable. However, subsequent funds are positively and significantly associated with higher PMEs, suggesting either significant GP skill in these locations or the existence of a better set of investment opportunities. Interestingly, comparing North American and global funds (i.e. funds investing in both the US and internationally), we find a significant and economically large effect of the geographical diversification outside the US home market, especially with a local presence overseas, although the previously highlighted negative effects of fund durations and ability to repeat above historical PMEs remain.

Overall, the results on fund performance using the multivariate analyses above show heterogeneity amongst geographical groups, and leave potential particularities around GP skill as an explanation for the subsequent funds failing to achieve higher PMEs. In the next section, we formally test for fund performance persistence to draw more light on these patterns.

5 Performance persistence

In this section, we analyze fund performance persistence over time across the investment styles and regional groups in the sample. To this end and following the literature, we estimate conditional transition probabilities to measure the ability of funds to repeat given previous performances. Given that the sample size is relatively small, we follow the early literature on North American focused funds in using performance terciles to estimate performance transition matrices[13]. To this end, we limit the sample to funds that have at least one follow-on fund. Then, we sort the funds according to their performance into terciles. As in our previous analyses, we use the PME measure against the S&P500 as a performance measure[14]. We then estimate conditional probabilities that a given partnership's follow-on fund falls into the same tercile as the previous fund. We calculate separate transition matrices for separate investment styles and geographical focus groups, and tabulate the results in Table 5.

[Table 5 around here]

We find evidence of performance persistence in the overall sample. Funds in the top tercile have a 49% chance of repeating among the top performing funds. Persistence is somewhat stronger for worse performing funds, where there are higher chances for funds to remain in the bottom tercile than for good performing funds to remain in the top tercile.

[13] Early papers that studied private equity performance were similarly faced with smaller samples. In the earliest literature on persistence, particularly the seminal paper studying North American funds of Kaplan and Schoar (2005), the authors use a sample of 398 funds. As access to more data on North American funds grew over the years, sample sizes increased allowing for more refined quantiles to be analyzed.

[14] The results are qualitatively unchanged using other performance measures (TVPI) and other benchmarks for the PME calculations.

Over time, persistence has significantly declined after the 2008 financial crisis for the total sample, where the GPs' ability to repeat among the top performing has almost halved, and that of the worse performing funds to repeat among the worse has doubled. To get a sense of the persistence results by investment style, we divide the sample into later stage funds (i.e. buyout funds), and early stage funds (venture capital and growth funds[15]). Persistence is stronger for early stage funds than it is for later stage funds for the total sample. For later stage funds, this is true at both ends of the distribution, where top performers persistently stay top performers and bad performers consistently remain bad performers. An interesting result is that the middle tercile funds, have higher chances of moving to the top tercile than to remain in the same tercile or move to the bottom tercile for buyout funds. We do find some evidence of significantly changing performance persistence over time by investment strategy. The transition probabilities are random prior to the 2007 vintages for early stage investments, while there is evidence of strong persistence for buyout funds. For funds raised after the financial crisis, persistence has significantly declined for buyouts, with top performing funds repeating only 26% of the time, while it spiked for venture capital funds at 73% chance of repeating among the top for the best funds. In comparison with the literature on North American funds, we find these results qualitatively similar. In North America, buyout fund performance has declined over time, while there is evidence of marked persistence in venture capital funds (Harris et al., 2022).

By investment geographical focus, we do not find any evidence of performance persistence in the Asia Pacific region nor in other parts of the world both individually and

[15] We group the sample of venture capital and growth funds to have a relatively meaningful number of funds for these analyses, as the number of growth funds is small in the sample. We get similar results by restricting this test to pure strategies although the sample sizes are relatively small.

collectively. A chi-square test for the equality of terciles is insignificant. We conclude with regards to the results in Table 3 that fund performances are rather explained by local market conditions. European funds show relative top quartile persistence, with top performing funds repeating 54% of the time and having an at most chance of falling into one of the below terciles of 31%. Bad performing funds in Europe remain in the lower tercile 62% of the time. Although persistence dropped after the financial crisis, average tercile PME measures show that European funds still delivered on top and above par with the public market even for the middle tercile, highlighting significant GP skill for European funds even if investors are with the average GP. The same id true for global funds, where we find significant persistence at both ends of the distribution. Top performing funds and worse performing funds consistently remain so. Funds in the middle tercile have higher chances of moving to the lower tercile than making it to the top terciles. There is a marked difference between performance terciles both for European funds and globally investing funds, where the chi-square test for the equality of terciles is significant at the 1% level for both geographical groups. We do find marked drops in performance persistence for global funds after the financial crisis, even though average tercile PMEs are at stronger levels than observed for European funds.

Overall, performance seems to pertain markedly to individual GP skill for European and global funds, while market conditions seem to rather drive the success of funds in Asia Pacific and other parts of the world.

6 Conclusion

Academic studies of private equity performance outside the North American scope have so far been hindered by the lack of data. We exploit newly available data from Eurekahedge and merge it with Preqin cashflow data to draw a first picture of the geographical distribution and characteristics of fund performance. Our sample comprises 614 partnerships totaling over a trillion dollars in committed capital across 34 countries. We present some of the characteristics of these funds in terms of contractual designs and absolute returns, and assess their performances relative to a variety of public market equities. We also investigate the relationship between fund performance and fund characteristics, and study performance persistence over time, across investment styles, and geographical focuses. We find evidence of superior returns and strong persistence in Europe, although performance declines over time. Funds focused on Asia Pacific and other parts of the world do not particularly exhibit strong returns or persistence and have disappointed overall. Non-North American funds persistently repeat at both ends of the distribution, where both top performers and bad performers consistently fall within similar tercile returns over time. Persistence has considerably declined after 2008, although top performing funds continue to show marked outperformance compared to both public equities and the typical fund in the sample across all geographical groups.

7 References

Bae, K. H., Tan, H., & Welker, M. (2008). International GAAP differences: The impact on foreign analysts. The Accounting Review, 83(3), 593-628.

Bengtsson, Ola and Ravid, S. Abraham, (2009). The Importance of Geographical Location and Distance on Venture Capital Contracts. Working paper.

Bernstein, S., Lerner, J., Sorensen, M., & Strömberg, P. (2017). Private equity and industry performance. Management Science, 63(4), 1198-1213.

Chen, H., Gompers, P.A., Kovner, A., and Lerner, J., (2010), "Buy Local? The Geography of Successful Venture Capital Expansion." Journal of Urban Economics 67, no. 1, 90–110.

Coval, J. D., & Moskowitz, T. J. (2001). The geography of investment: Informed trading and asset prices. Journal of political Economy, 109(4), 811-841.

Cumming, D. J., & Johan, S. A. (2013). Venture capital and private equity contracting: An international perspective. Academic Press.

Cumming, D., & Walz, U. (2010). Private equity returns and disclosure around the world. Journal of International Business Studies, 41(4), 727-754.

Fang, D. (2019). Dry powder and short fuses: Private equity funds in emerging markets. Journal of Corporate Finance, 59, 48-71.

Gompers, P., and Lerner, J., (2000), “Money chasing deals? The impact of fund inflows on private equity valuations”, Journal of Financial Economics,Volume 55, Issue 2, Pages 281-325, ISSN 0304-405X

Hanby, M., Kanuri, S., Fulmore, A., & Mcleod, R. (2022). Private Equity (PE) Performance Around the World. The Journal of Applied Business and Economics, 24(3), 159-168.

Harris, R., Jenkinson, T., Kaplan, S. N. and Stucke, R., (2022), “Has Persistence Persisted in Private Equity? Evidence from Buyout and Venture Capital Funds” Fama-Miller Working Paper

Harris, R., T. Jenkinson, and R. Stucke, (2010), “A White Paper on Private Equity Data and Research”. UAI Foundation Working Paper, University of Virginia

Harris, R.., Tim Jenkinson, and Steven N. Kaplan, (2014), “Private Equity Performance: What Do We Know?” Journal of Finance, October, 1851-1882.

Harris, Robert S., Tim Jenkinson, and Steven N. Kaplan, (2016), “How Do Private Equity Investments Perform Compared to Public Equity?” Journal of Investment Management 14, 1-24.

Johan, S., & Zhang, M. (2016). Private equity exits in emerging markets. Emerging markets review, 29, 133-153.

Kaplan, S. N., and A. Schoar, (2005). Private Equity Returns: Persistence and Capital flows. Journal of Finance 60, 1791-1823.

Larocque, S., Shive, S., & Stevens, J. S. (2022). Private Equity Performance and the Effects of Cash-Flow Timing. The Journal of Portfolio Management, 48(9), 86-102.

Leeds, R. S., & Satyamurthy, N. (2015). Private equity investing in emerging markets: Opportunities for value creation. Palgrave Macmillan.

Lerner, J., & Baker, M. (2017). An Empirical Analysis of Investment Return Dispersion in Emerging Market Private Equity. The Journal of Private Equity, 20(4), 15-24.

Malloy, C. J. (2005). The geography of equity analysis. The Journal of Finance, 60(2), 719-755.

Mingo, S., Morales, F., & Dau, L. A. (2018). The interplay of national distances and regional networks: Private equity investments in emerging markets. Journal of International Business Studies, 49(3), 371-386.

Phalippou, L. (2008). The hazards of using IRR to measure performance: The case of private equity. Available at SSRN 1111796.

Robinson, D. and B. Sensoy, (2016). Cyclicality, Performance Measurement, and Cash Flow Liquidity in Private Equity. Journal of Financial Economics 122, 521-543.

Robinson, David and Berk Sensoy, (2013). Do Private Equity Fund Managers Earn their Fees? Compensation, Ownership, and Cash Flow Performance. Review of Financial Studies 26, 2760-2797.

Sannajust A., Groh A., (2020), There's no need to be a pioneer in emerging private equity markets, Journal of Corporate Finance, 65.

Sorensen, M. and Jagannathan, R., (2015). The Public Market Equivalent and Private Equity Performance. Financial Analysts Journal 71, 43-50

Strömberg, P. (2008). The new demography of private equity. The global impact of private equity report, 1, 3-26.

Stucke, R. (2011). Updating history. Available at SSRN 1967636.

Teo, M. (2012). The geography of private equity. Asia Private Equity Institute (APEI), Private Equity Insights Q3

Teo, M. (2009). The geography of hedge funds. The Review of Financial Studies, 22(9), 3531-3561.

Table 1: Number of funds

This table shows the distribution of private equity funds throughout the sample vintages by investment style (Panel A) and geographical focus (Panel B). We consider corporate strategies only, namely buyouts, growth equity and venture capital. Values are expressed in 2018 US dollars. Regional or local funds are funds backed with a firm in-situ or in a neighboring country.

Panel A – By vintage year and investment strategy

Investment Strategy	Vintage year	Number of funds	Total Committed Capital (in 2018 USDm)	Number of regional or local funds
	1990	1	2,546	1
	1992	1	341	1
	1993	2	467	1
	1994	2	3,320	2
	1995	4	5,753	3
	1996	7	16,120	5
	1997	6	5,259	4
	1998	15	39,208	11
	1999	6	59,692	6
	2000	7	27,051	4
	2001	11	38,127	6
	2002	5	15,725	5
	2003	6	26,826	5
Buyout	2004	8	11,204	7
	2005	21	64,913	19
	2006	23	98,121	21
	2007	32	80,779	30
	2008	34	159,671	31
	2009	14	33,627	12
	2010	12	8,319	11
	2011	31	37,496	29
	2012	22	39,686	19
	2013	27	41,592	25
	2014	30	46,912	27
	2015	31	26,888	30
	2016	40	56,134	27
	2017	17	17,348	16
Buyout Total/Average		**415**	**963,126**	**358**
	1990	1	233	1
	1993	1	680	1
	1995	1	419	1
	2001	1	241	1
	2005	4	2,587	2
	2006	1	250	1
	2007	7	5,033	7
	2008	13	11,919	12
Growth Equity	2009	2	1,615	1
	2010	6	5,790	4
	2011	8	3,549	8
	2012	6	3,928	4
	2013	8	3,318	7
	2014	13	5,999	13
	2015	9	7,546	9
	2016	6	3,364	1
	2017	5	1,172	2
Growth Total/Average		**92**	**57,642**	**75**

Table 1: Number of funds – *Continued*

Panel A – By vintage year and investment strategy – *Continued*

Investment Strategy	Vintage year	Number of funds	Total Committed Capital (in 2018 USDm)	Number of regional or local funds
	1990	3	2,286	3
	1991	1	20	1
	1992	1	88	1
	1995	1	3,217	1
	1996	2	241	1
	1997	2	872	2
	1998	1	623	0
	2000	7	4,334	5
	2001	6	1,963	4
	2002	1	32	1
	2003	1	195	1
	2004	3	970	2
Venture Capital	2005	4	727	4
	2006	3	614	3
	2007	8	2,338	7
	2008	7	2,435	4
	2009	4	1,673	4
	2010	2	207	2
	2011	6	2,203	5
	2012	5	1,850	4
	2013	7	4,289	5
	2014	6	1,466	5
	2015	11	2,926	9
	2016	10	1,788	3
	2017	5	1,703	1
VC Total/Average		**107**	**39,063**	**78**
Overall Total/Average		**614**	**1,059,831**	**511**

Table 1: Number of funds – *Continued*

Panel B – By vintage year and geographical focus

Geographical focus	Vintage year	Number of funds	Total Committed Capital (USDm)	Number of regional or local funds	Number of buyout funds
	1991	1	20	1	0
	1995	2	759	1	2
	1998	1	276	1	1
	2000	2	2,198	2	1
	2001	4	3,561	3	3
	2004	3	1,870	3	3
	2005	7	9,170	5	3
	2006	8	12,831	8	6
	2007	12	16,608	11	6
Asia Pacific	2008	22	28,931	18	8
	2009	5	4,705	4	2
	2010	8	8,421	7	4
	2011	15	14,350	14	7
	2012	9	12,581	4	5
	2013	13	23,044	12	9
	2014	19	20,648	18	7
	2015	17	26,651	15	7
	2016	12	27,987	9	8
	2017	2	7,145	1	1
Asia Pacific Total/Average		**162**	**221,755**	**137**	**83**
	1990	5	5,066	5	1
	1992	1	341	1	1
	1993	3	1,147	2	2
	1994	2	3,320	2	2
	1995	3	8,212	3	2
	1996	5	13,074	3	5
	1997	5	5,138	4	4
	1998	12	35,224	8	12
	1999	6	59,692	6	6
	2000	9	26,588	5	6
	2001	14	36,770	8	8
	2002	6	15,757	6	5
	2003	5	26,007	5	5
Europe	2004	5	9,334	4	5
	2005	20	58,688	18	17
	2006	17	79,551	16	15
	2007	27	66,109	25	21
	2008	28	139,918	26	24
	2009	15	32,211	13	12
	2010	11	4,008	9	7
	2011	21	19,139	20	15
	2012	20	31,488	20	15
	2013	25	21,540	22	17
	2014	25	29,194	24	19
	2015	32	8,684	31	23
	2016	33	30,074	20	26
	2017	21	12,578	18	16
Europe Total/Average		**376**	**778,851**	**324**	**291**

Table 1: Number of funds – *Continued*

Panel B – By vintage year and geographical focus – *continued*

Geographical focus	Vintage year	Number of funds	Total Committed Capital (USDm)	Number of regional or local funds	Number of buyout funds
ROW	1992	1	88	1	0
	1995	1	419	1	0
	1996	4	3,287	3	2
	1997	3	992	2	2
	1998	3	4,330	2	2
	2000	3	2,599	2	0
	2003	2	1,014	1	1
	2004	3	970	2	0
	2005	2	369	2	1
	2006	2	6,604	1	2
	2007	8	5,432	8	5
	2008	4	5,177	3	2
	2010	1	1,887	1	1
	2011	9	9,760	8	9
	2012	4	1,395	3	2
	2013	4	4,615	3	1
	2014	5	4,535	3	4
	2015	2	2,026	2	1
	2016	11	3,226	2	6
	2017	4	500	0	0
ROW Total /Average		**76**	**59,225**	**50**	**41**
Overall Total /Average		**614**	**1,059,831**	**511**	**415**

Table 2: Money multiples

This table shows the average and median money multiple of the funds in the sample, by investment style and geographical focus. The money multiple for the individual funds is the TVPI (total value to paid-in), calculated as the ratio of (i) the total distributions to investors plus the residual value of the fund, and (ii) the total fund commitments.

Panel A – By vintage year and investment strategy

Investment Strategy	Vintage year	Number of funds	Average TVPI	Median TVPI
	1990	1	1.32	1.32
	1992	1	1.59	1.59
	1993	2	1.80	1.80
	1994	2	2.05	2.05
	1995	4	1.10	0.68
	1996	7	1.97	1.62
	1997	6	0.89	0.94
	1998	15	1.60	1.30
	1999	6	1.63	1.22
	2000	7	1.87	1.94
	2001	11	1.90	1.58
	2002	5	2.12	2.00
	2003	6	2.55	1.82
Buyout	2004	8	1.26	1.16
	2005	21	1.24	1.28
	2006	23	1.09	1.01
	2007	32	1.10	1.11
	2008	34	1.38	1.25
	2009	14	0.99	0.89
	2010	12	1.06	0.87
	2011	31	1.09	1.09
	2012	22	0.96	0.92
	2013	27	0.77	0.60
	2014	30	0.76	0.49
	2015	31	0.50	0.36
	2016	40	0.68	0.59
	2017	17	0.17	0.11
Buyout Total/Average		**415**	**1.31**	**1.17**
	1990	1	1.07	1.07
	1993	1	2.75	2.75
	1995	1	1.05	1.05
	2001	1	1.06	1.06
	2005	4	2.35	1.68
	2006	1	1.92	1.92
	2007	7	0.95	0.97
	2008	13	1.59	0.75
Growth Equity	2009	2	0.97	0.97
	2010	6	0.81	0.68
	2011	8	0.97	1.12
	2012	6	0.60	0.32
	2013	8	1.20	1.36
	2014	13	0.67	0.77
	2015	9	0.80	0.89
	2016	6	0.51	0.52
	2017	5	1.17	1.17
Growth Equity Total/Average		**92**	**1.20**	**1.12**

Table 2: Money multiples – *continued*

Panel A – By vintage year and investment strategy – *continued*

Investment Strategy	Vintage year	Number of funds	Average TVPI	Median TVPI
	1990	3	2.47	2.33
	1991	1	1.10	1.10
	1992	1	2.79	2.79
	1995	1	1.21	1.21
	1996	2	0.56	0.56
	1997	2	2.46	2.46
	1998	1	0.35	0.35
	2000	7	0.94	0.88
	2001	6	0.86	0.63
	2002	1	0.88	0.88
	2003	1	0.21	0.21
	2004	3	0.72	0.14
Venture Capital	2005	4	0.69	0.73
	2006	3	1.38	0.87
	2007	8	1.27	1.16
	2008	7	1.41	0.32
	2009	4	1.53	1.38
	2010	2	2.08	2.08
	2011	6	0.95	0.97
	2012	5	1.35	1.21
	2013	7	1.33	1.17
	2014	6	0.52	0.20
	2015	11	0.49	0.43
	2016	10	0.58	0.55
	2017	5	0.45	0.45
Venture Capital Total/Average		**107**	**1.14**	**1.00**
Overall Total/Average		**614**	**1.22**	**1.10**

Table 2: Money multiples – *continued*

Panel B – By vintage year and geographical focus

Geographical focus	Vintage year	Number of funds	Average TVPI	Median TVPI
	1991	1	1.10	1.10
	1995	2	0.68	0.68
	1998	1	0.13	0.13
	2000	2	1.09	1.09
	2001	4	1.53	1.43
	2004	3	0.81	0.79
	2005	7	1.95	1.38
	2006	8	0.80	0.57
	2007	12	1.02	0.67
Asia Pacific*	2008	22	1.11	0.70
	2009	5	1.40	1.65
	2010	8	0.56	0.43
	2011	15	0.79	0.45
	2012	9	0.56	0.28
	2013	13	1.06	1.20
	2014	19	0.55	0.32
	2015	17	0.53	0.46
	2016	12	0.46	0.24
	2017	2	-	-
Asia Pacific Total/Average		**162**	**0.99**	**0.75**
	1990	5	1.96	2.28
	1992	1	1.59	1.59
	1993	3	2.12	2.56
	1994	2	2.05	2.05
	1995	3	1.42	1.21
	1996	5	2.38	2.21
	1997	5	1.40	1.36
	1998	12	1.93	1.64
	1999	6	1.63	1.22
	2000	9	1.52	1.78
	2001	14	1.50	1.39
	2002	6	1.91	1.91
	2003	5	2.93	2.21
Europe	2004	5	1.53	1.52
	2005	20	1.17	1.19
	2006	17	1.36	1.47
	2007	27	1.19	1.17
	2008	28	1.78	1.52
	2009	15	0.99	0.99
	2010	11	1.45	1.48
	2011	21	1.30	1.33
	2012	20	1.16	1.21
	2013	25	0.76	0.81
	2014	25	0.93	0.99
	2015	32	0.57	0.43
	2016	33	0.66	0.57
	2017	21	0.51	0.38
Europe Total/Average		**376**	**1.47**	**1.42**

Table 2: Money multiples – *continued*

Panel B – By vintage year and geographical focus – *continued*

Geographical focus	Vintage year	Number of funds	Average TVPI	Median TVPI
ROW*	1992	1	2.79	2.79
	1995	1	1.05	1.05
	1996	4	0.76	0.94
	1997	3	1.07	0.47
	1998	3	0.37	0.35
	2000	3	1.26	1.47
	2003	2	0.45	0.45
	2004	3	0.72	0.14
	2005	2	0.54	0.54
	2006	2	0.86	0.86
	2007	8	0.99	1.04
	2008	4	0.82	0.78
	2010	1	0.59	0.59
	2011	9	0.92	1.04
	2012	4	0.68	0.67
	2013	4	1.68	1.68
	2014	5	0.48	0.35
	2015	2	0.31	0.31
	2016	11	0.91	0.92
	2017	4	-	-
ROW Total /Average		**76**	**0.91**	**0.87**
Overall Total /Average		**614**	**1.14**	**1.07**

* The funds in the 2017 vintages for these geographical groups have not made any distributions, hence the TVPI is not calculated.

Table 3: Fund PMEs

This table shows the vintage year average PMEs by fund investment strategy and geographical focus. The reported PMEs are computed relative to a similar timed investment in the international and regional MSCI indices, as well as the S&P500 and the Russell smaller indices (2000, 2000 Growth, 2000 Value).

Panel A – By vintage year and investment strategy

Investment Strategy	Vintage	MSCI World	MSCI Europe, Australia and Far East	MSCI Europe	S&P500	Russell 2000	Russell 2000 Growth
	1990	0.92	1.03	0.87	0.80	0.79	0.84
	1992	1.43	1.52	1.40	1.33	1.37	1.47
	1993	1.66	1.71	1.63	1.62	1.65	1.68
	1994	1.81	1.97	1.75	1.66	1.74	1.88
	1995	1.06	1.05	1.04	1.07	1.00	1.05
	1996	1.87	1.89	1.85	1.85	1.74	1.85
	1997	0.88	0.87	0.87	0.90	0.80	0.87
	1998	1.58	1.56	1.55	1.60	1.40	1.54
	1999	1.57	1.55	1.54	1.60	1.48	1.53
	2000	1.65	1.63	1.63	1.70	1.55	1.56
	2001	1.76	1.80	1.80	1.75	1.69	1.66
	2002	1.77	1.73	1.73	1.83	1.71	1.70
	2003	2.40	2.52	2.52	2.31	2.29	2.25
Buyout	2004	1.20	1.25	1.25	1.17	1.16	1.13
	2005	1.16	1.25	1.26	1.09	1.07	1.03
	2006	0.97	1.06	1.06	0.90	0.89	0.86
	2007	1.00	1.06	1.06	0.96	0.96	0.94
	2008	1.28	1.33	1.32	1.25	1.26	1.25
	2009	1.03	1.03	1.04	1.04	1.09	1.10
	2010	1.06	1.06	1.06	1.07	1.07	1.08
	2011	1.16	1.12	1.13	1.21	1.19	1.20
	2012	1.03	1.00	1.00	1.07	1.06	1.08
	2013	0.85	0.82	0.82	0.88	0.87	0.88
	2014	0.84	0.80	0.79	0.88	0.86	0.87
	2015	0.66	0.64	0.64	0.68	0.67	0.66
	2016	0.86	0.85	0.85	0.86	0.88	0.88
	2017	0.63	0.63	0.63	0.63	0.62	0.62
Buyout Total/Average		**1.26**	**1.29**	**1.26**	**1.25**	**1.22**	**1.24**
Total/Average 2010s		0.89	0.87	0.87	0.91	0.90	0.91
Total/Average 2000s		1.42	1.47	1.47	1.40	1.37	1.35
Total/Average 1990s		1.42	1.46	1.39	1.38	1.33	1.41

Table 3: Fund PMEs – *continued*

Panel A – By vintage year and investment strategy – *continued*

Investment Strategy	Vintage	MSCI World	MSCI Europe, Australia and Far East	MSCI Europe	S&P500	Russell 2000	Russell 2000 Growth
	1990	0.92	1.00	0.89	0.83	0.85	0.95
	1993	1.71	2.11	1.51	1.35	1.67	1.89
	1995	0.86	0.94	0.80	0.77	0.71	0.93
	2001	1.04	1.06	1.07	1.03	1.00	0.97
	2005	2.34	2.37	2.37	2.32	2.32	2.29
	2006	2.32	2.84	2.98	2.00	1.88	1.67
	2007	0.83	0.89	0.89	0.78	0.77	0.76
	2008	1.50	1.52	1.51	1.49	1.51	1.50
Growth Equity	2009	1.02	1.02	1.03	1.03	1.07	1.08
	2010	0.84	0.82	0.82	0.86	0.87	0.89
	2011	0.99	0.99	0.99	0.99	1.00	1.00
	2012	0.62	0.61	0.61	0.63	0.63	0.63
	2013	1.20	1.15	1.16	1.24	1.21	1.23
	2014	0.79	0.76	0.74	0.82	0.80	0.81
	2015	0.87	0.85	0.84	0.89	0.90	0.89
	2016	0.64	0.64	0.63	0.65	0.66	0.66
	2017	1.01	1.01	1.01	1.01	1.00	1.01
Growth Equity Total/Average		**1.15**	**1.21**	**1.17**	**1.10**	**1.11**	**1.13**
Total/Average 2010s		0.87	0.85	0.85	0.89	0.88	0.89
Total/Average 2000s		1.51	1.62	1.64	1.44	1.43	1.38
Total/Average 1990s		1.17	1.35	1.06	0.98	1.08	1.25

Table 3: Fund PMEs – *continued*

Panel A – By vintage year and investment strategy – *continued*

Investment Strategy	Vintage	MSCI World	MSCI Europe, Australia and Far East	MSCI Europe	S&P500	Russell 2000	Russell 2000 Value
	1990	1.71	1.97	1.61	1.47	1.60	1.54
	1991	0.65	0.74	0.62	0.56	0.56	0.57
	1992	2.79	2.79	2.79	2.79	2.79	2.79
	1995	1.16	1.16	1.15	1.17	1.09	1.06
	1996	0.56	0.56	0.56	0.56	0.56	0.56
	1997	2.36	2.36	2.39	2.37	2.30	2.29
	1998	0.34	0.33	0.33	0.34	0.32	0.31
	2000	0.88	0.89	0.90	0.87	0.83	0.83
	2001	0.73	0.74	0.75	0.75	0.69	0.71
	2002	0.69	0.75	0.75	0.66	0.62	0.65
	2003	0.18	0.19	0.19	0.18	0.17	0.17
	2004	0.74	0.74	0.74	0.73	0.73	0.73
Venture Capital	2005	0.62	0.71	0.72	0.56	0.55	0.57
	2006	1.09	1.29	1.32	0.95	0.92	0.96
	2007	1.09	1.14	1.14	1.06	1.06	1.07
	2008	1.41	1.41	1.41	1.41	1.41	1.41
	2009	1.67	1.66	1.67	1.68	1.74	1.73
	2010	2.14	2.07	2.08	2.22	2.27	2.20
	2011	1.11	1.08	1.10	1.15	1.15	1.13
	2012	1.49	1.44	1.44	1.54	1.54	1.51
	2013	1.39	1.30	1.30	1.48	1.43	1.40
	2014	0.94	0.90	0.89	0.97	0.98	0.96
	2015	0.79	0.76	0.75	0.82	0.80	0.81
	2016	0.84	0.83	0.82	0.84	0.86	0.87
	2017	0.57	0.58	0.58	0.57	0.57	0.57
Venture Capital Total/Average		**1.12**	**1.14**	**1.12**	**1.11**	**1.10**	**1.10**
Total/Average 2010s		1.16	1.12	1.12	1.19	1.19	1.17
Total/Average 2000s		0.91	0.95	0.96	0.88	0.87	0.88
Total/Average 1990s		1.37	1.42	1.35	1.32	1.32	1.30
Overall Total/Average		**1.18**	**1.21**	**1.19**	**1.16**	**1.15**	**1.16**

Table 3: Fund PMEs – *continued*

Panel B – By vintage year and geographical focus

Geographical focus	Vintage	MSCI World	MSCI Europe, Australia and Far East	MSCI Europe	S&P500	Russell 2000	Russell 2000 Growth	Russell 2000 Value
	1991	0.65	0.74	0.62	0.56	0.56	0.58	0.57
	1995	0.66	0.65	0.65	0.67	0.63	0.64	0.61
	1998	0.12	0.12	0.12	0.12	0.11	0.11	0.11
	2000	0.97	1.01	1.00	0.95	0.89	0.88	0.91
	2001	1.44	1.50	1.50	1.39	1.34	1.30	1.39
	2004	0.80	0.83	0.83	0.77	0.77	0.75	0.79
	2005	1.91	1.97	1.98	1.86	1.84	1.80	1.88
	2006	0.77	0.86	0.88	0.71	0.68	0.65	0.72
	2007	0.93	0.97	0.97	0.90	0.91	0.90	0.92
Asia Pacific	2008	1.06	1.07	1.07	1.05	1.06	1.06	1.06
	2009	1.50	1.46	1.46	1.55	1.59	1.62	1.57
	2010	0.52	0.54	0.54	0.52	0.52	0.53	0.52
	2011	0.81	0.80	0.80	0.82	0.81	0.82	0.81
	2012	0.62	0.62	0.62	0.63	0.63	0.63	0.62
	2013	1.13	1.11	1.12	1.16	1.14	1.16	1.12
	2014	0.69	0.67	0.66	0.71	0.69	0.70	0.69
	2015	0.70	0.67	0.66	0.71	0.71	0.70	0.72
	2016	0.66	0.65	0.65	0.67	0.68	0.68	0.68
	2017	-	-	-	-	-	-	-
Asia Pacific Total/Average		**0.89**	**0.90**	**0.90**	**0.88**	**0.87**	**0.86**	**0.87**
Total/Average 2010s		0.73	0.72	0.72	0.75	0.74	0.74	0.74
Total/Average 2000s		1.17	1.21	1.21	1.15	1.14	1.12	1.16
Total/Average 1990s		0.77	0.81	0.78	0.74	0.71	0.70	0.72

Table 3: Fund PMEs – *continued*

Panel B – By vintage year and geographical focus – *continued*

Geographical focus	Vintage	MSCI World	MSCI Europe, Australia and Far East	MSCI Europe	S&P500	Russell 2000	Russell 2000 Growth	Russell 2000 Value
	1990	1.40	1.59	1.32	1.21	1.29	1.39	1.23
	1992	1.43	1.52	1.40	1.33	1.37	1.47	1.31
	1993	1.68	1.84	1.59	1.53	1.66	1.75	1.61
	1994	1.81	1.97	1.75	1.66	1.74	1.88	1.64
	1995	1.37	1.36	1.34	1.37	1.29	1.35	1.23
	1996	2.26	2.30	2.25	2.21	2.13	2.25	2.06
	1997	1.37	1.35	1.37	1.39	1.26	1.36	1.21
	1998	1.90	1.88	1.87	1.92	1.68	1.86	1.57
	1999	1.57	1.55	1.54	1.60	1.48	1.53	1.45
	2000	1.34	1.32	1.33	1.38	1.24	1.25	1.23
	2001	1.36	1.38	1.38	1.37	1.31	1.29	1.34
	2002	1.59	1.57	1.57	1.64	1.53	1.51	1.54
	2003	2.74	2.89	2.89	2.64	2.62	2.56	2.68
Europe	2004	1.45	1.51	1.51	1.41	1.40	1.36	1.45
	2005	1.09	1.18	1.19	1.02	1.00	0.96	1.04
	2006	1.19	1.32	1.33	1.09	1.07	1.04	1.10
	2007	1.04	1.11	1.11	0.99	0.99	0.97	1.01
	2008	1.67	1.71	1.71	1.63	1.64	1.63	1.65
	2009	1.05	1.06	1.06	1.04	1.09	1.09	1.09
	2010	1.51	1.48	1.49	1.55	1.56	1.59	1.54
	2011	1.38	1.35	1.36	1.42	1.42	1.43	1.41
	2012	1.26	1.22	1.22	1.30	1.30	1.33	1.28
	2013	0.86	0.80	0.81	0.90	0.88	0.90	0.86
	2014	0.99	0.94	0.92	1.03	1.01	1.02	0.99
	2015	0.77	0.74	0.74	0.79	0.78	0.77	0.79
	2016	0.85	0.85	0.84	0.85	0.87	0.87	0.87
	2017	0.73	0.73	0.74	0.73	0.72	0.73	0.72
Europe Total/Average		**1.39**	**1.43**	**1.39**	**1.37**	**1.34**	**1.38**	**1.33**
Total/Average 2010s		1.04	1.01	1.02	1.07	1.07	1.08	1.06
Total/Average 2000s		1.45	1.51	1.51	1.42	1.39	1.37	1.41
Total/Average 1990s		1.64	1.71	1.60	1.58	1.54	1.65	1.48

Table 3: Fund PMEs – *continued*

Panel B – By vintage year and geographical focus – *continued*

Geographical focus	Vintage	MSCI World	MSCI Europe, Australia and Far East	MSCI Europe	S&P500	Russell 2000	Russell 2000 Growth	Russell 2000 Value
ROW	1992	2.79	2.79	2.79	2.79	2.79	2.79	2.79
	1995	0.86	0.94	0.80	0.77	0.71	0.93	0.58
	1996	0.73	0.71	0.72	0.74	0.67	0.71	0.63
	1997	1.06	1.05	1.05	1.06	1.05	1.05	1.04
	1998	0.35	0.34	0.34	0.36	0.34	0.35	0.33
	2000	1.24	1.25	1.25	1.24	1.23	1.23	1.24
	2003	0.43	0.44	0.44	0.43	0.43	0.43	0.43
	2004	0.74	0.74	0.74	0.73	0.73	0.74	0.73
	2005	0.53	0.54	0.55	0.52	0.52	0.51	0.52
	2006	0.78	0.83	0.83	0.74	0.73	0.72	0.75
	2007	0.91	0.94	0.93	0.90	0.88	0.86	0.90
	2008	0.77	0.80	0.80	0.75	0.75	0.74	0.77
	2010	0.59	0.59	0.59	0.60	0.60	0.60	0.60
	2011	1.08	1.02	1.03	1.14	1.13	1.14	1.11
	2012	0.77	0.74	0.73	0.80	0.79	0.81	0.78
	2013	1.61	1.52	1.51	1.69	1.63	1.64	1.62
	2014	0.66	0.60	0.58	0.71	0.67	0.69	0.66
	2015	0.33	0.32	0.32	0.34	0.36	0.35	0.37
	2016	0.99	0.97	0.96	0.99	1.03	1.02	1.04
	2017	0.83	0.83	0.83	0.83	0.83	0.83	0.83
ROW Total /Average		**0.90**	**0.90**	**0.89**	**0.91**	**0.89**	**0.91**	**0.89**
Total/Average 2010s		0.86	0.82	0.82	0.89	0.88	0.89	0.88
Total/Average 2000s		0.77	0.79	0.79	0.76	0.75	0.75	0.76
Total/Average 1990s		1.16	1.17	1.14	1.15	1.11	1.17	1.07
Overall Total /Average		**1.09**	**1.10**	**1.08**	**1.07**	**1.06**	**1.07**	**1.05**

Table 4: The relationship between fund performance and fund characteristics

The dependent variable is the fund PME relative to the S&P500. *Non North American-focused* is a dummy variable equal to 1 if the fund's investment focus is not North America. *Regional or Local* is a dummy variable which is set to one if the private equity firm is based in the same region or country as the investment focus of the fund. Fund regional distribution is established following the MSCI classification. *Size* is the natural logarithm of the fund's total commitments in 2018 dollars. *Fund age* is a variable to proxy for the fund's duration, expressed as the difference in years between the fund's last distribution date and first capital call date. *Fund sequence* is the fund's sequence number within the fund family by the same GP. Standard errors are double clustered by firm and vintage year. t-statistics are reported in brackets. ***, ** and * denote significance at the 1%, 5% and 10% level respectively.

Panel A – By investment style

	Total Sample	**Buyouts**	**Venture Capital**	**Growth Equity**
Non North American-focused	-0.207	-0.058	-0.243	-0.438
	(-0.74)	(-0.19)	(-0.32)	(-0.50)
Regional or Local	-0.297	-0.315	-0.055	-0.945
	(-1.51)	(-1.37)	(-0.14)	(-1.22)
Size	0.032	0.043	-0.006	0.017
	-1.140	-1.090	(-0.10)	-0.120
Fund age	-0.047***	-0.030*	-0.057**	-0.102*
	(-3.37)	(-1.90)	(-2.09)	(-1.68)
Fund Sequence	-0.249***	-0.208***	-0.227**	0.045
	(-4.34)	(-3.35)	(-2.33)	-0.310
Constant	1.193	0.949	2.607***	1.954
	-1.280	-0.720	-2.670	-1.510
Vintage year, Style and Firm dummies	Yes	-	-	-
Vintage year and Firm dummies	-	Yes	Yes	Yes
Adj. R-sq	0.16	0.30	0.15	0.43
N. obs	2,591	1,389	875	327

Table 4: The relationship between fund performance and fund characteristics – *continued*

The dependent variable is the fund PME relative to the S&P500. *Non North American-Focus* is a dummy variable equal to 1 if the fund's investment focus is not North America. *Regional or Local* is a dummy variable which is set to one if the private equity firm is based in the same region or country as the investment focus of the fund, or, for global funds, has a local branch. Regional distribution is established following the MSCI classification. *Size* is the natural logarithm of the fund's total commitments in 2018 dollars. *Fund age* is a variable to proxy for the fund's age, expressed as the difference in years between the fund's first capital call date and the last distribution date. *Fund sequence* is the fund's sequence number within the fund family by the same GP. Standard errors are double clustered by firm and vintage year. t-statistics are reported in brackets. ***, ** and * denote significance at the 1%, 5% and 10% level respectively.

Panel B – By geographical focus

	Asia Pacific	**Europe**	**North America and Global**	**ROW**
Regional or Local	0.123	0.196	1.607**	-0.201
	-0.35	-0.6	-2.17	(-0.57)
Size	0.101	-0.015	0.049	-0.267***
	-0.41	(-0.47)	-1.21	(-2.99)
Fund age	-0.262***	-0.091***	-0.046***	0.057
	(-2.61)	(-3.15)	(-2.89)	-1.26
Fund Sequence	-0.097	-0.222**	-0.261***	0.288***
	(-0.69)	(-2.23)	(-3.92)	-3.13
Global			2.117***	
			-2.77	
Constant	2.314	3.429***	0.983	2.893*
	-0.73	-2.91	-1.43	-1.68
Vintage year, Style and Firm dummies	Yes	Yes	Yes	Yes
Adj. R-sq	0.49	0.43	0.15	0.88
N. obs	158	349	2,022	62

Table 5: Performance persistence

This table reports the performance transition probabilities across fund performance terciles. Performance is measured as the fund's PME relative to the S&P500. Separate estimations are provided by time periods, investment styles and geographical focus.

Panel A – By investment style

Total sample															
	All funds				Pre-2009				Post-2008				Average Tercile PME		
	1st	2nd	3rd	N	1st	2nd	3rd	N	1st	2nd	3rd	N	All funds	Pre-2009	Post-2008
1st	48.8%	32.9%	18.3%	82	60.0%	32.5%	7.5%	40	38.1%	33.3%	28.6%	42	1.43	1.70	1.17
2nd	28.2%	49.5%	22.3%	103	31.0%	48.3%	20.7%	29	27.0%	50.0%	23.0%	74	1.04	1.09	1.02
3rd	12.9%	21.2%	65.9%	85	7.7%	53.9%	38.5%	13	13.9%	15.3%	70.8%	72	0.58	0.64	0.57
Buyouts															
	All funds				Pre-2009				Post-2008				Average Tercile PME		
	1st	2nd	3rd	N	1st	2nd	3rd	N	1st	2nd	3rd	N	All funds	Pre-2009	Post-2008
1st	46.9%	31.3%	21.9%	64	66.7%	27.3%	6.1%	33	25.8%	35.5%	38.7%	31	1.39	1.81	0.94
2nd	31.2%	45.5%	23.4%	77	30.4%	52.2%	17.4%	23	31.5%	42.6%	25.9%	54	1.05	1.07	1.05
3rd	13.3%	16.7%	70.0%	60	0.0%	50.0%	50.0%	6	14.8%	13.0%	72.2%	54	0.55	0.48	0.56
Venture Capital and Growth Equity															
	All funds				Pre-2009				Post-2008				Average Tercile PME		
	1st	2nd	3rd	N	1st	2nd	3rd	N	1st	2nd	3rd	N	All funds	Pre-2009	Post-2008
1st	55.6%	38.9%	5.6%	18	28.6%	57.1%	14.3%	7	72.7%	27.3%	0.0%	11	1.57	1.16	1.83
2nd	19.2%	61.5%	19.2%	26	33.3%	33.3%	33.3%	6	15.0%	70.0%	15.0%	20	0.99	1.15	0.95
3rd	12.0%	32.0%	56.0%	25	14.3%	57.1%	28.6%	7	11.1%	22.2%	66.7%	18	0.67	0.78	0.63

Table 5: Performance persistence – *continued*

Panel B – By investment geography

	All funds				Pre-2009				Post-2008				Average Tercile PME		
Europe															
	1st	**2nd**	**3rd**	**N**	**1st**	**2nd**	**3rd**	**N**	**1st**	**2nd**	**3rd**	**N**	**All funds**	**Pre-2009**	**Post-2008**
1st	53.5%	31.0%	15.5%	58	66.7%	30.0%	3.3%	30	39.3%	32.1%	28.6%	28	1.51	1.88	1.12
2nd	34.7%	46.7%	18.7%	75	38.1%	42.9%	19.1%	21	33.3%	48.2%	18.5%	54	1.11	1.13	1.10
3rd	16.2%	21.6%	62.2%	37	25.0%	75.0%	0.0%	4	15.2%	15.2%	69.7%	33	0.65	0.95	0.61
Global funds															
	All funds				**Pre-2009**				**Post-2008**				**Average Tercile PME**		
	1st	**2nd**	**3rd**	**N**	**1st**	**2nd**	**3rd**	**N**	**1st**	**2nd**	**3rd**	**N**	**All funds**	**Pre-2009**	**Post-2008**
1st	57.3%	24.3%	18.5%	103	69.7%	19.7%	10.6%	66	35.1%	32.4%	32.4%	37	2.12	2.57	1.30
2nd	33.9%	28.6%	37.5%	56	50.0%	25.0%	25.0%	20	25.0%	30.6%	44.4%	36	1.25	1.79	0.95
3rd	11.0%	17.8%	71.2%	73	21.1%	26.3%	52.6%	19	7.4%	14.8%	77.8%	54	0.58	0.99	0.44
Asia Pacific and ROW															
	All funds				**Pre-2009**				**Post-2008**				**Average Tercile PME**		
	1st	**2nd**	**3rd**	**N**	**1st**	**2nd**	**3rd**	**N**	**1st**	**2nd**	**3rd**	**N**	**All funds**	**Pre-2009**	**Post-2008**
1st	37.5%	37.5%	25.0%	24	40.0%	40.0%	20.0%	10	35.7%	35.7%	28.6%	14	1.21	1.14	1.27
2nd	10.7%	57.1%	32.1%	28	12.5%	62.5%	25.0%	8	10.0%	55.0%	35.0%	20	0.85	0.97	0.80
3rd	10.4%	20.8%	68.8%	48	0.0%	44.4%	55.6%	9	12.8%	15.4%	71.8%	39	0.53	0.50	0.54

Private Equity Fund Performance around the World

Sara Ain Tommar Serge Darolles Emmanuel Jurczenko

SUPPLEMENTARY RESULTS

In the below sections, we present and briefly discuss supplementary information and additional results to the main analyses in the paper.

S1. On the quality of fund data in the merged sample of Eurekahedge and Preqin

Using the combined sample of fund cashflows from Eurekahedge and Preqin, we replicate and report in the tables below the main analyses of Harris et al. (2014) on fund performance, and Harris et al. (2022) on fund performance persistence for North American-focused funds. The objective of these analyses is to test the quality of our sample's data, by checking whether the coverage of funds allows to replicate the conventional findings on private equity performance and persistence, before extending the use of the data to other international markets. We find the results generally aligned with the literature and conclude that the combined data is unlikely to suffer data quality issues.

S1.1. Table S1-1 compares the coverage of North American-focused funds in the combined Eurekahedge and Preqin sample, relative to other private equity data as reported by Harris et al. (2014). Harris et al. (2014) use the Burgiss data. Kaplan and Schoar (2005) use Venture Economics data, and Robinson and Sensoy (2011)a use proprietary data from a large, anonymous investor. Harris et al. (2022) use the Burgiss data and provide recently updated statistics. Our sample comprises 1,565 unique, corporate-focused, North American invested private equity funds that have cash flow information, including 863 buyout funds and 702 venture capital funds. The total sample is represents 73% of the number of funds in Harris et al. (2014) in the overlap period (between 1984 and 2008), and 63% of

the same universe in more recent statistics by Harris et al. 2022, for vintages between 1984 and 2015. By fund strategy, the combined Eurekahedge and Preqin sample of buyout funds represents about 85% of the reported number of funds in Harris et al. (2014, 2022). For venture capital funds, our sample roughly covers between one half to two thirds of the number of funds in Harris et al., (2014, 2022).

S1.2. Table S1-2 shows the average fund PMEs (Public Market Equivalent) relative to the S&P500 and other US equities benchmarks, for the funds in the combined sample. Comparison is provided with the existing literature on the North American-focused funds in Harris et al. (2014) by vintage year and investment strategy. The reported PMEs are computed relative to a similar timed investment in the S&P500, as well as alternative market benchmarks: the Nasdaq, the Russell indices (3000,2000, 2000 Value, 2000 Growth). We perform tests for the equality of means of the PME results in both our sample and Harris et al. (2014) on the overlapping vintages. We find no statistical evidence that the PME results using the combined sample are different from those reported in the literature.

S1.3. Table S1-3 shows the performance persistence results using the combined sample of Eurekahedge and Preqin, compared to the most recent results on North-American focused funds, described in Harris et al. (2022). For this analysis, we use the PME relative to the S&P500 as a performance measure, across successive funds by vintage year within fund families. We report the results by investment strategy and performance quartile to allow for comparison with the existing literature. Consistent with the literature, we find that top (respectively worse) performing funds continue to consistently yield higher (lower) returns to their investors for both investment strategies. Also consistent with the literature, we find that buyout fund performance declined significantly after the 2000s, while it relatively maintained the same levels for venture capital funds over time.

Table S1-1: Number of Funds

This table shows the number of funds in the combined Eurekahedge and Preqin sample, for which performance data are available. The sample is presented by investment focus and by vintage year, and in comparison with the literature as reported by the seminal paper of Harris et al. (2014), and follow on-statistics from Harris et al. (2022). Panel A shows buyout funds, Panel B shows venture capital funds. Fund strategy classifications are provided by EurekaHedge and Preqin.

Panel A – Buyout funds

Vintage	Our Sample	Harris-Jenckinson-Kaplan-Stucke (2022)	Harris-Jenckison-Kaplan (2014)	Kaplan-Schoar (2005)	Robinson-Sensoy (2011)a
1984	3	2	2	6	
1985	3	4	1	12	
1986	3	4	5	16	1
1987	7	8	7	22	8
1988	6	9	7	21	14
1989	3	10	8	22	16
1990	7	8	2	14	7
1991	2	3	4	6	2
1992	8	9	5	17	4
1993	11	8	11	11	9
1994	20	18	13	6	24
1995	15	26	17	7	24
1996	21	17	9		41
1997	22	30	30		40
1998	39	39	38		59
1999	26	32	28		59
2000	40	51	39		68
2001	22	27	26		26
2002	21	20	21		5
2003	16	22	13		8
2004	29	37	46		3
2005	41	56	57		2
2006	42	57	67		8
2007	49	62	74		6
2008	45	60	68		12
2009	24	22			
2010	28	26			
2011	40	46			
2012	39	47			
2013	42	50			
2014	51	65			
2015	55	48			
2016	47				
2017	24				
2018	12				
Total	863	923	598	160	446
Total 2009-18	362	304			
Total 2000-08	305	392	411		
Total 1990-99	171	200	157	61	269
Total 1984-89	25	37	30	99	39

Table S1-1: Number of Funds – *Continued*

Panel B – Venture Capital funds

Vintage	Our sample	Harris-Jenckinson-Kaplan-Stucke (2022)	Harris-Jenckison-Kaplan (2014)	Kaplan-Schoar (2005)	Robinson-Sensoy (2011)a
1984	2	22	18	57	6
1985	4	26	20	37	5
1986	5	24	12	36	3
1987	5	26	17	63	6
1988	5	28	16	42	9
1989	3	26	18	45	10
1990	7	13	13	20	1
1991	1	6	6	11	
1992	8	17	17	18	4
1993	8	20	13	45	5
1994	9	16	20	49	7
1995	14	29	18	43	13
1996	16	18	20		13
1997	13	44	33		19
1998	22	54	46		36
1999	36	88	65		40
2000	66	112	80		55
2001	42	59	48		18
2002	20	16	18		7
2003	17	19	25		
2004	31	38	32		
2005	34	52	48		1
2006	39	79	62		
2007	48	74	65		2
2008	42	57	45		
2009	10	27			
2010	20	31			
2011	26	46			
2012	20	58			
2013	19	55			
2014	31	76			
2015	25	91			
2016	38				
2017	15				
2018	1				
Total	702	1,347	775	466	260
Total 2009-18	205	384			
Total 2000-08	339	506	423		
Total 1990-99	134	305	251	186	138
Total 1984-89	24	152	101	280	39

Table S1-2: Fund PMEs

This table shows the average PMEs (Public Market Equivalent) for the funds in the combined Eurekahedge and Preqin sample. Comparison is provided with the existing literature on the North American-focused funds (Harris et al. 2014) by vintage year and fund investment strategy. The reported PMEs are computed relative to a similar timed investment in the S&P500, as well as in alternative market benchmarks: the Nasdaq, and the Russell indices: 3000, 2000, 2000 Value, and 2000 Growth.

Panel A – Buyout funds

	Our Sample					Harris et al. (2014)				
			Russell indices					Russell indices		
Vintage year	S&P500	Nasdaq	3000	2000	2000 Value	S&P500	Nasdaq	3000	2000	2000 Value
1984	3.24	3.21	3.26	3.35	4.06	0.87	0.97	0.90	1.15	1.07
1985	0.99	0.97	1.02	1.15	1.13	0.91	0.98	0.94	1.18	1.09
1986	2.73	2.63	2.74	2.77	2.73	1.00	1.02	1.02	1.18	1.10
1987	3.75	3.54	3.74	3.76	3.72	1.25	1.20	1.27	1.43	1.32
1988	1.24	1.04	1.24	1.22	1.19	0.98	0.90	0.99	1.05	0.99
1989	2.71	2.68	2.72	2.74	2.72	1.26	1.15	1.27	1.34	1.23
1990	1.20	1.03	1.20	1.22	1.17	1.57	1.48	1.57	1.58	1.43
1991	0.88	0.77	0.90	1.03	1.04	1.23	1.15	1.25	1.40	1.31
1992	0.96	0.90	0.98	1.06	1.06	0.79	0.78	0.82	0.97	0.92
1993	2.18	2.14	2.17	2.17	2.12	1.35	1.33	1.38	1.62	1.56
1994	1.54	1.50	1.54	1.57	1.54	1.48	1.45	1.52	1.78	1.70
1995	1.17	1.15	1.16	1.15	1.10	1.34	1.30	1.35	1.50	1.43
1996	1.61	1.55	1.59	1.53	1.49	1.13	1.26	1.12	1.02	0.83
1997	1.17	1.18	1.14	1.00	0.92	1.23	1.30	1.19	1.01	0.88
1998	1.28	1.30	1.25	1.09	1.02	1.35	1.56	1.30	1.01	0.81
1999	1.62	1.59	1.59	1.43	1.37	1.19	1.36	1.15	0.92	0.74
2000	1.88	1.80	1.85	1.76	1.76	1.42	1.48	1.38	1.18	1.05
2001	1.35	1.28	1.34	1.29	1.30	1.31	1.27	1.28	1.15	1.12
2002	1.40	1.32	1.38	1.35	1.38	1.42	1.34	1.39	1.28	1.29
2003	1.89	1.76	1.88	1.85	1.91	1.75	1.66	1.72	1.63	1.66
2004	1.52	1.41	1.50	1.48	1.53	1.40	1.30	1.38	1.32	1.36
2005	1.19	1.12	1.19	1.18	1.22	1.20	1.10	1.19	1.12	1.17
2006	1.14	1.05	1.13	1.12	1.17	1.03	0.94	1.02	0.96	0.99
2007	1.50	1.44	1.49	1.50	1.53	1.03	0.95	1.02	0.94	0.97
2008	1.28	1.25	1.28	1.29	1.31	0.91	0.86	0.91	0.85	0.87
2009	1.77	1.75	1.77	1.78	1.79					
2010	1.07	1.06	1.07	1.07	1.06					
2011	1.12	1.12	1.12	1.12	1.12					
2012	1.04	1.05	1.04	1.03	1.02					
2013	0.93	0.97	0.93	0.90	0.88					
2014	0.67	0.70	0.67	0.66	0.65					
2015	0.65	0.66	0.65	0.65	0.66					
2016	0.62	0.64	0.62	0.63	0.63					
2017	0.77	0.79	0.77	0.75	0.74					
2018	0.75	0.74	0.75	0.75	0.75					
Total Average	1.45	1.40	1.45	1.44	1.45	1.22	1.20	1.21	1.22	1.16
Average 2009-18	0.94	0.95	0.94	0.93	0.93					
Average 2000-08	1.46	1.38	1.45	1.42	1.46	1.27	1.21	1.25	1.16	1.16
Average 1990-99	1.36	1.31	1.35	1.33	1.28	1.27	1.30	1.27	1.28	1.16
Average 1984-89	2.45	2.35	2.45	2.50	2.59	1.07	1.04	1.07	1.22	1.13

Table S1-2: Fund PMEs – *Continued*

Panel B – Venture capital funds

	Our Sample					Harris et al. (2014)				
			Russell indices					Russell indices		
Vintage year	S&P500	Nasdaq	3000	2000	2000 Growth	S&P500	Nasdaq	3000	2000	2000 Growth
1984	1.03	1.10	1.07	1.27	-	0.70	0.80	0.73	0.92	1.01
1985	1.04	1.00	1.07	1.23	1.32	0.71	0.76	0.73	0.91	0.98
1986	0.87	0.76	0.88	0.92	0.95	0.75	0.73	0.76	0.86	0.95
1987	1.39	1.19	1.39	1.39	1.43	1.18	1.10	1.18	1.32	1.42
1988	2.56	2.41	2.55	2.57	2.62	1.18	1.07	1.18	1.26	1.34
1989	1.60	1.32	1.60	1.63	1.71	1.34	1.18	1.35	1.45	1.57
1990	1.52	1.42	1.52	1.53	1.59	1.50	1.32	1.50	1.55	1.68
1991	0.85	0.61	0.86	0.99	1.00	1.37	1.23	1.40	1.64	1.75
1992	1.96	1.71	1.99	2.25	2.32	1.27	1.24	1.32	1.56	1.68
1993	2.20	1.95	2.24	2.59	2.64	2.79	2.38	2.92	3.88	3.90
1994	2.94	2.88	2.94	2.97	3.03	2.40	2.10	2.50	3.23	3.35
1995	2.79	2.41	2.82	3.15	3.09	2.16	1.89	2.21	2.59	2.67
1996	2.17	1.87	2.18	2.37	2.28	3.79	3.01	3.85	4.46	4.34
1997	2.21	1.98	2.18	2.09	2.09	2.43	2.05	2.42	2.45	2.42
1998	1.78	1.63	1.75	1.65	1.68	1.43	1.52	1.38	1.15	1.37
1999	0.78	0.78	0.76	0.67	0.72	0.76	0.89	0.73	0.57	0.72
2000	0.78	0.74	0.76	0.72	0.72	0.79	0.83	0.77	0.64	0.73
2001	0.93	0.86	0.92	0.89	0.87	0.80	0.76	0.78	0.69	0.72
2002	0.74	0.68	0.73	0.70	0.68	0.82	0.76	0.80	0.73	0.73
2003	0.79	0.74	0.79	0.79	0.76	0.88	0.82	0.87	0.82	0.80
2004	1.36	1.25	1.35	1.33	1.28	0.90	0.82	0.89	0.83	0.80
2005	0.83	0.80	0.83	0.83	0.82	1.27	1.16	1.26	1.18	1.13
2006	0.75	0.73	0.75	0.74	0.74	0.93	0.85	0.92	0.85	0.82
2007	1.14	1.12	1.14	1.15	1.13	0.97	0.89	0.95	0.88	0.86
2008	0.98	0.99	0.99	1.00	1.00	0.84	0.78	0.83	0.77	0.75
2009	1.22	1.21	1.22	1.25	1.24					
2010	1.22	1.22	1.23	1.24	1.25					
2011	1.20	1.23	1.20	1.20	1.21					
2012	0.89	0.91	0.89	0.90	0.91					
2013	0.89	0.94	0.88	0.85	0.87					
2014	0.89	0.93	0.89	0.86	0.87					
2015	0.77	0.78	0.76	0.76	0.75					
2016	0.74	0.77	0.75	0.76	0.76					
2017	0.80	0.82	0.80	0.79	0.80					
2018	0.51	0.52	0.51	0.51	0.51					
Total Average	1.29	1.21	1.29	1.33	1.34	1.36	1.24	1.37	1.49	1.54
Average 2009-18	0.91	0.93	0.91	0.91	0.92					
Average 2000-08	0.92	0.88	0.92	0.90	0.89	0.91	0.85	0.90	0.82	0.82
Average 1990-99	1.92	1.72	1.92	2.02	2.04	1.99	1.76	2.02	2.31	2.39
Average 1984-89		1.42	1.30	1.43	1.50	0.98	0.94	0.99	1.12	1.21

Table S1-3: Performance persistence

This table This table shows the performance persistence results using the combined Eurekahedge and Preqin sample, compared to the most recent results on North-American focused funds, described in Harris et al. (2022). The performance measure is the PME relative to the S&P500 of successive funds. Results are presented by investment strategy for the current fund quartile, given the previous fund quartile.

Our sample

	All funds					Pre - 2001					Post-2000				
	1	**2**	**3**	**4**	**N**	**1**	**2**	**3**	**4**	**N**	**1**	**2**	**3**	**4**	**N**
	Buyout funds														
1	48.6%	26.2%	13.1%	15.1%	107	75.8%	21.2%	0.0%	3.0%	33	36.5%	28.4%	18.9%	16.2%	74
2	22.6%	24.5%	27.4%	25.5%	106	38.1%	19.1%	33.3%	9.5%	21	18.8%	25.9%	25.9%	29.4%	85
3	19.4%	23.2%	27.8%	29.6%	108	45.0%	15.0%	20.0%	20.0%	20	13.6%	25.0%	29.6%	31.8%	88
4	6.0%	11.0%	22.0%	61.0%	100	18.2%	27.3%	18.2%	36.4%	11	4.5%	9.0%	22.5%	64.0%	89
	Venture Capital funds														
1	39.5%	32.6%	12.8%	15.1%	86	47.4%	21.1%	18.4%	13.2%	38	33.3%	41.7%	8.3%	16.7%	48
2	32.1%	29.8%	26.2%	11.9%	84	40.0%	10.0%	25.0%	25.0%	20	29.7%	35.9%	25.6%	7.8%	64
3	14.1%	21.2%	25.9%	38.8%	85	18.2%	22.7%	18.2%	40.9%	22	12.7%	20.6%	28.6%	38.1%	63
4	8.1%	10.5%	30.2%	51.2%	86	0.0%	25.0%	37.5%	37.5%	8	9.0%	9.0%	29.5%	52.6%	78

Harris et al. (2022)

	All funds					Pre - 2001					Post-2000				
	1	**2**	**3**	**4**	**N**	**1**	**2**	**3**	**4**	**N**	**1**	**2**	**3**	**4**	**N**
	Buyout funds														
1	35.4%	23.6%	25.0%	16.0%	144	42.9%	17.9%	21.4%	17.9%	28	33.6%	25.0%	25.9%	15.5%	116
2	22.8%	23.4%	34.5%	19.3%	145	25.0%	31.3%	28.1%	15.6%	32	22.1%	21.2%	36.3%	20.4%	113
3	20.3%	30.4%	28.3%	21.0%	138	16.3%	20.9%	34.9%	27.9%	43	22.1%	34.7%	25.3%	17.9%	95
4	13.8%	21.3%	26.3%	38.8%	80	14.3%	19.0%	33.3%	33.3%	21	13.6%	22.0%	23.7%	40.7%	59
	Venture Capital Funds														
1	45.1%	23.6%	19.0%	12.2%	237	46.2%	20.4%	18.3%	15.1%	93	44.4%	25.7%	19.4%	10.4%	144
2	25.5%	26.4%	31.0%	17.1%	216	30.1%	24.1%	32.5%	13.3%	83	22.6%	27.8%	30.1%	19.5%	133
3	16.6%	32.1%	30.5%	20.9%	187	19.8%	25.9%	29.6%	24.7%	81	14.2%	36.8%	31.1%	17.9%	106
4	10.0%	20.0%	26.0%	44.0%	125	15.0%	15.0%	23.0%	48.0%	48	7.8%	23.4%	27.3%	41.6%	77

S2. Additional results

S2.1. The relationship between fund performance and characteristics: Additional tests with alternative public market benchmarks for the PME and with the TVPI as an alternative performance measure

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics

This table replicates the regression analyses in table 4 in the main body of the paper using alternative public market benchmarks for the PME calculations and the TVPI as an alternative performance measure. The dependent variable is the fund PME or the TVPI. *Non North American-Focus* is a dummy variable equal to 1 if the fund's investment focus is not North America. *Regional or Local* is a dummy variable which is set to one if the private equity firm is based in the same region or country as the investment focus of the fund, or, for global funds, has a local branch. Regional distribution is established following the MSCI classification. *Size* is the natural logarithm of the fund's total commitments in 2018 dollars. *Fund age* is a variable to proxy for the fund's age, expressed as the difference in years between the fund's first capital call date and the last distribution date. *Fund sequence* is the fund's sequence number within the fund family by the same GP. Standard errors are double clustered by firm and vintage year. t-statistics are reported in brackets. ***, ** and * denote significance at the 1%, 5% and 10% level respectively.

Panel A – Total Sample

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Non North American-focused	-0.212	-0.219	-0.208	-0.222	-0.210	-0.244	-0.286
	(-0.73)	(-0.72)	(-0.71)	(-0.75)	(-0.74)	(-0.77)	(-0.67)
Regional or Local	-0.307	-0.316	-0.319	-0.285	-0.292	-0.274	-0.315
	(-1.52)	(-1.51)	(-1.57)	(-1.39)	(-1.47)	(-1.26)	(-1.19)
Size	0.034	0.035	0.038	0.034	0.032	0.035	0.040
	-1.180	-1.210	-1.340	-1.210	-1.130	-1.220	-1.200
Fund age	-0.040***	-0.032**	-0.038***	-0.046***	-0.045***	-0.044***	-0.024
	(-2.83)	(-2.21)	(-2.70)	(-3.19)	(-3.19)	(-2.95)	(-1.57)
Fund Sequence	-0.253***	-0.257***	-0.253***	-0.252***	-0.247***	-0.258***	-0.274***
	(-4.36)	(-4.36)	(-4.31)	(-4.40)	(-4.41)	(-4.37)	(-4.17)
Constant	1.185	1.166	1.000	1.282	1.440	1.114	1.527
	-1.210	-1.120	-0.980	-1.340	-1.560	-1.110	-1.410
Vintage year, Style and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.15	0.15	0.15	0.14	0.16	0.12	0.17
N. obs	2,591	2,591	2,591	2,591	2,591	2,591	2,421

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel B – By investment strategy: Buyouts

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Non North American-focused	-0.063	-0.067	-0.073	-0.066	-0.062	-0.069	-0.04
	(-0.20)	(-0.21)	(-0.23)	(-0.22)	(-0.21)	(-0.23)	(-0.12)
Regional or Local	-0.320	-0.326	-0.323	-0.304	-0.306	-0.304	-0.343
	(-1.38)	(-1.38)	(-1.36)	(-1.35)	(-1.37)	(-1.33)	(-1.39)
Size	0.048	0.055	0.058	0.048	0.04	0.055	0.06
	-1.190	-1.290	-1.370	-1.22	-1.03	-1.35	-1.23
Fund age	-0.025	-0.020	-0.024	-0.033**	-0.030*	-0.035**	-0.012
	(-1.59)	(-1.23)	(-1.45)	(-2.15)	(-1.94)	(-2.22)	(-0.73)
Fund Sequence	-0.207***	-0.208***	-0.206***	-0.205***	-0.202***	-0.207***	-0.209***
	(-3.31)	(-3.25)	(-3.20)	(-3.34)	(-3.35)	(-3.33)	(-3.10)
Constant	0.789	0.590	0.670	0.949	0.866	0.981	0.54
	-0.580	-0.410	-0.470	-0.71	-0.7	-0.69	-0.36
Vintage year and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.30	0.30	0.30	0.29	0.30	0.28	0.33
N. obs	1,389	1,389	1,389	1,389	1,389	1,389	1,313

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel B – By investment strategy: Venture Capital

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Non North American-focused	-0.278	-0.315	-0.242	-0.312	-0.296	-0.369	-1.413
	(-0.34)	(-0.35)	(-0.29)	(-0.36)	(-0.37)	(-0.38)	(-0.67)
Regional or Local	-0.039	-0.016	-0.063	0.015	-0.015	0.072	-0.063
	(-0.09)	(-0.04)	(-0.15)	-0.03	(-0.04)	-0.15	(-0.13)
Size	-0.010	-0.015	-0.011	-0.004	-0.003	-0.007	-0.03
	(-0.18)	(-0.27)	(-0.19)	(-0.07)	(-0.05)	(-0.13)	(-0.43)
Fund age	-0.047	-0.035	-0.046	-0.048	-0.051*	-0.041	-0.024
	(-1.64)	(-1.16)	(-1.62)	(-1.62)	(-1.78)	(-1.28)	(-0.73)
Fund Sequence	-0.237**	-0.248**	-0.240**	-0.244**	-0.239**	-0.248**	-0.301**
	(-2.35)	(-2.35)	(-2.34)	(-2.43)	(-2.42)	(-2.37)	(-2.21)
Constant	2.473**	2.293**	2.410**	2.389**	2.486**	2.239**	2.221
	-2.420	-2.120	-2.32	-2.37	-2.52	-2.12	-1.2
Vintage year and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.14	0.13	0.12	0.13	0.16	0.09	0.15
N. obs	875	875	875	875	875	875	811

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel B – By investment strategy: Growth equity

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Non North American-focused	-0.447	-0.448	-0.446	-0.483	-0.466	-0.497	-1.567
	(-0.51)	(-0.51)	(-0.52)	(-0.54)	(-0.53)	(-0.55)	(-1.34)
Regional or Local	-0.940	-0.940	-0.941	-0.952	-0.957	-0.947	-1.022
	(-1.21)	(-1.20)	(-1.20)	(-1.23)	(-1.24)	(-1.22)	(-1.32)
Size	0.023	0.030	0.032	0.021	0.026	0.015	-0.058
	-0.170	-0.220	-0.23	-0.15	-0.18	-0.11	(-0.45)
Fund age	-0.099	-0.094	-0.094	-0.108*	-0.109*	-0.106*	-0.094
	(-1.63)	(-1.55)	(-1.55)	(-1.76)	(-1.80)	(-1.72)	(-1.46)
Fund Sequence	0.049	0.055	0.055	0.052	0.048	0.056	0.045
	-0.340	-0.380	-0.38	-0.36	-0.34	-0.38	-0.29
Constant	1.325	0.577	1.268	1.136	1.099	1.089	0.934
	-1.030	-0.440	-0.98	-0.88	-0.86	-0.84	-0.67
Vintage year and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.43	0.44	0.43	0.41	0.42	0.41	0.5
N. obs	327	327	327	327	327	327	297

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel C – By investment geography: Asia Pacific

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Regional or Local	0.11	0.096	0.097	0.112	0.11	0.115	0.135
	-0.32	-0.27	-0.28	-0.31	-0.31	-0.32	-0.39
Size	0.089	0.079	0.088	0.095	0.096	0.094	0.016
	-0.36	-0.32	-0.36	-0.39	-0.4	-0.39	-0.06
Fund age	-0.259**	-0.255**	-0.255**	-0.260**	-0.260**	-0.259**	-0.259***
	(-2.59)	(-2.55)	(-2.55)	(-2.57)	(-2.55)	(-2.59)	(-2.66)
Fund Sequence	-0.094	-0.091	-0.091	-0.094	-0.092	-0.095	-0.128
	(-0.68)	(-0.66)	(-0.65)	(-0.66)	(-0.65)	(-0.67)	(-0.81)
Constant	2.371	2.396	2.317	2.427	2.466	2.368	9.293***
	-0.74	-0.74	-0.71	-0.76	-0.78	-0.74	-2.87
Vintage year, Style and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.49	0.5	0.5	0.48	0.48	0.49	0.52
N. obs	158	158	158	158	158	158	142

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel C – By investment geography: Europe

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Regional or Local	0.167	0.133	0.161	0.16	0.168	0.155	0.163
	-0.5	-0.38	-0.46	-0.48	-0.52	-0.46	-0.44
Size	-0.016	-0.018	-0.015	-0.009	-0.015	-0.005	-0.007
	(-0.50)	(-0.57)	(-0.48)	(-0.31)	(-0.48)	(-0.19)	(-0.17)
Fund age	-0.086***	-0.079***	-0.082***	-0.097***	-0.092***	-0.100***	-0.078**
	(-3.01)	(-2.82)	(-2.92)	(-3.47)	(-3.14)	(-3.68)	(-2.22)
Fund Sequence	-0.223**	-0.224**	-0.225**	-0.224**	-0.212**	-0.233**	-0.256**
	(-2.25)	(-2.26)	(-2.25)	(-2.25)	(-2.18)	(-2.29)	(-2.18)
Constant	3.254***	3.048***	3.116***	3.476***	3.448***	3.531***	2.609***
	-2.81	-2.65	-2.73	-3.06	-2.88	-3.19	-2.89
Vintage year, Style and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.44	0.44	0.44	0.44	0.43	0.44	0.48
N. obs	349	349	349	349	349	349	304

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel C – By investment geography: North America and Global funds

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Regional or Local	1.636**	1.710**	1.666**	1.613**	1.513**	1.700**	-0.523*
	-2.11	-2.07	-2.05	-2.12	-2.05	-2.13	(-1.71)
Size	0.052	0.055	0.058	0.051	0.049	0.051	0.063
	-1.26	-1.31	-1.4	-1.25	-1.22	-1.22	-1.28
Fund age	-0.039**	-0.031*	-0.037**	-0.044***	-0.044***	-0.042**	-0.023
	(-2.39)	(-1.83)	(-2.26)	(-2.69)	(-2.75)	(-2.43)	(-1.30)
Fund Sequence	-0.265***	-0.271***	-0.266***	-0.264***	-0.261***	-0.269***	-0.285***
	(-3.95)	(-3.98)	(-3.90)	(-4.02)	(-4.04)	(-3.99)	(-3.90)
Global	2.160***	2.245***	2.204***	2.115***	2.022***	2.192***	
	-2.7	-2.64	-2.63	-2.7	-2.66	-2.66	
Constant	0.954	0.875	0.777	1.047	1.170*	0.916	3.087***
	-1.32	-1.12	-1.02	-1.47	-1.69	-1.22	-5.49
Vintage year, Style and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.15	0.15	0.14	0.14	0.16	0.12	0.18
N. obs	2022	2022	2022	2022	2022	2022	1919

Table S2-1: Additional tests for the relationship between fund performance and fund characteristics - *continued*

Panel C – By investment geography: ROW

	PME MSCI World	PME MSCI Europe, Australia and Far East	PME MSCI Europe	PME Russell 2000	PME Russell 2000 Growth	PME Russell 2000 Value	TVPI
Regional or Local	-0.151	-0.113	-0.114	-0.126	-0.129	-0.125	1.708***
	(-0.49)	(-0.45)	(-0.41)	(-0.32)	(-0.32)	(-0.33)	-3.77
Size	-0.267***	-0.268***	-0.271***	-0.271***	-0.269***	-0.272***	-0.259***
	(-3.48)	(-4.22)	(-3.85)	(-2.76)	(-2.68)	(-2.85)	(-5.82)
Fund age	0.057	0.057	0.057	0.057	0.058	0.057	0.058
	-1.39	-1.56	-1.48	-1.22	-1.18	-1.26	-1.58
Fund Sequence	0.288***	0.289***	0.292***	0.294***	0.296***	0.293***	0.286***
	-3.6	-4.3	-3.96	-2.95	-2.88	-3.02	-5.22
Constant	2.921*	2.937**	2.917**	2.97	2.916	3.022*	-0.637
	-1.88	-2.12	-2	-1.66	-1.57	-1.76	(-0.63)
Vintage year, Style and Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-sq	0.89	0.9	0.89	0.88	0.87	0.89	0.86
N. obs	62	62	62	62	62	62	56