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# **Home Bias in Leveraged Buyouts\***

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## **Abstract**

In this paper, we examine cross-border investments in 2,260 portfolio companies by 102 buyout funds raised between 1995 and 2004. Using proprietary data compiled by AlpInvest Partners, we calculate the aggregate home bias of these funds as well as their home bias at the fund level. We find a significant variation across funds. While UK-based funds are on average least home-biased, they show a high degree of intra-European bias. By comparison, US funds are found to be least home-biased in terms of inter-regional acquisitions, with Europe being the most important destination for US buyout capital. Furthermore, we find that buyout funds tend to be less home biased than portfolio investors, and more specifically, mutual funds. This finding is consistent with the optimal ownership theory of the home bias, which predicts that foreign direct investment - as opposed to portfolio investment – represents the preferred choice of entry in countries where the quality of governance is perceived to be inferior, promoting insider ownership.

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## I. Introduction

Financial globalization has gathered considerable momentum over the last two decades. In 2007, global cross-border investing – foreign direct investment, purchases of foreign equity and debt securities, and lending and deposits – is estimated to have totaled more than \$11.2 trillion, up from \$1.1 trillion in 1990 (McKinsey, 2008). As a result, the stock of foreign assets and liabilities has grown substantially. According to the *External Wealth of Nations* database compiled by Lane and Milesi-Feretti (2007, 2008), advanced economies now typically hold (gross) cross-border asset and liability positions of well over 200 percent of GDP, a more than doubling since the early 1990s. Apart from the stimulus provided by earlier waves of capital account liberalization, financial deregulation, and falling communication costs, this tremendous growth has been attributed to the rapid pace of financial innovation, especially securitization, the rise of hedge funds, and the widespread use of offshore special purpose vehicles. Emerging economies still represent a relatively small share in global cross-border holdings of financial instruments. However, the recent sharp rise in capital inflows - which has been outpaced by even larger capital outflows - suggests that their role in financial globalization is set to increase.

Although portfolio investors have become less home-biased in recent years, they continue to allocate a disproportionately large share of capital to their home markets. While the share of foreign equities in U.S. investors' equity portfolios went up to 17 percent in 2005 from 10 percent in 2001, it was still substantially smaller than the 61 percent predicted by the International Capital Asset Pricing Model (IMF, 2007). The decline in the home bias in recent years has been particularly pronounced in Europe. However, this fall has been largely due to the process of monetary and financial integration within the eurozone, causing a shift from home bias to "intra-European" bias. The reasons why investors choose to be underdiversified internationally are not fully understood, however. While the home bias in portfolio investing has attracted substantial interest ever since French and Poterba's classical 1991 paper, it remains one of the unresolved puzzles in the international finance literature.

Promising new research on the home bias has recently been presented by Chan et al. (2005) and Hau and Rey (2008). Their papers attempt to shed new light on investors' preferences by using micro data from mutual funds as opposed to country-level data used in most previous research. These cross-border holdings data – compiled by Thomson Financial Securities - add a significant degree of granularity in two important aspects: First, they allow distinguishing the domestic and foreign components of home bias. By covering a large number of countries, the data reflect not only the extent to which mutual fund investors overweigh their home markets, but they also mirror the extent to which investors underweigh or overweigh individual foreign markets. Second, the data are disaggregated enough to study patterns of heterogeneity in the degree of home bias at the fund level, such as the extent to which the home bias varies with the size of funds. The findings of this new research provide additional challenges as theories of home bias need to be compatible with a significantly more complex picture than country-level data are able to present.

The present paper aims to provide further granularity to the home bias puzzle by examining the extent to which buyout funds have invested globally. Buyout funds are fundamentally different from mutual funds in terms of their structure, their investor base and their investment approach (Kaplan and Strömberg, 2009). Typically, buyout funds are closed-end vehicles with an expected life span of around ten years. The funds are set up by private equity firms who serve as general partners (GPs) of the fund. Investors or limited partners (LPs) in the fund are usually corporate and public pension funds, insurance companies, endowments and wealthy individuals. On the investment side, the buyout fund usually acquires the majority of a company or a division spun off by a company. Most transactions involve privately-held firms. While public-to-private transactions are less common, they generally involve larger firms and have accounted for more than a quarter of the capital deployed by buyout funds between 1970 and 2007.

To our knowledge, this is the first paper to present stylized facts on home bias in leveraged buyouts (LBOs). Our paper is related with a recent study by Aizenman and Kendall (2008) who examine cross-border flows in private equity and the determinants of the direction of such flows. However, their analysis remains at the market level and is mainly focused on venture capital flows. More importantly, their dataset suffers from a number of significant limitations. Specifically, their "...deal level data do not contain the actual amount invested by each investment firm but have only the name and headquarters location of each investor as well as the total amount invested by all participating investor firms." In the absence of detailed deal level data, the authors assume that each investor invests the same amount, an assumption, however, that introduces a considerable margin of error.

We believe that examining the degree to which buyout funds invest internationally can provide important new insights in the home bias puzzle for the following reasons. First, although the capital managed by buyout funds is comparatively small, the fact that buyout deals typically include substantial amounts of debt has propelled their share in the global M&A market to almost 30 percent in the most recent cycle. Second, many institutional investors and high net worth individuals have considerably increased their allocations to private equity in recent years in search of higher yield and potential diversification gains. Third, cross-border capital flows in private equity foster not only financial globalization, but may also enhance our knowledge about the dynamics of regional integration. Finally, LBOs are directly relevant for what has been labeled the "optimal ownership theory of the home bias" (Kho et al. 2007). According to this approach, the home bias is largely a function of the quality of institutions, with weaker governance leading to a higher level of insider ownership and limiting portfolio holdings by foreign investors. This theory predicts that countries with poor governance standards tend to have a relatively higher share of foreign direct investment – typically defined as an acquisition of 10 percent or more of the shares, with the intention of participating in management – as information asymmetries make it more valuable for investors to expend resources in monitoring and enforcement. Overall, the findings we present in the paper are expected to help further discriminate between the various theories of the home bias.

The rest of the paper is structured as follows: Section II discusses the demography of the global LBO market, examining the degree to which individual economies have become more penetrated by private equity over the last few decades. Section III asks whether the increased role of private equity in financial intermediation has been driven by greater cross-border investment flows or has occurred in largely isolated markets. In addressing this important question, the section first describes our proprietary dataset and then presents the empirical evidence. Section IV focuses more specifically on the integration of the European buyout market. Section V benchmarks the home bias in private equity against portfolio investment, notably mutual funds. Section VI, finally, summarizes and concludes.

## **II. Private Equity Around the World**

Private equity is a relatively young asset class, with LBOs dating back to the late 1970s and 1980s when the first non-venture private equity partnerships were formed in the United States (Fenn, Liang, and Prowse (1997)).<sup>1</sup> In Europe, an indigenous private equity industry began to

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<sup>1</sup> Some of the oldest U.S. private equity firms are Warburg Pincus (founded in 1966), Thomas Lee Partners (1974), KKR (1976), and Clayton Dublier & Rice (1978). These early partnerships were followed by a second wave, including Bain Capital (1984), Hellman & Friedman (1984), The Blackstone Group (1985), and The Carlyle Group (1987). While some of these firms have become today's largest private equity managers, a few more recently formed partnerships, such as Apollo Management (1990), Providence Equity Partners (1990), and TPG (1992), have managed to rapidly gain a significant share in the LBO market.

emerge in the early 1980s. Most large European buyout funds grew out of financial institutions, although many of them have gone through management buyouts themselves and become independent.<sup>2</sup> Most of the larger funds are located in London as Europe's financial hub, with a substantial office network across Europe, which allows them to take a pan-European approach. In the rest of the world, the private equity industry began to emerge even later. While a few firms were founded in the mid-1980s, most private equity houses in the non-US, non-European markets started to raise funds only in the last ten years.<sup>3</sup>

At the beginning of 2009, there were 257 buyout funds in the global market, aiming to raise \$233bn. (Private Equity Intelligence, 2008). While their average target size was almost 30 percent lower than the average size of buyout funds closed in 2008 amid a much harsher fundraising environment, individual targets continued to vary widely. In fact, the 10 funds with the largest fundraising targets accounted for almost one-third of the entire amount all funds in the market were seeking to raise. Although buyout funds have found it increasingly difficult to meet their targets, the trend towards more market concentration appears to be largely unaffected.<sup>4</sup> Cornelius et al. (2007) find that the concentration in the buyout market has increased significantly over time. More specifically, they calculate a Gini coefficient of 0.75 in the US fundraising market in 2005, with the top-10% of the buyout funds (in terms of their size) accounting for almost two-thirds of all capital raised. This compares with a Gini coefficient of 0.61 in 1995 when the top-10% of the funds raised around 45% of the capital committed to this asset class. In Europe, the picture is similar, with the Gini coefficient having increased to 0.70 in 2005 from 0.61 in 1995.

Thus, a relatively small group of funds are responsible for the substantial amount of global fundraising, which rose at a compound annual growth rate of almost 25 percent between 1980 and 2007, the peak of the last fundraising cycle (Table 1). Although new commitments fell markedly in 2008, they remained at a relatively high level in terms of the market capitalization of the public equity markets. In the United States, fundraising in 2008 continued to exceed 1% of public market capitalization, a threshold buyout funds reached in 2006 for the first time. While European funds still have to reach the same level of market depth, their role in financial intermediation has also increased considerably – at least until recently when many investors showed a substantially greater preference for liquidity. In the emerging markets, whose history in private equity is much shorter, commitments to emerging market funds have recently outpaced inflows to private equity funds targeting buyouts in the mature markets by a wide margin. Whereas commitments to buyout funds in the United States and Europe fell by more than 40% in 2008, inflows to private equity funds operating in emerging market economies continued to increase. With the public market capitalization in most emerging market economies contracting as much as or even more than in mature economies, new commitments to private equity funds reached about 0.9% relative to public markets, a sevenfold increase compared with 2003.

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<sup>2</sup> These include, for example, BC Partners (Barings), Cinven (the Government Coal Board Pension Fund), CVC (Citicorp), Doughty Hanson (Charterhouse and Westdeutsche Landesbank), Industri Kapital (Skandinaviska Enskilda Banken), Permira (Schroders).

<sup>3</sup> One of the oldest private equity firms in 'non-traditional markets' is Ethos Private Equity, which was formed in South Africa in 1984. However, most other leading firms in their respective regions are considerably younger, such as Baring Vostok Capital Partners in Russia, whose origins date back to 1994; Chrys Capital in India, which was founded in 1998; Pacific Equity Partners in Australia, which was formed in 1998; Abraaj Capital, a firm founded in Dubai in 2001; CDH Investments in China, which started to operate in 2002; and Affinity Equity Partners in the Asia-Pacific region, a firm that originated from a spinout from UBS Capital in 2004.

<sup>4</sup> In 2008, the percentage of buyout funds, which missed their fundraising target by 20% or more, increased to more than one-third, up from only around 10% in 2007.

**Table 1. Capital Committed to Buyout Funds**

Year	US		Europe		Emerging Markets 1/	
	Capital Committed (\$bn)	Capital Committed as % of total stock market	Capital Committed (\$bn)	Capital Committed as % of total stock market	Capital Committed (\$bn)	Capital Committed as % of total stock market
1980	0.2	0.01%	...	...	...	...
1981	0.3	0.02%	...	...	...	...
1982	0.5	0.04%	...	...	...	...
1983	1.9	0.13%	...	...	...	...
1984	1.8	0.10%	...	...	...	...
1985	2.4	0.13%	1.0	...	...	...
1986	6.8	0.31%	0.2	...	...	...
1987	14.7	0.59%	1.2	...	...	...
1988	10.7	0.43%	1.6	...	...	...
1989	11.9	0.44%	9.4	...	...	...
1990	4.8	0.14%	3.8	0.20%	...	...
1991	5.6	0.19%	1.7	0.08%	...	...
1992	8.1	0.20%	1.8	0.10%	...	...
1993	9.9	0.23%	2.6	0.11%	...	...
1994	15.2	0.30%	5.4	0.16%	...	...
1995	22.5	0.45%	2.3	0.06%	...	...
1996	19.7	0.29%	9.0	0.18%	...	...
1997	41.5	0.50%	17.3	0.29%	...	...
1998	61.9	0.57%	17.1	0.22%	...	...
1999	43.4	0.33%	15.6	0.16%	...	...
2000	79.6	0.47%	23.0	0.25%	...	...
2001	51.5	0.33%	31.2	0.41%	...	...
2002	43.1	0.31%	17.6	0.28%	...	...
2003	28.4	0.26%	23.7	0.27%	3.5	0.13%
2004	57.4	0.39%	22.1	0.21%	6.5	0.18%
2005	110.8	0.67%	71.5	0.64%	25.8	0.54%
2006	148.8	1.14%	106.2	0.72%	33.2	0.48%
2007	226.7	1.57%	62.1	0.37%	59.2	0.42%
2008	131.7	1.13%	30.4	0.36%	66.5	0.89%

1/ Includes commitments to growth capital and VC funds

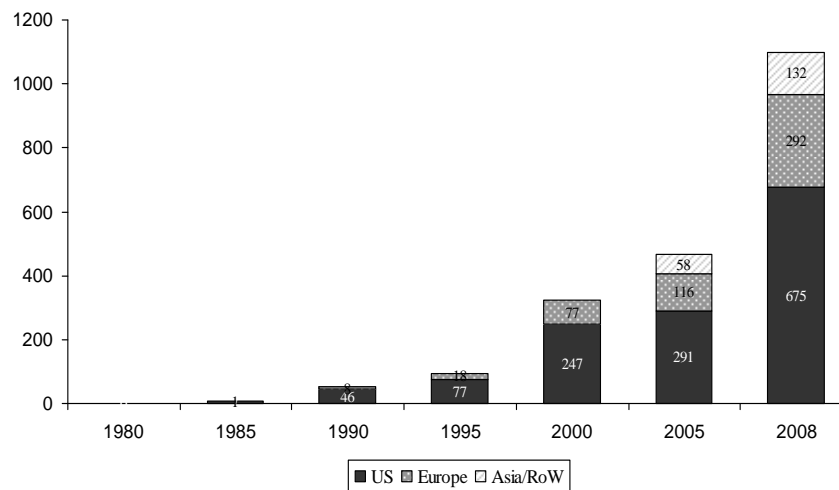
Source: Private Equity Analyst, Thomson, EMPEA, World Federation of Exchanges

The substantial growth in commitments to buyout funds has enabled GPs to acquire not only a growing number of portfolio companies but also significantly larger ones. Based on Capital IQ data, Lerner, Sørensen and Strömberg (2009) estimate the global value of LBO transactions at around \$3.9tr between 1990 and 2008 (in 2008 dollars).<sup>5</sup> In terms of stocks, capital managed by buyout firms skyrocketed to almost \$1.1tr at the end of 2008, up from just about \$500mn in 1980 (Figure 1).<sup>6</sup>

<sup>5</sup> Unrecorded transaction values are imputed as a function of various deal and sponsor characteristics.

<sup>6</sup> Assets under management are calculated as the sum of funds raised during the last five years, assuming that the holding period of portfolio companies averages five years.

**Figure 1. Assets under Management in LBO Funds (US\$bn)**



Source: McKinsey (2007), TVE, EMPEA

The enormous long-term growth of private equity over the last few decades has been subject to pronounced cycles. The first buyout boom began in the mid-1980s and ended in 1989. This period culminated in the \$24.8bn buyout of RJR Nabisco in 1988, still one of the largest deals in history. The second boom, which ran from 2005 through the middle of 2007, was even more powerful. In fact, a substantial fraction of historic buyout activity took place during these two-and-a-half years, totaling \$1.6tr or 43 percent of the (constant dollar) value of all transactions recorded by Capital IQ between 1970 and mid-2007 (Kaplan and Strömberg, 2009).

The two buyout booms share a number of similarities. In the 1980s and, to an even larger extent, in the 2000s, the cycles were fuelled by record amounts of capital committed to private equity funds. In both cycles, debt markets were exceedingly liquid, with speculative-grade interest rates significantly below earnings yields. In both boom periods, therefore, average debt-equity-ratios in buyouts increased markedly, especially in the first cycle, when leverage ratios climbed to more than 90 percent in individual deals. During both cycles, individual deals grew substantially bigger, with public-to-private transactions gathering substantial momentum. As a result, private equity was a major driver in the global M&A market. In the last cycle, almost one-fifth of worldwide buyside transactions was due to LBOs, up from just 3 percent at the beginning of the decade. And both booms ended similarly abruptly. While the sudden stop of the first cycle was caused by the crash of the junk bond market, which led to sharply higher interest rates and a large number of high-profile LBO defaults, more recently the boom was derailed by a general repricing of credit risk in August 2007 in response to the problems in the US subprime mortgage market.

However, there is a fundamental difference between the two cycles. Whereas the first boom had essentially been a U.S. phenomenon, the second cycle was much more global. In terms of the number of transactions the U.S. share in the global buyout market fell from around two-thirds in 1985-89 to about 42 percent between 2005 and mid-2007. In terms of enterprise values, the decline in the dominance of the U.S. market was even more dramatic. While U.S. buyouts

accounted for more than 85 percent of all the value of all global transactions recorded by Capital IQ, their share almost halved to just a bit more than 45 percent during the last boom between 2005 and the middle of 2007 (Strömberg, 2008).

In Table 2, we take a longer-term view and compare the volume of buyout transactions in individual regions between 2001 and 2007 with the geographical distribution of deals between 1970 and 2000. In fact, during the more recent period the Western European buyout market saw a larger volume of transactions than the US market, accounting for 46 percent of global deals involving financial sponsors, up from an average share of 30.5 percent during the three preceding decades. Within Europe, there have also been significant shifts in the relative importance of national markets. Continental Europe and Scandinavia have been catching up significantly, with their combined share in the global buyout market having doubled in 2001 – 2007 compared with the previous three decades. At the same time, the United Kingdom’s share has more or less stagnated.

**Table 2. LBO Transactions by Region, 1970 – 2007**

	In percent of world total			In percent of GDP
	whole Period	1970 - 2000	2001 - 2007	2001 - 2007
<b>North America</b>	<b>51.8%</b>	<b>66.0%</b>	<b>45.2%</b>	<b>1.7%</b>
USA	49.7%	64.5%	42.8%	1.7%
Canada	2.1%	1.5%	2.4%	1.1%
<b>Western Europe</b>	<b>41.1%</b>	<b>30.5%</b>	<b>46.1%</b>	<b>1.8%</b>
Continental Europe	22.0%	13.2%	26.1%	1.4%
Scandinavia	3.8%	2.3%	4.5%	2.1%
United Kingdom	15.3%	15.0%	15.5%	3.6%
<b>Other regions</b>	<b>7.1%</b>	<b>3.5%</b>	<b>8.8%</b>	<b>0.2%</b>
Africa & Middle East	1.0%	0.3%	1.3%	0.4%
Asia	3.3%	1.8%	4.0%	0.2%
Australia	1.0%	0.3%	1.3%	1.0%
Eastern Europe	0.7%	0.2%	1.0%	0.2%
Latin America	1.1%	0.9%	1.2%	0.2%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1.2%</b>

Source: Strömberg (2008); IMF WEO Database; authors’ calculations.

Note: The total amount of LBO transactions is estimated at \$3.92tr (in 2007 dollars) between 1970 and 2007, of which transactions valued at \$3.62tr have involved financial sponsors.

Despite this apparent convergence process, significant inter-regional and intra-regional differences persist in terms of the role private equity plays in financial intermediation relative to the size of individual economies. The United Kingdom is by far the most deeply penetrated economy, with the value of buyout transactions having averaged 3.6 percent of GDP in 2001 - 2007, two-and-a-half times more than in Continental Europe. In fact, in relative terms the United Kingdom has attracted even more private equity capital than the United States. In other mature market economies (notably Australia, Canada, and Japan), private equity still plays a relatively small role in providing capital for business improvements, turnarounds, and growth. However, in these countries, too, the LBO market is gaining in importance in financial intermediation. The strongest growth, however, is found in some emerging market economies. Although their penetration has remained low by U.S. and European standards, markets outside the United States

and Western Europe have captured a share of more than 11 percent in 2001 – 2007, up from an average of just 5 percent in the previous three decades. In recent studies, these cross-country differences have been attributed to a complex set of factors including, for example, national tax systems, fiscal incentives, bankruptcy and insolvency legislation, and cultural attitudes towards entrepreneurs (Apax Partners, 2007; Groh, Liechtenstein and Kieser, 2008).

### **III. Cross-Border Private Equity Flows**

While private equity has played an increasingly important role in financial intermediation in a growing number of countries, this says little about the extent to which the global market has become more integrated. Conceivably, private equity could have emerged in more or less segmented markets, with funds raised in one market being invested in the same market. Market segmentation could be due, for example, to differences in national legal and regulatory environments. Since such differences tend to be highly persistent, Megginson (2004) argues that private equity markets are unlikely to become integrated.

However, the limited empirical evidence suggests otherwise. To begin with, the ranges specified in the partnership agreements within which GPs may invest outside their home markets have become significantly wider over time. More importantly, as Aizenman and Kendall (2008) find, GPs have made use of these wider ranges, with increasing cross-border private equity capital flows reflecting in part general factors driving globalization and in part determinants specific to private equity. As regards the latter, one factor is seen in the oversupply of funds to U.S. private equity firms who may have gone international in the search for deal flow. Aizenman and Kendall show that the destinations of these flows have not been random. Using various versions of a gravity model, they find that factors, such as distance, language connections, the quality of institutions and financial market depth significantly determine where private equity firms invest abroad. Overall, their results confirm that the conditions that attract foreign private equity capital are similar to those, which are found to determine the growth of domestic private equity markets (Jeng and Wells, 2000; Lerner, Sørensen, and Stömberg, 2009).

Aizenman and Kendall's study is based on data from Thomson VentureXpert, a commercial data vendor. While this and similar databases typically provide aggregate information on the flow of capital into and out of private equity funds, which allow researchers to estimate fund returns (e.g. Kaplan and Schoar, 2005), they have important limitations. Deals reported in Thomson are at the discretion of the investing firm, which means that a number of deals are likely to remain unreported. Aizenman and Kendall argue that coverage is nevertheless sufficiently comprehensive as the majority of deals involve more than one investment firm. While this may be the case for venture capital deals, the focus of their study, it is not true for buyouts. Furthermore, where the Thomson VentureXpert database does report all investors in a particular deal, there is no information on the actual amount of capital individual funds have invested. Aizenman and Kendall assume that each investor has invested the same amount of capital, which in many deals is not the case, however. While a limited number of studies (Gompers and Lerner, 1997; Ljungqvist and Richardson, 2003; Gottschalg and Phalippou, 2006; Metrick and Yasuda, 2007) have been able to obtain access to proprietary data provided by individual LPs or GPs, none of them have addressed the issue of cross-border investing.

The following analysis aims at narrowing the existing gap by analyzing information from AlpInvest Partners' proprietary data base. This database allows us to link precisely individual portfolio companies with the buyout funds, which have acquired them, and unlike publicly available data sources, our database includes detailed information on the individual investment amounts. As a matter of course, although AlpInvest Partners is one of the world's largest private equity investors, its database reflects its own investment decisions. As a result, there is likely to be a sample bias in the sense that AlpInvest's investment portfolio deviates from the market

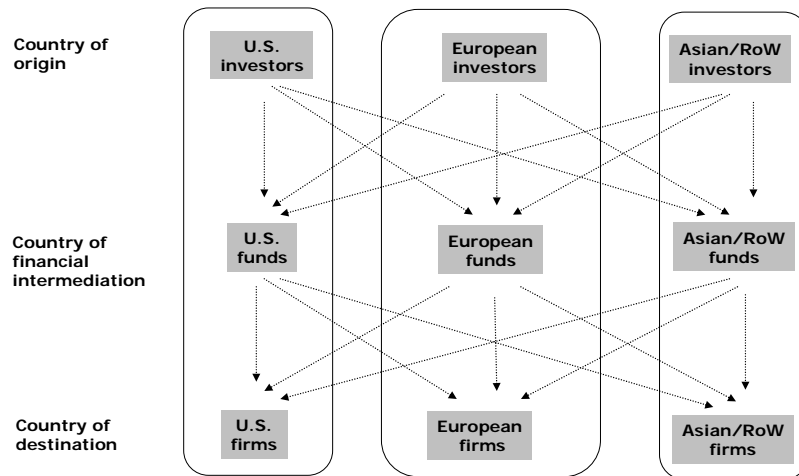
portfolio. While the sample bias may be significant at the aggregate level, in this paper we also provide evidence at the individual fund level.

At the onset, three important points warrant clarification:

First, the definition of the home bias: Standard definitions of home bias are based on the International Capital Asset Pricing Model, which predicts that individuals hold equities from around the world in proportion to market capitalizations. The home bias is typically calculated as one minus the ratio of the weights of the country in domestic equity portfolios and in the world market portfolio.<sup>7</sup> Alternatively, the home bias is sometimes expressed as one minus the ratio of the shares of foreign equities in domestic portfolios and foreign equities in the world portfolio. As the market capitalization of individual markets may be a misleading benchmark for investments in unlisted firms, we define the home bias in private equity as the ratio of a fund’s capital invested in its home region relative to the total amount of the fund’s investment. This definition is essentially the same as in Hau and Rey (2008) for mutual funds. Further, we aggregate funds according to four different regions: the U.S., the U.K., non-UK Europe and Asia-Pacific. For non-UK Europe, we calculate an “intra-regional” bias as well as the extent of home bias of individual European countries (see next section).

Second, the level of analysis of cross-border flows and home bias: There are two levels at which cross-border capital flows in private equity may occur (figure 2). At the LP level – or “country of origin” level – private equity investors may commit to funds managed in their home market, but they may also decide to commit capital to foreign funds, which involves cross-border capital flows. At the GP level – or “country of financial intermediation” level – fund managers decide where they want to deploy the capital they have raised. The “country of destination” may be where their fund is domiciled, but acquisition targets may also be pursued abroad. In the present paper, we focus only on the second stage of cross-border investing, i.e. investment decisions made by GPs as financial intermediaries.

**Figure 2. Global Private Equity Flows**



<sup>7</sup> Home bias = 1 – (share of domestic equities in portfolio held by domestic investors/share of domestic equities in world portfolio); or 1 - (share of foreign equities in portfolio held by domestic investors/share of foreign equities in world portfolio)

Third, the definition of “country of management.” In principle, two approaches are conceivable. The country of management may be defined as the location where a private equity fund is actually raised and managed, or, alternatively, it may be the location where the GP is headquartered. These two locations do not need to be identical – a GP may decide to open an office abroad in order to raise and manage a fund outside his home market. Generally, this involves trade in financial services, which at least in the shorter term is likely to substitute for cross-border capital flows.<sup>8</sup> In this paper, we adopt the approach used by the European Private Equity and Venture Capital Association (EVCA), which considers funds raised and managed in Europe as European funds, regardless of where the GP is headquartered. It is important to note that this definition may imply a comparatively higher aggregate home bias since funds raised by foreign GPs in the domestic market tend to have a clear investment focus on the market where they are managed and are less likely to invest outside the thus defined country of management. For example, a U.S. GP deciding to raise and manage a fund out of its European office in London is less likely to deploy the fund’s capital outside the European market. In practice, however, the risk of over-estimating the degree of home bias (and hence under-estimating the degree of financial globalization in private equity) is limited.<sup>9</sup> In fact, in our sample we have only a handful of funds whose country of management is different from where the GP is headquartered. Although these funds are relatively large, their re-classification according to the GP headquarters concept would not materially change our results.

Our sample consists of 102 buyout funds raised between 1995 and 2004. By using 2004 as the cut-off year, we ensure that only those funds are included that have already entirely, or at least to a large extent, drawn down the capital LPs have committed. Of the 102 buyout funds in our sample, 48 are U.S. funds, 28 are U.K. funds, 18 are non-UK European funds and 8 are Asia-Pacific funds. At the end of June 2007, these funds had invested in 2,260 portfolio companies which were valued at cost at around €7bn.

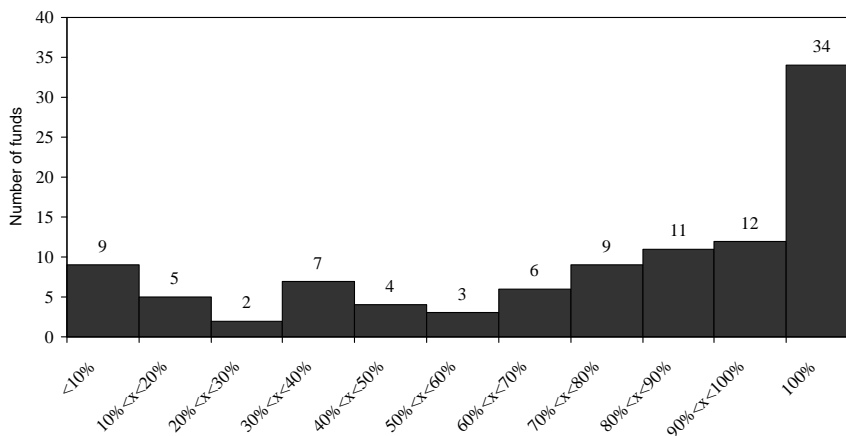
The majority of the funds in our sample are based on partnership agreements, which include ranges within which the GP may invest outside the fund’s home market. As far as U.S. funds are concerned, more recent partnership agreements include upper bounds varying between 15 and 50 percent. European buyout funds tend to have somewhat lower upper limits, ranging from 5 to 40 percent. While actual investments generally remain within the fund-specific limits, the home bias of individual funds in our sample varies substantially: While one third of the funds in the sample have invested exclusively in their own region, 9 percent of the funds have invested only outside the region where they are managed (figure 3). While some of these funds have a truly global investment focus, others target specific regions, especially in the emerging markets, but decide to manage their capital out of a major financial hub, benefiting, among other things, from a superior market infrastructure.

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<sup>8</sup> Longer-term, however, domestic financial development is likely to be spurred by foreign investment in the domestic financial system, with the creation of domestic financial products fueling foreign demand for domestic liabilities. Thus, trade in financial services – involving commercial presence as well as cross-border supply – is found to be complementary to cross-border capital flows (Martin and Rey, 2004).

<sup>9</sup> Several large GPs in the U.S. have developed a global office network, and some of them have successfully raised significant amounts of private equity capital. The first investment in Europe by a U.S. private equity firm was made by KKR in 1996. KKR’s first European office was opened in London in 1998, raising their first European fund in 1999. Carlyle’s first European fund was raised even earlier, in 1997, while Bain Capital’s first European fund was raised in 2002. While European GPs have also expanded their office network into different regions, their foreign investments have been typically financed through their main funds raised in their home markets.

**Figure 3. Histogram Home Bias at Fund Level**



Source: AlpInvest Partners

**Table 3. Home Bias Statistics**

	<b>US</b>	<b>UK</b>	<b>Europe</b>	<b>Asia-Pacific</b>
Number of funds	48	28	18	8
Aggregate home bias	72.7%	44.6%	100.0%	92.7%
Fund-level home bias:				
Mean	69.3%	47.2%	99.5%	89.6%
Median	86.9%	43.6%	100.0%	93.3%
Upper quartile	100.0%	75.4%	100.0%	100.0%
Lower quartile	40.3%	14.1%	100.0%	85.2%
SD	35.3%	33.9%	2.3%	13.4%

Source: AlpInvest Partners

In examining the degree to which buyout funds in different regions are on average home-biased, we calculate the ratio of the funds' capital invested in their respective home regions relative to the total amount of the funds' investments. We call this ratio the *aggregate buyout fund home bias* (Table 3). There are significant differences in the home bias across different regions. As far as US-based funds are concerned, 72.7 percent of their investments were made in the home market. While UK-based funds show a substantially smaller home bias, with less than half of their overall investments made in their home market, investments made by non-UK European funds and Asia-Pacific funds are highly focused on their home regions.

We also calculate the mean degree of home bias at the fund level. In the US, the mean degree of home bias is somewhat smaller than the aggregate buyout fund home bias, suggesting a positive correlation with the size of funds. This is also true for funds in the Asian-Pacific region. In the UK, by contrast, the mean degree of home bias is comparatively larger, potentially indicating that our UK sample is biased towards more international funds.

Of the capital deployed abroad by US buyout funds, non-UK Europe absorbed the relatively largest percentage, followed by the UK and Asia (Table 4). By contrast, the Latin American market played a minor role for U.S.-based funds, accounting for only 3 percent of their deployed capital. The vast majority of foreign investments made by UK-based funds have targeted firms in other European economies, underlining London’s role as a major financial hub, an issue we turn to in greater detail in the following section. In comparison, buyouts in the U.S. made by UK-based funds have remained rare. With funds managed in other European countries showing an extreme intra-European bias, Europe has been a significant net importer of private equity capital vis-à-vis the United States. This is also true for Asia-Pacific whose imports of buyout capital exceeded foreign investments made by domestic funds by a huge margin.

**Table 4. Investment Value by Origin of GP and Destination Market**

Destination	Fund location								Total	
	US		UK		Non-UK Europe		Asia-Pacific			
	€bn	%	€bn	%	€bn	%	€bn	%	€bn	%
US	37,398	72.7%	2,197	5.7%	26	0.4%	83	5.6%	39,704	40.7%
UK	4,098	8.0%	17,266	44.6%	2	0.0%	...	...	21,365	21.9%
Non-UK Europe	5,865	11.4%	19,101	49.3%	5,882	99.5%	...	...	30,848	31.6%
Asia-Pacific	2,521	4.9%	168	0.4%	...	...	1,385	92.7%	4,074	4.2%
Latin America	1,542	3%	...	...	...	...	27	1.8%	1,568	1.6%
Total	51,424	100%	38,731	100%	5,909	100%	1,495	100%	97,559	100%

Source: AlpInvest Partners

Overall, while US-based funds represented 52.7 percent of the total amount of capital under management in our sample, in terms of the value of assets acquired by private equity funds in our sample the US market accounted for only 40.7 percent of global buyouts. Note that this share is broadly consistent with Capital IQ data, according to which the US represented 42.8 percent of global buyout transactions between 2001 and 2007 (Table 2). By contrast, while private equity funds based in non-UK Europe accounted for only about 6.1 percent of global investments, their home market represented 31.6 percent of the equity value of global buyouts at the middle of 2007. The UK is clearly the most international market: Although only 21.9 percent of global private equity capital was invested in UK portfolio companies, UK-based funds in our sample managed almost 40 percent of private equity capital deployed worldwide. While the broader European market (UK plus non-UK) represented 53.5 percent of the value of all buyouts in our sample, funds domiciled in this region managed only 45.7 percent of the buyout capital worldwide.

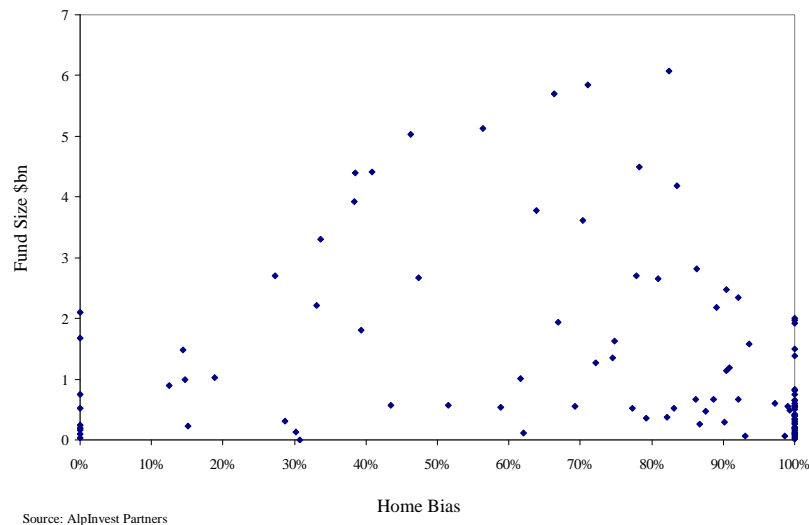
In order to examine whether buyout funds have become more international over time, we split our sample into two sub-samples, consisting of 39 funds raised between 1995 and 1999 and 63 funds raised between 2000 and 2004. As far as US-based funds are concerned, we observe a significant increase in their exposure in Europe. Whereas non-UK Europe accounted for just 5.2 percent of the capital deployed by US funds raised before 2000, its share rose nearly threefold to 15.3 percent in our sub-sample covering the vintage years from 2000 to 2004. Conversely, UK-based funds have expanded into the US market, whose share rose to 7.4 percent in 2000 to 2004 from 4.7 percent in 1995 to 1999. By contrast, non-UK European funds as well as Asia-Pacific funds in our sample do not exhibit any tendency towards greater inter-regional exposure during the period under investigation.

Importantly, we find no statistically significant relation between the size of private equity funds and the degree of their home bias (Figure 4). At the one extreme, there are relatively small funds targeting buyouts in emerging markets but are managed in one of the world’s major financial hubs, notably New York and London. Their home bias is zero as they do not invest at all in the country where they are raised and managed. At the other extreme, there are a number of

comparatively small funds especially in Europe, whose investment focus is often not even their home region but their local economy within that region (e.g., France, Germany, Italy or UK). Their home bias is 100 percent. As far as large buyout funds are concerned, their home bias tends to vary between 40 and 80 percent, with US-based funds showing a somewhat stronger home bias than their European peers.

Unfortunately, our sample does not allow us to examine the possible existence of a foreign bias in private equity investing, in the sense that GPs overweigh or underweigh certain markets. That portfolio investors show not only a considerable home bias (see section V) but also a significant foreign bias is well documented in the literature (e.g., Chan, Covrig and Ng, 2005; Kho, Stulz, and Warnock, 2007), and notwithstanding significant data limitations Aizenman and Kendall’s (2008) study indicates that a foreign bias is likely to exist in private equity as well. However, while our sample includes 1,036 foreign acquisitions in 50 countries, accounting for nearly half of all portfolio companies in our sample, in a significant number of countries there are very few observations. Not surprisingly, this applies especially to emerging market economies. While this observation alone may be interpreted as anecdotal evidence that the destination of private equity flows is not random, our sample is too small to investigate the factors that make individual countries attractive or less attractive for foreign investors. In the absence of an econometric analysis, we can only speculate that these factors are broadly identical with those that are found to determine the absolute level of buyout activity in individual markets, which includes investments by domestic investors (Lerner, Sørensen, and Strömberg, 2009).

**Figure 4. Fund Size versus home Bias**



#### **IV. Europe**

A country can integrate with the region where it is located or with the world as a whole. In this section, we look more closely at the home bias of individual funds within Europe. While we know from the preceding section that non-UK European funds have a 100 percent intra-regional bias, here we are interested in the extent to which the average private equity fund that is

raised in a European country invests in the rest of non-UK Europe. Overall, we find a significant variation in the extent to which European buyout funds invest abroad (table 5). Swedish funds are particularly outward-oriented, investing more than 50 percent of their capital outside their home market, especially in neighboring countries Denmark, Finland and Norway. French buyout funds in our sample are not much behind, with 48 percent of their capital having been deployed in five other European economies, especially in Germany. By contrast, Italian and Spanish funds show a substantially higher home bias of 88 percent and 98 percent.

Interestingly, it seems that there is an inverse relationship between the size of a fund's home market and the degree of intra-European home bias. France and Sweden represent Europe's largest buyout markets outside the United Kingdom, accounting for about 33% and 14%, respectively, of LBO transactions in non-UK Europe. Italy's and Spain's buyout markets have remained comparatively smaller, accounting for 10.5 percent and 10.2 percent, respectively, of buyout activity in non-UK Europe in the most recent cycle. Inflows from non-UK European markets have remained very limited, indicating that private equity in Italy and Spain has remained largely a local affair. Germany is falling in between: With a market share of 11.6 percent, around one-third of the capital raised by domestic funds has been invested abroad. Overall, these results highlight the importance of developing a mature domestic private equity industry before expanding abroad.

How do our findings compare with the cross-border fund investments reported by the EVCA? Their database has two important advantages. First, the sample of European funds tracked by EVCA is considerably larger than ours. Second, the database allows us to make inter-temporal comparisons and examine whether the European private equity market is becoming less segmented over time. Unfortunately, the database has also some important limitations. First, EVCA only provides cross-border capital flows in individual years as opposed to asset positions reported in our preceding analysis. Second, cross-border flows recorded by EVCA do not allow us to distinguish between different types of private equity (buyouts, VC, mezzanine etc). However, as buyouts clearly dominate the European private equity industry, the EVCA data should be broadly representative for cross-border investments in the buyout segment.

It appears that our sample is skewed towards the more international funds. Generally, EVCA data suggest that the home bias among non-UK European funds is on average significantly more pronounced than our data suggest (Jenkinson, 2008). For example, in 2006, at the peak of the previous buyout cycle, French funds invested €10.1bn, of which nearly 83 percent was invested domestically (Table 7). For German funds, EVCA data show a home bias of more than 90 percent. However, the pattern is similar, with Swedish funds being comparatively least home-biased and Italian and Spanish funds showing the relatively highest degree of home bias. Furthermore, EVCA's dataset confirms that the by far most interconnected private equity market is the United Kingdom, where private equity funds have invested as nearly as much abroad as domestically. Importantly, of the capital deployed abroad by UK-based funds, almost 87 percent was invested in other European markets.

Although the EVCA dataset does not provide a breakdown for Central and Eastern Europe, the vast majority of private equity funds raised for this region are for the region as a whole and not for any specific country (EVCA 2008). Fundraising for Central and Eastern Europe has skyrocketed to €4.3bn in 2007 from just €12mn in 2003. Of this, however, only around 20 percent is managed by funds domiciled in the region. While one would expect these funds to show a relatively low home bias, they do exhibit a very strong intra-regional bias.

**Table 5: Intra-European Bias**

	Fund located in:								
	Denmark	France	Germany	Italy	Poland	Spain	Sweden	Switzerland	UK
Market:	%	%	%	%	%	%	%	%	%
Austria	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	29.9%	0.9%
Belgium	0.0%	2.7%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
Bulgaria	0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%
Czech Rep.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Denmark	63.1%	0.0%	0.0%	0.0%	0.0%	0.0%	19.6%	0.0%	2.2%
Estonia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Finland	24.7%	0.0%	0.0%	0.0%	0.0%	0.0%	8.7%	0.0%	1.7%
France	0.0%	52.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	7.2%
Germany	0.0%	44.1%	66.2%	0.0%	0.0%	2.0%	0.0%	13.1%	10.7%
Ireland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%
Italy	0.0%	0.6%	1.4%	88.0%	0.0%	0.0%	0.0%	0.0%	3.1%
Luxembourg	0.0%	0.0%	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	2.3%
Netherlands	0.0%	0.1%	7.0%	0.0%	0.0%	0.0%	5.1%	0.0%	8.8%
Norway	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	0.0%	0.6%
Poland	0.0%	0.0%	0.0%	0.0%	63.2%	0.0%	0.0%	0.0%	0.0%
Romania	0.0%	0.0%	0.0%	0.0%	17.3%	0.0%	0.0%	0.0%	0.0%
Slovakia	0.0%	0.0%	0.0%	0.0%	7.7%	0.0%	0.0%	0.0%	0.0%
Slovenia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Spain	0.0%	0.0%	0.0%	0.0%	0.0%	98.0%	0.0%	0.0%	4.3%
Sweden	12.2%	0.0%	0.0%	0.0%	0.0%	0.0%	49.3%	0.0%	4.6%
Switzerland	0.0%	0.0%	9.1%	0.0%	0.0%	0.0%	1.3%	57.0%	1.6%
UK	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	42.9%
Non-Europe	0.0%	0.0%	0.0%	0.0%	9.9%	0.0%	0.0%	0.0%	6%
<b>Grand Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: AlpInvest Database

**Table 6. Geographic destination of capital managed by European private equity funds, 1999 (€bn)**

	<b>Country of management</b> (investments managed by domestic funds)	Investments managed by domestic funds going to other European firms	Investments managed by domestic funds going to non-European firms	Investments managed by domestic funds going to domestic firms	Funds managed by other European funds going to domestic firms	<b>Country of destination</b> (investments going to)	<b>Aggregate Home Bias</b>
	1	2	3	4	5	6=4+5	7=4/1
Total Europe	<b>25,100</b>	<b>4,453</b>	<b>1,248</b>	<b>19,399</b>	<b>4,454</b>	<b>23,853</b>	<b>77.3%</b>
EU	24,373	4,239	1,126	19,007	3,885	22,894	78.0%
UK	11,494	2,362	490	8,642	393	9,034	75.2%
Germany	3,157	212	252	2,693	591	3,284	85.3%
France	2,815	375	192	2,247	492	2,739	79.8%
Netherlands	1,710	487	81	1,142	430	1,571	66.8%
Italy	1,778	79	6	1,694	214	1,908	95.3%
Finland	249	25	9	214	162	376	85.9%
Belgium	673	146	88	438	178	617	65.1%
Switzerland	440	113	108	219	160	380	49.8%
Sweden	1,276	443	1	832	393	1,224	65.2%
Spain	722	50	5	668	219	887	92.5%
Norway	264	98	10	157	55	212	59.5%
Denmark	116	3	1	113	395	507	97.4%
Ireland	105	9	0	96	356	452	91.4%
Austria	89	11	0	78	25	103	87.6%
Greece	71	28	0	43	0	43	60.6%
Portugal	118	8	1	110	38	147	93.2%
CEE	23	4	4	16	0	16	69.6%
Other Europe					378	378	...
Total non-Europe						1,248	..
Total						<b>25,100</b>	<b>...</b>

Source: EVCA; authors' calculations

**Table 7. Geographic destination of capital managed by European private equity funds, 2006 (€bn)**

	<b>Country of management</b> (investments managed by domestic funds)	Investments managed by domestic funds going to other European firms	Investments managed by domestic funds going to non-European firms	Investments managed by domestic funds going to domestic firms	Funds managed by other European funds going to domestic firms	<b>Country of destination</b> (investments going to)	<b>Aggregate Home Bias</b>
	1	2	3	4	5	6=4+5	7=4/1
Total Europe	<b>71,165</b>	<b>20,015</b>	<b>3,422</b>	<b>47,728</b>	<b>20,015</b>	<b>67743</b>	<b>67.1%</b>
EU	69,866	19,794	3,309	46,763	19,429	66,192	66.9%
UK	40,897	16,154	2,495	22,248	1,230	23,478	54.4%
Germany	3,518	279	65	3,174	4,053	7,227	90.2%
France	10,100	1,239	490	8,370	2,428	10,798	82.9%
Netherlands	2,393	310	35	2,047	3,484	5,531	85.5%
Italy	3,415	39	2	3,373	1,543	4,916	98.8%
Finland	266	36	10	219	172	391	82.3%
Belgium	940	70	15	855	543	1,398	91.0%
Switzerland	837	205	93	538	317	855	64.3%
Sweden	4,259	1,361	89	2,809	1,619	4,428	66.0%
Spain	2,815	242	43	2,529	1,052	3,581	89.8%
Norway	462	16	20	427	269	696	92.4%
Denmark	370	8	43	320	416	736	86.5%
Ireland	108	11	19	78	614	692	72.2%
Austria	158	16	0	142	122	264	89.9%
Greece	15	0	0	15	65	80	100.0%
Portugal	173	14	0	159	19	178	91.9%
CEE	438	15	3	417	1,223	1,640	95.2%
Other Europe					854	854	...
Total non-Europe						3,422	...
Total						<b>71,175</b>	<b>...</b>

Source: EVCA; authors' calculations

Comparing private equity cross-border flows in 2006 with those in 1999 shows a significant decline in the overall home bias in Europe by about 10 percentage points (Table 6). However, a closer examination reveals that this decline was almost entirely due to a sharp drop in the home bias in the United Kingdom. While the United Kingdom has become substantially more integrated with other national European private equity markets, funds raised in other European countries show virtually no decline in their home bias. In several cases, notably in France, Germany, Italy and the Netherlands, EVCA data actually show an increase in the home bias of private equity funds since 1999. This may seem surprising, given the introduction of the euro in 11 member countries of the common currency area (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain), which has fostered the closer integration of Europe's financial markets, including the euro corporate bond market where the country of issuance has become of marginal importance in explaining yield differentials.

However, the closer integration of European debt capital markets appears to have had little impact on Europe's private equity markets. Rather, there remains a close geographical proximity of the fund management company to the investee companies in most non-UK countries. While local funds may have a competitive advantage in sourcing deals, the apparent fragmentation of Europe's private equity market has also been attributed to important cross-country differences in tax and legal systems. As the Report of the Alternative Investment Expert Group (2006) notes there is no specific regime at the European Union level governing the regulatory approach to the private equity industry. Instead, most Member States regulate part or all of the private equity value chain, especially regarding (i) the management of pooled investment vehicles and funds; (ii) the placement to eligible investors; (iii) tax incentives and restrictions; and (iv) product terms and conditions.

What does the picture look like from the standpoint of European portfolio companies? In 1999, firms acquired by financial sponsors in non-UK Europe received total financing of €14.8bn. Of this amount, €10.8bn represented investments made by funds domiciled in the same country as the portfolio company. The remainder (almost one fourth) was due to acquisitions made by foreign funds. These include funds domiciled in other European countries (including UK) as well as non-European economies. In 2006, domestic and foreign investments in non-UK European portfolio companies totaled €44.3bn, an almost threefold increase since 1999. Although domestic investments more than doubled during the period under review, cross-border investments increased even faster. However, these cross-border investments were dominated by UK-based funds, whereas cross-border acquisitions of firms within the eurozone by financial sponsors domiciled in other member countries remained very limited.

## **V. Are Private Equity Funds Less Home-Biased?**

The preceding sections have provided an inter-regional, intra-regional as well as inter-temporal analysis of the degree to which buyout funds are home-biased. In this section, we compare the home bias in private equity funds with portfolio investments and, more specifically, with the investment behavior of mutual fund managers. Our analysis is motivated by the optimal ownership theory of the home bias proposed by Kho et al. (2007). Other things being equal, this theory would be consistent with a comparatively less pronounced home bias in private equity.

The starting point of the optimal ownership theory of the home bias lies in the observation that insider ownership tends to be high if the extraction of private benefits is cheap. In countries with poor governance standards it is therefore optimal for insiders to own large stakes in corporations. Since poor governance leads to a higher level of insider ownership, portfolio holdings by foreign investors are limited – implying a stronger home bias vis-à-vis countries whose legal institutions are weak. However, as Kho et al (2007) emphasize, insider ownership is costly. If insiders do not take steps to commit to consume fewer private benefits in countries with poor institutions, their firms will be unable to access the equity markets on

acceptable terms. Portfolio investors will only buy equity from such firms at a discount that reflects the anticipated consumption of private benefits.

Agency problems of controlling shareholders can be reduced by having investors who actively monitor the controlling shareholders. Two types of investors can have a comparative advantage in monitoring. Local investors may have access to more information. However, to the extent that domestic investors serve as monitoring shareholders, even fewer shares float and can be acquired by foreign investors. Kho et al (2007) call this the indirect effect of home bias, which amplifies the direct effect caused by high insider ownership.

Alternatively, foreign investors may have a comparative advantage in monitoring insiders. As Stulz (2005) argues, foreigners are limited in their consumption of private benefits by the governance of their home country. Conversely, firms that attract foreigners can increase their value because they signal a commitment to consume fewer benefits. However, for foreign investors to serve as effective and credible monitoring shareholders, they need to be blockholders. To the extent that information asymmetries make it more valuable for investors to expand resources in monitoring and enforcement, poor institutions imply that large shareholders earn a higher expected return than atomistic shareholders.

This has important implications for the mode of entry by foreign investors. In countries with poor institutions foreign investors are less likely to be atomistic portfolio investors and more likely to be large insider or outside investors. In general, large foreign blockholders are classified as foreign direct investors, with direct investment typically classified as holding at least 10 percent and intending to participate in the management of the firm. Thus, the optimal ownership theory of the home bias predicts the ratio of foreign direct investment to total foreign investment to be inversely related to the quality of institutions and to the fraction of shares held by insiders.

Kho et al.(2007) find robust empirical support for their hypotheses. First, using country-level U.S. data on portfolio investment from the Treasury Benchmark Survey and firm-level block holdings reported by Worldscope, they find that on average the home bias of US investors towards the 46 countries with the largest equity markets actually did not fall between 1994 and 2004. Second, regarding US investors' home bias against individual countries, it was found to have decreased the most towards countries in which the ownership by corporate insiders declined. Third, the importance of foreign direct investment was found to have declined - and the importance of portfolio investment to have increased - in countries in which ownership by corporate insiders fell.

These findings are directly relevant for our analysis. Since buyout funds typically acquire majority stakes in firms and work closely with management to sharply reduce or eliminate agency problems, other things being equal one would expect them to be less home-biased than mutual funds, which normally are portfolio investors. While sometimes private equity funds accept minority positions, notably in Asia where growth capital tends to play a comparatively greater role than buyouts, rarely do these positions involve less than 10 percent of the shares. And in practically all cases private equity investors are active shareholders in order to ensure that their interests are fully aligned with management and other insiders.

In examining whether buyout funds indeed are less home-biased than mutual funds as well as portfolio investors at the country level, we restrict our sample to US and UK-based funds. They represent three quarters of the total number of funds and 92 percent of the capital invested. Non-UK European funds and Asia-Pacific funds typically have a local or regional investment focus, and, as discussed, show a very high intra-regional bias. Comparing the home bias of these funds with mutual funds in non-UK Europe and Asia-Pacific would require disaggregating our sample according to individual countries, which, however, would in many cases result in very small country samples.

As far as US buyout funds are concerned, they are in fact significantly less home-biased than US mutual funds. In our sample, US buyout funds have invested on average 27.3 percent of their capital abroad. By comparison, Hau and Rey (2008) who calculate the "aggregate mutual

fund home bias” as the ratio between the total market capitalization of the domestic assets in which mutual funds invest and their total investment portfolio find that foreign equities represent just about 15 percent of the investment portfolios held by US mutual funds (Table 8). Their results are virtually identical with those obtained by Chan et al (2005), whose estimates are also based on the same dataset provided by Thomson Financial Securities, although for a different sample period.

**Table 8. Recent Studies on Home Bias in Equity Investing**

<b>Study</b>	<b>Focus</b>	<b>Data source</b>	<b>Period</b>	<b>US</b>	<b>UK</b>
Present	Buyout funds US, Europe, UK, Asia- Pacific	AlpInvest proprietary dataset	1995 - 2004	72.0	46.0
Hau/Rey (2008)	Mutual funds US, Canada, UK, Europe, Switzerland	Thomson Financial Securities	1997 - 2002	85.1	22.8
Chan et al. (2005)	Mutual funds, 26 economies	Thomson Financial Securities	1999-2000	85.7	43.1
Hau/Rey (2008)	Portfolio investment, US, Canada, UK, Europe, Switzerland	IMF Coordinated Portfolio Investment Survey (CPIS),	2001-2002	92.1	65.4

In our sample, UK-based buyout funds show a significantly lower degree of home bias than their American peers, with 54 percent of their capital invested abroad. This is also true for mutual funds in the UK, which are found to be substantially less home biased than US mutual funds. However, the shares reported by Hau and Rey (2008) and Chan et al. (2005) differ significantly. While Chan et al. report a home bias in UK mutual fund investing similar to UK buyout funds, Hau and Rey find a substantially lower amount of holdings in the home market relative to the funds’ overall holdings. While Chan et al.’s UK sample of mutual funds is nearly twice as large as Hau and Rey’s (2,021 versus 1,186 funds), it remains unclear what explains the substantial difference in the home bias reported in these two studies. One possible explanation Hau and Rey offer is that their sample is biased towards more international funds.

Hau and Rey also report the degree to which portfolio investors are biased at the country level, which they define as the ratio between the total investment made by domestic agents in the home market and the total domestic market capitalization. Their calculations are based on data from the International Monetary Fund’s Coordinated Portfolio Investment Survey. In contrast to most other studies (e.g. Warnock, 2002; Ahearne et al., 2004; Chan, 2005), however, they choose not to normalize their numbers by the relative size of the domestic capitalization in the world market capitalization. This has the advantage that we can easily compare the thus calculated home bias at the country level with that at the mutual and buyout fund levels (Table 8). Importantly, the home bias at the country level is significantly higher than for mutual funds as well as for buyout funds, both in the US and the UK. As far as buyout funds are concerned, the differences are quite dramatic. While US buyout funds in our sample are found to have invested 28 percent of their capital abroad, at the country level holdings of foreign assets are reported to

represent just 8 percent of total investments. Similarly, while UK-based buyout funds in our sample have deployed 54 percent of their capital abroad, at the country level foreign investment represents only about 35 percent.

Overall, buyout funds tend to be less home-biased than portfolio investors, a finding that appears to be consistent with the optimal ownership theory of the home bias. This conclusion finds further support in the destination of foreign investments made by buyout funds versus mutual funds. Although, as we have explained above, we are unable to calculate the degree to which buyout funds show a foreign bias, we do find that the funds in our sample have a considerably higher exposure to emerging markets. While these markets have absorbed around 6 percent of the total capital deployed by the U.S. and U.K.-based buyout funds in our sample, Chan et al. (2005) report that investments in emerging markets accounted for less than 3 percent and less than 5 percent of the assets held by U.S. and U.K. mutual funds at the beginning of this decade. Although mutual fund investments in emerging markets have risen noticeably in recent years, the huge increase in private equity fundraising for emerging markets suggests that the exposure gap between the two asset classes looks to set to widen.

That private equity funds show a comparatively higher exposure to markets where institutions are less developed is in part explained by their role in monitoring insiders. Interestingly, Lerner and Schoar (2005) who examine 210 developing country private equity investments (mainly growth capital transactions but also buyouts and venture capital) find that investors pursue different strategies depending on the corporate governance structures they operate. While in high enforcement and common law countries investors often use convertible preferred stock with covenants, investors in low enforcement countries and civil law nations tend to use common stock and debt and rely on equity and board control. However, board seats are normally available only to foreign direct investors, such as buyout funds acquiring controlling stakes or at least a sufficiently large number of shares allowing them to effectively monitor insiders. This avenue is normally not open to portfolio investors holding small shares, explaining why mutual funds typically show a larger home bias, including against emerging markets.

## **VI. Conclusions**

Our main findings can be summarized as follows: First, our sample of 102 buyout funds raised between 1995 and 2004 show a significant variation in the degree to which they invest abroad. The most international funds are found to be based in the UK, with more than half of the capital they have raised being deployed abroad. In terms of the destination of foreign investments, non-UK Europe is found to be the most important market, underlining London's role as Europe's most important financial hub. By comparison, the 48 US-based funds in our sample are found to be significantly more home-biased, with only around 22 percent of their capital deployed outside their home market.

Second, buyout funds raised in non-UK Europe show an extreme degree of intra-regional bias, with virtually none of their capital leaving the region. However, within Europe we find a significant amount of cross-border capital flows in private equity – albeit with substantial cross-country differences. While funds in some European economies take a regional perspective (e.g. Scandinavia) or invest significant amounts in neighboring countries, some markets have remained largely isolated in terms of private equity capital outflows as well as inflows.

Third, at the fund level there is no statistically significant relation between the degree of home bias and the size of individual funds.

Fourth, the home bias in private equity investing has decreased over time. This applies especially to US funds, which are found to invest a rising share of their capital in Europe. Although our sample does not include vintage years after 2004, more recent fundraising trends suggest that we should expect a growing allocation to other regions, notably emerging Asia, as well. UK funds have also become more international, not only with regard to investments made in

other European economies but also in terms of deploying more capital in the US market. Finally, EVCA data suggest that the European private equity market has become less segmented over time, although this process is impeded by important structural barriers.

Finally, private equity funds appear to be less home-biased than portfolio investors, a finding which is consistent with the optimal ownership theory of the home bias. Whereas traditional explanations to the home bias are based on the portfolio approach, this theory focuses on the quality of institutions as a key determinant of insider ownership and hence the share of portfolio holdings by foreign investors. Importantly, it predicts that the home bias in portfolio investing will decline only if institutions that support decentralized ownership become prevalent across the world. This prediction is particularly relevant for emerging markets whose economies are characterized by institutions that are still emerging. As long as their quality of governance is perceived to be inferior, foreign direct investment – as opposed to portfolio investment - is likely to remain the preferred choice of entry.

Private equity funds share an important characteristic with foreign direct (strategic) investors in that they typically buy a significant – often controlling – stake in a company, thus reducing agency problems in the acquired firms. For institutional investors, such as pension funds and insurance companies, seeking greater exposure to the rapid economic catch-up process in emerging markets, private equity funds might thus offer superior risk-adjusted returns. This would help explain why commitments to private equity funds targeting emerging markets have skyrocketed in recent years. As this capital gets deployed, the home bias in private equity looks set to fall further – in contrast to portfolio investing and mutual funds whose home bias tends to be more persistent in light of the typically slow progress in improving the quality of a country's institutions.

Whether or not private equity funds indeed become less home-biased, especially against emerging markets, will critically depend on whether their fund managers have learned from past mistakes, however. According to Leeds and Sunderland (2003), a key mistake earlier private equity funds made was the failure to recognize important cross-country differences in corporate governance and legal institutions and to adjust their investment strategies accordingly. Private equity firms acquiring non-controlling stakes – thus deviating from a core principle in private equity investing – got burned particularly badly in the 1990s. While the substantial risk of acquiring minority stakes in countries with inferior governance structures are widely recognized today, sometimes private equity funds are willing to take this risk in the absence of investment opportunities to become a controlling stakeholder. The extent to which the home bias in private equity will actually continue to decline will ultimately depend on how these risks are managed.

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