FX Neglect in Private Equity Buyouts*

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Abstract

Our evidence suggests that international private equity (PE) funds misallocate capital by failing to account for predictable foreign exchange (FX) movements. Ex-ante observable forward FX rates predict realized FX changes and fund-level investment returns. Furthermore, PE funds are more likely to make acquisitions when forward FX rates imply the target currency will depreciate. The effects become weaker for PE funds dealing more in foreign currencies and that previously experienced FX losses. They disappear in placebo tests in which domestic-only PE funds are assigned an expected FX return. Similar results are obtained using real exchange rates to capture expected FX movements.

JEL classification: F31, G15, G23, G41

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We find evidence that international private equity (PE) funds fail to adjust prospective investment return calculations for predictable foreign exchange (FX) movements and hence misallocate capital. PE funds tend to focus on internal rates of return (IRR) and multiples of invested capital (MOIC) to evaluate potential investment returns, typically targeting a threshold return (Gompers et al., 2016). Target company cash flows are likely to be modelled in local currency, which may be different from the fund's home currency. Given currency movements can have a significant impact on an investment's final return in the home currency, it is important to also account for predictable FX movements when forming the return estimate. Failing to incorporate this predictability could distort the attractiveness of available investment opportunities, leading to a misallocation of a fund's capital.

Foreign exchange rates are known to be difficult to predict over short horizons (Meese and Rogoff, 1983; Rossi, 2013). There is ample evidence, however, that over the medium-to-long term, movements *are* predictable and closely aligned with forward exchange rates—high-interest-rate currencies systematically depreciate against low-interest-rate currencies over the medium term, in line with the interest-rate differential (e.g., Chinn and Meredith, 2004; Chinn and Quayyum, 2012; Valchev, 2015; Engel, 2016; Boudoukh et al., 2016; Engel et al., 2022). Crucially, this medium-term predictability aligns with the typical investment horizon of PE funds and is thus relevant to the evaluation of potential international PE investments.

Failing to adjust for these predictable FX movements would result in over-estimating investment returns in high-interest-rate economies (i.e., those trading at an FX forward discount) and under-estimating investment returns in low-interest-rate economies. Section 1 provides a numerical example to make these ideas concrete. The conjecture yields two specific predictions that we take to the data. First, failing to adjust for FX forward discounts would result in realized PE fund returns being correlated with both realized and *expected* FX returns. Second, there would be a systematic over-investment in high-yielding economies and systematic under-investment in low-yielding economies. Our empirical results are consistent with both predictions. Our findings therefore align with the survey results of Gompers et al.

(2016), who show that PE funds fail to formally account for the riskiness of investments when assessing whether they meet return thresholds. Our results suggest that, in addition to risk, PE funds neglect FX when forming their return estimates.

For our analysis, we construct a comprehensive global sample of PE buyout funds, using data from Preqin. For each fund, we identify the headquarter country of each target company it acquires and obtain the five-year forward FX rate between the local currency of the target company and the fund's home currency, using market rates at the end of the last quarter prior to the investment. Using these FX forward rates we form a deal-weighted measure of the expected exchange rate depreciation for each fund. Importantly, these FX forward rates are easily observable before the investment decision is made, so the expected FX return requires no estimation. Moreover, since private equity investments are typically held for approximately 3 to 7 years, it suggests the five-year forward rate is a reasonable choice for the expected FX movement over the investment period.[1]

We first study the relationship between expected FX returns, as implied by the FX forward discount and PE investment returns. Around half the funds in our sample have investments in foreign currencies, and conditional on having foreign currency exposure are exposed to three currencies on average. Unsurprisingly, the US dollar and euro are the most common fund denomination currencies and deal target currencies. For foreign currency deals in which the fund's home currency is not the same as the target's local currency, the British pound is the most common local currency. The annualized FX forward discount, our main measure of the expected FX movement is on average -0.15%. The average net IRR is 16% and the average MOIC 1.96.

We perform a regression analysis of fund-level returns on expected deal-weighted average FX returns. We find that PE fund returns are strongly positively correlated with expected FX returns at the time of the investment. A one-standard-deviation increase in the annualized fund-level expected FX return is associated with a 0.93 percentage point increase in a

[1]In Figure 5, we show that five-year forward FX rates at the time of investment are closely correlated with the realized FX changes over the same period in our sample of PE deals.

fund's IRR and a 0.039x increase in a fund's MOIC. Given the strong FX predictability, the magnitude of the return sensitivity estimate is nearly identical when we replace the expected FX movement with the *realized* five-year FX change from the time of each investment. This finding is consistent with PE funds failing to account for predictable FX moves when making the investments and is difficult to reconcile otherwise.

We then turn to study the likelihood of acquiring a target company conditional on the current FX forward discount. Consistent with our predictions, we find that PE deal activity is positively associated with FX forward discounts. PE funds are significantly more likely to buy target companies in high-interest-rate countries whose currencies are expected to depreciate, and significantly less likely to make acquisitions in low-interest-rate countries. A one percentage-point increase in the annualized FX forward discount is associated with 0.96% increase in the number of buyouts.

In further analyses, we show that the relationship between realized fund returns and expected FX movements weakens with the share of foreign deals undertaken by a fund, consistent with funds more used to dealing with foreign currencies being less likely to neglect predictable FX movements. Furthermore, funds by PE firms which suffered negative FX returns in their previous funds are also less likely to be affected by these predictable movements, however the same is not true for PE firms that only experienced positive benefits from FX changes. These findings suggest that funds that are more experienced in dealing with FX changes are less likely to neglect expected FX. In particular, negative past experiences with FX appear to result in more attention to it.

Finally, we run placebo tests using domestic funds by randomly assigning observable forward FX rates to each of their deals and find, reassuringly, no relationship between the fund's performance and the expected FX returns implied by these forward rates. We also repeat our fund return analysis using real exchange rates (RERs) instead of the FX forward premium as a proxy for expected currency movements. Similar to the FX forward premium, RERs align closely with longer-term FX movements (see, e.g., Eichenbaum et al., 2021). Our

findings remain qualitatively similar when using RERs. Funds investing in currencies expected to depreciate based on having an currently overvalued currency exhibit lower realized returns.[2]

Taken together, our findings are most consistent with PE funds failing to account for predictable future FX changes when assessing potential international investment opportunities. Our results are not consistent with local funding conditions driving buyouts, as that would generate the opposite correlation between deal activity and the FX forward discount. Similarly, our returns analysis suggests that the findings on deal activity are not driven by taking on deliberate systematic FX risk typically associated with the currency carry trade (Lustig et al., 2011), as in that case high-interest-rate currencies are associated with higher returns—the opposite of what we find. Instead, our results are consistent with there being essentially zero currency premium at longer horizons, while PE funds behave *as if* there was.[3]

We make several contributions. First, our findings add to the large literature on the measurement and determinants of private equity returns (e.g., Ang et al., 2018; Acharya et al., 2013; Biesinger et al., 2023; Boucly et al., 2011; Brown et al., 2015; Guo et al., 2011; Driessen et al., 2012; Cole et al., 2025; Harris et al., 2014; Humphery-Jenner, 2012; Kaplan, 1989; Kaplan and Schoar, 2005; Phalippou and Gottschalg, 2009). Our study is also closely related to the literature on market timing in private equity (Brown et al., 2021; Robinson and Sensoy, 2016). Our results suggest that expected FX returns both affect PE funds' choice of investments, as it distorts the relative expected profitability of targets if expected FX changes are not accounted for, as well as realized fund returns.

Our findings are also related to the literature on corporate discount rates. Survey ev-

[2]The result is consistent with evidence that high-interest-rate currencies are also typically overvalued. See Engel (2016) for a discussion and theoretical reconciliation.

[3]Uncovered interest rate parity (UIP) is the cornerstone efficiency condition in FX markets. It essentially predicts that rational and risk-neutral agents will expect exchange rate movements to perfectly offset interest rate differentials. When covered interest rate parity (CIP) holds, this is equivalent to the forward exchange rate being an unbiased predictor of future exchange rates. While UIP has been long-rejected over short intervals, generating the "forward premium puzzle" (Fama, 1984), the interest-rate differential becomes a far better guide to the realized exchange rate movement as the horizon extends.

idence suggests that most corporates use IRR and NPV calculations to assess investment opportunities and often apply hurdle rates that are above their cost of capital (e.g., Trahan and Gitman, 1995; Poterba and Summers, 1995). Gormsen and Huber (2025) document time-varying wedges between discount rates applied and cost of capital, affecting firms' capital investment. Specific to private equity, Gompers et al. (2016) provides descriptive evidence for how PE funds assess returns—and fail to explicitly account for riskiness. Our results suggest that in addition to lacking appropriate risk adjustments, at least some PE funds appear to neglect predictable FX returns and instead naively compare nominal returns across different currencies when making investment decisions.

Finally, our core argument of FX neglect relies on the partial predictability of FX rates over multi-year horizons. While evidence suggests that forward FX rates are not good at predicting short-term FX movements (Fama, 1984; Hansen and Hodrick, 1980; Lustig et al., 2011), studies repeatedly show that FX forward rates are strongly positively correlated with realized FX changes over longer horizons (e.g., Boudoukh et al., 2016; Chinn and Quayyum, 2012; Chinn and Meredith, 2004; Engel, 2016; Engel et al., 2022; Valchev, 2015). Indeed, we confirm that the five-year forward FX rate strongly predicts realized five-year FX movements. Our analysis therefore provides an application for how failing to incorporate predictable FX movements can have negative consequences for high-stakes investment decisions.

1 Illustrative Investment Example

In this Section, we provide a simple numerical example to highlight why failing to incorporate predictable FX movements can result in a misallocation of a PE fund's capital.

To directly compare IRR or MOIC estimates across potential deals, one needs to calculate them in the same currency. This is the same as requiring that cash flows and discount rates are in the same currency when valuing an asset—an obvious requirement for internal consistency. The most obvious way to make this conversion is by converting expected for-

eign cash flows into a common currency, likely the fund's home currency, using current FX forward rates.[4] Alternatively, if the fund applies a targeted minimum IRR (i.e., a threshold return), it could translate the threshold return into the foreign currency to assess whether the investment meets that adjusted return threshold.

Table 1 illustrates a hypothetical situation in which a U.S.-based private equity fund (denominated in USD) assesses the expected returns of two potential investments, based either in Switzerland or in the UK. Both investments are expected to be exited in five years. The fund has a minimum IRR target of 15% and MOIC target of 2. The estimated local-currency-IRRs are 13.2% for the Swiss target and 15.2% for the UK target. Similarly, the local-currency MOIC is 1.86 for the Swiss target and 2.03 for the UK one. A naive comparison of local-currency returns would hence lead the fund to conclude that the UK target is more attractive and meets the threshold return of the fund. However, converting the expected investment cash flows into USD using the current market forward FX rates results in an expected USD IRR (MOIC) of 17.8% (2.27) for the Swiss target and 14.7% (1.99) for the UK target. This means that a fair "apples to apples" comparison results in the opposite conclusion.

Instead of converting the return estimates into its home currency, the US fund could also convert the required return threshold into the investment currency. As any cost of capital consists of a risk-free rate and a risk premium, the threshold return can be broken down into the currency-specifc risk-free rate and the implied risk premium. Assuming that the risk premium is inherent to the underlying risk profile of the asset and hence independent from the currency in which the cash flows estimates are undertaken, one can then generate equivalent threshold returns in different currencies, based on their respective risk-free interest rates. Table 2 illustrates how the hypothetical U.S. PE fund with a minimum required IRR of 15% could translate this threshold return into either CHF or GBP.

In the example, the USD threshold return translates into a threshold IRR of 10.99% in

[4]See, e.g., Damodaran (2025).

Table 1
Illustrative Investment Returns in Different Currencies

This table presents the expected cash flows related to two hypothetical target companies for a US-based private equity fund. Target 1 is based in Switzerland and reports financial information in CHF. Target 2 is based in the United Kingdom and reports financial information in GBP. The cash flows assume entry today and exit five years later. The entry cash flow is converted to USD using the spot FX rate as of August 21, 2025, and the exit cash flow using the five-year forward FX rate.

Target 1 – Switzerland

	CHF		Converted to USD	
	Entry	Exit (in 5y)	Entry	Exit (in 5y)
Cash flow	-80.8	150.0	-100.0	227.3
Exchange rate			1.238	1.515
FX forward premium/discount			4.1%	
IRR	13.2%		17.8%	
MOIC	1.86		2.27	

Target 2 – United Kingdom

	GBP		Converted to USD	
	Entry	Exit (in 5y)	Entry	Exit (in 5y)
Cash flow	-74.5	151.0	-100.0	198.7
Exchange rate			1.343	1.316
FX forward premium/discount			-0.4%	
IRR	15.2%		14.7%	
MOIC	2.03		1.99	

Table 2
Currency-Specific Threshold Returns

This table illustrates how a home currency (USD) threshold return of 15% would translate into other currencies, based on their respective interest rates. Ten-year government bond yields are used as a proxy for the currency-specific interest rates.

	Threshold return	Interest rate	Implied risk premium
Home currency threshold return:			
USD	15.00%	4.33%	10.67%
Equivalent foreign currency threshold returns:			
CHF	10.99%	0.32%	10.67%
GBP	15.49%	4.82%	10.67%

CHF and 15.49% in GBP. Comparing these against the estimated local-currency IRRs in Table 1 results in the identical conclusion when making an FX forward conversion. Applying the currency-adjusted threshold returns implies the Swiss target (with an IRR of 13.2%) meets the return threshold, while the UK target (with an IRR of 15.2%) does not. This is generally true assuming covered interest rate parity—a no-arbitrage condition that ties FX forward rates to currency-specific interest rates—holds for forward FX rates. Using FX forward rates to convert foreign-currency cash flows into USD and then discounting them with a USD discount rate is conceptually equivalent to converting the USD discount rate into the foreign currency discount rate and then discounting the foreign-currency cash flows with that discount rate. Internet Appendix Table IA.10 illustrates this mathematically.

2 Data and Methodology

In this section, we begin by describing our PE deal-level data that is at the centre of our analysis. We then provides details for how we construct expected FX returns with FX forward rates, which we use in the main analysis, and with real exchange rates, which we use use in further analyses. Finally, we document auxiliary data, filters we use to construct our final sample of PE funds' deals, and how we construct key variables including funds' NAV adjustments and realized FX returns.

2.1 Deal and Fund-Level Data and Sample Construction

Our data on private equity buyouts are from Preqin Pro. The database provides deal-level information, including target company identifiers, country, announcement date, and deal currency, as well as fund-level characteristics such as fund size, vintage year (1976-2024), reporting currency, geographic focus, and performance metrics (net IRR and MOIC).

We construct our analysis samples through a series of sequential filters. Our starting point is the universe of all buyout transactions. We require that both the fund's reporting

currency and the deal's currency are known; for the latter, we use the target company's country currency as a proxy if the deal currency is missing. This process yields 42,283 unique transactions. We map these to their respective investing funds to create our full deal sample, which comprises 45,550 deal-fund observations from 6,490 unique funds.

Parallel to this, we define our full fund sample, which consists of 10,138 funds that have complete deal-level information but for which we do not impose performance data or maturity requirements. This sample serves as the basis for our fund-level analysis.

From these two full samples, we create two final samples for our main analyses. First, the deal activity sample is derived from the full deal sample by requiring a successful match with our exchange rate data. This sample contains 44,740 deals from 6,425 funds. Second, the fund returns sample is derived from the full fund sample by applying three additional screens: (i) the fund must have FX data available, (ii) to ensure performance is largely realized, the fund must either be liquidated or have a vintage year of 2014 or earlier, and (iii) the fund must have non-missing net IRR and MOIC. The final fund returns sample consists of 1,543 buyout funds, of which 744 have investments in foreign currencies.

To mitigate the influence of outliers, fund-level performance and FX variables are winsorized at the 1st and 99th percentiles.

2.2 Forward Exchange Rates

We obtain quarterly five-year forward and spot exchange rates from Bloomberg. Our sample begins in 1998:Q4 and runs to 2025:Q1; we select this start date to avoid discontinuities related to the introduction of the euro in January 1999.[5] The data cover 23 fund-reporting currencies and 70 deal currencies. All rates are quoted against the USD, from which we calculate mid-rates and derive all necessary cross-rates via triangulation. This dataset provides coverage for 99.8% of buyout deals in our full sample.

From these data, we construct our primary measure of *ex ante* expected currency return

[5]This choice has a minimal impact on our sample. Only 1,378 deals (3.1% of the total) occurred before 1999, and all of these are same-currency transactions involving 310 funds (4.8% of all funds).

for each transaction. The annualized FX forward discount, which we term Expected FX, is defined as:

$$\text{Expected FX}_{d,f,t} = \left[\left(\frac{F_{d,f,t-1}}{S_{d,f,t-1}} \right)^{1/5} - 1 \right] \times 100 \tag{1}$$

where d, f, and t index the deal currency, fund currency, and deal quarter, respectively. $F_{d,f,t-1}$ and $S_{d,f,t-1}$ are the five-year FX forward and FX spot rates (units of fund currency per unit of deal currency) in the quarter preceding the deal's announcement.[6] A negative value indicates an expected depreciation of the deal currency relative to the fund currency.

To benchmark these expectations, we construct a corresponding *ex post* measure of realized currency performance over a five-year horizon, consistent with a typical private equity holding period:

$$\text{Realized FX}_{d,f,t} = \left[\left(\frac{S_{d,f,t+19}}{S_{d,f,t-1}} \right)^{1/5} - 1 \right] \times 100 \tag{2}$$

where $S_{d,f,t+19}$ is the FX spot rate (units of fund currency per unit of deal currency) 20 quarters (five years) after the measurement of the initial FX spot rate. The forecast error is the difference between these two measures, $\text{Realized FX}_{d,f,t} - \text{Expected FX}_{d,f,t}$.

2.3 Macroeconomic Controls

We control for local macroeconomic conditions using two main variables. First, we source annual real GDP growth from the World Bank. Our data cover 202 countries from 1980 to 2024, which allows us to match 98.3% of all transactions in our *deal activity sample*.[7] Second, to control for the level of investment activity in a currency zone, we construct a measure of the total number of acquisitions in each deal currency. This variable is sourced from Preqin Pro and includes all investment deal types across 184 currencies from 1980 to 2024.

[6] Cross rates are derived from USD-quoted rates via triangulation: if both the deal and fund currencies are quoted against USD, then $S_{d,f,t} = (\text{USD per deal currency})_t / (\text{USD per fund currency})_t$. For example, if the deal currency is GBP and the fund currency is EUR, then $S_{d,f,t}$ represents EUR per GBP. The forward rate $F_{d,f,t}$ is calculated analogously.

[7] The unmatched deals consist primarily of transactions with an announcement date in 2025, for which lagged macro data are not yet available in the World Bank database, and a small number of investments in jurisdictions with limited World Bank coverage (e.g., British Virgin Islands, Jersey, Guernsey, Taiwan) or affected by country-name reclassifications.

2.4 Investment Activity Panel

To analyze investment decisions, we construct a fund-currency-year panel from our deal activity sample. Starting with the 44,740 deals in our deal activity sample, we aggregate deal observations to the fund-currency-year level. For each fund f, currency c, and year t combination, we calculate the number of deals made and the corresponding lagged FX forward discount. The FX forward discount is fund-currency-pair specific, calculated as the annualized five-year FX forward discount between the fund's reporting currency and the deal currency, based on December rates from year $t-1$ to ensure it precedes investment decisions in year t.

The key challenge is defining each fund's investment opportunity set across currencies and time. We construct a comprehensive country set for each fund by combining three components: (1) geographic focus inferred from Preqin Pro[8], (2) the firm's broader historical investment universe, and (3) actual investment countries observed in the deal observations. This approach captures both declared investment intentions and revealed preferences through actual behavior. Countries are mapped to currencies using a time-varying correspondence that accounts for currency transitions such as euro adoption. This ensures that our panel reflects the evolving currency landscape over our sample period.

2.5 Quarterly NAV Adjustments and Fund Realized FX

To analyze the quarterly transmission of FX movements to fund performance, we construct two time-varying fund-level measures from Preqin's transaction data on NAV's and cash flows.

First, we calculate each fund's quarterly NAV adjustment, $r_{f,t}$, which isolates the change in Net Asset Value (NAV) attributable to investment performance, net of capital calls and distributions. For fund f in quarter t, let $V_{f,t}$ denote the quarter-end NAV, $C_{f,t}$ total capital

[8]Preqin Pro sources geographic focus data from fund level descriptors (Geographic Focus), which approximate the fund's intended investment geography.

calls, and $D_{f,t}$ total distributions within the quarter. The NAV adjustment is defined as:

$$r_{f,t} = \frac{V_{f,t} - V_{f,t-1} - C_{f,t} + D_{f,t}}{V_{f,t-1}} \tag{3}$$

where $V_{f,t-1}$ is the beginning-of-quarter NAV. This measure captures the organic valuation change during the quarter, scaled by invested capital.[9]

Second, we construct the Fund Realized FX measure, Fund Realized $\text{FX}_{f,t}$, capturing the realized currency return on the fund's active portfolio holdings each quarter. For each fund-quarter, we identify all active deals, those within their assumed five-year (20-quarter) holding period from the investment date. For each active deal i in quarter t, we compute the quarter-over-quarter percentage change in the FX spot rate between the deal's local currency and the fund's home currency. Fund Realized FX is the size-weighted average of these quarterly currency returns across all active deals, where each deal is weighted by its USD deal size:

$$\text{Fund Realized FX}_{f,t} = \sum_{i \in \text{Active}_{f,t}} w_{i,f} \cdot \frac{S_{i,t} - S_{i,t-1}}{S_{i,t-1}} \tag{4}$$

where $w_{i,f}$ is the deal-size weight of deal i within fund f (normalized to sum to one over all active deals in the quarter), and $S_{i,t}$ is the FX spot rate (fund currency per deal currency) for deal i in quarter t. Deals where the deal currency equals the fund currency are assigned a realized FX return of zero. We winsorize Fund Realized $\text{FX}_{f,t}$ at the 1^{st} and 99^{th} percentiles.[10]

[9] We aggregate transaction-level cash flows and NAV reports from Preqin to the quarterly frequency. Missing quarter-end valuations are imputed by carrying forward the most recent reported NAV and adjusting for subsequent net cash flows. For the first quarter with positive NAV, we set $r_{f,t} = 0$ as no prior capital is at risk. We floor beginning-of-quarter NAV at the 1^{st} percentile of the positive NAV distribution when aggregating to fund-quarter level and winsorize $r_{f,t}$ at the 1^{st} and 99^{th} percentiles to mitigate outliers.

[10] Currency observations with missing or zero spot rates are excluded from the calculation. Deal sizes missing at the deal level are imputed using the firm-level average deal size computed from the same private equity firm's other transactions.

2.6 Real Exchange Rates

Following Eichenbaum et al. (2021), we construct the quarterly real exchange rate (RER) for each currency i relative to the U.S. dollar as:

$$RER_{i,t} = S_{i,t} \times \frac{P_{i,t}}{P_t} \tag{5}$$

where $S_{i,t}$ is the quarterly spot exchange rate (USD per unit of foreign currency), and $P_{i,t}$ and P_t are the quarterly consumer price indices (CPI) for country i and the United States, respectively. We source all CPI data from the IMF's International Financial Statistics. For currencies shared by multiple countries, we assign a representative country whose CPI we use for the RER calculation. For the euro, we select Germany.

To measure the exchange rate relevant for a specific investment, we construct a deal-level RER. We define this as the ratio of the deal currency RER to the fund currency RER at the time of investment:

$$RER^{deal}_{d,f,t} = \frac{RER_{d,t-1}}{RER_{f,t-1}} \tag{6}$$

where d indexes the deal currency, f indexes the fund currency, and t is the quarter of the investment. We lag the RER by one quarter to mitigate look-ahead bias. Finally, we aggregate this measure to the fund level by taking a weighted average across all deals within a fund, consistent with the construction of our other fund-level currency measures.

The resulting RER dataset covers 99.9% of transactions in the deal activity sample, including 95.7% of unique deal currencies and 100% of unique fund currencies. Coverage for the broader full sample spanning from 1998 to 2025 remains high at 99.8% of transactions.

3 Main Results

In this section, we document our empirical results. We begin by providing descriptive statistics relating to our main sample. We then document our main regression analysis that tests

the link between funds' realized performance and their expected FX return before turning to the relationship between funds' deal activity and the expected FX return. In further analyses, we explore whether funds with more international exposure are less likely to neglect FX considerations, whether funds with prior FX experience respond more to predictable FX movements, and whether our core results are observed in placebo tests using funds without international exposure.

3.1 Sample Description

Table 4 reports summary statistics for the fund returns sample. Panel A includes all funds, while Panel B restricts the sample to funds with investments in foreign currencies.[11] On average, funds in the fund returns sample deliver a *Net IRR (%)* of 16.16% and a *MOIC* of 1.96. The mean *Fund size (USD million)* is \$932 million, and the typical fund undertakes 10.1 investments (*Number of deals per fund*) across approximately 1.9 distinct currencies (*Number of currencies*). The average *expected FX* is slightly negative at -0.15%, consistent with a modest *ex ante* expected depreciation of the investment country's local currency relative to the fund's home currency.

3.2 Fund Performance

We first test whether *ex ante* currency expectations are related to realized fund performance. To do so, we regress a fund's investment performance on its associated expected currency depreciation. We define this expected FX impact, Expected FX_f, as the size-weighted average

[11] We define a fund as having exposure to foreign currency if it has a positive foreign investment percentage, calculated as the share of foreign currency deals with available FX forward data. Our FX data requirements significantly affect foreign currency classification across both samples. In the fund full sample (10,138 funds), 2,698 funds originally had foreign currency deals, but 191 funds (7.1%) lost their foreign currency status due to missing FX forward data. After applying maturity criteria and performance data requirements to arrive at our fund returns sample of 1,543 funds, 805 funds originally had foreign currency deals, but 61 funds (7.6%) lost their foreign currency status due to missing FX forward data, leaving 744 funds with investments in foreign currencies in both samples. The lower reclassification rate in the fund returns sample reflects that funds with complete performance data tend to have better FX data coverage. Given these data limitations, our main analysis focuses on the full fund returns sample, while using the funds with investments in foreign currencies as supplementary evidence.

of the deal-level forward discounts from Equation (1) across all of fund f's investments.[12] The specification is:

$$\text{Performance}_f = \alpha + \beta \, \text{Expected FX}_f + \mathbf{X}_f'\delta + \theta_f + \varepsilon_f \tag{7}$$

where the dependent variable, Performance_f, is either the fund's *Net IRR (%)* or its *MOIC*. The vector $\mathbf{X}_f$ contains fund-level controls, and θ_f represents a comprehensive set of fund currency and vintage year fixed effects.

The results are reported in Table 5. The coefficient on Expected FX_f is positive and highly statistically significant across all specifications. Standard errors are two-way clustered at the vintage and fund currency level. Economically, a one standard deviation increase in this measure (0.76 percentage points) is associated with a 0.93 percentage point increase in *Net IRR* and a 0.039 increase in *MOIC*. Relative to the sample mean, this effect corresponds to a 5.8% increase in a fund's IRR. We find almost identical results for the sample of all funds in the fund returns sample (Panel A) and when restricting to funds with investments in foreign currencies (Panel B).

3.3 Investment Decisions

We next investigate whether the FX forward premium influences investment allocation across currencies. We estimate a fund-currency-year panel model where the dependent variable is the number of deals a fund makes in a given currency and year. The key explanatory variable is the predetermined fund-currency-pair-specific FX forward premium. The specification is:

$$\ln(1 + \text{Deals}_{f,c,t}) = \alpha + \beta \, \text{Expected FX}_{f,c,t} + \mathbf{X}_f'\delta + \mathbf{Z}_{f,c,t-1}'\phi + \theta_{f,c,t} + \varepsilon_{f,c,t} \tag{8}$$

[12] We weight each deal by its USD-denominated size to capture the economic significance of each investment. For deals with missing size data (70.9% of transactions in our deal activity sample), we impute the deal size using the average size of other deals made by the same private equity firm, computed separately for cross-currency and same-currency transactions. Same-currency deals have no FX exposure by construction (their deal-level *expected FX* is zero) and therefore contribute zero to the numerator of the weighted average. Their deal sizes are included in the denominator, so the fund-level measure reflects the average expected FX impact per dollar of total portfolio investment.

where the indices f, c, t denote fund, currency, and year. Expected $\text{FX}_{f,c,t}$ is the FX forward premium between the fund's reporting currency and the deal currency, predetermined at t. $\mathbf{X}_f$ is a vector of time-invariant fund controls (e.g., fund size), $\mathbf{Z}_{f,c,t-1}$ contains time-varying controls (e.g., lagged GDP growth), and $\theta_{f,c,t}$ represents a comprehensive set of fixed effects, which are specified in each column of the results table.

Table 7 reports the results. The coefficient on the *expected FX* is consistently negative and significant. The economic magnitude is meaningful: a one standard deviation decrease in *expected FX* (2.53 percentage points) is associated with a 2.4% increase in the number of deals that a fund makes in that currency. This result indicates that funds systematically allocate more capital to currencies that are expected to depreciate.

This finding, combined with our performance results, provides strong evidence consistent with FX neglect in private equity. Managers not only fail to price predictable currency movements but appear to actively increase their exposure to currencies that are ex ante unattractive from a currency perspective. This investment pattern mechanically resembles a currency carry trade, allocating capital from low- to high-interest-rate currencies. However, unlike a typical carry trade strategy, which is presumed to earn a currency risk premium, this behavior is associated with lower fund returns. This disconnect reinforces our interpretation of neglect, as it appears funds increase their exposure to currencies that are ex-ante unattractive from a currency return perspective, amplifying the fund's FX risk and leading to the negative performance consequences we document.

3.4 Heterogeneity by Foreign Currency Exposure

Under a framework of rational inattention, managers may ignore currency dynamics when foreign exposure is incidental. However, as funds allocate a larger fraction of their capital across currency boundaries, the potential cost of ignoring predictable FX movements increases. We conjecture that substantial cross-currency exposure compels managers to explicitly incorporate currency expectations into their ex-ante deal evaluation, thereby mit-

igating the bias.

To test this conjecture, we augment our baseline specification with an interaction term between *expected FX* and the fund's share of cross-currency deals. We estimate:

$$\begin{aligned} y_f = \alpha + \beta\,\text{Expected FX}_f + \gamma\left(\text{Expected FX}_f \times \text{Foreign Share}_f\right) \\ + \delta\,\text{Foreign Share}_f + \mathbf{X}_f'\boldsymbol{\eta} + \theta_f + \varepsilon_f \end{aligned} \tag{9}$$

where y_f denotes fund performance (Net IRR or MOIC), and Foreign Share_f is the size-weighted share of fund f's investments denominated in a currency different from the fund's reporting currency. The coefficient of interest, γ, measures how the relationship between ex-ante currency expectations and realized performance varies with the intensity of cross-currency investing.

Table 8 reports the results. The interaction coefficient γ is negative and statistically significant. This indicates that the predictive power of *expected FX* on performance systematically weakens as a fund's foreign deal share increases. Funds with substantial cross-border exposure appear less susceptible to FX neglect, consistent with the view that international diversification sharpens management's attention to currency dynamics.

3.5 Learning from Experience

If FX neglect is a correctable bias rather than a structural feature of the asset class, firms that have experienced adverse currency movements in prior funds should exhibit weaker neglect in subsequent vehicles.

To test for learning, we construct a firm-level history of FX realizations. Let H_f denote the weighted average realized FX return across all predecessor funds managed by the same firm that held cross-currency investments, ordered by fund number within the firm. We decompose this history into positive (gain) and negative (loss) components:

$$H_f^+ = \max(H_f, 0), \qquad H_f^- = |\min(H_f, 0)| \tag{10}$$

where H_f^+ captures the magnitude of prior currency gains and H_f^- captures the magnitude of prior losses. Both variables are set to zero for firms launching their first cross-currency fund. We estimate the following specification:

$$\begin{aligned} y_f = \alpha + \beta\,\text{Expected FX}_f + \theta^+\left(\text{Expected FX}_f \times H_f^+\right) + \theta^-\left(\text{Expected FX}_f \times H_f^-\right) \\ + \delta H_f^+ + \zeta H_f^- + \mathbf{X}_f'\boldsymbol{\eta} + \theta_f + \varepsilon_f \end{aligned} \tag{11}$$

In this model, the marginal effect of *expected FX* on performance is given by $\beta + \theta^+ H_f^+ + \theta^- H_f^-$. The coefficient θ^- tests the hypothesis of loss-driven learning.

Table 9 presents the results. We find that θ^- is negative and statistically significant, while θ^+ is statistically indistinguishable from zero. This asymmetry implies that learning is driven primarily by adverse outcomes: prior currency losses materially dampen the association between *expected FX* and performance in subsequent funds, whereas prior gains have no detectable impact. This pattern is consistent with attention being activated by costly surprises rather than positive reinforcement.

4 Additional Analysis and Robustness Checks

4.1 NAV Dynamics and Fund Realized FX

We examine whether quarterly fund performance comoves with the time-varying currency composition of the fund's portfolio. This analysis provides complementary evidence on the transmission channel through which FX affects fund performance. If funds fail to hedge currency risk or adjust for predictable FX movements *ex ante*, their quarterly NAV adjustments should mechanically track currency fluctuations in their active portfolio holdings.

Using $r_{f,t}$ and Fund Realized $\text{FX}_{f,t}$ as defined in Section 2.5, we estimate a fund-quarter

panel regression:

$$r_{f,t} = \alpha + \beta \, \text{Fund Realized FX}_{f,t} + \gamma \, \text{Foreign Currency Inv}_f + \theta_{f,t} + \varepsilon_{f,t} \tag{12}$$

where Foreign Currency Inv_f is an indicator for whether fund f has at least one investment in a currency different from its fund currency, and $\theta_{f,t}$ represents fixed effects that vary across specifications.

Table 10 presents the regression results. Panel A reports estimates for the full fund-quarter sample, while Panel B restricts the analysis to funds with investments in foreign currencies. Across all specifications, robust to the inclusion of fund currency, vintage, year, and fund fixed effects, the coefficient on Fund Realized $\text{FX}_{f,t}$ is positive and statistically significant. Economically, a one standard deviation increase in Fund Realized FX (approximately 1.0 percentage point) is associated with a 0.60 percentage point increase in the quarterly NAV return. Relative to the sample mean quarterly return of 1.64 percent, this corresponds to a 36 percent increase.

4.2 Placebo Tests

A potential concern is that the positive relationship between *expected FX* and fund performance reflects spurious correlation—for instance, if forward premiums proxy for unobserved macroeconomic conditions that independently drive private equity returns. We address this by conducting two placebo exercises designed to preserve the distributional properties of the FX variables while detaching their link to the specific funds holding the risk.

In the first exercise, we randomly reassign observed deal-level FX forward premiums from cross-currency deals to same-currency deals within the same announcement year and fund currency. Each same-currency deal receives a randomly drawn forward premium from the empirical distribution of cross-currency deals. We then construct a *Pseudo Expected FX* measure for each fund as the size-weighted average of these randomly assigned premiums

across the fund's same-currency deals only. If our main result were driven by omitted variables correlated with general currency conditions, this pseudo measure should also predict performance. Panel A of Table 11 reports that the coefficient on *Pseudo Expected FX* is statistically indistinguishable from zero across all specifications. In the Internet Appendix (Table IA.6, Panel A), we extend this analysis using 1,000 bootstrap randomization iterations, confirming that the null distribution of the coefficients is centered at zero.

In the second exercise, we replicate this logic at the fund-quarter level using the *Fund Realized FX* measure defined in Equation (4). We randomly reassign quarterly realized currency returns from cross-currency funds to domestic-only funds within the same quarter-currency cell. Panel B of Table 11 shows that the resulting *Pseudo Fund Realized FX* has no explanatory power for fund performance. Collectively, these falsification tests support the interpretation that our results represent a genuine economic link between neglected currency expectations and investment outcomes, rather than being a mere statistical artifact.

4.3 Real Exchange Rates as an Alternative Proxy for Expected FX

To ensure our results are not specific to our *expected FX* measure, a market-based proxy mechanically linked to interest rate differentials, we conduct a parallel analysis using the Real Exchange Rate (RER). The RER is a fundamentals-based measure of currency valuation grounded in purchasing power parity, where a high RER indicates a currency is overvalued in real terms and thus likely to depreciate. If the neglect of predictable currency movements is a general phenomenon, we should find that investing in overvalued currencies also leads to lower performance.

We test this prediction by replacing Expected FX with our fund-level RER measure. The results, reported in Table 12, confirm this conjecture. The coefficient on the alternative Expected FX measure is negative and statistically significant, indicating that funds investing in overvalued currencies at the time of investment subsequently realize significantly lower

returns.

Together, these analyses provide convergent evidence for the FX neglect hypothesis. Whether we measure the expected currency depreciation using a market-based metric tied to uncovered interest rate parity using FX forward rates or a fundamentals-based metric tied to purchasing power parity, the inference is identical: investing in currencies that are *ex-ante* expected to weaken is associated with significantly lower fund returns. The economic channel underlying these results is the *ex-ante* predictability of currency movements. As we demonstrate in Appendix Tables IA.4 and IA.5, both measures are strong predictors of realized FX movements in our sample. The systematic relationship between these observable *ex-ante* measures and realized fund performance is inconsistent with managers fully incorporating this information into their investment decisions.

5 Conclusion

We begin with a conjecture that international PE funds might not fully account for predictable FX changes when assessing the expected returns of prospective international investments. This results in two empirical predictions that are contrary to what one might expect otherwise: i) investment returns would be positively correlated with the FX forward premium, and ii) PE funds would be more likely to buy targets in currencies that, based on the FX forward premium, are expected to depreciate.

Our empirical findings are consistent with both of these predictions. The FX forward premium (*expected FX*) at the time of PE buyouts strongly predicts realized fund-level investment returns. The same is true when using real exchange rates as the proxy for expected FX movements. Furthermore, PE funds are more (less) likely to acquire target companies when the FX forward premium implies the target currency will depreciate (appreciate) relative to the fund currency. This is consistent with PE funds naively comparing nominal local-currency returns when deciding on buyout targets, without adjusting for predictable

FX movements.

Our findings are striking, as FX forward rates are easily observable at the time of investment. As shown by prior research and in our analysis, FX forward rates over longer horizons are strongly correlated with *ex-post* realized FX returns. In principle, the investment cash flows could also be hedged at these rates, although this is not easy in practice, as the future cash flows are not known ex ante. Nevertheless, our findings are consistent with PE funds (at least partly) neglecting predictable FX changes and systematically misallocating capital.

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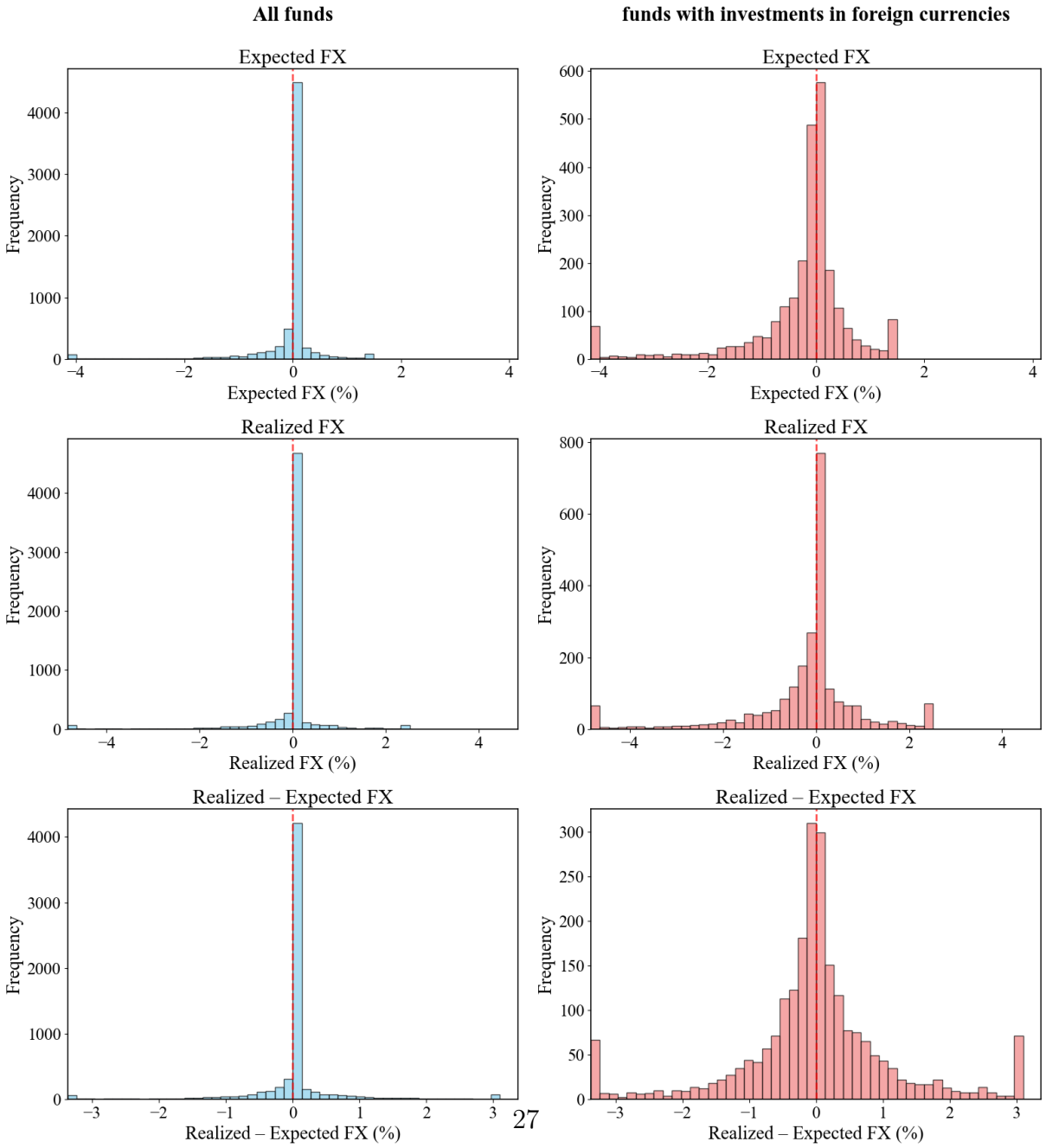
Figure 1: Distribution of Expected and Realized FX

This figure shows the distribution of *expected FX*, *realized FX*, and their difference at the fund level. *Expected FX* is the fund-level size-weighted average of the annualized five-year forward discount across a fund's investments (see Equation 1). *Realized FX* is the corresponding size-weighted average of ex post FX returns over the following five years. The left panel covers all funds; the right panel restricts to funds with investments in foreign currencies. Panel A includes the full sample of funds, including funds with missing FX measures or performance data, without vintage or status filtering. Panel B includes our fund returns sample, which excludes funds dropped due to vintage restrictions, inactive status, or missing FX/performance data.

Panel A: Full sample



Panel B: Fund returns sample

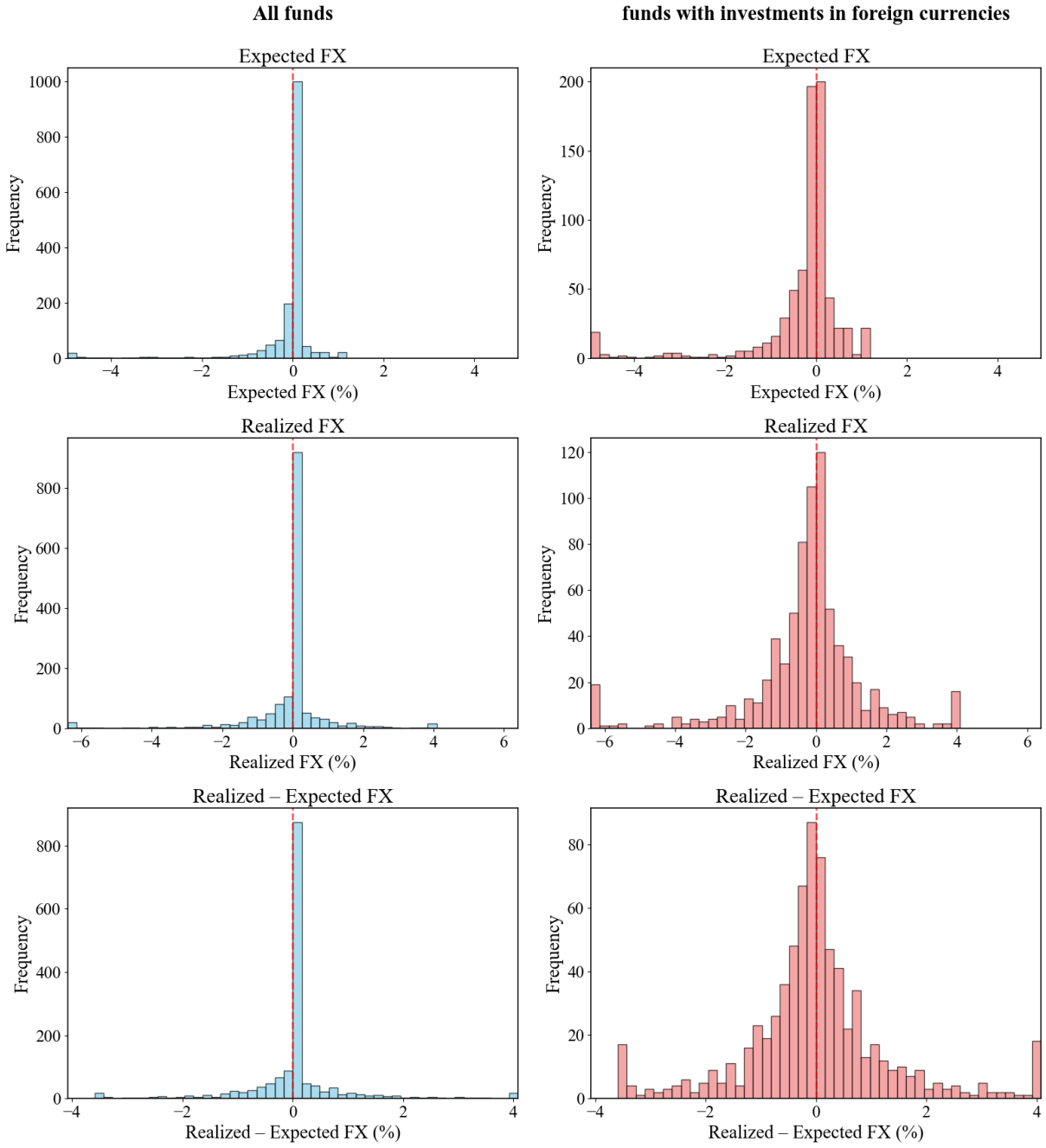
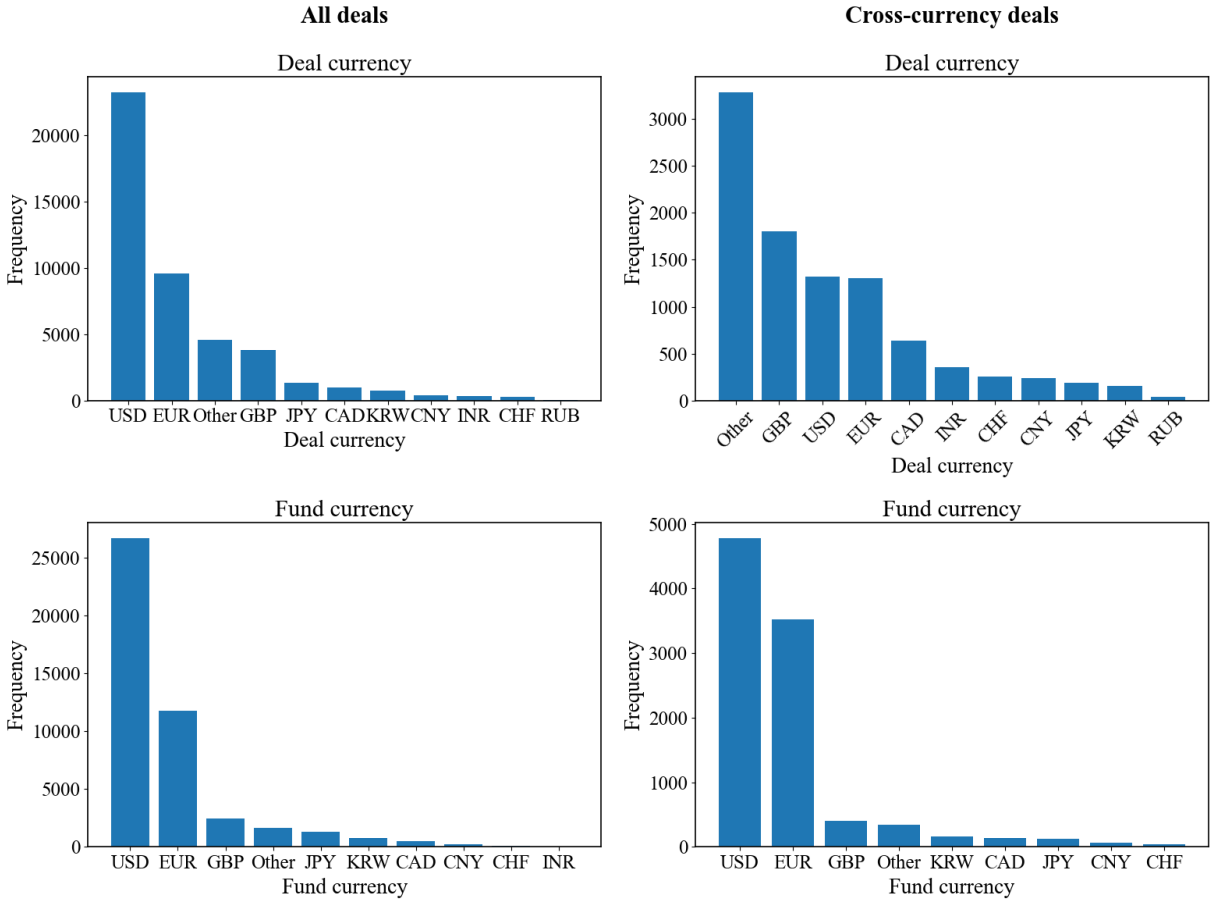


Figure 2: Distribution of Deal and Fund Currencies

This figure shows the frequency distribution of deal and fund currencies. Within each panel, the top subfigure reports deal currencies and the bottom subfigure reports fund currencies. The left panel covers all deals in the sample, while the right panel restricts to foreign currency deals. Panel A covers the full sample of deals. Panel B covers the deal activity sample, which excludes deals dropped due to missing forward FX data.

Panel A: Full sample



Panel B: Deal activity sample

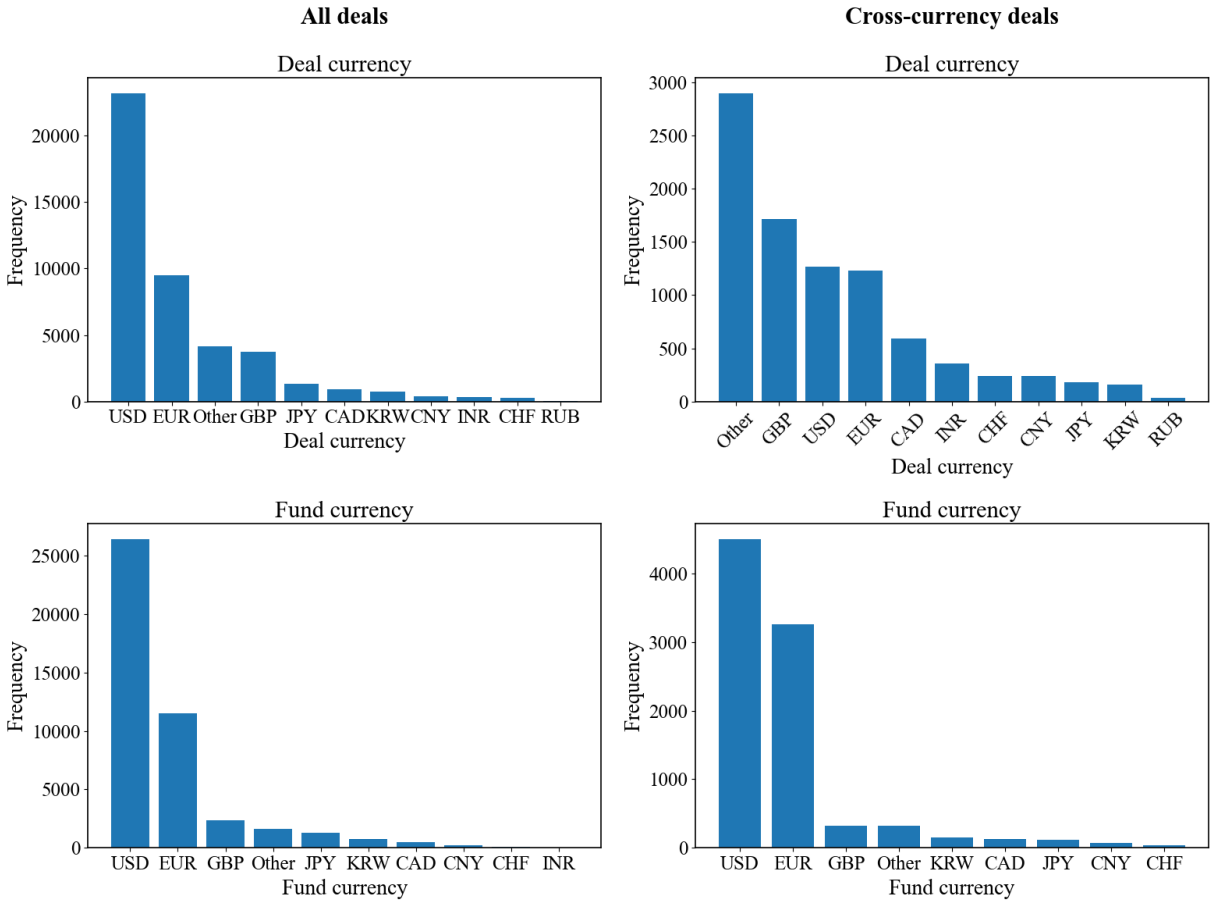
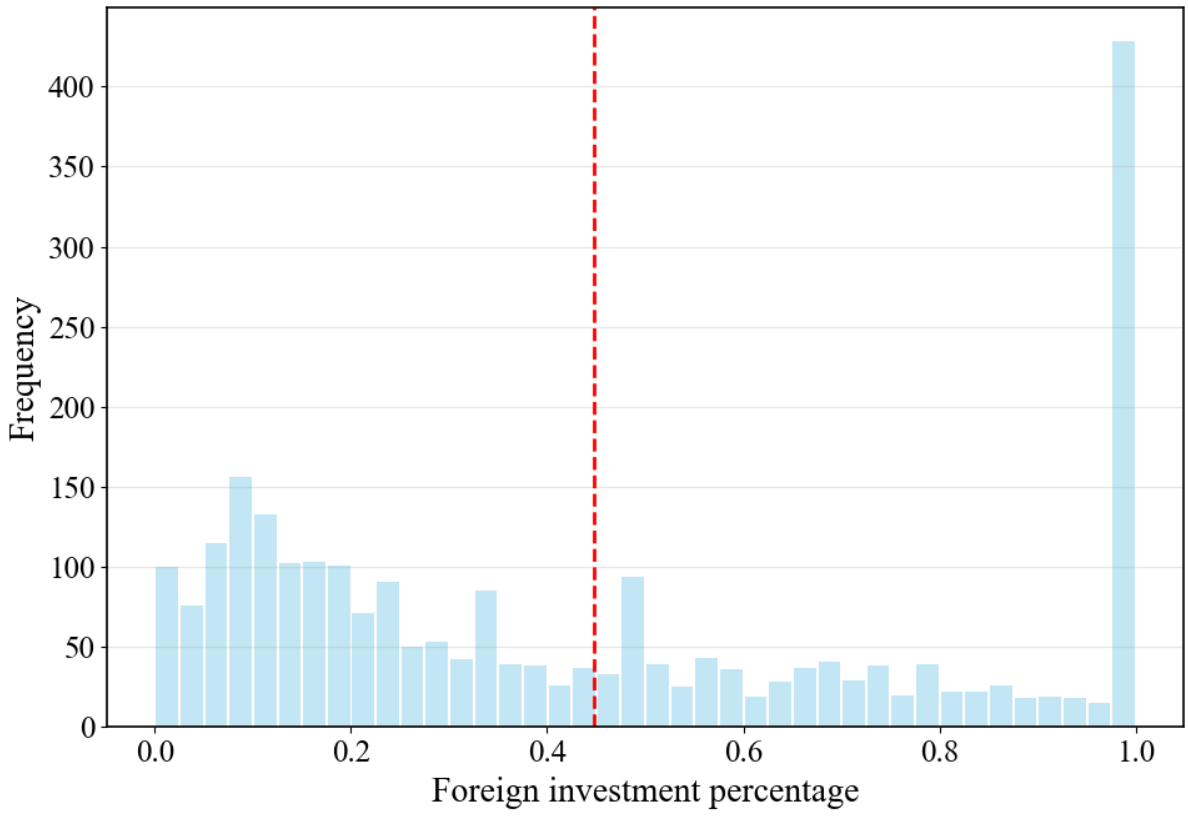


Figure 3: Distribution of Foreign Currency Share

This figure shows the distribution of foreign currency share across funds with investments in foreign currencies. Foreign currency exposure is defined as the share of a fund's deals denominated in currencies other than its reporting currency. Panel A reports results for the full sample of funds with investments in foreign currencies. Panel B reports the distribution for the fund returns sample, which excludes funds dropped due to vintage restrictions, inactive fund status, or missing FX and performance data.

Panel A: Full sample



Panel B: Fund returns sample

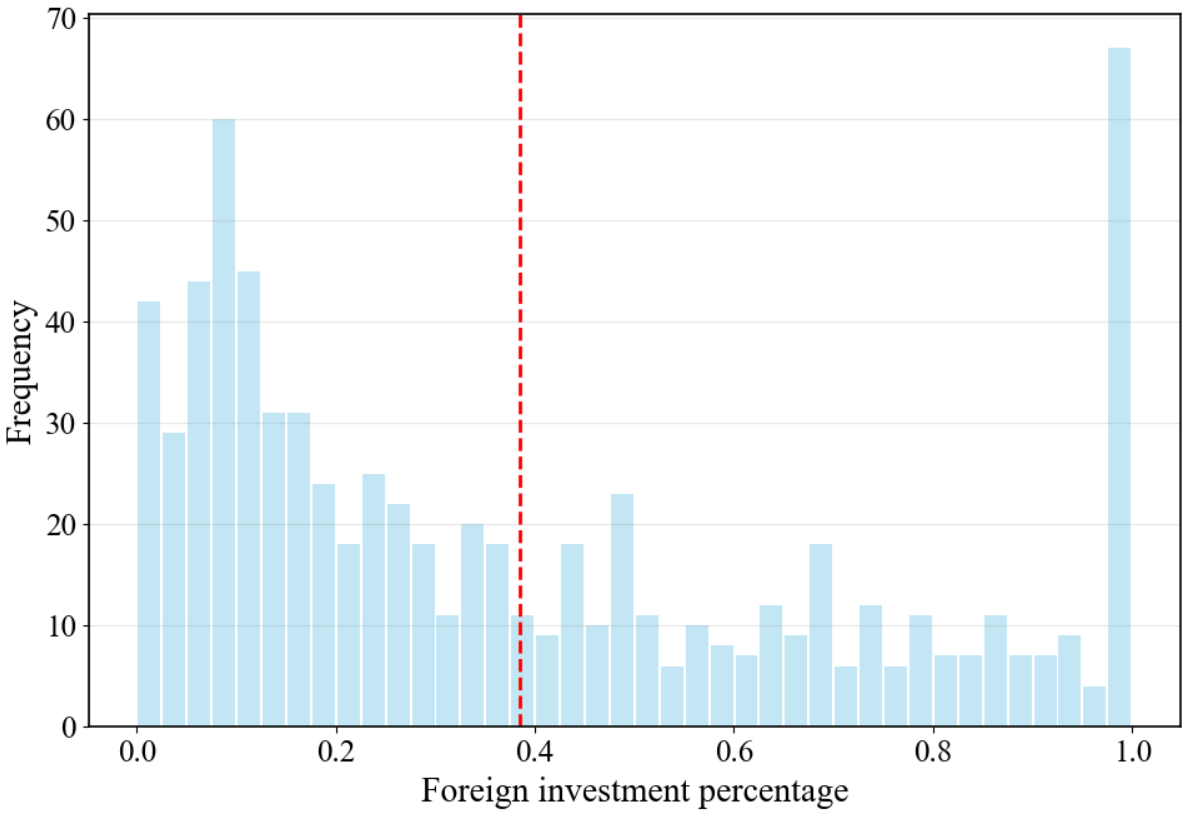
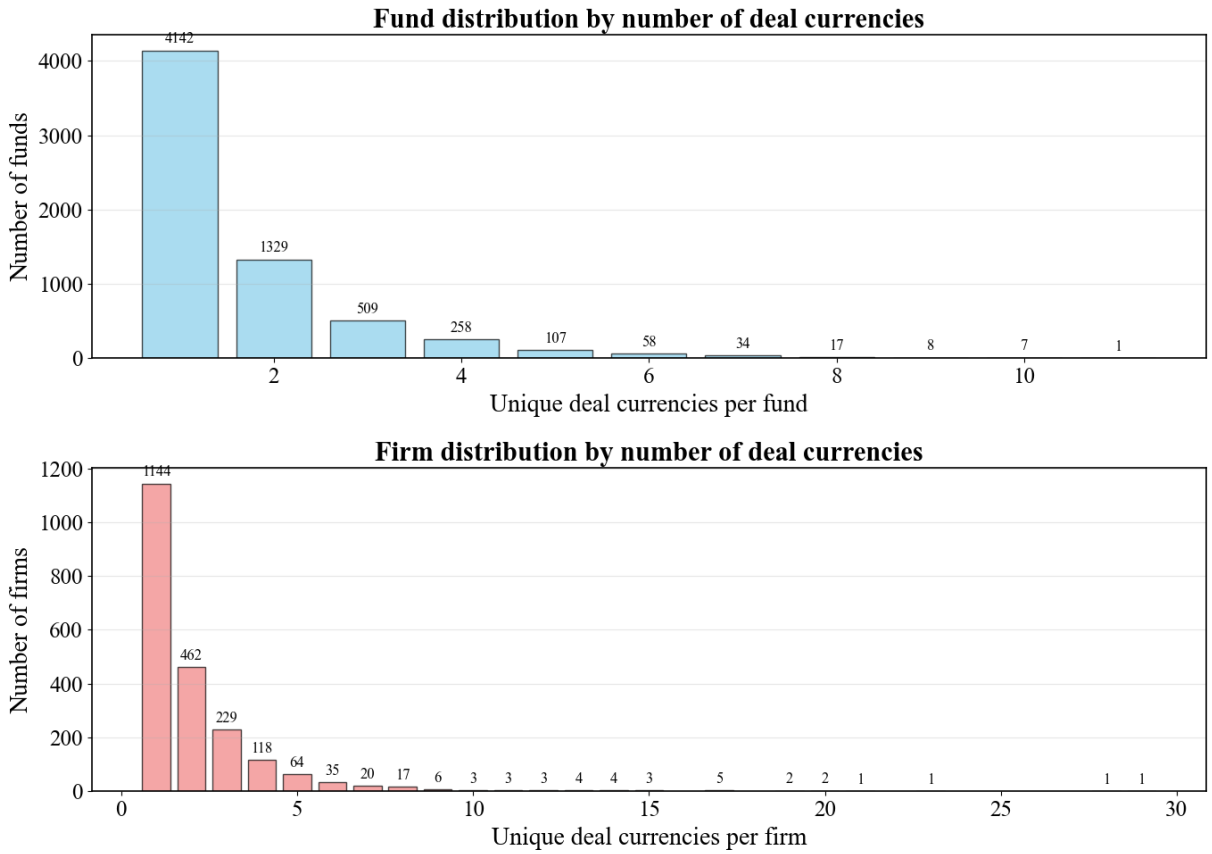


Figure 4: Distribution of Unique Deal Currencies per Firm and per Fund

This figure shows the distribution of the number of distinct deal currencies at the firm level (top panel) and the fund level (bottom panel). Panel A shows results for the full sample of funds. Panel B shows results for the fund returns sample, which excludes funds dropped due to vintage restrictions, inactive fund status, or missing FX and performance data.

Panel A: Full sample



Panel B: Fund returns sample

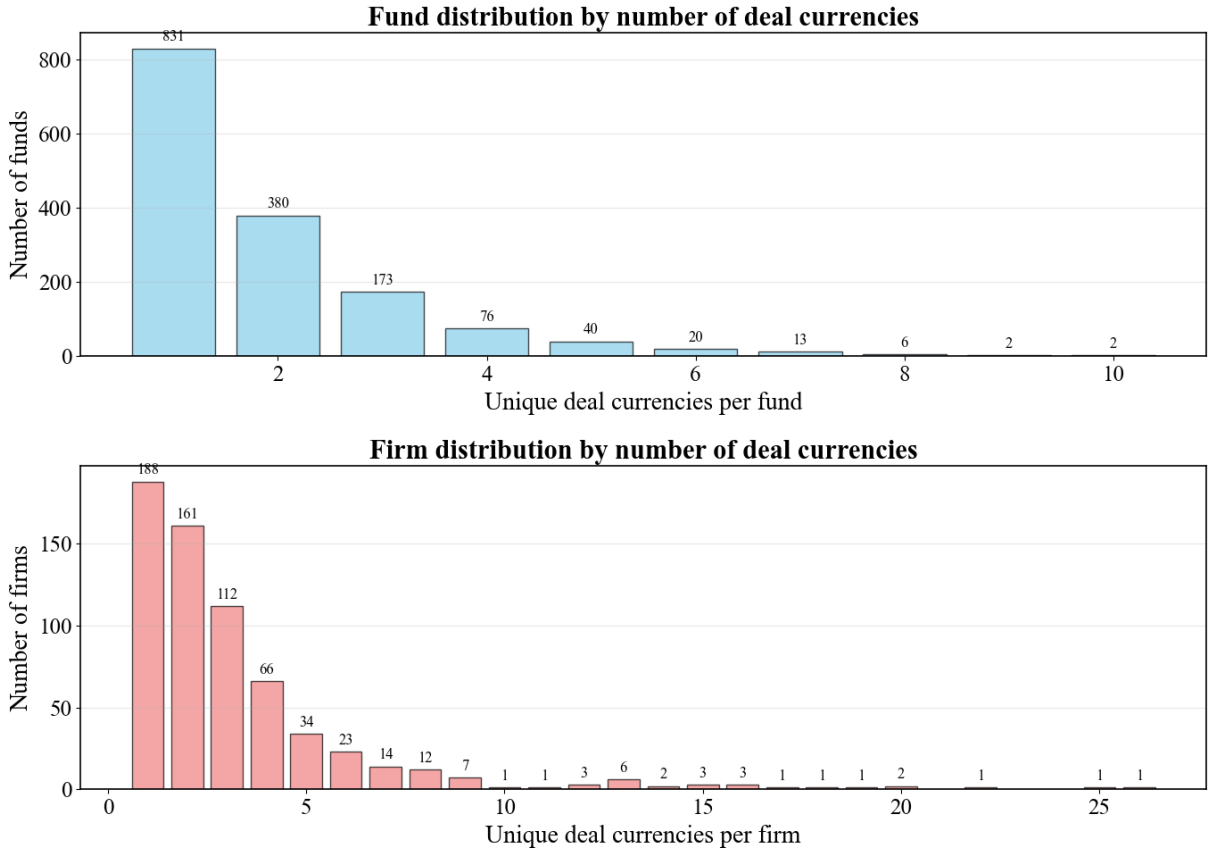


Figure 5: Relationship between Deal-level Expected and Realized FX

The figure plots binned scatter plots of deal-level *expected FX* against the corresponding *realized FX* for foreign currency deals.

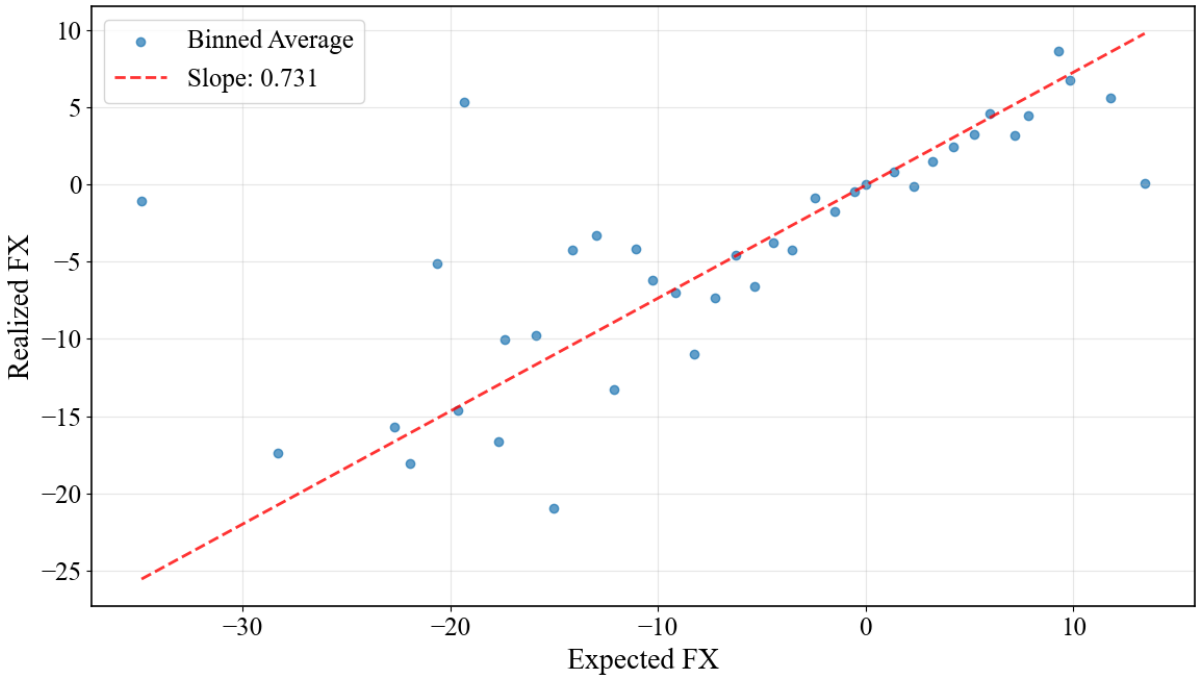


Table 3
Distribution of Deals by Fund Currency and Deal Currency

This table presents the distribution of deals by fund currency and deal currency for all deals in the deal activity sample and restricting to deals undertaken by funds with investments in foreign currencies.

Panel A: All deals

	USD	EUR	GBP	JPY	CAD	KRW	CNY	INR	CHF	RUB	Other	Total
Fund Currency						*Deal Currency*						
USD	21,916	944	738	174	561	146	211	314	44	27	1,342	26,417
EUR	756	8,257	947	3	18	5	22	13	190	5	1,303	11,519
GBP	78	193	2,039	0	4	0	0	8	5	0	38	2,365
JPY	73	1	2	1,162	0	5	4	4	0	0	22	1,273
KRW	112	9	5	4	1	614	2	10	0	0	10	767
CAD	128	0	3	0	365	0	0	1	0	0	0	497
CNY	33	5	5	0	0	0	160	7	0	0	16	226
CHF	1	37	1	0	0	0	0	0	29	0	0	68
INR	0	0	0	0	0	0	0	9	0	0	0	9
Other	88	44	15	1	5	1	0	1	2	0	1,442	1,599
Total	**23,185**	**9,490**	**3,755**	**1,344**	**954**	**771**	**399**	**367**	**270**	**32**	**4,173**	**44,740**

Panel B: Deals undertaken by funds with investments in foreign currencies

	USD	EUR	GBP	CAD	JPY	INR	CNY	CHF	KRW	RUB	Other	Total
Fund Currency						*Deal Currency*						
USD	9,298	944	738	561	174	314	211	44	146	27	1,321	13,778
EUR	756	4,389	947	18	3	13	22	190	5	5	1,303	7,651
GBP	78	193	896	4	0	8	0	5	0	0	38	1,222
JPY	73	1	2	0	296	4	4	0	5	0	22	407
CAD	128	0	3	216	0	1	0	0	0	0	0	348
KRW	112	9	5	1	4	10	2	0	54	0	10	207
CNY	33	5	5	0	0	7	71	0	0	0	16	137
CHF	1	37	1	0	0	0	0	20	0	0	0	59
Other	88	44	15	5	1	1	0	2	1	0	995	1,152
Total	**10,567**	**5,622**	**2,612**	**805**	**478**	**358**	**310**	**261**	**211**	**32**	**3,705**	**24,961**

Table 4
Summary Statistics

This table reports summary statistics for key variables for all funds in the fund returns sample and restricting to funds with investments in foreign currencies.

Panel A: All funds

	Mean	Std	P25	Median	P75	N
Net IRR (%)	16.1582	14.6875	7.7000	14.1000	22.9850	1543
MOIC	1.9636	0.9026	1.4000	1.7938	2.3337	1543
Expected FX	-0.1521	0.7587	-0.0158	0.0000	0.0000	1543
Realized FX	-0.1263	1.1628	-0.0323	0.0000	0.0000	1543
Realized - Expected FX	0.0002	0.9288	-0.0104	0.0000	0.0000	1543
Number of deals per fund	10.1005	8.1293	5.0000	9.0000	13.0000	1543
Number of currencies	1.8866	1.3318	1.0000	1.0000	2.0000	1543
Foreign investment (%)	0.1857	0.2942	0.0000	0.0000	0.2594	1543
Fund size (USD billion)	0.9322	1.6251	0.1750	0.3945	0.9170	1523

Panel B: Funds with investments in foreign currencies

	Mean	Std	P25	Median	P75	N
Net IRR (%)	14.9960	13.3891	7.4675	13.2000	21.0000	744
MOIC	1.8673	0.7735	1.3803	1.7360	2.2302	744
Expected FX	-0.3155	1.0691	-0.3226	-0.0225	0.0633	744
Realized FX	-0.2618	1.6645	-0.6973	-0.0728	0.3787	744
Realized - Expected FX	0.0005	1.3381	-0.5347	-0.0332	0.4563	744
Number of deals per fund	12.5820	9.7107	7.0000	11.0000	16.0000	744
Number of currencies	2.8387	1.3886	2.0000	2.0000	3.0000	744
Foreign investment (%)	0.3851	0.3206	0.1084	0.2794	0.6387	744
Fund size (USD billion)	1.3769	2.0849	0.2500	0.6400	1.5678	739

Table 5
Expected FX and Fund Performance

This table reports regressions of fund performance on *expected FX* for all funds in the fund returns sample (Panel A) and restricting to funds with investments in foreign currencies (Panel B). The dependent variables are net IRR (columns 1–3) and MOIC (columns 4–6). Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX	1.4008***	1.2407***	1.2270***	0.0654***	0.0563***	0.0513***
	(0.1157)	(0.1452)	(0.1704)	(0.0134)	(0.0070)	(0.0095)
ln(Fund size)		-1.8434***	-1.5686***		-0.1490***	-0.1352***
		(0.2873)	(0.2794)		(0.0278)	(0.0301)
ln(Number of fund deals)		1.7893*	1.7313*		0.1104**	0.1163**
		(1.0161)	(1.0009)		(0.0486)	(0.0466)
ln(Fund number in series)		-0.0863	-0.5529		0.0576	0.0145
		(0.9817)	(0.9678)		(0.0588)	(0.0601)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,507	1,507	1,543	1,507	1,507
R^2	0.0052	0.1740	0.2736	0.0030	0.1856	0.2790

Panel B: Funds with investments in foreign currencies

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX	1.1429***	1.2193***	1.2441***	0.0417***	0.0537***	0.0439***
	(0.1956)	(0.1298)	(0.2123)	(0.0134)	(0.0090)	(0.0111)
ln(Fund size)		-0.9575**	-0.5814**		-0.0671***	-0.0497**
		(0.4160)	(0.2829)		(0.0230)	(0.0196)
ln(Number of fund deals)		0.6178	0.1876		0.0303	0.0429
		(0.7332)	(0.6744)		(0.0271)	(0.0355)
ln(Fund number in series)		0.5198	-0.1270		0.0336	-0.0253
		(0.7930)	(0.9773)		(0.0872)	(0.0761)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	744	732	732	744	732	732
R^2	0.0083	0.2443	0.3665	0.0033	0.1533	0.3241

Table 6
Realized FX and Fund Performance

This table reports regressions of fund performance on the *realized FX* measure for all funds in the fund returns sample (Panel A) and restricting to funds with investments in foreign currencies (Panel B). Dependent variables are net IRR (columns 1-3), MOIC (4-6). Standard errors are two-way clustered at the vintage and fund currency levels are shown. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Realized FX	1.5070**	1.2822**	1.5727***	0.0956***	0.0937***	0.0994***
	(0.5880)	(0.5359)	(0.5335)	(0.0223)	(0.0229)	(0.0229)
ln(Fund size)		-1.7532***	-1.4525***		-0.1421***	-0.1277***
		(0.2946)	(0.2772)		(0.0272)	(0.0295)
ln(Number of fund deals)		1.8196*	1.7519*		0.1104**	0.1158**
		(1.0126)	(0.9952)		(0.0470)	(0.0455)
ln(Fund number in series)		-0.1381	-0.5515		0.0510	0.0126
		(0.9926)	(1.0258)		(0.0597)	(0.0654)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,507	1,507	1,543	1,507	1,507
R^2	0.0142	0.1800	0.2829	0.0152	0.1973	0.2909

Panel B: Funds with investments in foreign currencies

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Realized FX	1.4163**	1.1310***	1.3318***	0.0877***	0.0919***	0.0995***
	(0.6126)	(0.2969)	(0.2930)	(0.0221)	(0.0201)	(0.0168)
ln(Fund size)		-0.7646*	-0.3178		-0.0544**	-0.0341*
		(0.4559)	(0.3105)		(0.0234)	(0.0184)
ln(Number of fund deals)		0.6879	0.1852		0.0247	0.0299
		(0.7139)	(0.6193)		(0.0233)	(0.0300)
ln(Fund number in series)		0.3619	-0.3075		0.0166	-0.0422
		(0.8277)	(1.0170)		(0.0911)	(0.0837)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	744	732	732	744	732	732
R^2	0.0310	0.2536	0.3776	0.0356	0.1830	0.3529

Table 7
Deal Activity and Expected FX

This table reports regressions of ln(number of deals) on the *expected FX* measure using a fund-year-currency panel for all deals in the deal activity sample and restricting to deals undertaken by funds with investments in foreign currencies. Columns progressively include *Fund currency* (dummy variable for deal currency = fund currency), fixed effects, and fund characteristics as controls. Standard errors are clustered by fund and deal currency pairs. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All deals

	ln(Number of deals)				
	(1)	(2)	(3)	(4)	(5)
Expected FX	-0.0043***	-0.0039**	-0.0038**	-0.0097***	-0.0096***
	(0.0013)	(0.0016)	(0.0017)	(0.0036)	(0.0037)
Fund currency	0.2626***	0.2654***	0.2639***	0.2517***	
	(0.0122)	(0.0110)	(0.0123)	(0.0110)	
ln(Fund size)	0.0177*	0.0231**		0.0179*	0.0184*
	(0.0095)	(0.0100)		(0.0100)	(0.0101)
ln(Fund number in series)	0.0213**	0.0378***		0.0204**	0.0210**
	(0.0102)	(0.0135)		(0.0092)	(0.0093)
GDP growth (t-1)	-0.0018	-0.0021**	-0.0028**	-0.0015	-0.0011
	(0.0012)	(0.0010)	(0.0012)	(0.0015)	(0.0015)
ln(Total acquisitions (t-1))	0.0166***	0.0207***	0.0229***		
	(0.0017)	(0.0020)	(0.0026)		
Year FE	Yes	Yes	Yes	No	No
Fund age FE	Yes	Yes	Yes	Yes	Yes
Fund currency FE	Yes	Yes	No	Yes	No
Firm FE	No	Yes	No	No	No
Fund FE	No	No	Yes	No	No
Year × Deal currency FE	No	No	No	Yes	Yes
Fund currency × Deal currency FE	No	No	No	No	Yes
N	108,762	108,762	117,566	108,762	108,762
R^2	0.2620	0.2991	0.3331	0.2762	0.2788

Panel B: Deals undertaken by funds with investments in foreign currencies

	ln(Number of deals)				
	(1)	(2)	(3)	(4)	(5)
Expected FX	-0.0037***	-0.0032**	-0.0033**	-0.0068**	-0.0063*
	(0.0013)	(0.0014)	(0.0015)	(0.0034)	(0.0036)
Fund currency	0.2546***	0.2544***	0.2489***	0.2433***	
	(0.0133)	(0.0135)	(0.0136)	(0.0078)	
ln(Fund size)	0.0056	0.0118**		0.0061	0.0065
	(0.0071)	(0.0059)		(0.0074)	(0.0075)
ln(Fund number in series)	0.0244***	0.0348***		0.0240***	0.0250***
	(0.0087)	(0.0111)		(0.0082)	(0.0082)
GDP growth (t-1)	-0.0018	-0.0020**	-0.0024**	-0.0003	-0.0010
	(0.0011)	(0.0010)	(0.0010)	(0.0011)	(0.0012)
ln(Total acquisitions (t-1))	0.0197***	0.0220***	0.0234***		
	(0.0018)	(0.0021)	(0.0024)		
Year FE	Yes	Yes	Yes	No	No
Fund age FE	Yes	Yes	Yes	Yes	Yes
Fund currency FE	Yes	Yes	No	Yes	No
Firm FE	No	Yes	No	No	No
Fund FE	No	No	Yes	No	No
Year × Deal currency FE	No	No	No	Yes	Yes
Fund currency × Deal currency FE	No	No	No	No	Yes
N	75,423	75,423	79,345	75,423	75,423
R^2	0.2350	0.2606	0.2798	0.2543	0.2575

Table 8
Expected FX Effects and Foreign Currency Exposure

This table examines whether the *expected FX* effect on fund performance varies with the extent of cross-border investing. The key variable is the interaction between *expected FX* and *Foreign share*, defined as the size-weighted share of a fund's investments made in a currency different from the fund's home currency. The regressions are estimated for all funds in the returns sample (Panel A) and separately for funds with cross-currency investment (Panel B). The dependent variables are net IRR (columns 1–3) and MOIC (columns 4–6). Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX × Foreign share	-4.0000*	-3.6071*	-4.8741***	-0.3864***	-0.3272***	-0.3533***
	(2.0802)	(1.8507)	(1.3271)	(0.0905)	(0.1127)	(0.1166)
Expected FX	4.5730**	4.5535**	5.6262***	0.3574***	0.3405***	0.3558***
	(2.0597)	(1.7677)	(1.2856)	(0.0877)	(0.0903)	(0.0948)
Foreign share	-1.5604	1.1631	1.0024	-0.2362**	0.0095	-0.0109
	(1.7496)	(1.0516)	(1.1344)	(0.1157)	(0.0931)	(0.1039)
ln(Fund size)		-1.8791***	-1.5834***		-0.1473***	-0.1321***
		(0.2869)	(0.2658)		(0.0276)	(0.0283)
ln(Number of fund deals)		1.8108*	1.7272*		0.1084**	0.1129***
		(0.9938)	(0.9855)		(0.0452)	(0.0434)
ln(Fund number in series)		0.0331	-0.4311		0.0638	0.0190
		(0.9717)	(0.9792)		(0.0610)	(0.0597)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,507	1,507	1,543	1,507	1,507
R^2	0.0075	0.1759	0.2762	0.0112	0.1884	0.2819

Panel B: Funds with investments in foreign currencies

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX × Foreign share	-3.3715	-5.9606***	-6.5474***	-0.3444***	-0.4742***	-0.5029***
	(2.3809)	(1.8828)	(1.5886)	(0.0985)	(0.0778)	(0.0742)
Expected FX	4.1777*	6.3926***	6.8024***	0.3310***	0.4499***	0.4605***
	(2.2590)	(1.5597)	(1.2651)	(0.0904)	(0.0566)	(0.0528)
Foreign share	1.0987	-0.0278	-1.2310	-0.0587	-0.1383	-0.1874
	(1.9082)	(2.8765)	(2.6266)	(0.1090)	(0.1589)	(0.1528)
ln(Fund size)		-0.8832*	-0.4479		-0.0561**	-0.0362
		(0.4959)	(0.3191)		(0.0278)	(0.0238)
ln(Number of fund deals)		0.4643	-0.1758		-0.0083	-0.0030
		(1.0052)	(0.8574)		(0.0449)	(0.0530)
ln(Fund number in series)		0.7141	-0.0309		0.0435	-0.0221
		(0.8113)	(0.9477)		(0.0882)	(0.0748)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	744	732	732	744	732	732
R^2	0.0121	0.2527	0.3755	0.0123	0.1693	0.3413

Table 9
Prior FX Experience and Expected FX Effects

This table reports regressions of fund performance on *expected FX* interacted with measures of a firm's prior experience with realized currency returns. Prior FX experience is calculated as the equal-weighted average across all predecessor funds within the same firm that had cross-currency investments (ordered by fund number within the firm), where each predecessor fund's realized FX is itself a size-weighted average of its deal-level realized currency returns. We decompose this measure into $H^+ = \max(H, 0)$ and $H^- = |\min(H, 0)|$, capturing the magnitude of prior FX gains and losses, respectively. Both equal zero for firms with no prior cross-currency fund. The regressions are estimated for all funds in the returns sample (Panel A) and separately for funds with cross-currency investment (Panel B). The dependent variables are net IRR (columns 1–3) and MOIC (columns 4–6). Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX × H^+	0.4684	0.4679	0.5710	0.0099	0.0110	0.0050
	(0.9207)	(0.7332)	(0.8444)	(0.0426)	(0.0327)	(0.0319)
Expected FX × H^-	-0.7841***	-0.7015***	-0.6564***	-0.0548***	-0.0528***	-0.0506***
	(0.0838)	(0.0580)	(0.1309)	(0.0063)	(0.0069)	(0.0103)
Expected FX	2.1563***	1.9901***	1.9962***	0.1272***	0.1227***	0.1206***
	(0.5984)	(0.6100)	(0.6410)	(0.0292)	(0.0288)	(0.0311)
ln(Fund size)		-1.9000***	-1.6294***		-0.1533***	-0.1404***
		(0.3004)	(0.3285)		(0.0302)	(0.0335)
ln(Number of fund deals)		1.9261*	1.8873*		0.1226**	0.1300**
		(1.0592)	(1.0671)		(0.0523)	(0.0508)
ln(Fund number in series)		-0.1324	-0.6131		0.0516	0.0071
		(1.0607)	(0.9997)		(0.0623)	(0.0632)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,507	1,507	1,543	1,507	1,507
R^2	0.0148	0.1819	0.2814	0.0174	0.1986	0.2922

Panel B: Funds with investments in foreign currencies

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX × H^+	0.4485	0.3095	0.3097	0.0107	0.0093	0.0014
	(0.9254)	(0.7627)	(0.7782)	(0.0415)	(0.0340)	(0.0319)
Expected FX × H^-	-0.9308***	-0.7116***	-0.6586***	-0.0613***	-0.0573***	-0.0578***
	(0.1155)	(0.0829)	(0.1026)	(0.0093)	(0.0088)	(0.0101)
Expected FX	1.9616***	1.9066***	1.9337***	0.1067***	0.1195***	0.1139***
	(0.6633)	(0.4712)	(0.4282)	(0.0300)	(0.0226)	(0.0245)
ln(Fund size)		-1.0211***	-0.6743***		-0.0735***	-0.0596**
		(0.3174)	(0.1684)		(0.0247)	(0.0241)
ln(Number of fund deals)		0.7930	0.3825		0.0481**	0.0641**
		(0.5749)	(0.5473)		(0.0222)	(0.0295)
ln(Fund number in series)		0.5511	-0.0809		0.0304	-0.0271
		(0.8605)	(0.9996)		(0.0930)	(0.0807)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	744	732	732	744	732	732
R^2	0.0350	0.2596	0.3798	0.0426	0.1874	0.3567

Table 10
Fund NAV Adjustments and Fund Realized FX

This table reports regressions of quarterly fund NAV adjustments on Fund Realized FX for the all funds sample (Panel A) and the sample with investments in foreign currencies (Panel B). The dependent variable is the fund's quarterly NAV adjustment (*Fund NAV adjustment*). The key independent variable is Fund Realized FX (*Fund Realized FX*), constructed as the size-weighted average of quarterly currency returns across all active portfolio companies in that quarter, where each deal is assumed to be held for 5 years (20 quarters) from the investment date. *Foreign currency investments* is a dummy variable equal to 1 if the fund has at least one deal in a currency different from the fund currency. Columns progressively include fund currency, fund, vintage, year fixed effects, and their interactions. Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	(1)	(2)	(3)	(4)	(5)
Fund Realized FX	0.8869***	0.6040***	0.6044***	0.6420***	0.6276***
	(0.2140)	(0.1853)	(0.1820)	(0.1896)	(0.1956)
Foreign currency investments	0.0071**	-0.0021	-0.0077		-0.0117*
	(0.0033)	(0.0036)	(0.0069)		(0.0064)
Year FE	No	Yes	Yes	Yes	No
Fund currency FE	No	Yes	No	No	No
Firm FE	No	Yes	Yes	No	Yes
Fund FE	No	No	No	Yes	No
Vintage FE	No	Yes	No	No	No
Fund currency × Vintage FE	No	No	Yes	No	No
Fund currency × Vintage × Year FE	No	No	No	No	Yes
N	10,481	10,481	10,481	10,481	10,481
R^2	0.0025	0.0762	0.0836	0.1057	0.1971

Panel B: Funds with investments in foreign currencies

	(1)	(2)	(3)	(4)	(5)
Fund Realized FX	0.8869***	0.5945***	0.5999***	0.6351***	0.6728***
	(0.2155)	(0.2011)	(0.1917)	(0.2027)	(0.1896)
Year FE	No	Yes	Yes	Yes	No
Fund currency FE	No	Yes	No	No	No
Firm FE	No	Yes	Yes	No	Yes
Fund FE	No	No	No	Yes	No
Vintage FE	No	Yes	No	No	No
Fund currency × Vintage FE	No	No	Yes	No	No
Fund currency × Vintage × Year FE	No	No	No	No	Yes
N	7,456	7,456	7,456	7,456	7,456
R^2	0.0032	0.0807	0.0886	0.1066	0.2214

Table 11
Placebo Tests

This table reports placebo regressions in which the main FX variables are replaced by pseudo measures constructed by randomly reassigning observed values, preserving the empirical distribution within matching cells. Panel A reports fund-level results: each same-currency deal is randomly assigned a forward FX premium drawn from the empirical distribution of cross-currency deals within the same calendar year and fund currency; the fund-level *Pseudo Expected FX* is then calculated as the size-weighted average of these randomly assigned premiums across the fund's same-currency deals only. Dependent variables are net IRR (columns 1–3) and MOIC (columns 4–6). Panel B reports fund-quarter level results: each domestic-only fund is randomly assigned a quarterly realized FX return drawn from the empirical distribution of cross-currency funds within the same calendar quarter and fund currency; the *Pseudo Fund Realized FX* is this randomly assigned value. The dependent variable is the quarterly fund NAV return. Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: Fund-level placebo (pseudo Expected FX)

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Pseudo Expected FX	-0.3884	-0.6176***	-0.5582***	-0.0276**	-0.0245***	-0.0275***
	(0.2661)	(0.0750)	(0.0430)	(0.0126)	(0.0089)	(0.0055)
ln(Fund size)		-1.6672***	-1.5099***		-0.1409***	-0.1351***
		(0.2495)	(0.3159)		(0.0273)	(0.0316)
ln(Number of fund deals)		1.7783**	1.7574*		0.1344***	0.1420**
		(0.7994)	(0.9039)		(0.0489)	(0.0551)
ln(Fund number in series)		-0.8272	-1.0190		0.0117	-0.0133
		(0.7991)	(0.9609)		(0.0528)	(0.0591)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,361	1,334	1,334	1,361	1,334	1,334
R^2	0.0021	0.1326	0.2316	0.0029	0.1035	0.1975

Panel B: Fund-quarter level placebo (pseudo Fund Realized FX)

	(1)	(2)	(3)	(4)	(5)
Pseudo Fund Realized FX	0.0751	-0.0035	-0.0099	-0.0264	0.0309
	(0.2027)	(0.1146)	(0.1162)	(0.1180)	(0.2715)
Year FE	No	Yes	Yes	Yes	No
Fund currency FE	No	Yes	No	No	No
Firm FE	No	Yes	Yes	No	Yes
Fund FE	No	No	No	Yes	No
Vintage FE	No	Yes	No	No	No
Fund currency × Vintage FE	No	No	Yes	No	No
Fund currency × Vintage × Year FE	No	No	No	No	Yes
N	3,850	3,850	3,850	3,850	3,850
R^2	0.0000	0.1338	0.1377	0.1458	0.3439

Table 12
Real Exchange Rate and Fund Performance

This table reports regressions of fund performance on the real exchange rate (RER) measure for all funds in the fund returns sample (Panel A) and restricting to funds with investments in foreign currencies (Panel B). The dependent variables are net IRR (columns 1–3) and MOIC (columns 4–6). Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
RER	-8.8711***	-9.6657***	-9.9660***	-0.8249***	-0.9808**	-0.9216**
	(3.1768)	(3.7296)	(3.6081)	(0.1056)	(0.3924)	(0.4642)
ln(Fund size)		-1.8401***	-1.5546***		-0.1480***	-0.1336***
		(0.2778)	(0.2707)		(0.0278)	(0.0302)
ln(Number of fund deals)		1.8892*	1.8329*		0.1161**	0.1214**
		(1.0842)	(1.0807)		(0.0516)	(0.0500)
ln(Fund number in series)		0.0247	-0.4451		0.0631	0.0198
		(0.9555)	(0.9552)		(0.0590)	(0.0615)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,507	1,507	1,543	1,507	1,507
R^2	0.0006	0.1707	0.2704	0.0013	0.1852	0.2786

Panel B: Funds with investments in foreign currencies

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
RER	-12.8705	-6.5453	-1.9818	-1.1581**	-1.1117***	-1.0737***
	(8.5507)	(4.0100)	(2.9918)	(0.5259)	(0.1265)	(0.2369)
ln(Fund size)		-0.8384*	-0.4617		-0.0567**	-0.0376**
		(0.4290)	(0.3048)		(0.0224)	(0.0179)
ln(Number of fund deals)		0.9772	0.5314		0.0532*	0.0644*
		(0.7586)	(0.7350)		(0.0276)	(0.0361)
ln(Fund number in series)		0.5827	-0.0614		0.0299	-0.0329
		(0.7670)	(0.8987)		(0.0869)	(0.0745)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	744	732	732	744	732	732
R^2	0.0030	0.2366	0.3585	0.0072	0.1538	0.3250

Internet Appendix

IA.1 Additional Summary Statistics

Figure IA.1: Fund Vintages by Same-currency and Cross-currency Funds

This figure shows the number of funds by vintage year, stacked by whether the fund has at least one investment in a foreign currency (cross-currency) or all investments in the fund's own currency (same-currency). The sample includes all funds with available deal currency and fund currency information, with vintages through 2013.

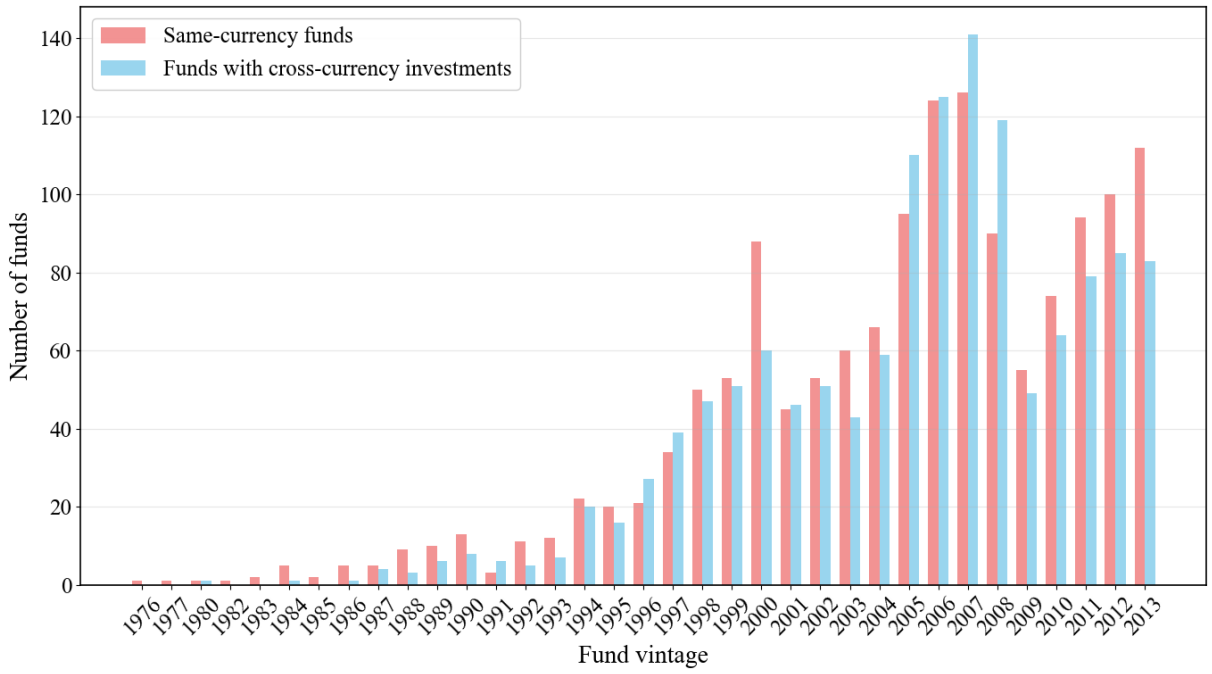


Figure IA.2: Distribution of Fund Performance Metrics

This figure shows the distribution of net IRR and MOIC. The left panel includes all funds in the fund returns sample. The right panel restricts to funds that have investments in foreign currencies. Performance measures are winsorized at the 1st and 99th percentiles.

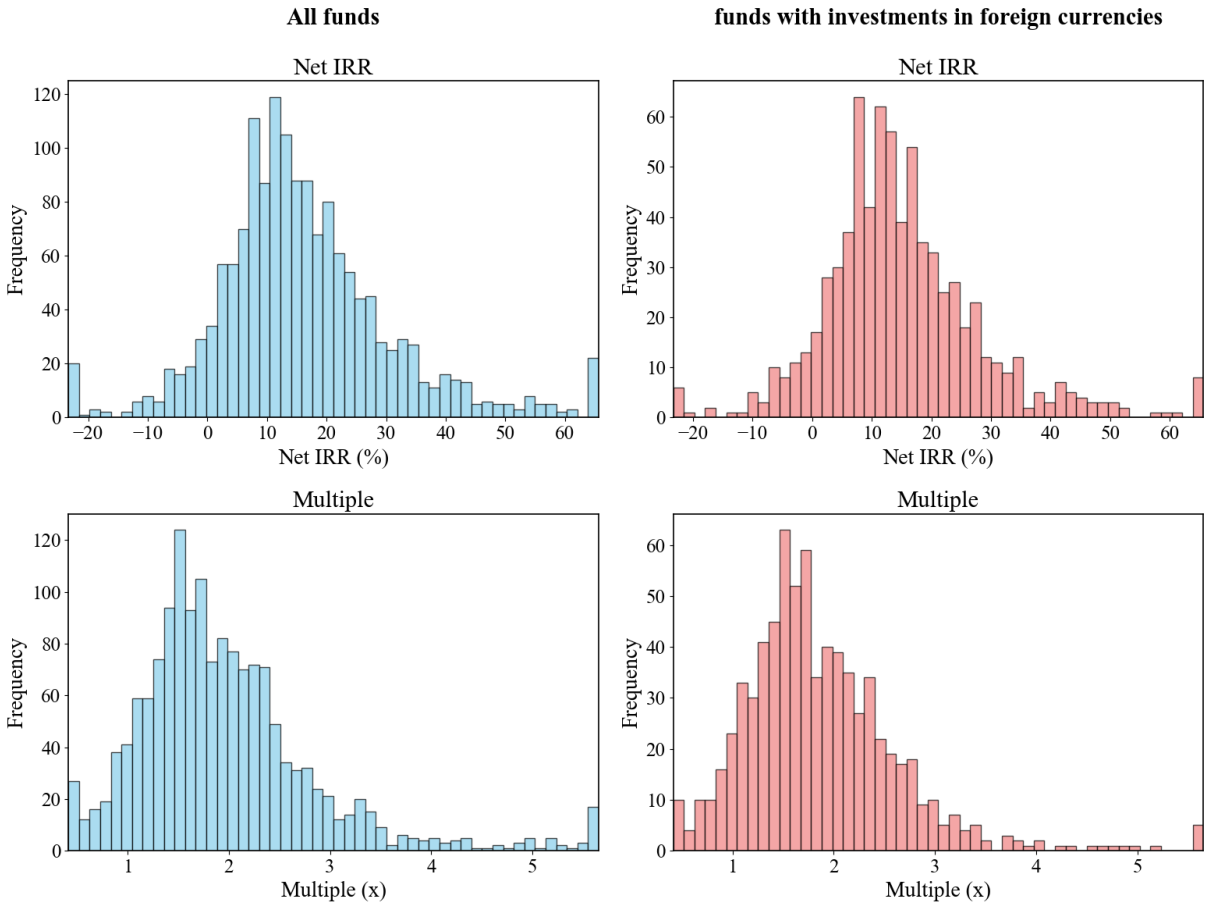


Figure IA.3: Distribution of Deal Expected FX: Cross-Currency Deals

This figure shows the distribution of deal-level *expected FX* for cross-currency deals — deals in which the deal currency differs from the fund currency. *Expected FX* is the annualized five-year forward discount for the deal currency relative to the fund currency. The red dashed vertical line marks zero; the dotted lines mark ±1 standard deviation.

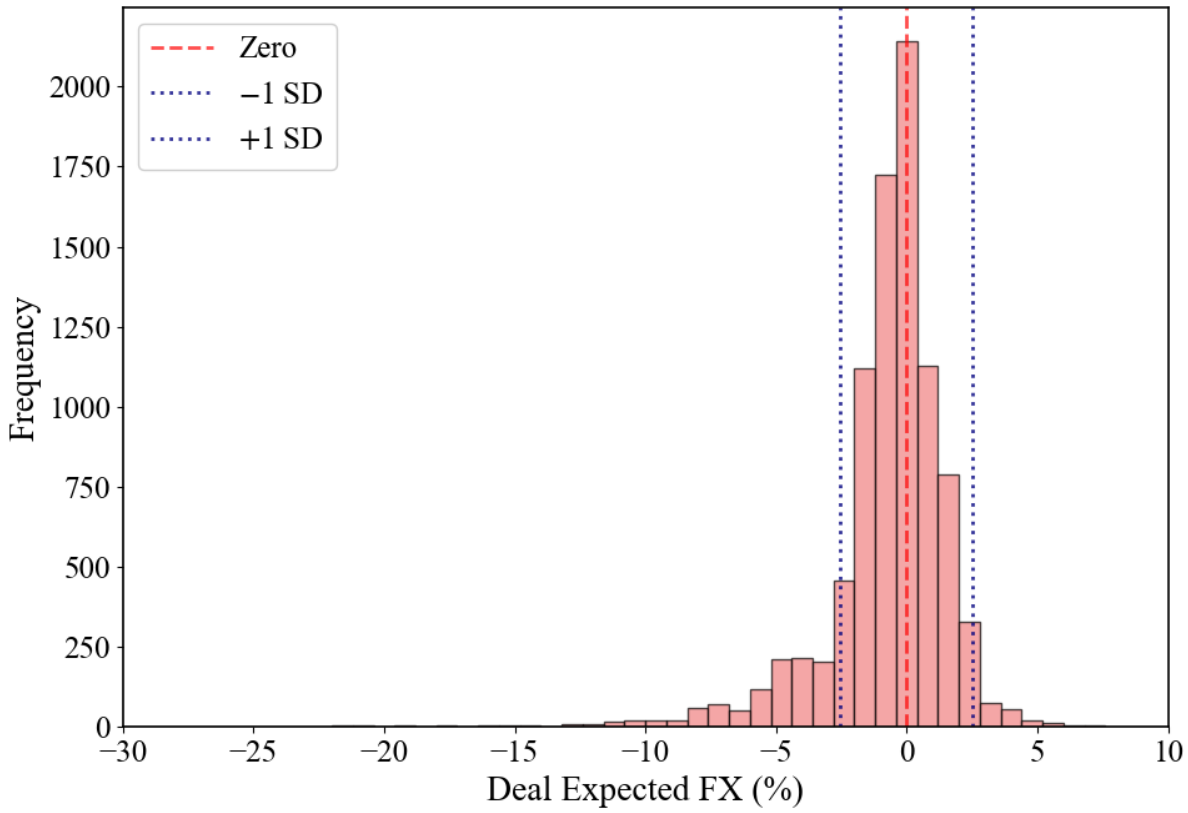


Figure IA.4: Distribution of Deal Realized FX: Cross-Currency Deals

This figure shows the distribution of deal-level *realized FX* for cross-currency deals — deals in which the deal currency differs from the fund currency. *Realized FX* is the ex post FX return over the following five years. The red dashed vertical line marks zero; the dotted lines mark ±1 standard deviation.

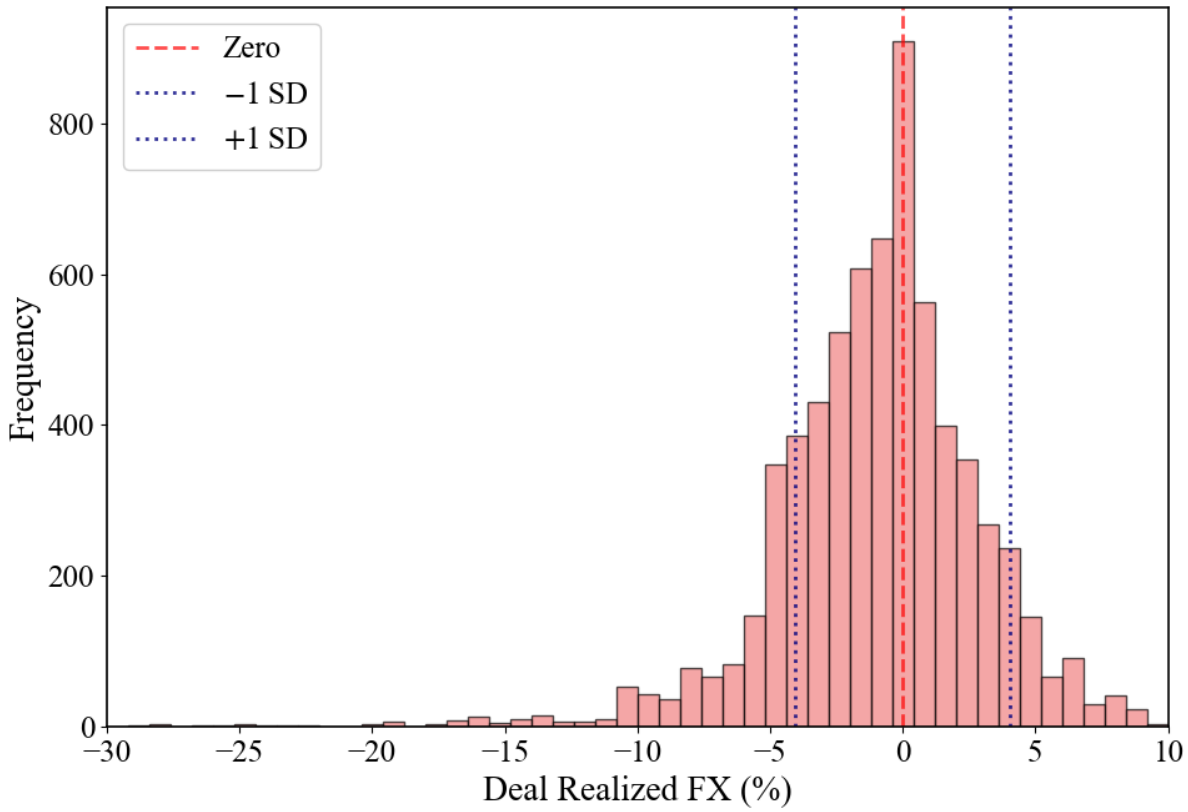


Figure IA.5: Distribution of Fund Expected FX: Funds with International Investments

This figure shows the distribution of fund-level *expected FX* for funds in the fund returns sample that have at least one investment in a foreign currency. *Expected FX* is the fund-level size-weighted average of the annualized five-year forward discount across all investments of the fund. The vertical dashed line marks zero. All FX values are winsorized at the 1st and 99th percentiles.

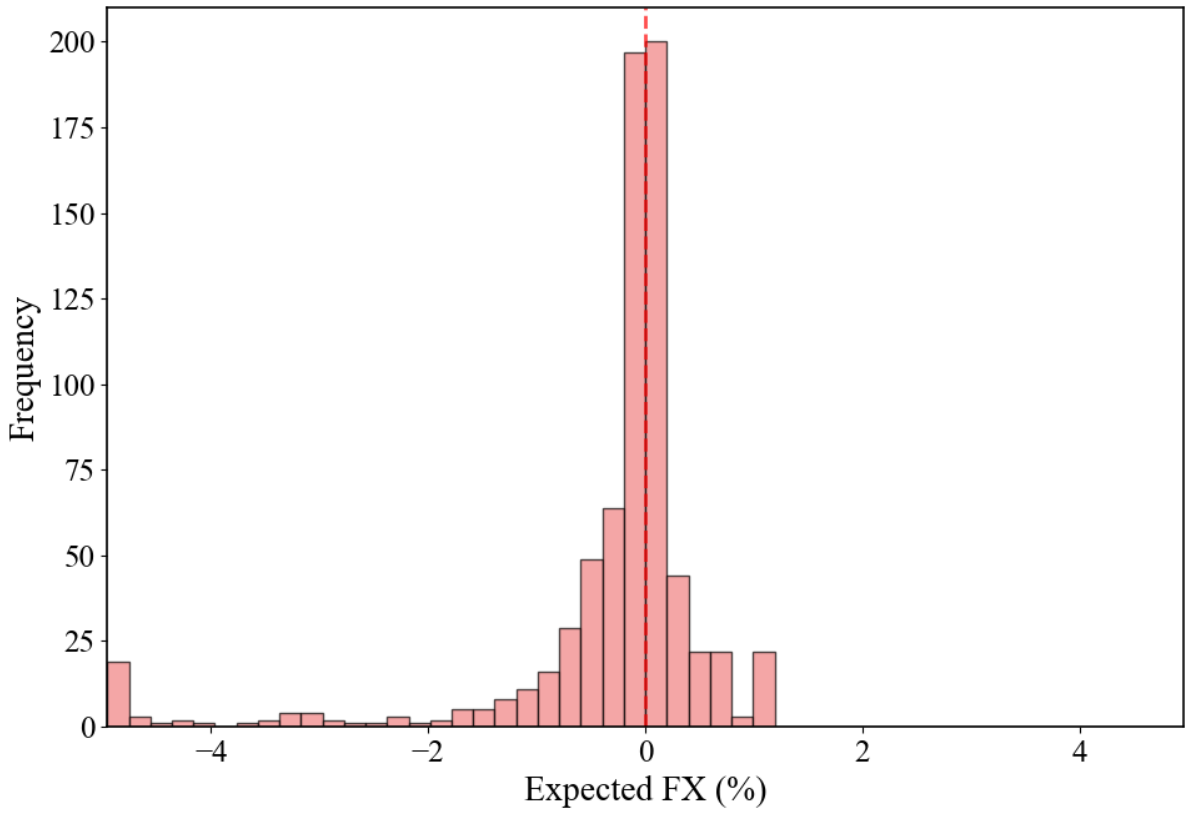


Figure IA.6: Distribution of Fund Realized FX: Funds with International Investments

This figure shows the distribution of fund-level *realized FX* for funds in the fund returns sample that have at least one investment in a foreign currency. *Realized FX* is the fund-level size-weighted average of the ex post FX return across all investments of the fund over the following five years. The vertical dashed line marks zero. All FX values are winsorized at the 1st and 99th percentiles.

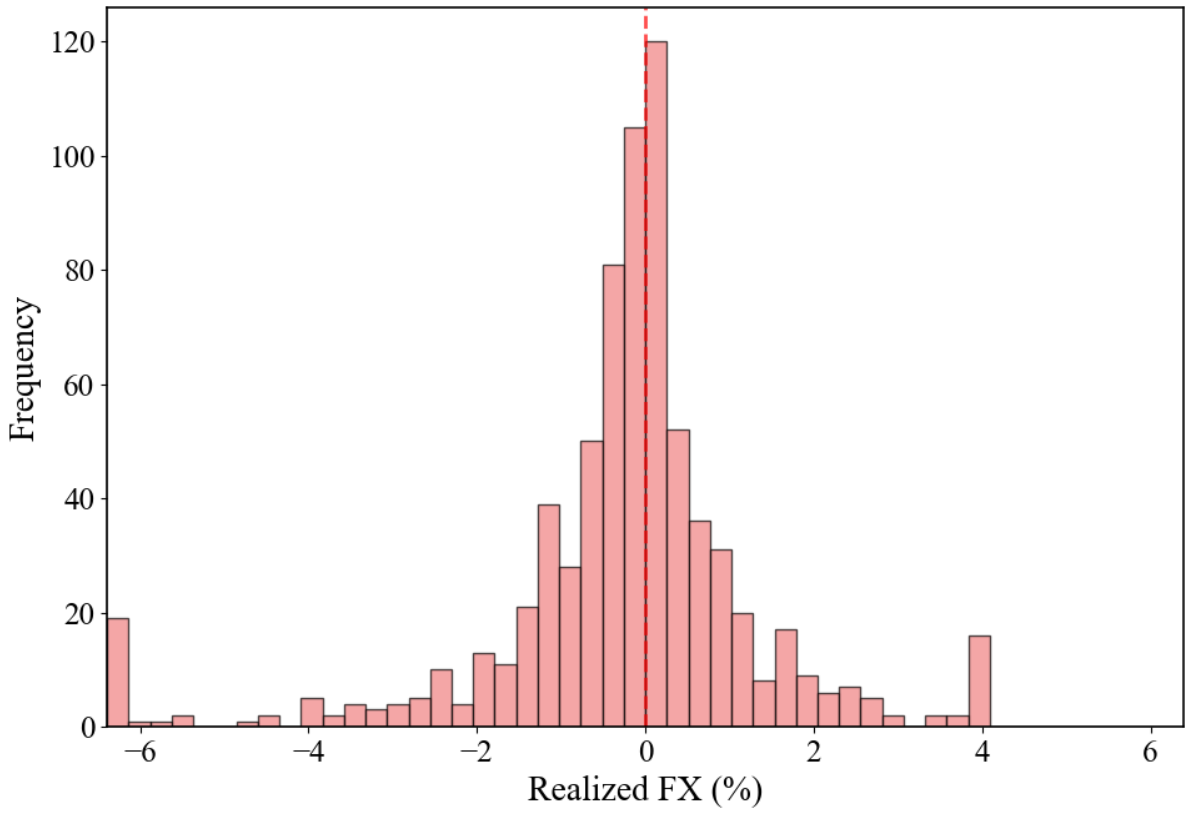


Figure IA.7: Distribution of Deal Timing Relative to Fund Vintage

The figure reports the distribution of deal timing, measured as the difference between the deal year and the fund vintage year, for all deals in the deal activity sample.

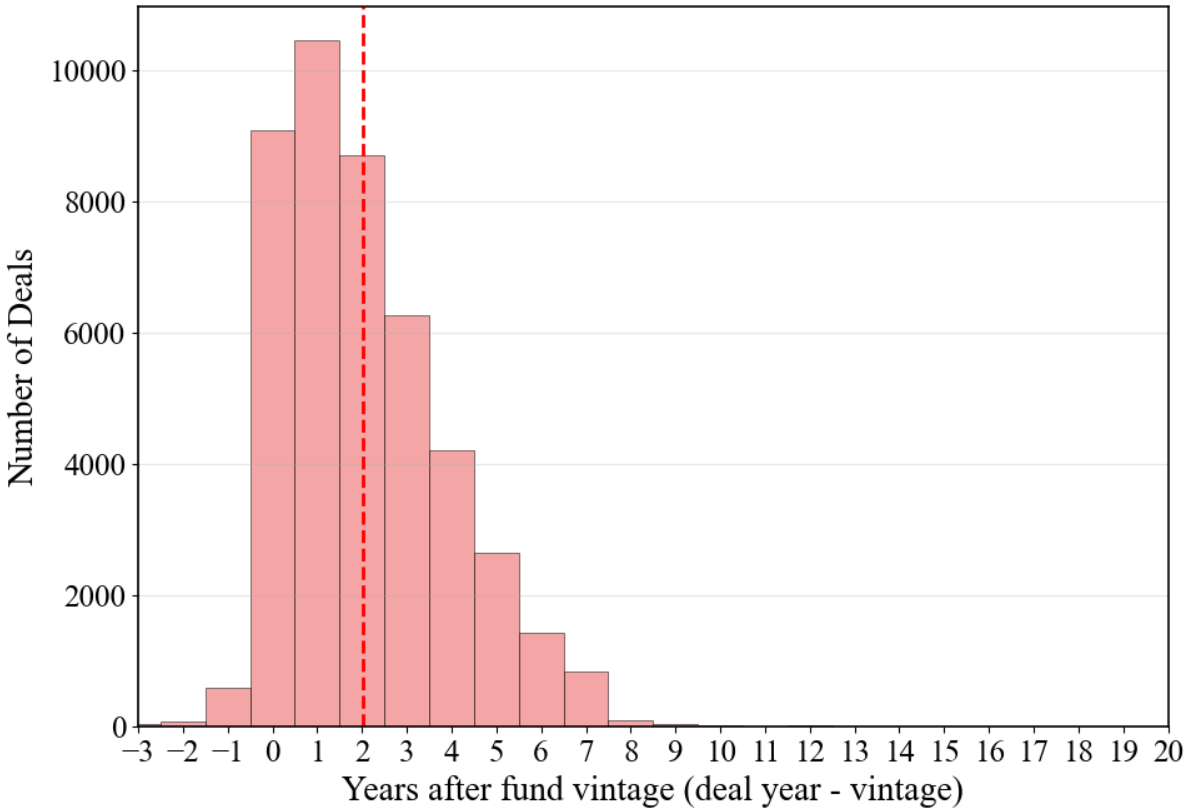


Figure IA.8: Distribution of Number of Deals per Fund

This figure shows the distribution of number of deals per fund for all funds in the fund returns sample.

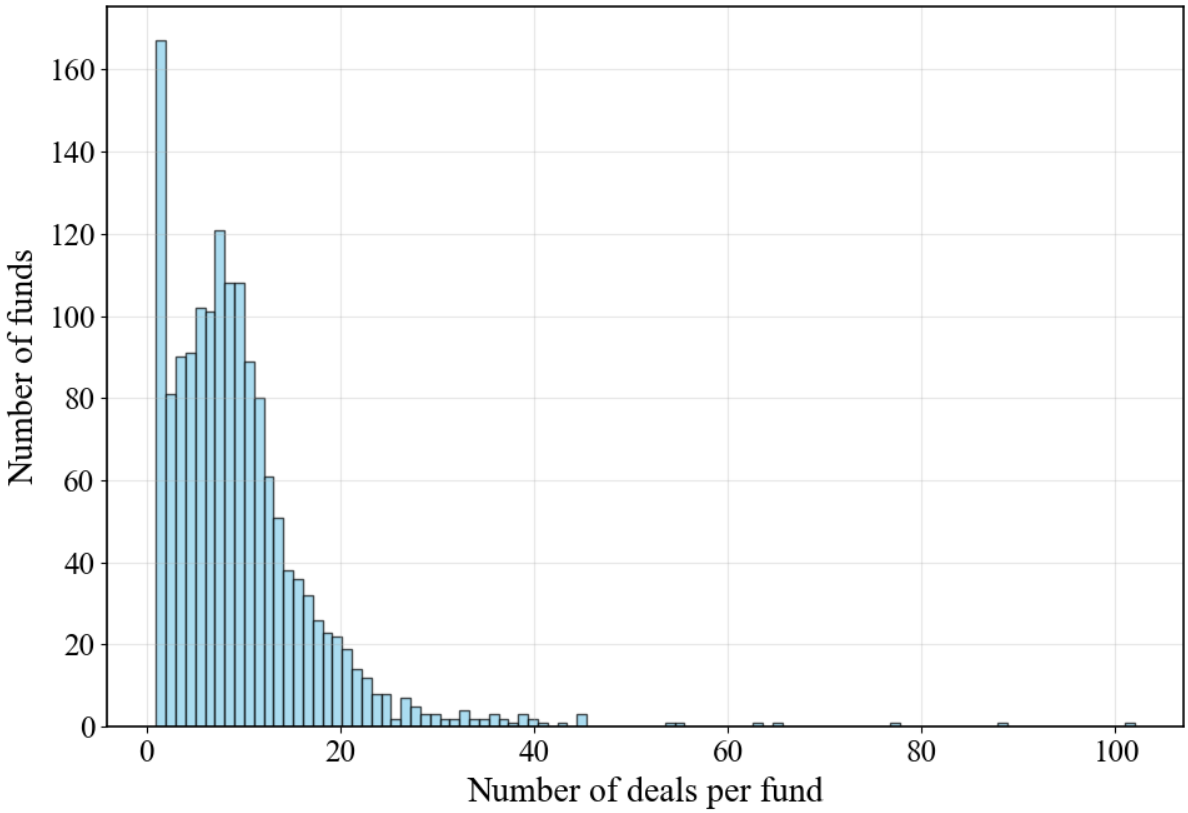


Figure IA.9: Expected FX, Realized FX, and Real Exchange Rate

The figure plots binned scatter plots of *expected FX* and *realized FX* against the real exchange rate (RER). The left column reports fund-level relationships for funds with investments in foreign currencies, where *expected FX* and *realized FX* are size-weighted averages across all investments of a fund. The right column reports deal-level relationships for foreign currency deals, defined as deals where the deal currency differs from the fund's reporting currency. The top row plots *expected FX* against RER; the bottom row plots *realized FX* against RER. *Expected FX* is the annualized five-year forward discount—the forward-to-spot rate ratio raised to the one-fifth power, minus one, expressed as a percentage (see Equation 1). *Realized FX* is the corresponding ex post FX return over the following five years. Fund-level FX and RER values (left panels) are winsorized at the 1st and 99th percentiles;

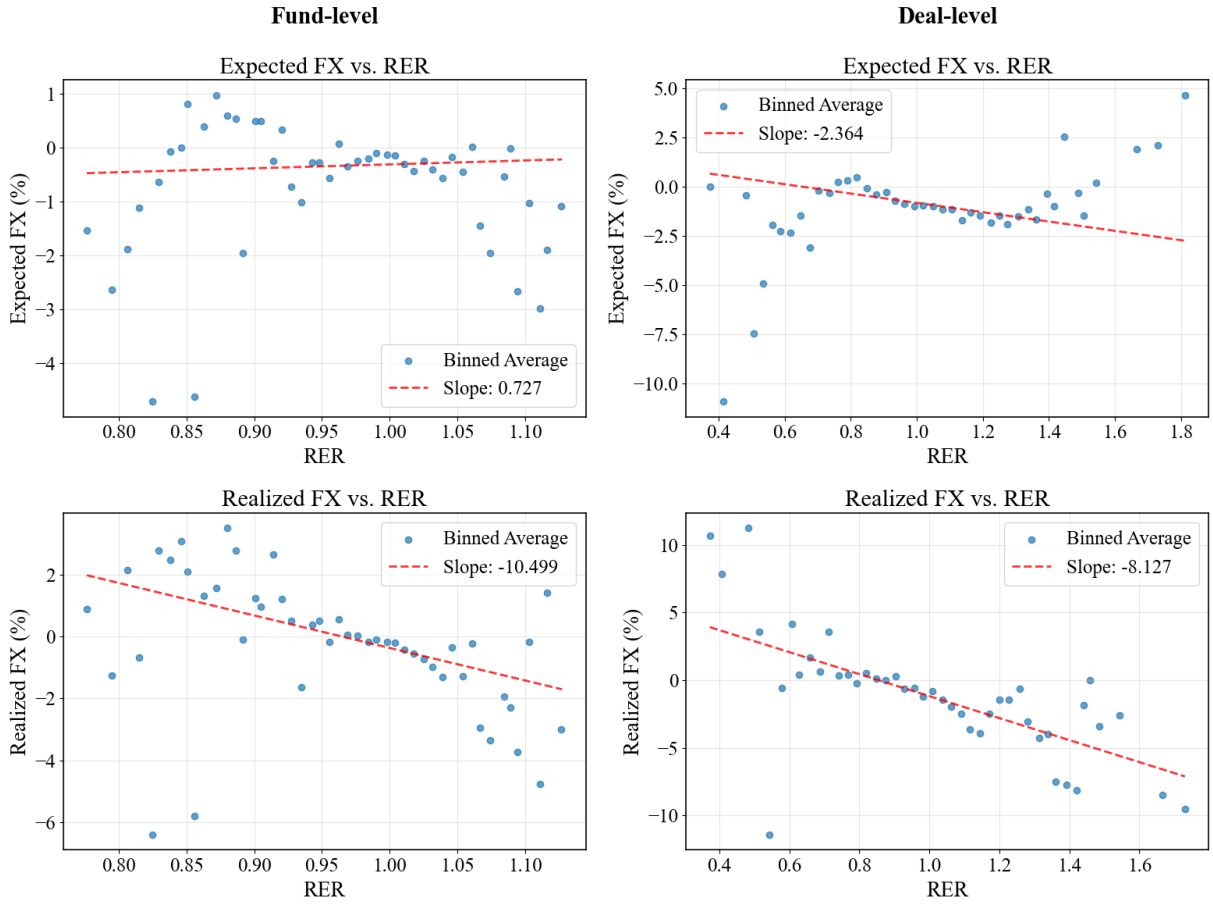


Table IA.1
Distribution of Deals by Year

This table reports the annual distribution of deal observations. Results are shown separately for all deals in the deal activity sample and for foreign currency deals. Deal counts are reported for selected years prior to 2005 and for every year thereafter.

	All deals	Foreign currency deals
1999	605	143
2000	662	141
2005	1,425	284
2006	1,831	364
2007	1,994	433
2008	1,529	301
2009	959	199
2010	1,537	313
2011	1,608	350
2012	1,665	341
2013	1,551	369
2014	1,883	434
2015	2,024	420
2016	2,170	439
2017	2,441	488
2018	2,623	540
2019	2,341	485
2020	2,318	495
2021	3,234	643
2022	2,391	512
2023	1,502	288
2024	1,408	312

Table IA.2
Realized - Expected FX and Fund Performance

This table reports regressions of fund performance on *Realized FX − Expected FX* for all funds in the fund returns sample (Panel A) and restricting to funds with investments in foreign currencies (Panel B). Dependent variables are net IRR (columns 1-3), MOIC (4-6). Standard errors are two-way clustered at the vintage and fund currency levels are shown. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All funds

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Realized - Expected FX	1.4870*	1.2193*	1.6009**	0.1046***	0.1058***	0.1155***
	(0.8195)	(0.6854)	(0.7129)	(0.0339)	(0.0337)	(0.0334)
ln(Fund size)		-1.7574***	-1.4434***		-0.1410***	-0.1260***
		(0.2818)	(0.2496)		(0.0254)	(0.0273)
ln(Number of fund deals)		1.8511*	1.7904*		0.1125**	0.1180**
		(1.0546)	(1.0445)		(0.0496)	(0.0480)
ln(Fund number in series)		-0.0516	-0.4604		0.0564	0.0184
		(0.9644)	(0.9893)		(0.0585)	(0.0635)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,507	1,507	1,543	1,507	1,507
R^2	0.0088	0.1757	0.2780	0.0116	0.1945	0.2883

Panel B: Funds with investments in foreign currencies

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Realized - Expected FX	1.4873*	1.0180***	1.2352***	0.1046***	0.1030***	0.1216***
	(0.8061)	(0.3768)	(0.4538)	(0.0319)	(0.0313)	(0.0287)
ln(Fund size)		-0.7081	-0.2296		-0.0464**	-0.0216
		(0.4850)	(0.3745)		(0.0220)	(0.0161)
ln(Number of fund deals)		0.8688	0.4125		0.0384	0.0445
		(0.7310)	(0.6660)		(0.0265)	(0.0321)
ln(Fund number in series)		0.4671	-0.2190		0.0218	-0.0397
		(0.7748)	(0.9404)		(0.0864)	(0.0766)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	744	732	732	744	732	732
R^2	0.0221	0.2450	0.3678	0.0327	0.1759	0.3482

Table IA.3
Deal Activity and Real Exchange Rate

This table reports regressions of ln(number of deals) on the real exchange rate(RER) measure using a fund-year-currency panel for all deals in the deal activity sample and restricting to deals undertaken by funds with investments in foreign currencies. Columns progressively include *Fund currency* (dummy variable for deal currency = fund currency), fixed effects, and fund characteristics as controls. Standard errors are clustered by fund and deal currency pairs. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: All deals

	ln(Number of deals)				
	(1)	(2)	(3)	(4)	(5)
RER	0.0253	0.0340*	0.0412	0.0347	0.0360
	(0.0184)	(0.0178)	(0.0256)	(0.0414)	(0.0432)
Fund currency	0.2629***	0.2649***	0.2631***	0.2523***	
	(0.0127)	(0.0112)	(0.0121)	(0.0110)	
ln(Fund size)	0.0176*	0.0229**		0.0181*	0.0185*
	(0.0095)	(0.0101)		(0.0100)	(0.0101)
ln(Fund number in series)	0.0218**	0.0385***		0.0208**	0.0214**
	(0.0102)	(0.0135)		(0.0092)	(0.0093)
GDP growth (t-1)	-0.0016	-0.0019*	-0.0026**	-0.0015	-0.0011
	(0.0013)	(0.0010)	(0.0012)	(0.0015)	(0.0015)
ln(Total acquisitions (t-1))	0.0148***	0.0195***	0.0218***		
	(0.0018)	(0.0022)	(0.0026)		
Year FE	Yes	Yes	Yes	No	No
Fund age FE	Yes	Yes	Yes	Yes	Yes
Fund currency FE	Yes	Yes	No	Yes	No
Firm FE	No	Yes	No	No	No
Fund FE	No	No	Yes	No	No
Year × Deal currency FE	No	No	No	Yes	Yes
Fund currency × Deal currency FE	No	No	No	No	Yes
N	107,958	107,958	116,727	107,958	107,958
R^2	0.2619	0.2994	0.3335	0.2763	0.2789

Panel B: Deals undertaken by funds with investments in foreign currencies

	ln(Number of deals)				
	(1)	(2)	(3)	(4)	(5)
RER	0.0388**	0.0436***	0.0466**	0.0324	0.0400
	(0.0162)	(0.0157)	(0.0209)	(0.0479)	(0.0510)
Fund currency	0.2544***	0.2537***	0.2481***	0.2439***	
	(0.0134)	(0.0133)	(0.0133)	(0.0081)	
ln(Fund size)	0.0052	0.0116*		0.0062	0.0066
	(0.0071)	(0.0060)		(0.0075)	(0.0076)
ln(Fund number in series)	0.0253***	0.0358***		0.0244***	0.0255***
	(0.0088)	(0.0112)		(0.0083)	(0.0082)
GDP growth (t-1)	-0.0016	-0.0018*	-0.0022**	-0.0002	-0.0010
	(0.0012)	(0.0010)	(0.0010)	(0.0012)	(0.0012)
ln(Total acquisitions (t-1))	0.0180***	0.0209***	0.0222***		
	(0.0018)	(0.0022)	(0.0024)		
Year FE	Yes	Yes	Yes	No	No
Fund age FE	Yes	Yes	Yes	Yes	Yes
Fund currency FE	Yes	Yes	No	Yes	No
Firm FE	No	Yes	No	No	No
Fund FE	No	No	Yes	No	No
Year × Deal currency FE	No	No	No	Yes	Yes
Fund currency × Deal currency FE	No	No	No	No	Yes
N	74,708	74,708	78,608	74,708	74,708
R^2	0.2349	0.2610	0.2804	0.2544	0.2577

IA.2 Realized vs. Expected FX

Table IA.4
Realized FX and Expected FX

This table reports regressions of *realized FX* on *expected FX* at the fund level (Panel A) and the deal level (Panel B). In Panel A, columns (1)–(3) use all funds in the fund returns sample, while columns (4)–(6) restrict to funds with investments in foreign currencies. Panel B focuses on foreign currency deals, defined as deals where the deal currency differs from the fund's reporting currency. The dependent variable is *realized FX*. Standard errors are two-way clustered by vintage and fund currency at the fund level, and clustered by fund–deal currency pairs at the deal level. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: Fund-Level

	All funds			Foreign currency funds		
	(1)	(2)	(3)	(4)	(5)	(6)
Expected FX	0.8648***	0.8614***	0.8499***	0.8663***	0.8484***	0.8330***
	(0.0608)	(0.0500)	(0.0622)	(0.0535)	(0.0119)	(0.0508)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,543	1,543	744	744	744
R^2	0.3184	0.3543	0.4512	0.3097	0.3765	0.5400

Panel B: Deal-Level

	Foreign currency				
	(1)	(2)	(3)	(4)	(5)
Expected FX	0.6920***	0.2047**	0.2172**	0.2093**	0.1536
	(0.0799)	(0.1022)	(0.1053)	(0.0843)	(0.1001)
Year FE	No	Yes	Yes	No	No
Fund currency FE	No	Yes	No	Yes	No
Deal currency FE	No	Yes	No	No	Yes
Year × Fund currency FE	No	No	No	No	Yes
Year × Deal currency FE	No	No	No	Yes	No
Fund currency × Deal currency FE	No	No	Yes	No	No
N	6,698	6,698	6,698	6,698	6,698
R^2	0.2120	0.4841	0.5043	0.8732	0.7001

IA.3 Realized FX and Real Exchange Rate

Table IA.5
Realized FX and Real Exchange Rate

This table reports regressions of *realized FX* on real exchange rate (RER) at the fund level (Panel A) and the deal level (Panel B). In Panel A, columns (1)–(3) use all funds in the fund returns sample, while columns (4)–(6) restrict to funds with investments in foreign currencies. Panel B focuses on foreign currency deals, defined as deals where the deal currency differs from the fund's reporting currency. The dependent variable is *realized FX*. Standard errors are two-way clustered by vintage and fund currency at the fund level, and clustered by fund–deal currency pairs at the deal level. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: Fund-Level

	All funds			Foreign currency funds		
	(1)	(2)	(3)	(4)	(5)	(6)
RER	-9.8725***	-9.7664***	-8.5764***	-10.4993***	-10.7131***	-9.0569**
	(2.9148)	(3.6201)	(3.2482)	(2.3113)	(3.9440)	(3.8265)
Fund currency FE	No	Yes	No	No	Yes	No
Vintage FE	No	Yes	No	No	Yes	No
Fund currency × Vintage FE	No	No	Yes	No	No	Yes
N	1,543	1,543	1,543	744	744	744
R^2	0.1137	0.1566	0.2391	0.1279	0.2177	0.3593

Panel B: Deal-Level

	Foreign currency				
	(1)	(2)	(3)	(4)	(5)
RER	-8.1266***	-14.0186***	-14.2013***	-15.7016***	-12.2819***
	(2.2616)	(1.2824)	(1.3207)	(0.9189)	(1.7033)
Year FE	No	Yes	Yes	No	No
Fund currency FE	No	Yes	No	Yes	No
Deal currency FE	No	Yes	No	No	Yes
Year × Fund currency FE	No	No	No	No	Yes
Year × Deal currency FE	No	No	No	Yes	No
Fund currency × Deal currency FE	No	No	Yes	No	No
N	6,635	6,635	6,635	6,635	6,635
R^2	0.0817	0.5961	0.6164	0.9095	0.7600

IA.4 Placebo Tests

Table IA.6
Placebo Tests: Distribution of Coefficient Estimates Across Bootstrap Randomization Iterations

This table summarizes the distribution of coefficient estimates from bootstrap randomization iterations of the two placebo exercises. In each iteration, pseudo FX values are drawn with replacement from the empirical within-cell distribution (bootstrap resampling). Panel A reports results from 1,000 bootstrap randomization iterations of the fund-level placebo. In each iteration, each same-currency deal is randomly assigned (with replacement) a forward FX premium from cross-currency deals within the same year and fund currency, the fund-level pseudo measure is calculated as the size-weighted average across same-currency deals, and all six regression specifications from Table 11 Panel A are re-estimated. Columns 1–3 use net IRR and columns 4–6 use MOIC; within each dependent variable, columns progress from no fixed effects to fund currency plus vintage fixed effects to interacted fund currency-vintage fixed effects. Panel B reports results from 1,000 bootstrap randomization iterations of the fund-quarter level placebo. In each iteration, each domestic-only fund is randomly assigned (with replacement) a quarterly realized FX return from cross-currency funds within the same quarter and fund currency, and the same five regression specifications used in the main Fund Realized FX analysis are re-estimated. All models in Panel B use the quarterly fund NAV return as the dependent variable. Both panels report the mean coefficient, its standard deviation, and the 95% confidence interval across iterations. Standard errors are two-way clustered by vintage and fund currency in each iteration.

Panel A: Fund-level placebo

	Net IRR			MOIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Coefficient	-0.0111	-0.1254	-0.0250	-0.0086	-0.0031	-0.0031
Std. Deviation	0.2428	0.2762	0.2904	0.0134	0.0151	0.0160
95% CI	[-0.482, 0.457]	[-0.676, 0.420]	[-0.610, 0.534]	[-0.035, 0.017]	[-0.033, 0.026]	[-0.036, 0.027]
N (avg)	1361	1334	1334	1361	1334	1334

Panel B: Fund-quarter level placebo

	(1)	(2)	(3)	(4)	(5)
Mean Coefficient	-0.0529	-0.1495	-0.1552	-0.1635	-0.1156
Std. Deviation	0.2463	0.2345	0.2344	0.2332	0.2540
95% CI	[-0.501, 0.440]	[-0.590, 0.322]	[-0.594, 0.316]	[-0.597, 0.311]	[-0.613, 0.401]
N (avg)	3850	3850	3850	3850	3850

IA.5 Robustness Table

Table IA.7
Expected FX and Fund Performance: Comparison of Weighting Schemes (All Funds)

This table compares the effect of *expected FX* on fund performance across six alternative deal-size weighting schemes, using the full fund returns sample. Each column corresponds to one weighting scheme used to construct the fund-level *expected FX* measure: equal-weighted (col. 1), fund-size-weighted (col. 2), fixed-ratio-weighted (col. 3), fund-currency-weighted (col. 4), fund-currency-×-vintage-weighted (col. 5), and fund-country-weighted (col. 6). All specifications include fund currency × vintage fixed effects and fund-level controls (log fund size, log number of deals, log fund number in series). Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: Net IRR

	Equal	Fund	Fixed	Fund ccy.	Fund ccy.×Vintage	Fund country	Available
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expected FX	1.4509***	1.4201***	1.3632***	1.2210***	1.2279***	1.2016***	2.6440
	(0.1594)	(0.2082)	(0.1395)	(0.1625)	(0.1589)	(0.2613)	(1.7924)
ln(Fund size)	-1.5662***	-1.5687***	-1.5615***	-1.5647***	-1.5635***	-1.5650***	-1.5895***
	(0.2816)	(0.2794)	(0.2863)	(0.2767)	(0.2767)	(0.2809)	(0.3453)
ln(Number of fund deals)	1.7175*	1.7229*	1.7085*	1.7164*	1.7200*	1.7261*	2.2002**
	(0.9994)	(0.9967)	(0.9990)	(1.0001)	(1.0039)	(1.0044)	(0.9717)
ln(Fund number in series)	-0.5791	-0.5777	-0.5652	-0.5495	-0.5468	-0.5572	-0.2698
	(0.9612)	(0.9597)	(0.9643)	(0.9662)	(0.9652)	(0.9680)	(1.2263)
Fund currency × Vintage FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1,507	1,507	1,507	1,507	1,507	1,507	1,392
R^2	0.2747	0.2743	0.2750	0.2740	0.2738	0.2736	0.2784

Panel B: MOIC

	Equal	Fund	Fixed	Fund ccy.	Fund ccy.×Vintage	Fund country	Available
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expected FX	0.0606***	0.0599***	0.0582***	0.0551***	0.0532***	0.0523***	0.1193
	(0.0101)	(0.0087)	(0.0103)	(0.0105)	(0.0097)	(0.0137)	(0.0835)
ln(Fund size)	-0.1351***	-0.1352***	-0.1349***	-0.1350***	-0.1349***	-0.1350***	-0.1391***
	(0.0301)	(0.0300)	(0.0304)	(0.0300)	(0.0300)	(0.0302)	(0.0335)
ln(Number of fund deals)	0.1157**	0.1159**	0.1152**	0.1153**	0.1156**	0.1159**	0.1355***
	(0.0467)	(0.0466)	(0.0466)	(0.0466)	(0.0468)	(0.0467)	(0.0515)
ln(Fund number in series)	0.0134	0.0134	0.0139	0.0144	0.0146	0.0142	0.0489
	(0.0598)	(0.0597)	(0.0601)	(0.0601)	(0.0600)	(0.0600)	(0.0740)
Fund currency × Vintage FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1,507	1,507	1,507	1,507	1,507	1,507	1,392
R^2	0.2795	0.2793	0.2797	0.2795	0.2792	0.2791	0.2867

Table IA.8
Expected FX and Fund Performance: Comparison of Weighting Schemes (Funds with Investments in Foreign Currencies)

This table compares the effect of *expected FX* on fund performance across six alternative deal-size weighting schemes, restricting to funds with at least one cross-currency investment. Each column corresponds to one weighting scheme: equal-weighted (col. 1), fund-size-weighted (col. 2), fixed-ratio-weighted (col. 3), fund-currency-weighted (col. 4), fund-currency-×-vintage-weighted (col. 5), and fund-country-weighted (col. 6). All specifications include fund currency × vintage fixed effects and fund-level controls (log fund size, log number of deals, log fund number in series). Standard errors are two-way clustered by vintage and fund currency. Significance levels: * 10%, ** 5%, *** 1%.

Panel A: Net IRR

	Equal	Fund	Fixed	Fund ccy.	Fund ccy.×Vintage	Fund country	Available
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expected FX	1.4652***	1.4417***	1.3915***	1.2458***	1.2613***	1.2105***	2.4815
	(0.2104)	(0.2140)	(0.1856)	(0.1690)	(0.1802)	(0.0464)	(1.6564)
ln(Fund size)	-0.5915**	-0.5906**	-0.5865**	-0.5804**	-0.5763**	-0.5688**	-0.1530
	(0.2836)	(0.2879)	(0.2812)	(0.2770)	(0.2763)	(0.2799)	(0.2866)
ln(Number of fund deals)	0.1277	0.1472	0.1013	0.1385	0.1521	0.1753	0.8766
	(0.6807)	(0.6747)	(0.6808)	(0.6811)	(0.6805)	(0.6756)	(0.7684)
ln(Fund number in series)	-0.1693	-0.1722	-0.1443	-0.1120	-0.1094	-0.1393	0.0980
	(0.9639)	(0.9476)	(0.9836)	(0.9678)	(0.9629)	(0.9755)	(1.8769)
Fund currency × Vintage FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	732	732	732	732	732	732	617
R^2	0.3687	0.3680	0.3697	0.3675	0.3671	0.3663	0.3802

Panel B: MOIC

	Equal	Fund	Fixed	Fund ccy.	Fund ccy.×Vintage	Fund country	Available
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expected FX	0.0538***	0.0535***	0.0539***	0.0492***	0.0478***	0.0461***	0.1315*
	(0.0100)	(0.0120)	(0.0084)	(0.0083)	(0.0114)	(0.0067)	(0.0791)
ln(Fund size)	-0.0502**	-0.0502**	-0.0502**	-0.0501***	-0.0498***	-0.0495**	-0.0317*
	(0.0197)	(0.0195)	(0.0200)	(0.0193)	(0.0192)	(0.0199)	(0.0180)
ln(Number of fund deals)	0.0402	0.0408	0.0384	0.0396	0.0407	0.0415	0.0819**
	(0.0357)	(0.0356)	(0.0355)	(0.0357)	(0.0360)	(0.0353)	(0.0321)
ln(Fund number in series)	-0.0270	-0.0271	-0.0263	-0.0251	-0.0249	-0.0260	0.0406
	(0.0759)	(0.0753)	(0.0771)	(0.0765)	(0.0761)	(0.0764)	(0.1149)
Fund currency × Vintage FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	732	732	732	732	732	732	617
R^2	0.3253	0.3250	0.3261	0.3253	0.3248	0.3245	0.3421

Figure IA.10: Distribution of Fund-Level Investment Loop Durations: Fund Returns Sample

This figure shows the distribution of holding periods (in years) for clean investment loops identified in the Preqin deal data, restricted to loops whose (portfolio company × PE firm) pair appears in at least one deal from the fund returns sample. A clean loop is defined as a (portfolio company × PE firm) pair where exactly one buyout fund from that firm invested in the company, allowing us to infer the fund-level holding period from the earliest buy date to the latest sell date. Vertical dashed lines mark the median and mean holding periods. The shaded green region highlights the canonical private equity holding period of 3–7 years.

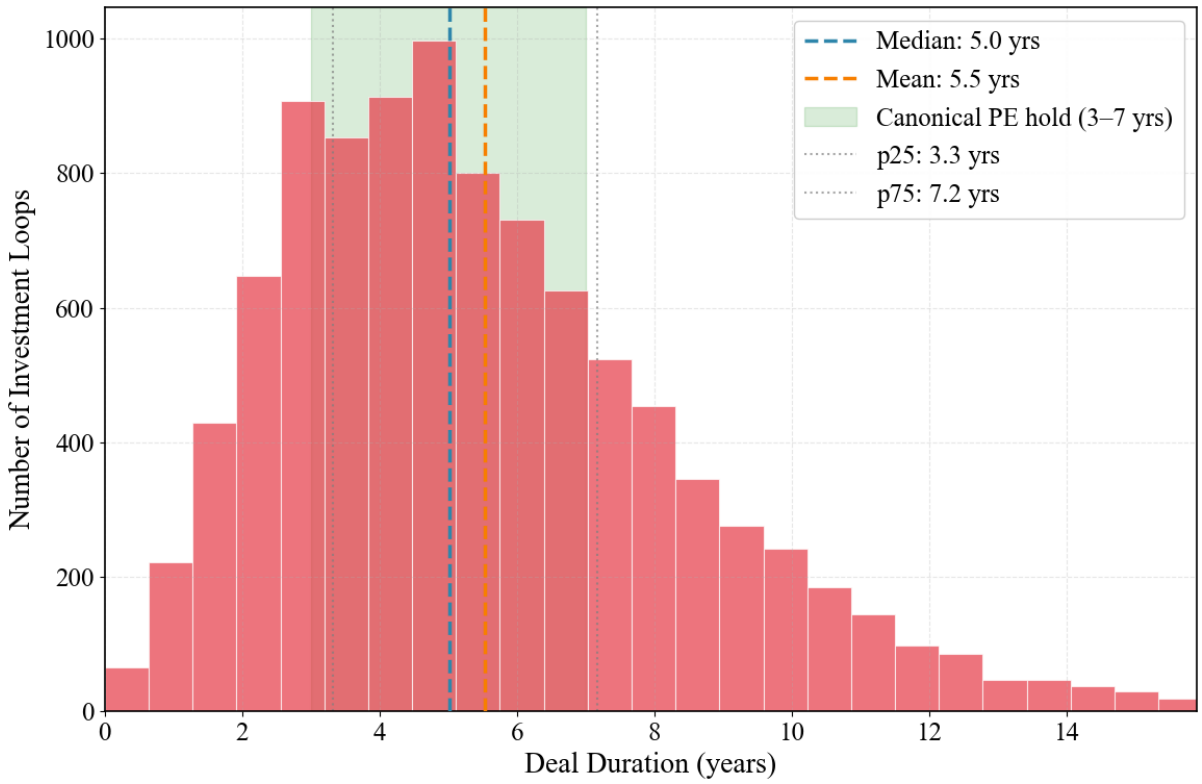


Table IA.9
Fund-Level Characteristics by Deal-Size Missingness Quintile

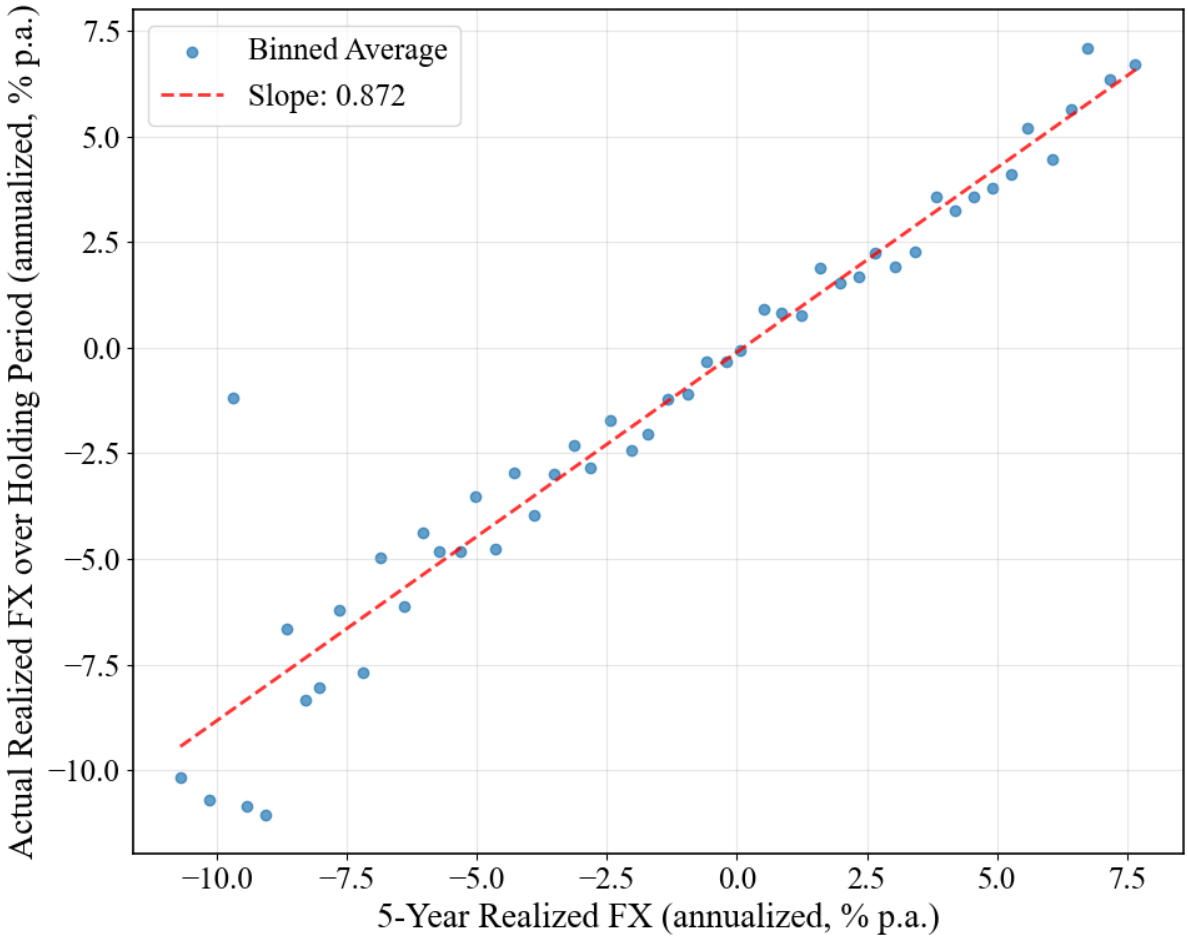
This table reports mean fund-level characteristics by quintile of the deal-size missingness ratio, defined as the fraction of a fund's cross-currency deals with missing deal size. Quintiles are formed within the international sample of the fund returns sample. *Fund size* is in USD millions. *Obs. avg deal size* is the fund-level mean deal size computed over deals with observed (non-missing) size only; the column reports the cross-fund mean within each quintile. Funds whose every deal has a missing size (concentrated in Q5) contribute a missing value and are excluded from that column's mean. *Imp. avg deal size* is the fund-level mean deal size under the firm-scheme imputation (missing sizes filled with the managing firm's average deal size; all deals contribute). *Avg. deals per fund* is the mean number of deals per fund within each quintile.

	N	Miss. ratio	Fund size	Obs. avg size	Imp. avg size	Avg. deals
Q1	158	0.18	2452.32	463.74	466.29	11.45
Q2	141	0.46	2007.64	316.24	354.02	14.02
Q3	160	0.66	1260.27	218.45	293.14	15.04
Q4	136	0.83	707.22	156.81	194.96	12.93
Q5	149	0.99	378.79	277.92	136.17	9.46

Figure IA.11: Five-Year Assumed vs. Actual Realized FX

This figure plots a binscatter of the standard five-year assumed realized FX against the actual annualized realized FX computed from quarterly spot rates spanning the true deal entry-to-exit holding period, for cross-currency deals identified as clean investment loops. Panel A uses all cross-currency clean loops with both measures available. Panel B restricts to deals by funds in the fund returns regression sample.

Panel A: Full sample



Panel B: Fund returns sample

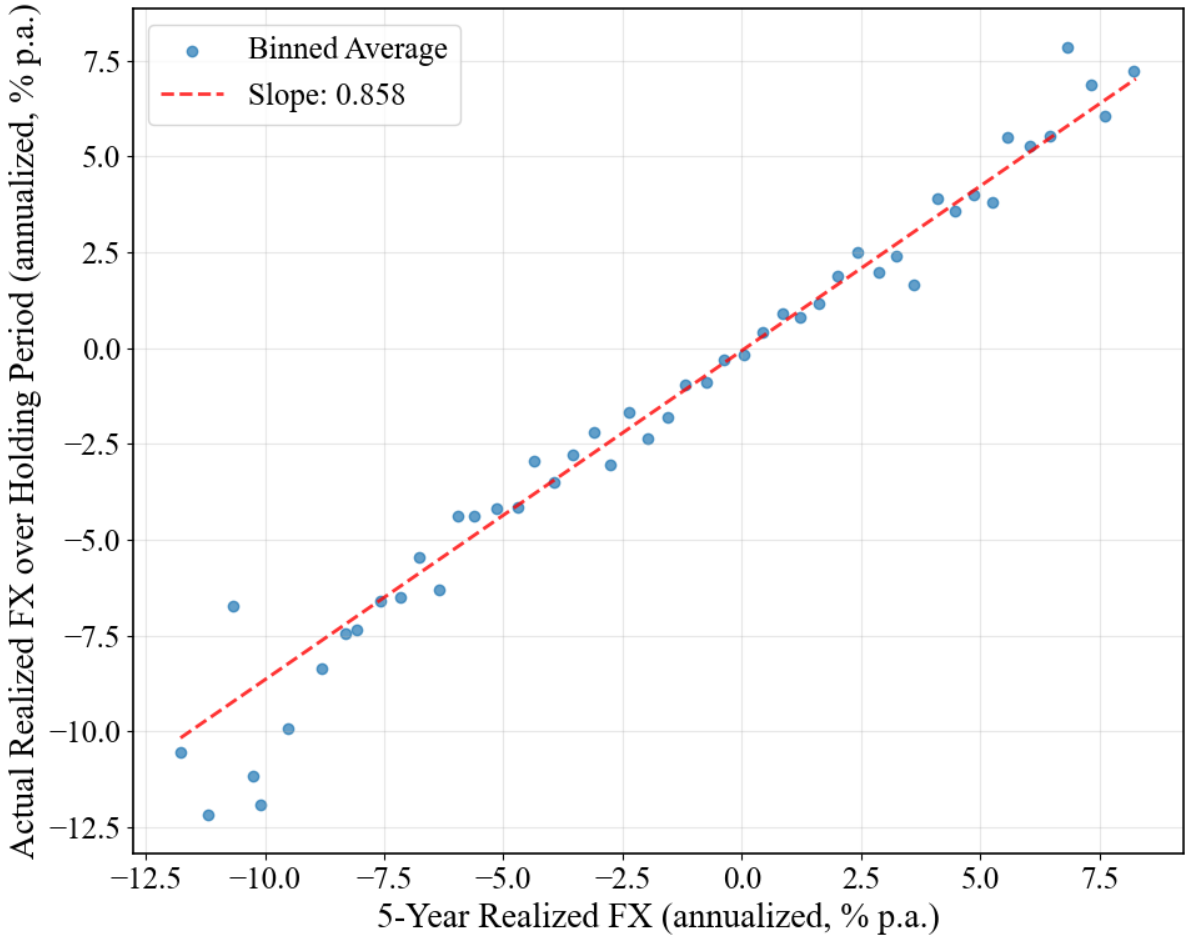


Table IA.10
Mathematical Equivalence of Foreign Project NPV Calculations

This table demonstrates the mathematical equivalence of the "Convert-then-Discount" and "Discount-then-Convert" methods for calculating the Net Present Value (NPV) of a foreign project. The equivalence holds under the condition of Covered Interest Parity (CIP). The proof is shown by substituting the CIP relation into the formula for the first method, which reduces to the formula for the second method.

Panel	Definition / Equation
A. Parameter Definitions	
CF_0^f, CF_t^f	Cash flows in foreign currency at time 0 and t
S_0, F_t	Spot and Forward exchange rates (domestic currency per unit of foreign currency)
r_d	Domestic risk-free interest rate
r_f	Foreign risk-free interest rate
B. Valuation Methodologies	
Method 1: Convert foreign cash flows to domestic currency, then discount	$NPV_d = (CF_0^f \cdot S_0) + \frac{CF_t^f \cdot F_t}{(1+r_d)^t}$
Method 2: Discount foreign cash flows, then convert NPV to domestic currency	$NPV_d = \left(CF_0^f + \frac{CF_t^f}{(1+r_f)^t}\right) \cdot S_0$
C. Covered Interest Parity (CIP)	$F_t = S_0 \cdot \frac{(1+r_d)^t}{(1+r_f)^t}$
D. Proof of Equivalence	
Substitute the CIP condition from Panel C into the formula for Method 1:	
Step 1:	$NPV_d = (CF_0^f \cdot S_0) + \frac{CF_t^f \cdot \left(S_0 \cdot \frac{(1+r_d)^t}{(1+r_f)^t}\right)}{(1+r_d)^t}$
Step 2:	$NPV_d = (CF_0^f \cdot S_0) + \frac{CF_t^f \cdot S_0}{(1+r_f)^t}$
The result of Step 2 is identical to the expanded formula for Method 2.	
	$NPV_d(\text{Method 1}) \equiv NPV_d(\text{Method 2})$