PERFORMANCE OF BRAZILIAN PRIVATE EQUITY AND VENTURE CAPITAL FUNDS FROM 1994 UNTIL 2018

December 2020

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This paper provides an overview of the performance of Private Equity and Venture Capital funds in Brazil from 1994 until 2018 combining registered funds at CVM (Brazilian SEC) and Spectra-Insper database. Those funds called together BRL 84 billion (USD 37 billion)[1] . We excluded funds of funds, real estate and infrastructure funds, and FIPs used as investment vehicles of family holdings. The current paper was prepared in a collaboration effort by Insper, Spectra Investments and ABVCAP, and it extends the analysis presented in the ABVCAP 2019 Conference.

Brazilian **Private Equity** and **Venture Capital** industry **showed resilience**

Despite the Brazilian economic turbulence, PE and VC funds were profitable investments in local currency. The average multiple of invested capital (TVPI – Total Value to Paid-In) in BRL was higher than 1.0 for almost all vintages. However, this was not the case for performance in USD, which was severely impacted by the Brazilian currency devaluation.

Investments in PE and VC funds **outperformed IBOVESPA, MSCI EM and CDI** (Brazilian Libor)

The average **net TVPI** in **BRL** was **1.62** and the average **net IRR** in **BRL** was **9.8%** p.a.

This was below global PE and VC average, and inferior to the results we found in a previous analysis.

In the paper released in 2018[2], we used a different dataset, which was based exclusively in private placement memorandums, and contemplated only PE and VC investments with an exit and funds which disinvested 70% or more of the committed capital to the investors. The current study shows a broader picture of the industry, since it also includes FIPs which disinvested less than 70% of the committed capital, as well as FIPs from firms which have not approached Spectra for fundraising.

Performance **dispersion** between the bottom of the **first** and the bottom of the **third quartile** of Brazilian FIPs **was 30%**

This was higher than the difference in the same period for the global, North American and European markets, and it persists across vintages. The impressive Brazilian dispersion indicates the ongoing coexistence of very skilled managers with poor performing inexperienced managers. This pattern differs from the one found in North America, where dispersion between quartiles has shown signals of compression.

The performance of **top quartile** funds also showed **resilience** to **currency devaluation**

74% of those funds persisted either in the first or second quartile according to IRR in USD.

1 - For the analysis in USD, we converted each fund's monthly cash flow by the average monthly FX rate.

2 - Insper, Spectra, ABVCAP. Sep. 2018. Performance of Private Equity and Venture Capital Industry in Brazil. Available at https://www.insper.edu.br/wp-content/uploads/2018/09/Performance-private-equity-venture-capital-industry-Brazil.pdf

I. METHODOLOGY AND DATA

Sample size: **268 funds** raised between 1994 and 2018

We selected all funds (FIPs) listed in Comissão de Valores Mobiliários (CVM), the Brazilian Securities Exchange Commission, that are classified as Private Equity (PE) or Venture Capital (VC) by ABVCAP. Also, we complemented this dataset with the funds from Spectra Insper database, which includes Brazil or Latin America based funds with investments in Brazil. Those funds added to the FIPs database were either raised before 2003 or did not use CVM vehicles for investing in Brazil. So, we have 324 FIPs and 75 funds raised between 1994 and 2018. Funds with inconsistent or missing data from our sample were removed. Furthermore, we aggregated FIPs used as investment vehicles for offshore funds[3] into portfolios that represent the underlying funds' investments in Brazilian companies. We merged those portfolios as if they were independent offshore funds focused on Brazil. The final sample contains 268 funds.

Performance indicators estimated: **TVPI**, **DPI**, **IRR** and **PME**

We estimated cash flows of capital calls, capital distributions, investments in portfolio companies, divestments, dividends, other proceeds, fees and market value of the fund's equity based on the information in the FIPs' financial statements in December 2018.

We estimated the following metrics for net returns[4] : Total Value to Paid-in (TVPI)[5] , Distributed to Paid-in (DPI)[6] , Internal Rate of Return (IRR) and Public Market Equivalent (PME)[7] . For the performance metrics in USD, we converted the monthly cash flows from BRL to USD using the monthly average bid exchange rate quoted by the Brazilian Central Bank.

Understanding the performance **Indicators** presented in the study

A TVPI higher than 1.0 means that investors would have positive returns if the fund were liquidated at market value - in our case, in December 2018. For instance, a TVPI with value 2.0 tells us that investors would receive 2x the invested capital. A TVPI lower than 1.0 indicates that the investments would yield a negative return, i.e., investors would receive less than the invested capital.

DPI corresponds to the ratio of distributed capital to the capital called. A DPI higher than 1.0 means that investors have received back the invested capital with a profit, while a DPI lower than one indicates that the investors had received back only part of the invested capital.

The difference between TVPI and DPI reflects the market value of the investment that is still in the fund's portfolio, and which has not been divested yet. For instance, a TVPI of 1.5 means that each $1.0 invested in the fund is worth $1.5. If the corresponding DPI is 0.7, it means that the investor has already received back $0.7 for each $1.0 invested, and that the unsold investments in the portfolio have a market value of $0.8 (i.e., $1.5 - $0.7).

PME is a performance metric used to compare an investment in a PE/VC fund with a public market index. The PME always quotes the benchmark, as for instance, PME IBOVESPA means that the benchmark is IBOVESPA (the most famous Brazilian stock market index). PME CDI means that the benchmark is CDI, the Brazilian Libor, and a PME MSCI EM means that the benchmark is the index MSCI EM, an index computed by MSCI, and which is composed by the largest stocks of the main emerging markets. If the ratio of the proceeds from the PE/VC investments to the public investment is greater than one, PE/VC is the superior investment; if the ratio is less than one, PE/VC underperformed the benchmark.

3 - Funds raised using an offshore structure usually invest in Brazilian companies through a single or multi-asset FIP. This structure has lower tax rates on capital gains to Brazilian investors, and it also exempt international investors from paying the capital gain taxes in Brazil.

4 - We did not calculate net returns of offshore funds using CVM data, because the FIPs used as investment vehicles do not charge carried interest and management fees from the limited partners. Those fees are charged in the offshore structure, and we do not have access to the limited partnership agreement of those funds. In these cases, we arbitrarily adopted that the resulting net IRR is 75% of the IRR estimated using the cash flows build using the FIPs financial statements. This is a rather conservative estimation.

5 - TVPI = (Sum of all Capital distributed + Portfolio Market Value in 2018)/(Sum of all Capital Called)

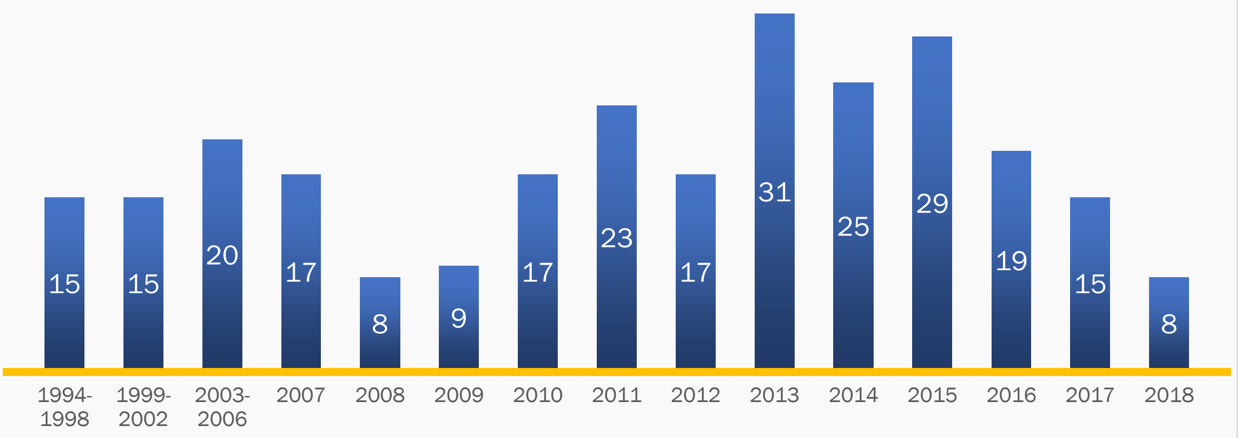
6 - DPI = (Sum of all Capital distributed) / (Sum of all Capital Calls)

7 - PME was calculated as the sum of the net present value of cash inflows (distributed capital) and the net present value of portfolio market value at December 2018, divided by the net present value of cash outflows (sum of capital called). To estimate the net present value of each cash flow, we used the return of the benchmark between fund inception and the dates of the respective cash flows.

II. SAMPLE OVERVIEW

Exhibit 1

NUMBER OF PE AND VC FUNDS REGISTERED IN CVM BY VINTAGES

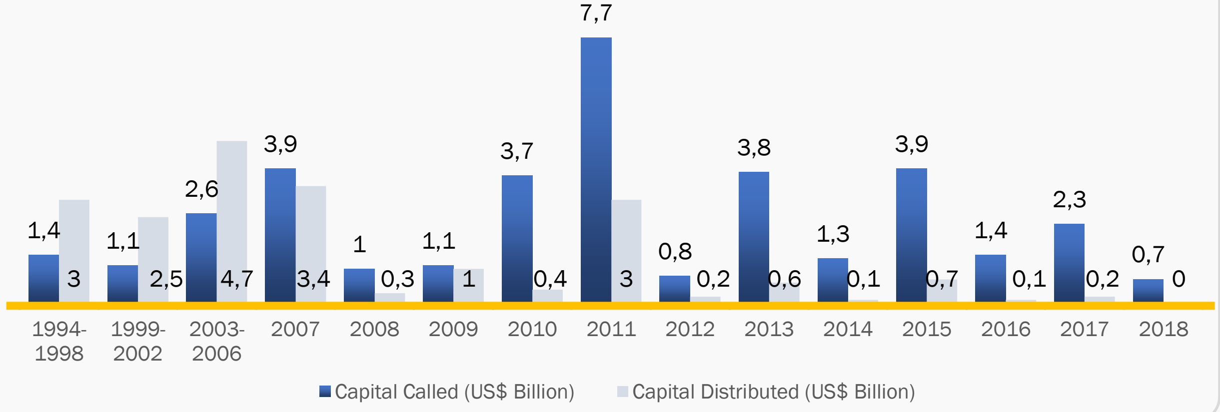


We observe in **Exhibit 1** that 75% of the funds have less than 10 years (raised after 2008) and had not completed a whole private equity cycle: investment, divestment, and liquidation. They are either in the investment period or in the divestment period and have not expired a typical 10-year life.

Exhibit 2 presents the amount of capital called and distributed in our sample (USD billion). The amount of capital called was USD 37 billion (BRL 84 billion), while the distributed capital was USD 20 billion (BRL 46 billion) between 1994 and 2018.

Exhibit 2

AMOUNT OF CAPITAL RAISED AND DISTRIBUTED BY FUNDS' VINTAGES (IN USD MILLION)



III. PERFORMANCE OF BRAZILIAN PRIVATE EQUITY AND VENTURE CAPITAL FUNDS

PE and VC funds showed resiliency in local currency. Despite the economic volatility and crisis during this period, most of the Brazilian PE and VC vintages showed positive returns in BRL – a net TVPI in BRL equal or higher than 1.0 (see **Exhibit 3**).

Foreign exchange rates (FX) had a severe negative impact on the returns in USD. **Exhibit 4** presents the TVPI and DPI in USD by vintage. Almost two-thirds of the gains faded away due to Brazilian currency devaluation - whereas mean TVPI in BRL stands at 1.62, in USD it is at 1.34.

Exhibit 3

AVERAGE TVPI AND DPI BY VINTAGES IN BRL

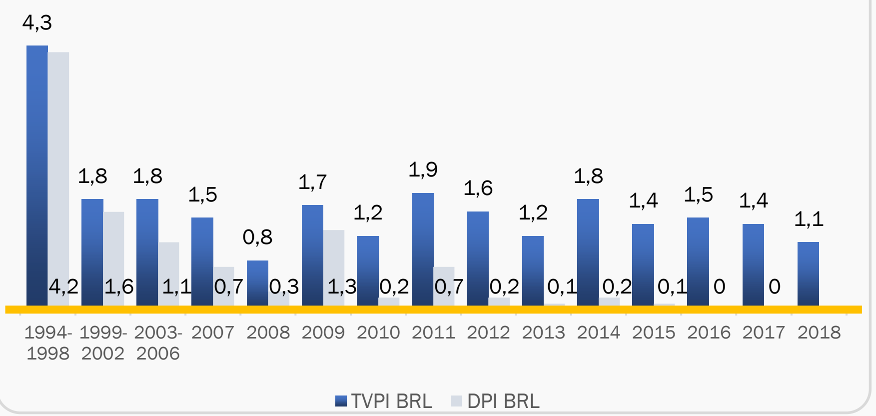
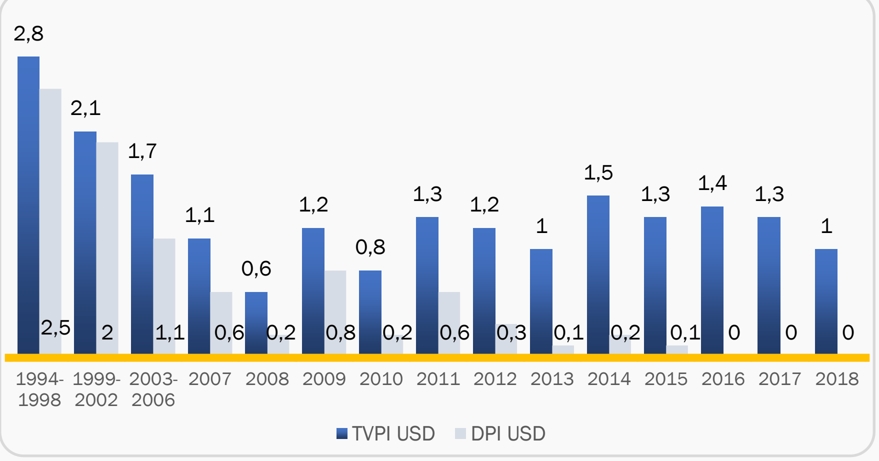


Exhibit 4

AVERAGE TVPI AND DPI BY VINTAGES IN USD

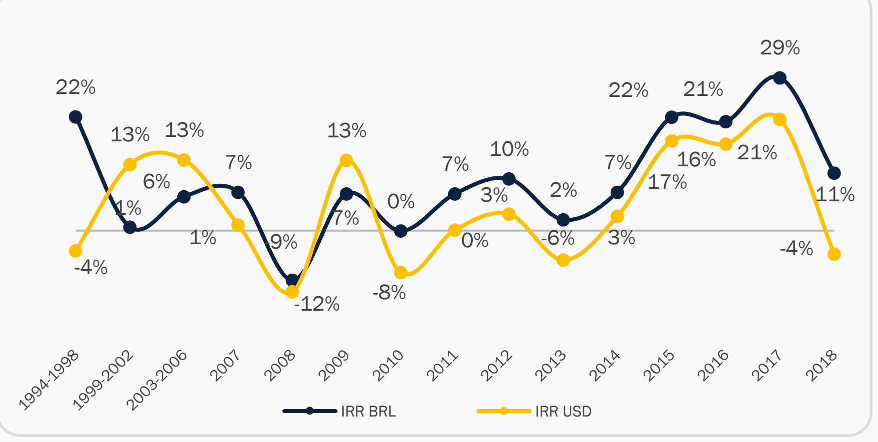


Consistently, FX also had a negative impact on the net IRR in USD: the 9.8% average net IRR in BRL between 1994 and 2018 was reduced to 4.8% in USD (see **Exhibit 5**), translating in a 5.0% average drop due to currency devaluation.

Exhibit 5

AVERAGE TVPI AND DPI BY VINTAGES IN USD

There is a clear increase in IRR from 2014 onwards (See **Exhibit 5**), which can be partially explained by a modest economic improvement in the period, approximating TVPI for newer funds to the levels shown in past vintages with good performance (2005, 2007, 2011).



IV. RELATIVE PERFORMANCE OF BRAZILIAN PRIVATE EQUITY AND VENTURE CAPITAL FUNDS

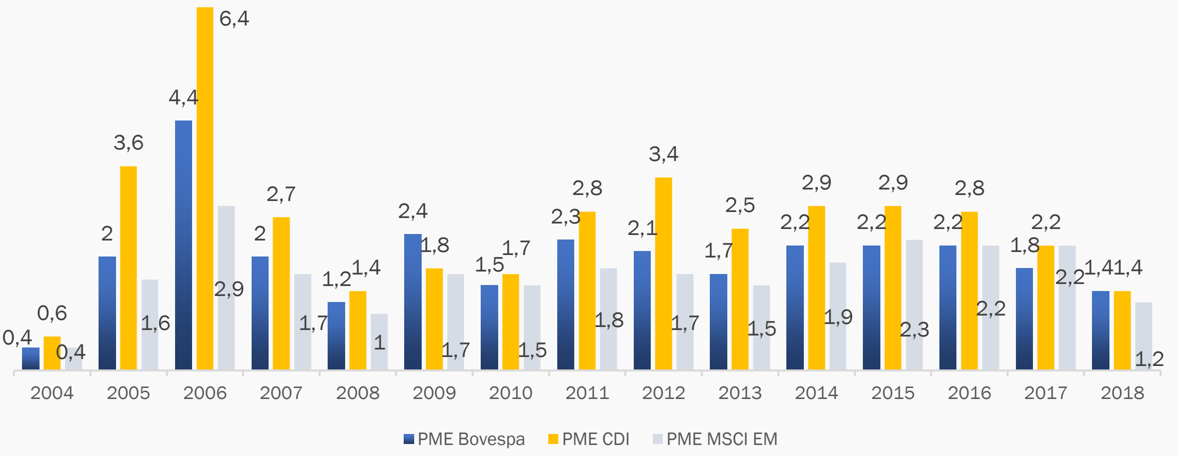
Private Equity and Venture Capital funds on average outperformed the following equivalent investments in liquid assets: IBOVESPA (Brazilian Stock Exchange Index), MSCI EM (MSCI Emerging Markets), and CDI (Brazilian Libor) - see **Exhibit 6**. The Brazilian funds returned on average two times similar investments in the IBOVESPA index, 1.9 times equivalent investments in MSCI EM and more than 2.6 times equivalent investments in CDI, indicating a positive sign of the industry's return profile.

Therefore, investors that allocated capital to Brazilian PE and VC FIPs seem to have been compensated for the liquidity premium.

However, Brazilian funds underperformed the Global, North American, and European PE and VC industries. The Brazilian average net IRR was 9.8% p.a. in BRL and 4.8% p.a. in USD versus an average net IRR of 12%, 13%, and 16% p.a. for Global, North American, and European markets, respectively[8].

Exhibit 6

AVERAGE PUBLIC MARKET EQUIVALENT (PME) BY VINTAGES ACCORDING TO DIFFERENT BENCHMARKS



V. DISPERSION OF TVPI AND NET IRR OF BRAZILIAN FUNDS

Exhibit 7 shows performance metrics by quartiles. In this analysis, we ranked the FIPs according to performance metrics (TVPI, IRR) in descending order, from the highest to the worst. Then, we allocated them in quartiles, where the first quartile (Q1) is composed by 25% of the funds with the highest performance, and the fourth quartile (Q4) contains those 25% funds with the worst performance.

The difference in performance between bottom Q1 – worst performer in the first quartile and bottom Q3 – worst performer in the third quartile is impressive: 30.0% in USD and 27.7% in BRL. This difference is higher than the Global (25%), North American (15.8%), and European (13.8%)[9] markets.

		TVPI BRL	TVPI USD	IRR BRL	IRR USD
1 Quartile	Maximum	14.54	10.20	98.0%	111.3%
	Average	3.17	2.61	40.6%	36.7%
	Bottom	2.00	1.74	25.4%	19.4%
2 Quartile	Average	1.62	1.40	16.8%	12.4%
	Bottom	1.30	1.08	9.4%	5.5%
3 Quartile	Average	1.11	0.91	2.7%	-3.2%
	Bottom	0.94	0.73	-2.3%	-10.6%
4 Quartile	Average	0.55	0.43	-21.1%	-26.6%
	Minimum	0.01	0.01	-71.5%	-100.0%
	Mean	1.62	1.34	9.8%	4.8%

8 - Estimation based on Preqin data

9 - Preqin data

V. DISPERSION OF TVPI AND NET IRR OF BRAZILIAN FUNDS

One possible explanation for this difference is the relative immatureness of the local market in comparison to Europe and North America. Brazilian firms raised a significant amount of capital between 2007 and 2018 with 78 funds raised (35.8% of the total) by 39 new firms, where inexperienced managers succeeded in raising first-time funds, or even follow-on funds. Whereas in the US, a natural selection process has happened leading to a scenario where only better managers survive. In Brazil this process is still ongoing, half of new entrants' firms raised more than one fund in the last ten years. Therefore, while in the US and other more mature markets, the poorest performers have already left the industry, which both increases the average returns and reduces the dispersion between good and bad funds. In Brazil, unskilled managers increase dispersion and decrease average returns.

Exhibit 8

DISTRIBUTION OF TVPI IN BRL AND USD

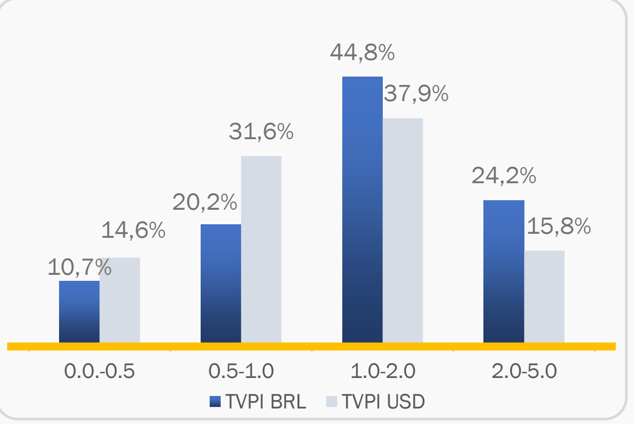
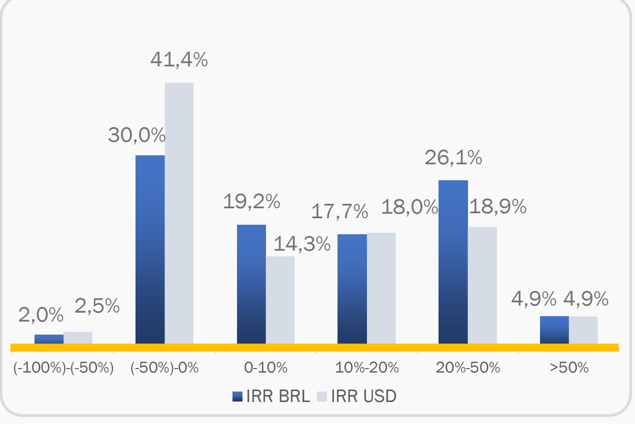


Exhibit 8 shows the distribution of TVPI in BRL and USD. The good performance is concentrated in the first quartile and the most of second quartile funds: 42% of the funds had a net TVPI in BRL higher than 1.5, and this percentage drops to 32% if we consider net TVPI in USD.

The analysis using IRR (see **Exhibit 9**) confirms that high returns are concentrated in top managers: 40% of the funds had a net IRR in BRL higher than 15%, and this drops to 32% of the funds considering net IRR in USD.

Exhibit 9

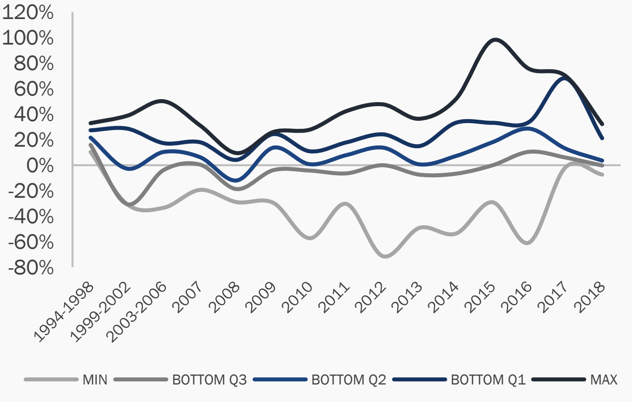
DISTRIBUTIONS OF NET IRR IN BRL AND USD



First quartile funds had an outstanding performance across vintages in local currency. In 80% of the vintages from 1994-2018 (see **Exhibit 10**), the net IRR in BRL was above 17% p.a. All Q1 funds outperformed CDI (Brazilian Libor Benchmark), and 98% of those funds outperformed IBOVESPA (Brazilian Stock Market Index). Excluding the 2008 vintage, the bottom Q1 funds have always delivered a net IRR in BRL above 11% p.a.. Despite more modest returns, second quartile funds showed resilience in local currency when compared to the local benchmarks: 91% of the Q2 funds outperformed CDI, and 89% of Q2 funds outperformed IBOVESPA.

Exhibit 10

PERFORMANCE OF FUNDS' QUARTILES BASED ON NET IRR IN BRL



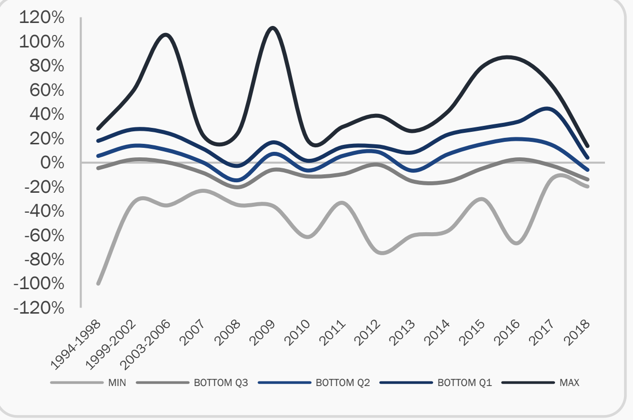
V. DISPERSION OF TVPI AND NET IRR OF BRAZILIAN FUNDS

Exhibit 11 presents the net IRR in USD by quartiles. First quartile funds also showed resilience to currency devaluation. The net IRR in USD of the bottom Q1 has been over 8%, except in 2008 and 2010, and it has been over 20% p.a. since 2014.

Despite the economic turbulence and currency exchange rate volatility, best fund managers were able to generate high returns even in USD, while fourth quartile funds and part of the third quartile lost money. This evidence suggests that it is possible to achieve high returns with PE in Brazil. Brazil has a group of skilled managers, who are able to navigate well the economic turbulence and earn high returns. However, in order to avoid poor performance and losses, it is indispensable to conduct a diligent selection process to choose the fund manager in Brazil.

Exhibit 11

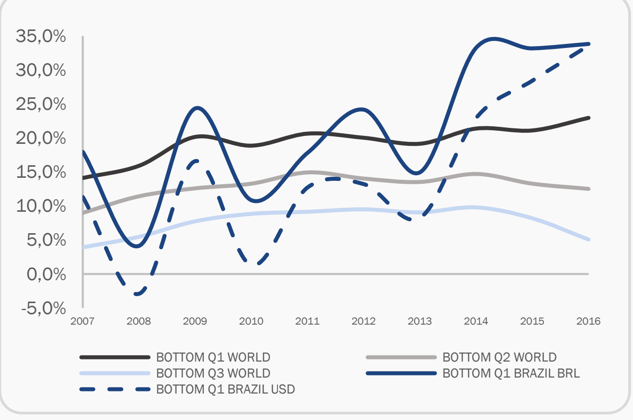
PERFORMANCE OF FUNDS' QUARTILES BASED ON NET IRR IN USD



VI. RELATIVE POSITION OF BRAZILIAN Q1 IN RELATION TO THE GLOBAL PRIVATE EQUITY PERFORMANCE

Exhibit 12

RELATIVE POSITION OF Q1 BRAZILIAN FUNDS IN BRL AND USD WITHIN THE GLOBAL INDUSTRY IN USD



Q1 Brazilian funds performed well in comparison to the global industry (using Preqin data) when we ignore currency impact: 83% of Q1 funds would be classified as first quartile globally, and 7% as second quartile globally.

Those funds performed well even in USD. Despite the negative impact of currency risk and according to IRR in USD, the worst Q1 fund persisted in the first global quartile in 30% of the vintages (2014-2016) – see **Exhibit 12**. Considering all Q1 Brazilian funds in the period 2014-2016, 59% maintained the first global quartile classification, while 20% were classified in the second global quartile.

VII. CONCLUDING REMARKS

Top funds performed well in the period

42% of the funds had a net TVPI in BRL higher than 1.5 (32% of the funds if we consider net TVPI in USD), while 40% of the funds had a net IRR higher than 15% in BRL (32% of the funds, when we analyze net IRR in USD). We found a lower average performance than we did in previous studies. We could partially explain the poorer result by a significant percentage of inexperienced managers, 75% of the PE and VC funds were raised in the last 10 years with 39 new firms raising 36% of the funds.

Despite the economic **turbulence** in the 2003-2018 period, funds were on average **profitable** investments in **BRL** terms

The mean TVPI for Brazilian PE and VC funds has been higher than 1.0 in all vintages except one, and the mean IRR was positive in 87% of the vintages. PE and VC funds also outperformed equivalent investments when compared to IBOVESPA, CDI, and MSCI EM.

Brazilian PE and VC funds **underperformed global** PE and VC **markets**

The mean TVPI was 1.62, and the mean IRR was 9.8%, below the mean of global TVPI of 1.7 and the mean of global IRR of 12.6%. Good performance was concentrated in the first quartile and most of second quartile funds, which had an outstanding performance in BRL.

Ignoring currency devaluation, first quartile funds showed consistent **outstanding** performance across vintages:

90% of Brazilian Q1 funds would be classified in the first or second global quartile according to IRR performance in BRL.

This group also showed some resilience to currency devaluation. The bottom first quartile funds of 2014 onward would persist in the first global quartile.

The **difference** between the bottom **first quartile** and bottom **third quartile** in **Brazil** is **30%**

This difference, in BRL and USD, is higher than the global difference, and the double the difference in North America and Europe. This is possibly explained by inefficiencies in the Brazilian market and by the relative immatureness of the industry, with experienced managers co-existing with inexperienced managers. Only skilled managers were able to take advantage of inefficiencies in a volatile market and generate outstanding returns.

There is a group of experienced and **skilled PE and VC** fund **managers** in Latam

Our main conclusion is that this group is able to navigate well the country's idiosyncrasies, exploit inefficiencies and generate outstanding performance, represented by an average IRR of 40.6% in BRL and 36.7% in USD, and an average TVPI of 3.17 in BRL and 2.61 in USD for first quartile funds. Therefore, it is possible to have substantial gains by investing in PE and VC funds in Brazil. However, in order to achieve substantial financial returns, it is crucial that one identifies and selects those skilled fund managers.

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