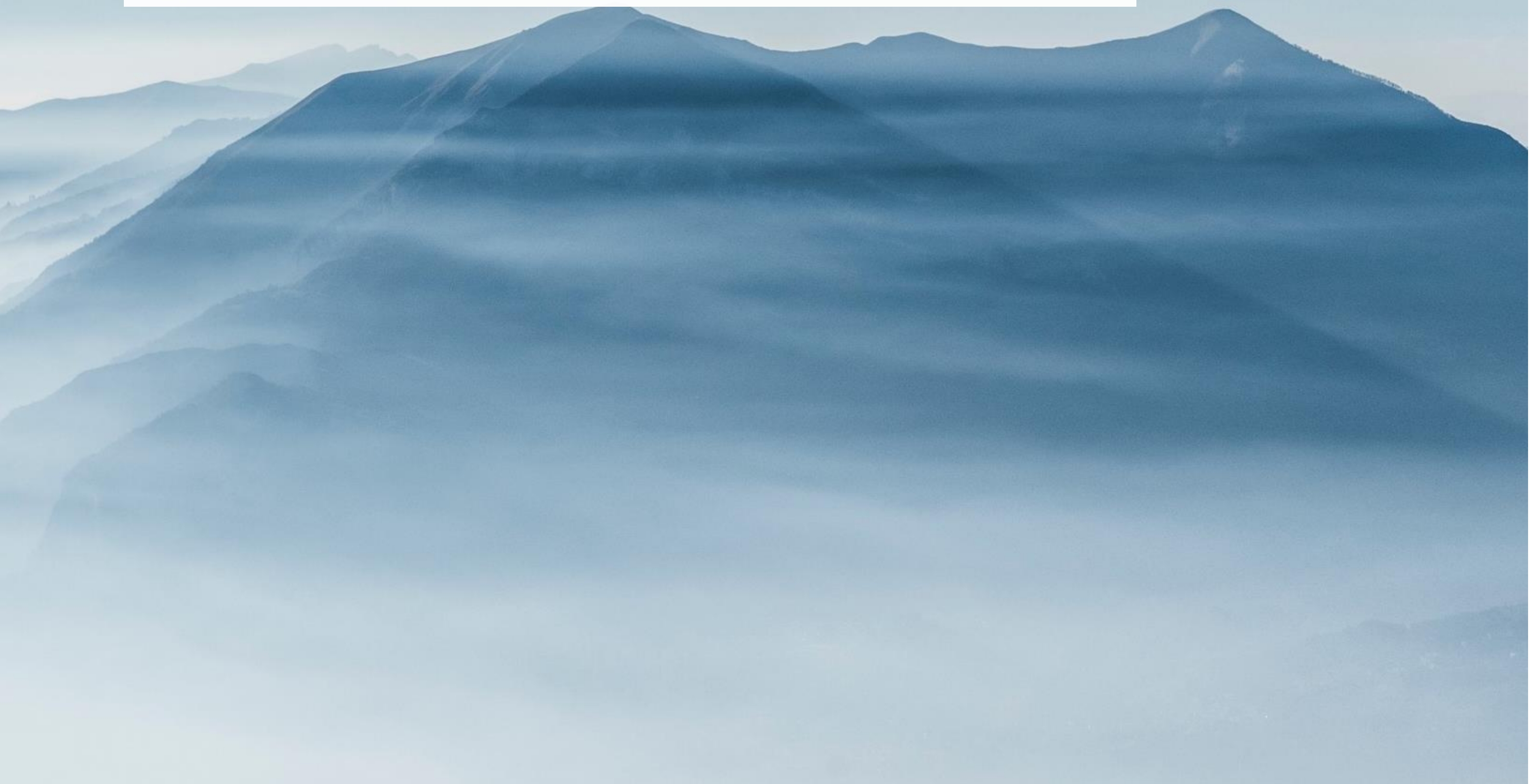
PERFORMANCE OF BRAZILIAN PRIVATE EQUITY AND VENTURE CAPITAL DEALS

NOVEMBER 2021



This paper investigates the performance of private equity (PE) and venture capital (VC) investments in Brazil. The performance data includes only deals that were invested and divested between 1984 and May 2021. As the main source of data is Private Placement Memorandum (PPM), the reported performance of deals in the funds' portfolios may be outdated, and distant from the current return expectations, and therefore, we excluded them from the analysis. We estimated statistics for performance denominated in USD, as well as in BRL.

We analyzed the performance of deals in the tech sector separately.

> The number of **investments in the tech sector has increased** since 2010, and since 2012 it has **surpassed** the number of non-tech investments

Although most tech deals were done by VC funds, this group includes series B, C and later rounds, that are characterized by a gray zone between VC and PE growth model. Almost all non-tech deals were realized by PE funds.

We estimated the percentage of each exit channel during the period, as well as descriptive statistics of the performance of deals exited through IPO, strategi cs, sponsor-to-sponsor, and buy-back. Our analysis investigates the performance of 1140 deals, being 407 in the tech segment and 733 in the non-tech segment.

Our main findings are:

- The Brazilian PE and VC industry performed well in USD[1]. The average gross MOIC and gross IRR estimated in USD for Brazilian PE and VC deals were 2.8 and 17% respectively.

- However, the performance in BRL was significantly higher – a clear indication that currency risk offset part of the return achieved by Brazilian fund managers. The gross MOIC in BRL was 4.7, and the gross IRR was 19% p.a.

- The performance pattern of the tech deals was in line with what is expected for VC deals: high percentage of losses, and a few outliers, some of them with skyrocket returns, pushing the average performance up. The majority of the tech exits resulted in either total (40%) or some loss (13%), and a few have extraordinary return: 8% with a gross MOIC in USD above 10, with a maximum of 455. The average gross MOIC in USD for tech exits was 6.2, and in BRL was 8.3.

- Accordingly, the performance pattern of non-tech deals was in line with the expectation for PE: more modest percentage of losses (8% total and 20% some losses), and a small percentage of high returns, but less scalable than in the tech segment: 4% of the exits resulted in a gross MOIC in USD above 10, with a maximum of 57. Despite showing lower return than tech deals, what is in accordance with lower risk, non-tech deals' gross average MOIC was high for global standards: 2.9x in USD and 3.5x in BRL.

- The channel that represents the largest percentage of exits was sale to strategics (55% of total exits), and this was the case for tech and non-tech deals.

- Write-offs corresponds to 24% of total exits, and when we break the sample in tech and non- tech, we observe that the tech deals had 41% of the write-offs, compared to 14% of non-tech.

[1] Global Private Equity Return 2021 by Bain&Co., based on CEPRES data, estimates the average gross MOIC of global PE and VC deals exited between 2015 and 2019 as 2.19x

- When we exclude write-offs, the rank of exit channels according to the number of transactions are similar for tech and non-tech deals: strategic is the most used channel, corresponding to 76% of the tech exits and 61% of the non-tech exits. The second most used channel was IPO: 12% of the tech and 16% of non-tech. Secondary sales and buybacks represent smaller share of the exits: between 3% and 5% for each channel, and each group.

- While IPO was the most successful exit route for non-tech companies (an average gross IRR of 66%, and an average gross MOIC of 4.7), it was behind sale to strategics and sponsor-to-sponsor for tech companies (an average gross IRR of 30%, and an average gross MOIC of 4.3 for IPOs). This may be explained by the experience of PE fund managers in lead companies to market and exploit hot market opportunities, which is clear not the case of Brazilian venture capitalists.

- Sale to another fund was behind trade sale for non-tech companies (average IRR of 20% and gross average MOIC of 1.8), and it was the exit route with the highest average MOIC of tech deals with 27x. This may be explained that VC funds focused on earlier stage are more used to sell to funds focused on latter stage than PE funds.

- Buyback resulted in the highest percentage of losses for tech and non-tech deals, and it was the less profitable route for exits of tech and non-tech sectors.

Sample Information

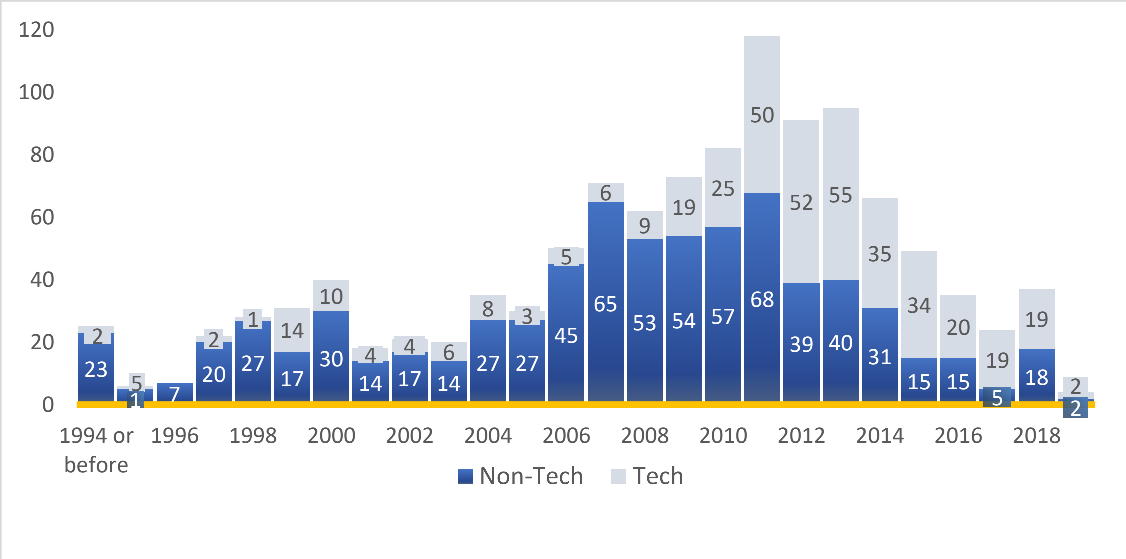
Our sample contains 1140 Private Equity (PE) and Venture Capital (VC) deals in Brazil, originated between January 1984 and October 2019, and liquidated between January 1984 until May 2021. The data is based on proprietary information of Spectra Investments, which main source is Private Placement Memorandum (PPM). Therefore, our analysis was built under performance measurements reported by fund managers. The information is sanitized by Spectra to protect identities.

In this whitepaper, we split the analysis for deals in the tech sector and non-tech sectors. Although this procedure differs from our previous whitepapers, in which we classified a deal as VC if the underlying company has not reached the breakeven at the time of the investment, and PE otherwise, the current segmentation has a lot of intersection with the former. The non-tech segment is composed almost entirely by PE investments. The vast majority of the VC deals (pre-seed, seed, series A and B) are in the tech segment. However, series B and later stage rounds also include investments by PE funds. The tech segment includes the gray area (series B and C) of investments that could be classified either as growth capital or VC. Recently, traditional PE funds also started investing in earlier stages. Tech companies represent 36% of our samples (407 deals).

PE/VC INDUSTRY IN LATIN AMERICA WAS INCIPIENT WITH FEW INVESTORS BEFORE 1994, AND 97,8% OF THE DEALS WERE ORIGINATED BETWEEN 1995 AND 2019 (see **Figure 1**).

As our sample contains only deals with exits, the number of observations drops substantially in 2019. Investments in tech sector have emerged after 2010, surpassing the number of non-tech deals after 2011

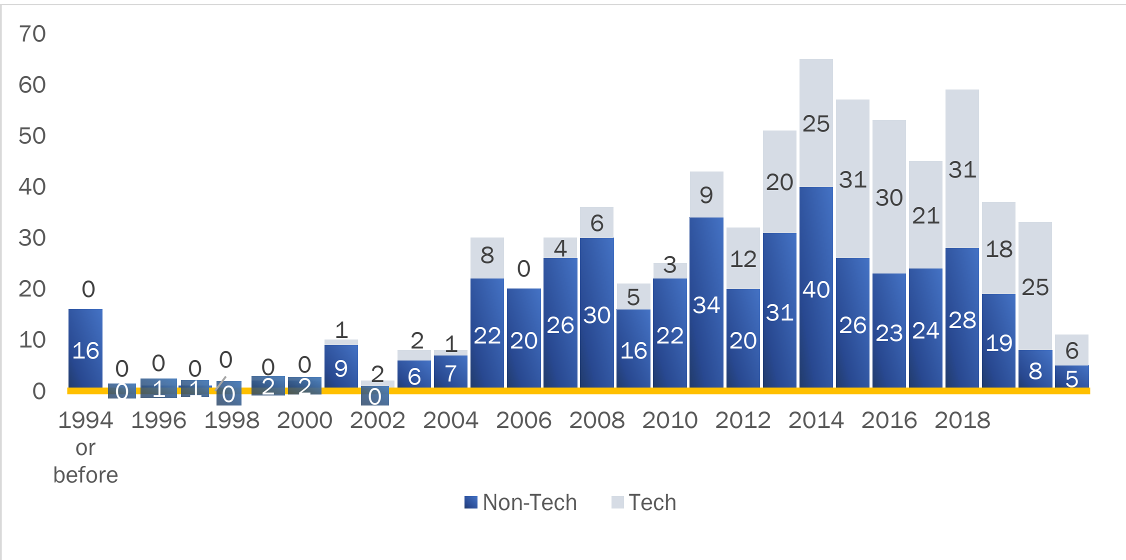
Figure 1. **Deals according to year of investment**



PERFORMANCE DENOMINATED IN USD OF TECH AND NON-TECH INVESTMENTS

PPMs reports information about gross MOIC (Multiple on Invested Capital)[2] and gross IRR in USD for most deals, and in BRL for a lower number of investments. We converted the data in BRL to USD using the exchange rate of the investment and divestment dates[3]. In the case of write-offs with missing performance information, we assumed a MOIC of 0 and an IRR (Internal Rate of Return) of -100%. After excluding all other deals without performance information, the sample was reduced to 682 deals: 260 in the tech segment and 422 in the non-tech segment. Figure 2 shows the number of deals with performance information per year of exit.

Figure 2. **Deals according to year of exit**



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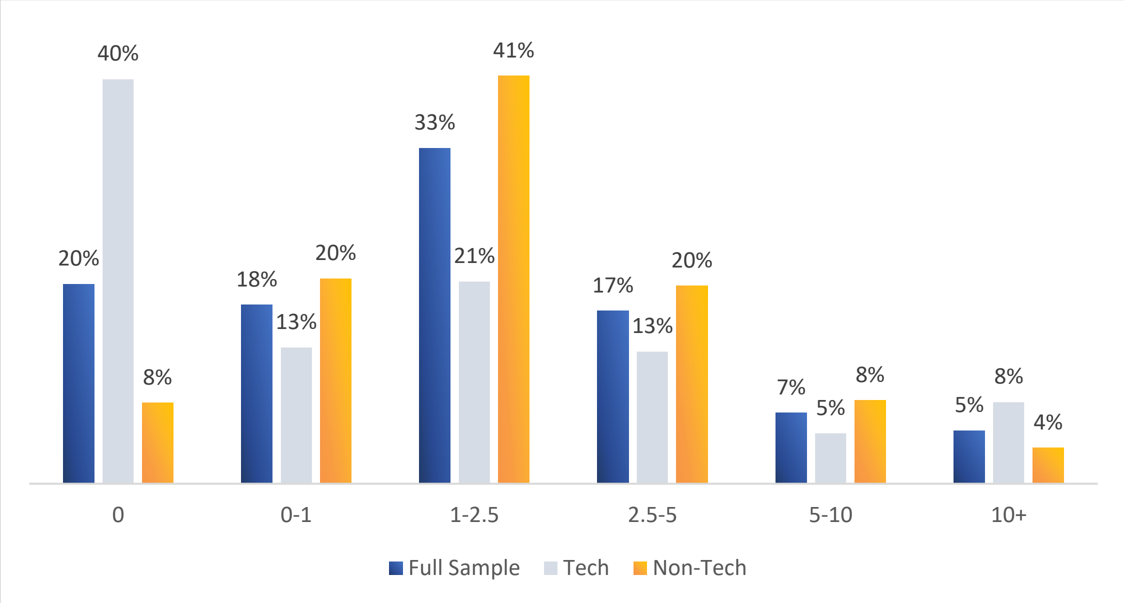
[2] MOIC – multiple of invested capital, also known as cash on cash or multiple of money. Represents the amount of money generated by USD 1.00 of investment. For example, a MOIC of 2.00 means that US$1.00 was transformed in US$2.00, considering all cash flows received

[3] $MOIC_{USD}=MOIC_{BRL}$*(Ptax investment day/ Ptax divestment date) and $IRR_{USD}=MOIC_{BRL}^{(365/\text{holding period days})}-1$, where Ptax is the Central Bank official exchange rate for BRL to USD.

Tech deals follows the performance pattern expected for VC deals (Figure 3): 40% of them had total loss, 13% lost part of the invested capital, and 13% had outstanding return (MOIC higher than 5x). The return distribution of the non-tech segment follows the pattern expected from PE investment: 8% of the deals had total loss, 20% had partial loss, and 12% had outstanding performance (MOIC higher than 5x). Tech segment is riskier than the non-tech segment but has a higher potential for upside: 8% of the tech deals had a MOIC higher than 10x, while only 4% of the non-tech had a MOIC higher than 10x.

Figure 3. **Performance Distribution According to MOIC (USD)**



The median gross MOIC of the tech deals was 0.8 and the median gross IRR was -6.5%, indicating that more than half of the tech deals resulted in losses (Table 1). As expected, the median gross MOIC and the median gross IRR for non-tech segment performed better, 1.8 and 17% respectively. This is aligned with the less risky profile of non-tech deals when compared to tech deals. The bottom Q1[4] MOIC and IRR are slightly higher for non-tech deals: gross MOIC of 2.8 for tech and 3.0 for non-tech, and gross IRR of 33.5% for tech and 38% for tech. However, the upside for tech was significantly higher. The maximum tech MOIC was 455, almost 8 times the maximum MOIC of the non-tech deals, and the maximum tech IRR was 1900%, representing 1.9 times the maximum non-tech IRR.

The tech gross average MOIC was 6.2x. Not surprisingly, the 8% of the tech deals with MOIC higher than 10x contributed to 53% of this figure (Figure 4). The concentration in a few very high performers to push up the average MOIC is obviously significantly higher for deals in the tech sector. The 12% of the non-tech deals with MOIC higher than 5x explain 42% of the not-tech average MOIC, while the 13% of tech deals with MOIC higher than 5x explain 67% of the tech average MOIC. The concentration of performance in few outliers for tech are also reflected in the IRR difference between the 1st decile and the

[4] Deal with the lowest return of the top quartile, that is, the deal that rank at the bottom of the 25% deals with highest return.

1st quartile: 65.8%, while for non-tech it was 38.6% (58% of the tech difference).

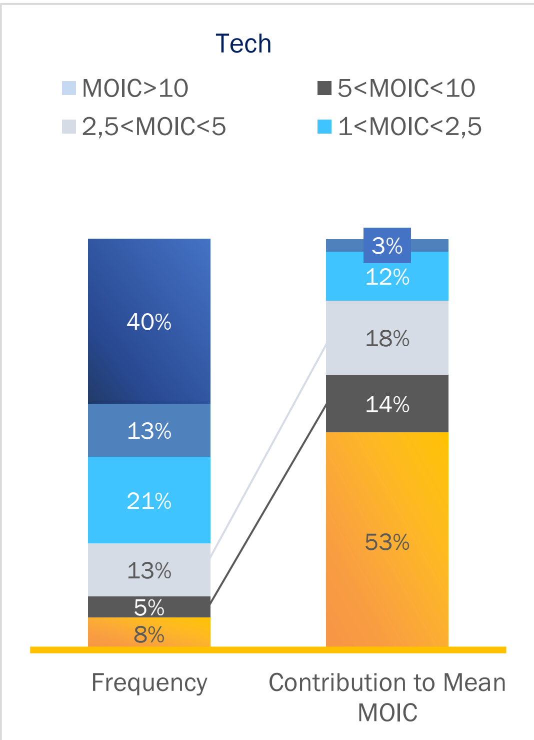
In accordance with the lowest risk, the non-tech average gross MOIC was 2.9x, less than half of the tech average gross MOIC. Still, non-tech Brazilian deals perform on average very well. The average gross MOIC of global PE and VC deals exited between 2015 and 2019 was 2.19x, 75% of the Brazilian non-tech average MOIC.

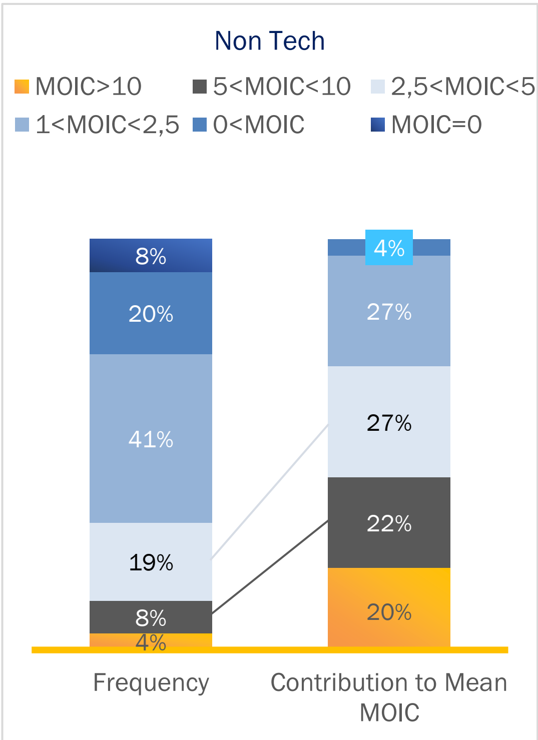
Most of the tech performance was boosted by more recent exits, between 2019-2021. The maximum tech MOIC observed in the current analysis represented more than 7.5 times the maximum MOIC (60x) observed for VC deals in our previous analysis, which encompassed the period between 1994 and March 2018. This is a reflection of the strength the Brazilian VC industry has shown more recently. There were more than one dozen unicorns since our previous deal analysis. The good performance of the Brazilian VC industry explains the dominance of investment in tech deals in most recent years.

Table 1. **Performance by quartile (USD)**

	Full sample			Tech			Non-Tech		
	IRR	MOIC	Holding Period	IRR	MOIC	Holding Period	IRR	MOIC	Holding Period
Maximum	1900	455.3	19,9	1900	455,3	19.9	1000	57.0	15.7
Top Quartile	35.3	2.6	6.1	33.5	2.8	5.0	38	3.0	6.5
Median	13.5	1.3	4.1	-6.5	0.8	3.3	17	1.8	4.7
Bottom Quartile	-11	0.9	2.5	-100	0.0	2.0	0	0.9	3.0
Minimum	-100	0.0	0.1	-100	0.0	0.2	-100	0.0	0.1
Average	17	2.8	4.6	3	6.2	3.9	28	2.9	5.0

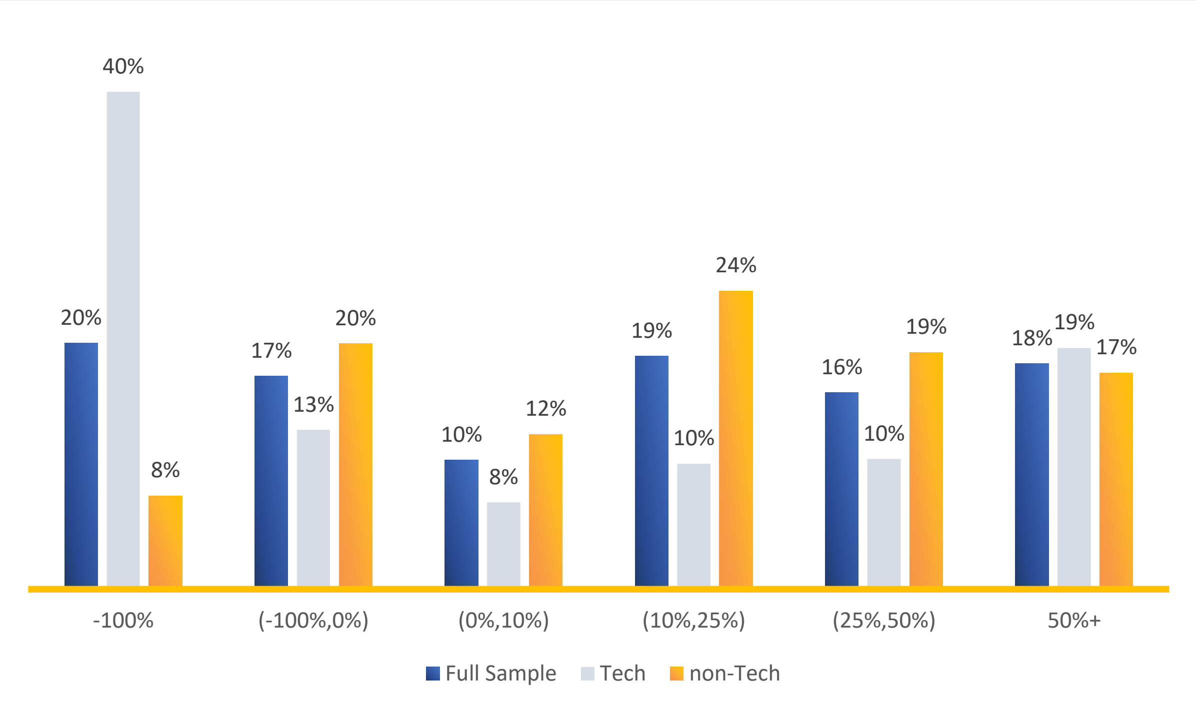
Figure 4. **Outliers' contribution to average gross MOIC**





The gross IRR distribution of the combined sample of tech and non-tech deals is almost uniform across ranges (around 10% and 20% in all ranges – see Figure 5). However, when we split the deals into tech and non-tech sectors, the difference between the groups is clear. The IRR loss distribution is analogous to the MOIC distribution: a higher percentage of negative return for tech (53%), and more modest for non-tech (28%). The percentage of upside, however, is higher than we found in the MOIC distribution. Classifying as outlier a deal with a gross IRR higher than 25%, we observe that this group represents a higher percentage of tech and non-tech deals, when compared to outstanding MOIC (above 5x): 30% versus13% for tech deals, and 36% versus 12% for non-tech. This is explained by the holding period. Lower holding period generate higher IRR, and PE funds accelerate exits whenever market condition is better, pushing the holding period down and the IRR up. We also observe in Table 1 that the median holding period is lower for the tech deals: 3.3 years versus 4.7 years for non-tech deals.

Figure 5. **Performance Distribution According to IRR (USD)**



PERFORMANCE DENOMINATED IN BRL OF TECH AND NON-TECH INVESTMENTS.

Brazil is famous for currency volatility. MOIC and IRR in USD is affected by exchange rate, which pattern is unpredictable and almost impossible to time the investment cycle. Domestic investors have capital calls in BRL, as well as capital distributed in BRL, and therefore, they do not run Brazilian currency risk.

When we compare the gross MOIC distribution estimated in BRL with the distribution estimated in USD, the negative impact of the currency risk is evident. The percentage of outliers (MOIC>5) for the tech deals increases from 13% when measured in USD to 18% when measured in BRL (Figure 6). The percentage of losses in tech investments also have a slight decrease: from 53% in USD to 49% in BRL. The same happens to non-tech deals: the percentage of non-tech deals with MOIC higher than 5x increases from 12% in USD to 15% in BRL, and the percentage of losses decreases from 28% in USD to 23% in BRL.

Figure 6. **Performance Distribution According to MOIC (BRL)**

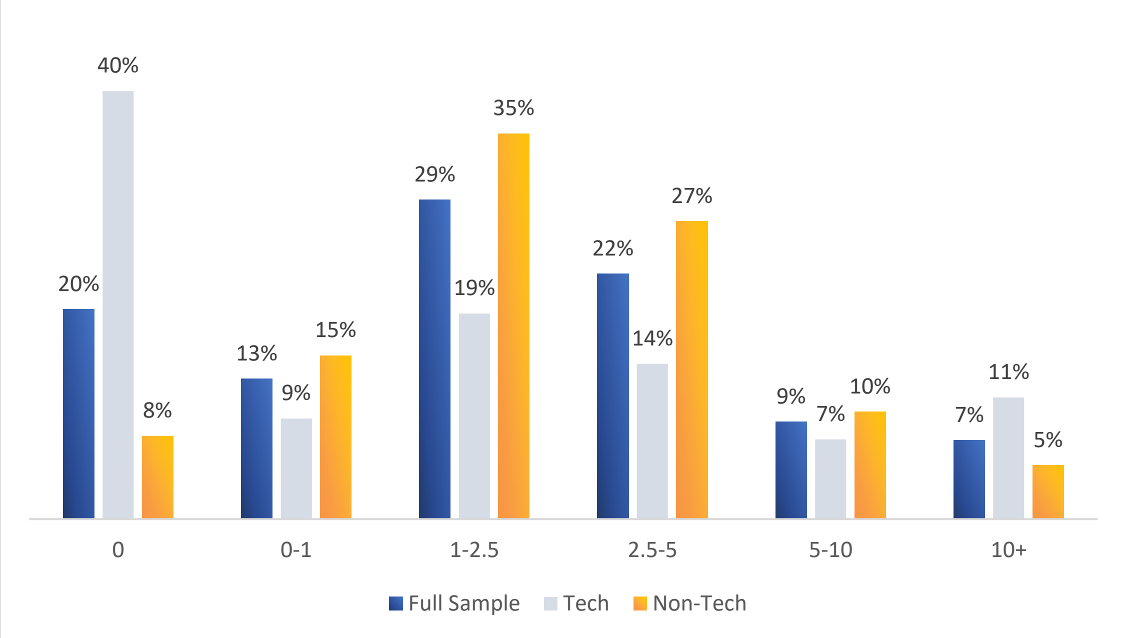


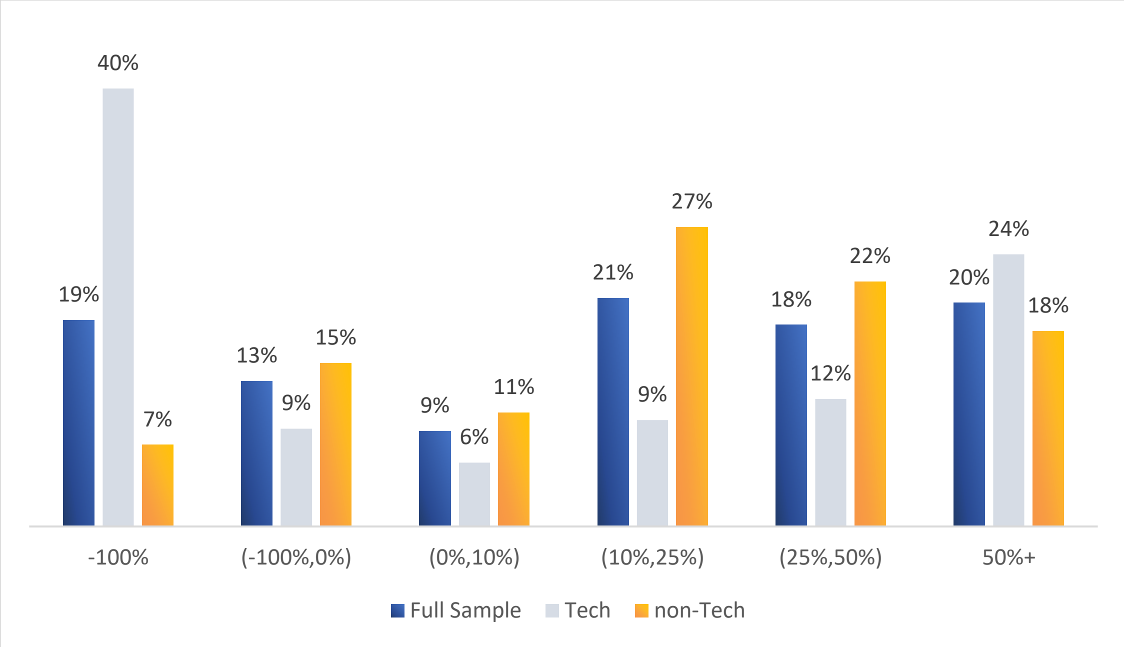
Table 2 shows the bottom MOIC and IRR of each quartile, as well as the maximum MOIC and maximum IRR of the sample, and the negative impact of Brazilian Reais devaluation is even clearer. The maximum MOIC for tech deals increases from 455.3 in USD to 734.7 in BRL. The tech median MOIC in BRL is higher than 1 (it is 0.8 in USD), and the average MOIC in BRL is 8.3, that is, 34% higher than the average of 6.2 in USD. For non-tech deals the maximum MOIC increases from 57 to 87.7, the mean MOIC increases from 1.8 to 2.1, and the average non-tech MOIC increases from 2.9 when measured in USD to 3.5 in BRL. Although the PE and VC mean performance measured in USD was good, it could have been much better if the Brazilian currency exchange rate were more stable.

Table 2. **Performance by quartile (BRL)**

	Full sample			Tech			Non-Tech		
	IRR	MOIC	Holding Period	IRR	MOIC	Holding Period	IRR	MOIC	Holding Period
Maximum	2792	734.7	19.9	2792	734.7	19.9	1238	87.7	19.9
Top Quartile	40	3.6	6.1	49	3.7	5.0	41	3.7	5.0
Median	18	1.9	4.1	4	1.1	3.3	21	2.1	3.3
Bottom Quartile	-20	0.5	2.5	-100	0.0	2.0	4	1.1	2.0
Minimum	-100	0.0	0.0	-100	0.0	0.2	-100	0.0	0.2
Average	19	4.7	4.6	21	8.3	3.9	25	3.5	3.9

Figure 7 shows the performance distribution according to IRR in BRL. Again, upside in BRL is better than in USD. Tech companies had 36% of the deals with IRR above 25% (and 29% for USD IRR). Non-tech companies had outstanding deals in 40% of the exits (36% in USD IRR). Finally, exchange rate impacted the return of companies with a negative IRR, 13% of exits had negative IRR in BRL and 17% in USD IRR.

Figure 7. **Performance Distribution According to IRR (BRL)**



PERFORMANCE ACCORDING TO EXIT ROUTES

There are 5 main exit routes: IPO, strategics (sale to another company or trade sale), sponsor-to-sponsor (sale to another fund or secondary sale), buyback (sale to the owner), and write-off. Write-offs[5] represent 24% of the exits for full sample, and they are concentrated in the tech segment: 41% of the group's exits, while the percentage is 14% for non-tech exits (Figure 8). This result is expected as tech deals correspond to seed and series A capital, which face a higher risk. The most frequent type of exit is sale to strategic buyers[6] (54%), followed by IPO (12%). Only 4% of the sales are buyback[7], and 3% of the exits are secondary sales[8].

When we exclude write-offs, the percentage of exits of tech and non-tech companies according to each channel follow similar ranking order (Figure 9). In both groups, the most common exit route was sale to strategic: 76% for tech companies and 71% for non-tech companies. IPO was the second most common exit strategy for both groups, however the percentage is less than one quarter of the sale to a strategic player. IPO corresponds to 16% for non-tech exits excluding write-offs and 12% of the tech deals. Sale to another fund corresponds to around 5% of the non-write-off exits for both groups, and buyback: between 3% and 5% of the sales excluding write-offs. The ranking of exit channel we observe in Brazil is in accordance with what is observed in the global PE and VC industry: strategics represents the higher percentage of exit channels, followed by IPOs, and then secondaries.[9]

[5] investment in companies that goes bankrupt, or the fund sells back to the owner for US$1.00
[6] Sale to another company – an M&A transaction.
[7] Sale to owner
[8] Sale to another PE or VC fund – sponsor to sponsor transaction
[9] See Bain&Co. (2021). Global Private Equity Report. Page 18.

Figure 8. **Percentage of exits according to each route**

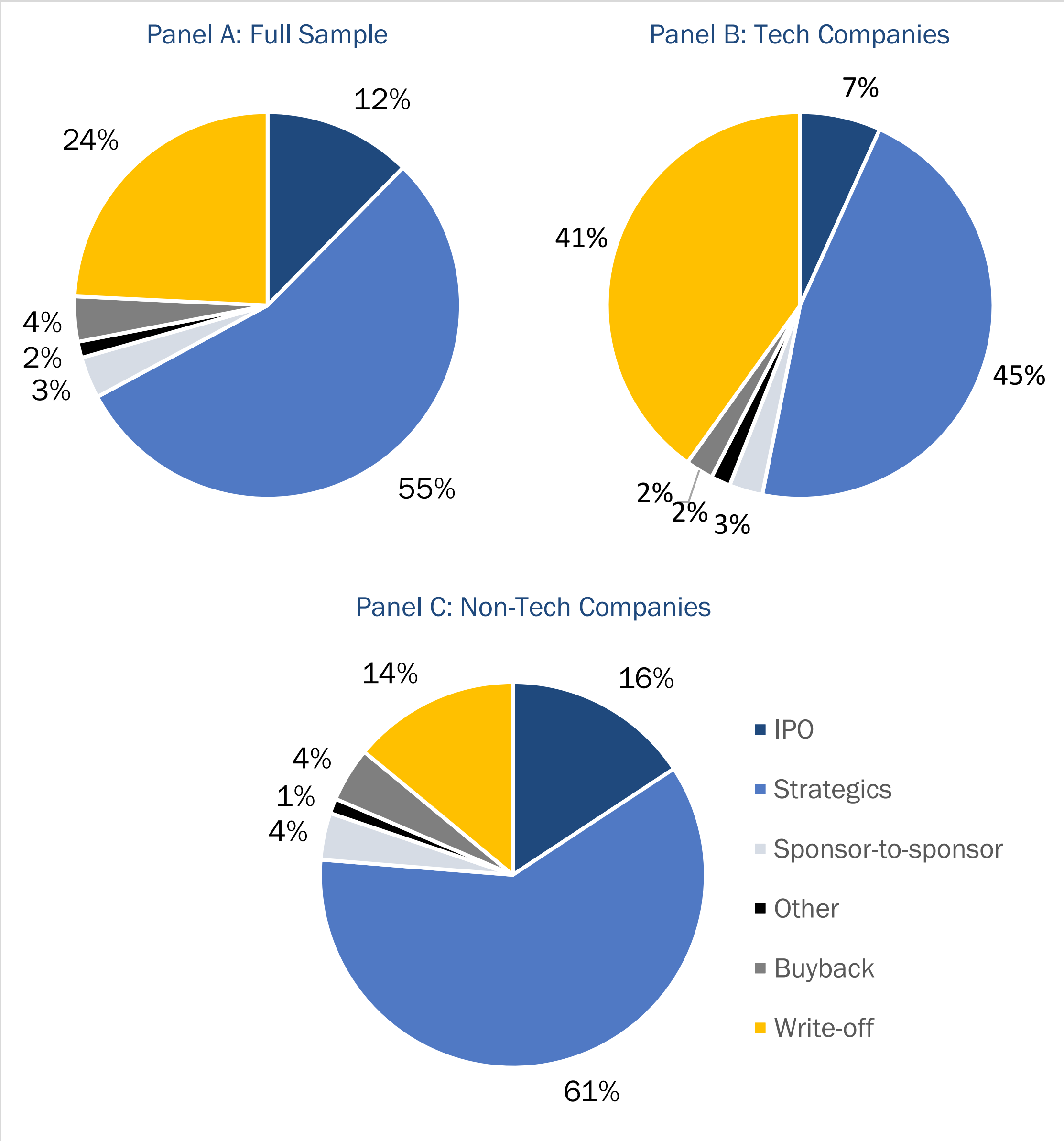
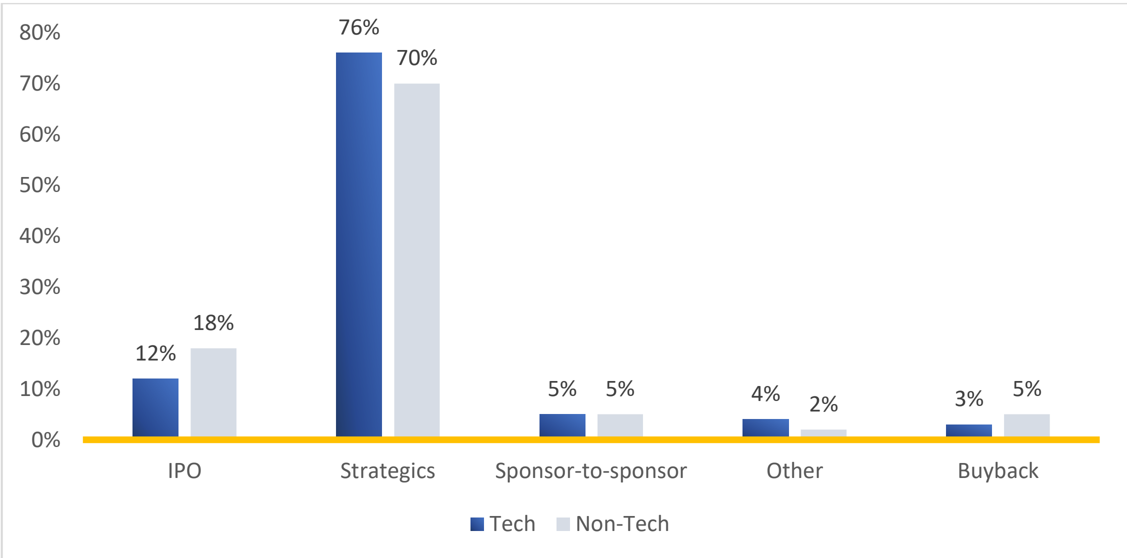


Figure 9. **Percentage of exits without write-offs**



PERFORMANCE CONSOLIDATED BY EXIT CHANNEL

When we analyze the whole sample (**Figure 10 – Panel A**),

IPO was the exit channel with the **highest average gross IRR in USD (59% p.a.), seconded by strategic buyer (47% p.a.). Sponsor-to-sponsor** was in the **third place** of the IRR (37%p.a.).

However, the profitability rank according to MOIC follows another order rank. Sponsor-to-sponsor showed the highest average gross MOIC: 5.4x, followed by IPO: 4.6x, and then strategic: 3.2x. This indicates that secondary sale was also a successful, and sometimes even better than an IPO or a strategic sale. The mean holding period of sales to another fund is 5.8 years, the same as to sale to a strategic buyer, also indicating that funds are not delaying the possibility to sell to another sponsor – that is, sale to another fund has also been a desirable alternative, as it is the case with IPO and strategic buyer.

A POSSIBLE EXPLANATION IS THE DEVELOPMENT OF THE PE AND VC BRAZILIAN INDUSTRY, WITH A HIGHER NUMBER OF FUNDS OPERATING AT DIFFERENT STAGES.

Later stage funds are probably buying companies from earlier stage funds, and they are paying well because they foresee another growth cycle to exploit.

Buyback, as expected, resulted in the lower average gross IRR: 11%, less than on third of the sponsor-to-sponsor IRR, and in the lower average gross MOIC: 1.5 (less than half of the strategics). The exit channels though have different order in the profitability rank for tech and non-tech deals.

For tech deals, IPO ranked in the third place according to both performance measurement: IRR and MOIC (**Figure 10- Panel B**). The average holding period of tech IPOs was also the longest: more than 6 years versus 4 years for strategic and 4.5 for sponsor-to-sponsor. This is expected, since IPOs of companies that have not reached the cash flow breakeven are still uncommon in Brazil, and Brazilian VCs are not used to bring companies public.

IPOs of tech deals had an average gross IRR of 30% (almost one third of average IRR of secondary sales (83%), the second in the rank), and an average gross MOIC of 4.3 (almost one third of the average MOIC of strategic sale (12x), the second in the rank).

Sale to strategic has the **highest** average **IRR** of **83**% for **tech** deals, and **secondary sale** had the **highest** average **MOIC: 27x**

For non-tech deals, IPO ranked first according to both performance metrics, IRR and MOIC, 66% and 4.7x respectively (**Figure 10- Panel C**). PE funds are used to bring companies public, and they learnt how to exploit IPO windows, launching offers in moments of bull stock markets. Sale to a strategic buyer ranked second, also according to both metrics: the average gross IRR was 33% (half of the average IPO's IRR), and the average gross MOIC was 2.7x (66% of the non-tech IPO's average MOIC). Secondary sale ranked third, with an average IRR of 20%, and an average MOIC of 2.6 (close to the average MOIC of strategics).

Figure 10. **Performance and holding period by exit type**

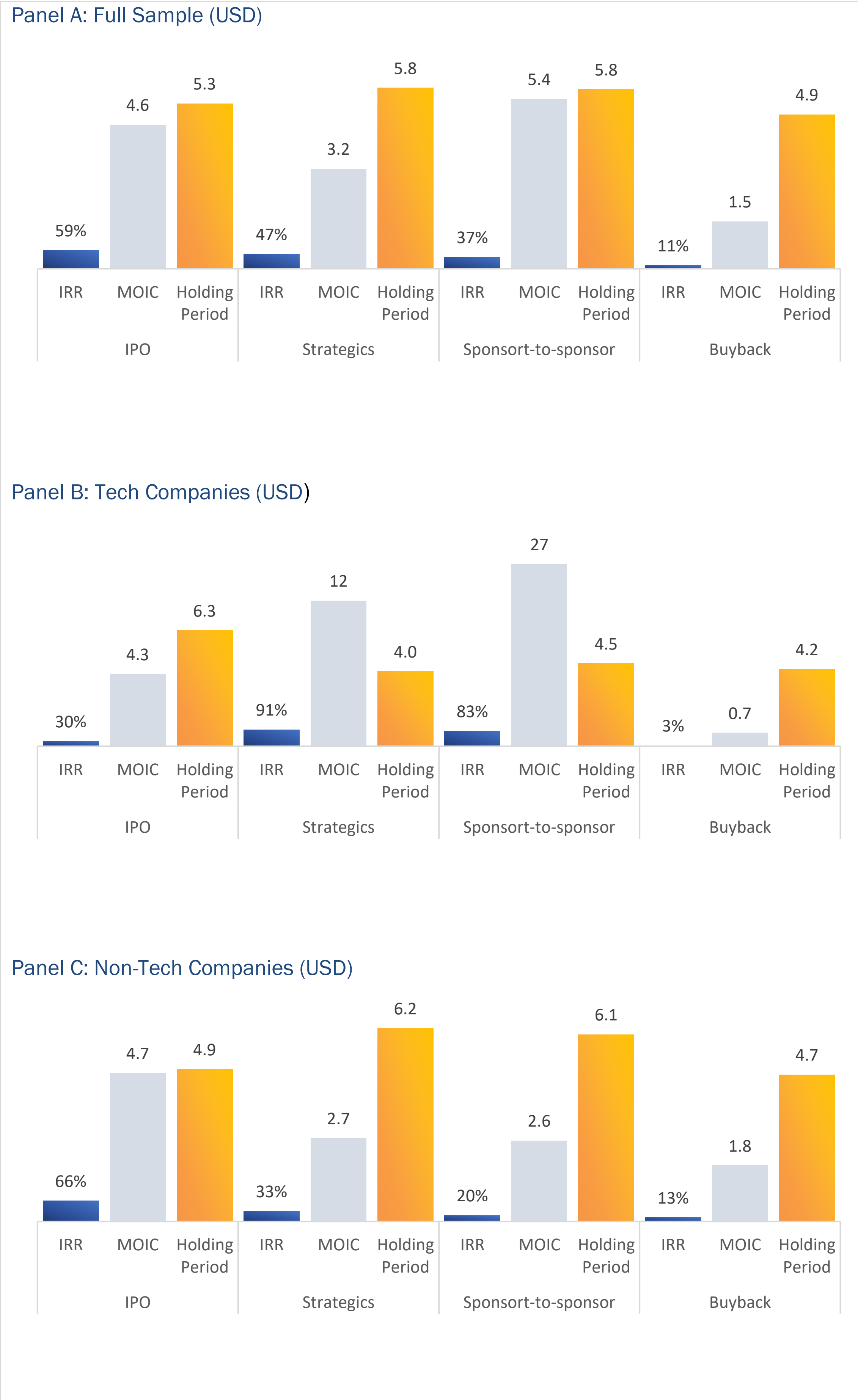


Figure 11 shows the MOIC distribution of each exit strategy. We do not analyze write-offs as almost all of them have MOIC equal zero and IRR of -100%. We observe that

buyback was the exit strategy with the highest percentage of losses: 42%, and that the percentage of losses in tech buybacks are 2.2 times the percentage of losses in non-tech buyback (71% versus 32%)

We do not observe any buyback sale with outstanding MOIC (higher than 5.0). However, we observe reasonable returns (between 2.5 and 5.0) for 26% of non-tech buyouts, while we do not find any MOIC higher than 2.5 for tech buyback. In accordance to expectation,

sale to the owner in general are not a profitable exit route, although there are some exceptions for non-tech deals: good returns, although not exceptional.

Analyzing the tech segment (Figure 11 – Panel B), we see that 50% of the sales to another fund had MOIC higher than 10, while only 24% of the tech M&A and 25% of the tech IPOs had MOIC higher than 5. When a startup is growing exponentially, it raises new rounds of capital with funds, allowing exits of earlier stage investors with very interesting MOICs.

Tech IPOs are probably for latter stage deals, with less upside potential, and many sales to strategic buyers have more modest returns. Accordingly, we observe that 25% of the tech IPOs and 13% of the tech sales to strategic had losses, while there was no tech sale to another PE fund with losses.

The non-tech segment has, as expected**, a different behavior.**

IPO in terms of performance was the most successful exit. A lower percentage of IPOs (7%) had losses, while there was 6% of sales to another fund, and 30% of sales to strategic buyers with MOIC lower than 1. We observe that 32% of IPOs had outstanding performance, while only 12% of strategic buyers and 6% of sale to another fund had MOIC higher than 5.

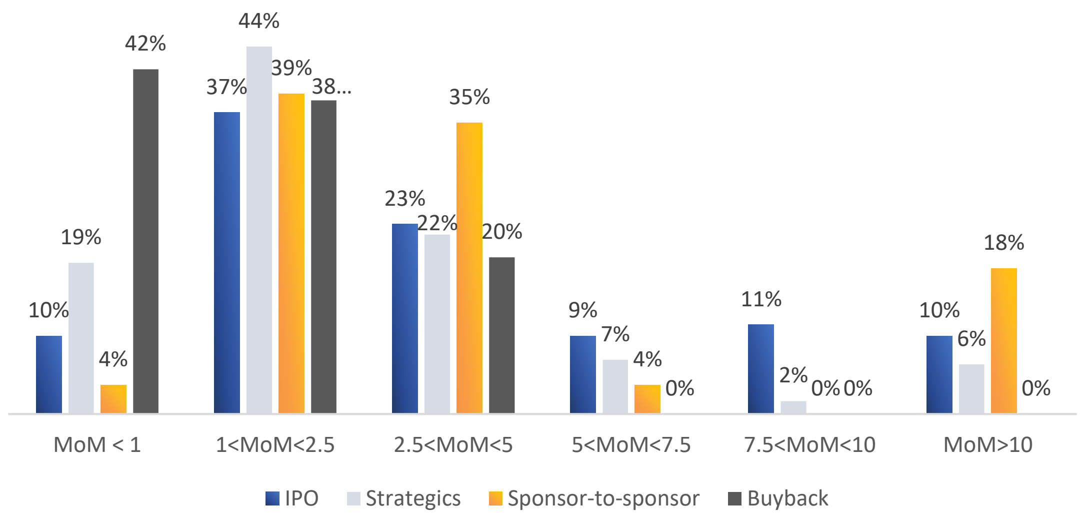
SECONDARY SALES SHOW A MORE STABLE PERFORMANCE: NO LOSSES, AND PRACTICALLY NO EXCEPTIONAL PERFORMANCE.

PE/VC FUNDS AVOID PAYING A VERY HIGH PRICE, BUT AT THE SAME TIME THEY ARE ONLY INTERESTED IN PORTFOLIO COMPANIES OF A GOOD QUALITY, AND THEREFORE THE ACQUISITION STILL GENERATES A FAIR RETURN TO THE PREVIOUS FUND.

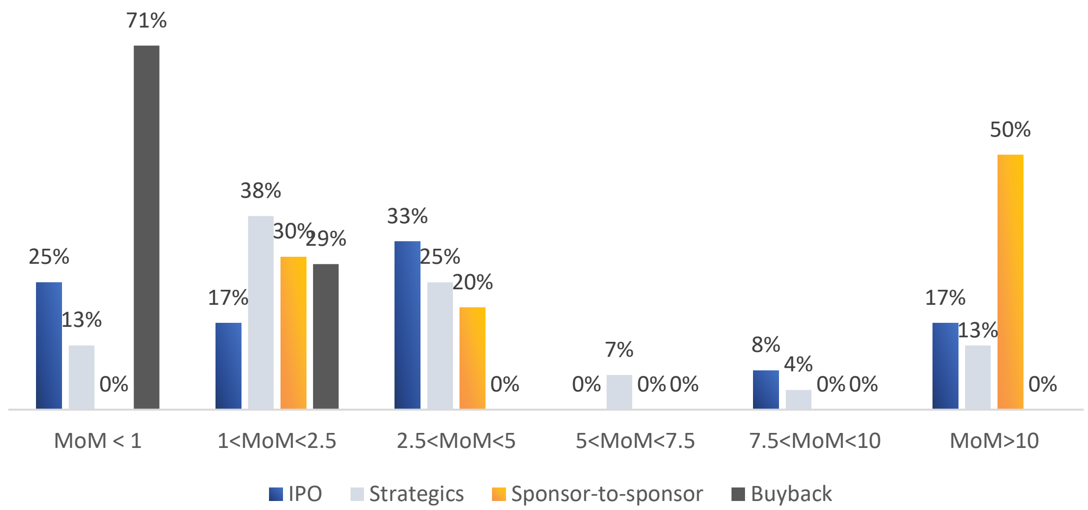
We observed that 9% of the sale to PE/VC had IRR higher than 50%. As **there are no deal with MoM higher than 5** times invested money, the high IRR is probably explained by a short holding period.

Figure 11. **Distribution of each exit type according to MOIC**

Panel A. Full Sample (USD)



Panel B. Tech Companies (USD)



Panel C. Non-Tech Companies (USD)

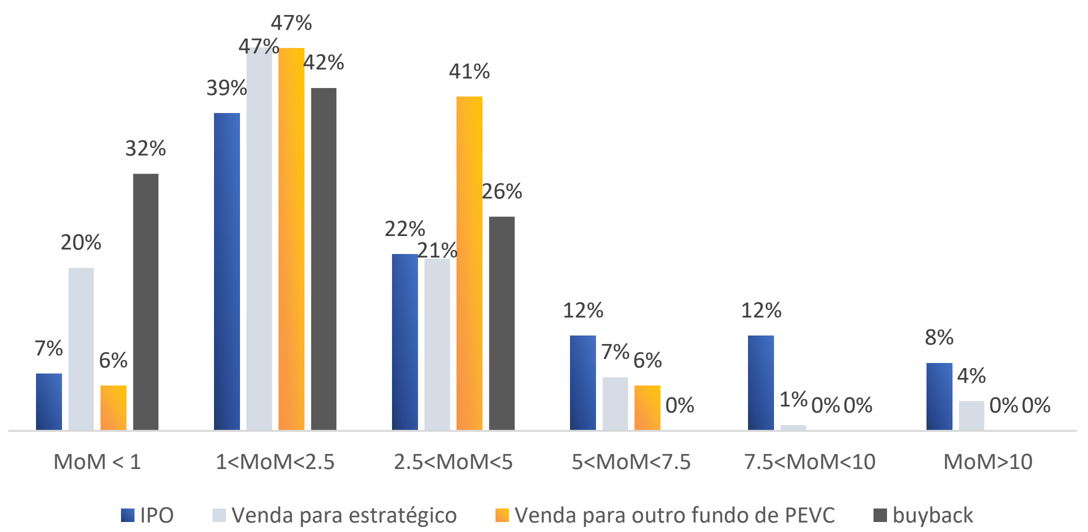
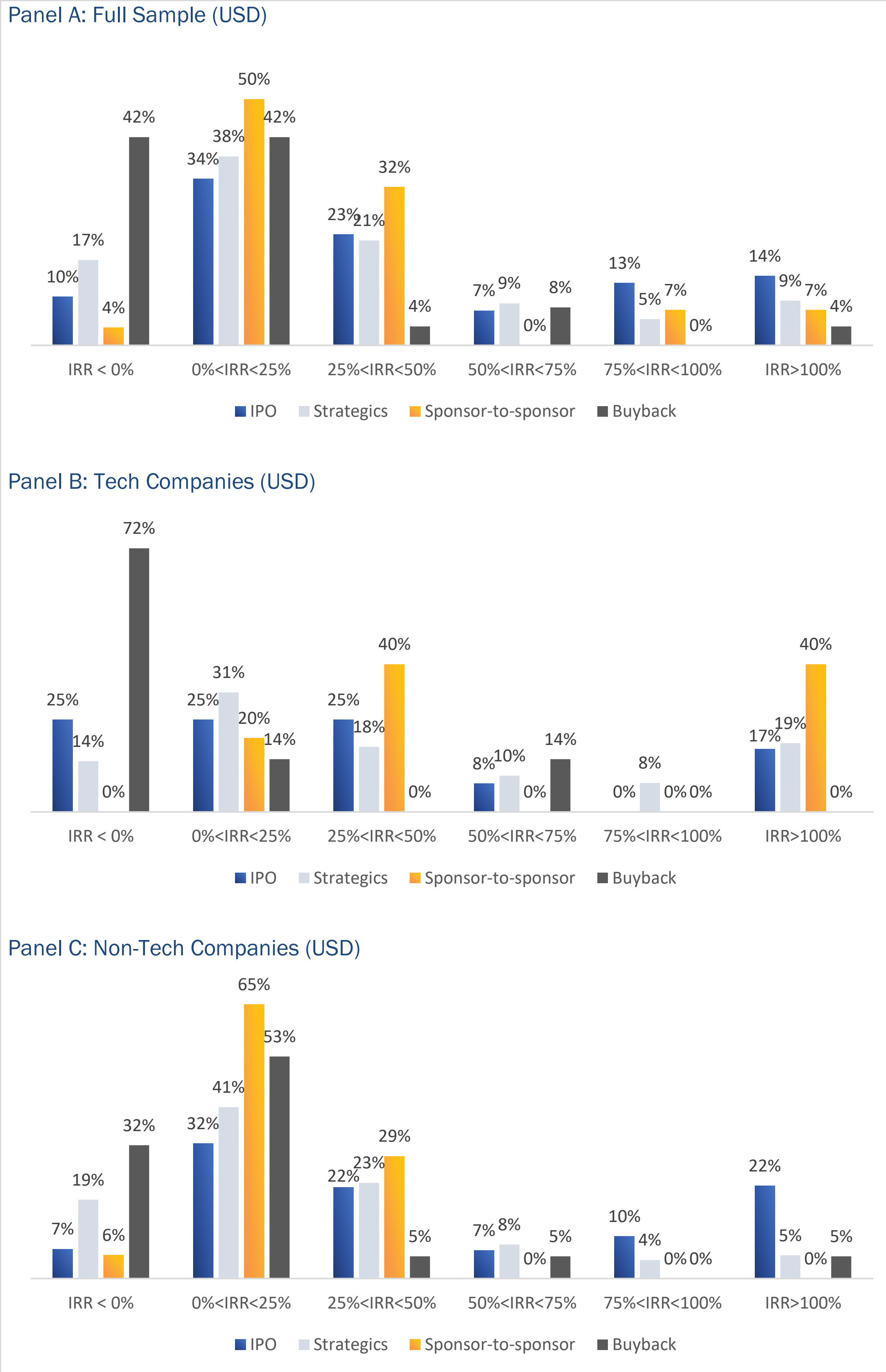


Figure 12 shows the IRR distribution of each exit strategy. It confirms that sale to another PE fund has the highest percentage of outstanding return for tech deals, while IPO has the highest percentage of non-tech outstanding IRR.

Figure 12. **Distribution of each exit type according to IRR**



CONCLUDING REMARKS

This paper investigates the performance of private equity and venture capital investments in Brazil. The performance data includes deals that were invested and divested between 1984 and May 2021. Our analysis investigates the performance of 1140 deals, being 407 in the tech segment and 733 in the non-tech segment. The number of investments in the tech sector has increased since 2010 and in 2012 it has surpassed the number of non-tech investments.

The Brazilian PE and VC industry had a good performance. The average gross MOIC and gross IRR in USD were 2.8 and 17% p.a. respectively. Performance in BRL was significantly higher – a clear indication that currency risk offset part of the return achieved by Brazilian fund managers. The gross MOIC in BRL was 4.7, and the gross IRR was 19% p.a.

The performance pattern of the tech deals was in line with what is expected for VC deals with a high percentage of losses, and few outliers, some of them with skyrocket returns, pushing the average performance up. Most of the tech exits resulted in either total (40%) or some loss (13%), and a few have extraordinary return: 8% with a gross MOIC in USD above 10, with a maximum of 455. The average gross MOIC in USD for tech exits was 6.2, and in BRL was 8.3.

Non-tech deals had lower percentage of losses (8% total and 20% partial losses), and a small percentage of high returns, but less scalable than in the tech segment: 4% of the exits resulted in a gross MOIC in USD above 10, with a maximum of 57. Despite showing lower return than tech deals, what is in accordance with lower risk, non-tech deals' gross average MOIC was high for global standards: 2.9x in USD and 3.5x in BRL.

Tech deals had 41% of the write-offs, compared to 14% of non-tech. When we exclude write-offs, the rank of exit channels according to the percentage of total exits are similar for tech and non-tech deals: strategic is the most used channel, corresponding to 76% of the tech exits and 61% of the non-tech exits. The second most used channel was IPO: 12% of the tech and 16% of non-tech. Secondary sales and buybacks represent smaller share of the exits: between 3% and 5% for each channel, and each group.

IPO was the most successful exit route for non-tech companies (an average gross IRR of 66%, and an average gross MOIC of 4.7), it was behind sale to strategics and sponsor-to-sponsor for tech companies (an average gross IRR of 30%, and an average gross MOIC of 4.3 for IPOs).

Brazilian private equity and venture capital environment changed in the last decade with a surge of tech companies. Strategic sale is the main exit channel in Brazil, while secondary sales is an important channel for tech companies and IPO remains as the most profitable exit for non-tech companies. Finally, the industry had a performance accordingly to the risk despite of the currency devaluation.

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