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**Art Collectors as Angel Investors: A Brazilian Collection**

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**Abstract**

The literature on measuring returns on art investments typically aims to understand the characteristics of art as an investment class and whether investing in art can yield good returns for an investor and their portfolio. This literature places less emphasis on how the risk taken in the creation of art is assumed and borne by the agents who compose this market. Inspired by the publication “Art Collectors as Angel Investors” (2023) by Whitaker and Kräussl, this study examines a real collection of a Brazilian collector to verify whether the investment strategy employed in the purchase and sale of the works in the collection aligns with the definition of an angel investor presented in the reference article.

**Keywords:** Art; Investments; Portfolio; Angel Investing; Collecting.

**1. Introduction**

The literature that deals with the measurement of returns on art investments usually seeks to understand the characteristics of art as an investment class and whether investing in art can provide good returns for an investor and their portfolio. It typically gives less importance to the ways in which the risk taken in art making is assumed and borne by the agents that compose this market. An approach that contributes to exploring this risk dimension is to shed light on the perspective of the collector by asking if some collectors can be understood as angel investors in artistic production, where the artist would be the startup receiving this type of investment. Whitaker and Kräussl (2023) indicate that from the perspective of the art collector, managing this asset class involves addressing three main issues: risk, reputation, and rebalancing.

The first issue is whether we can assume that collectors act as investors in early-stage ventures. The central idea of this premise is that the collector would be taking relatively large risks by making acquisition and investment decisions in artworks created by artists who have not necessarily yet achieved recognition, with works that have been produced recently. The fact that such investment and acquisition decisions are perceived as successful in the future highlights the relevance of this risk dimension.

The second issue concerns the reputational aspect — whether there is a noticeable relationship between collectors' actions to influence curatorial processes and museum exhibitions that may contribute to the appreciation of the works in their collections. Finally, the third issue is portfolio rebalancing, based on the possibility of donating works to museums as part of an investment strategy, emphasizing the importance of tax planning in managing this asset class. This article focuses on understanding the first issue that those managing this asset class seek to address: risk. Inspired by the publication "Art Collectors as Angel Investors" (2023) by Whitaker and Kräussl, this paper examines a real collection from a Brazilian collector with the objective of verifying whether the investment strategy employed in the buying and selling process of the artworks in the collection aligns with the definition of an angel investor outlined in the reference article, concerning the risk dimension.

Additionally, this article aims to present the returns obtained from the sales of the artworks, in some cases showing absolute returns above 1000%, and compare them with the returns observed in art indices, traditional financial assets, alternative assets, and local and international macroeconomic indicators during the same periods. By conducting these comparisons, the aim is to expand the literature on the financial returns of art investments applied to real collections, as it is not possible to acquire or replicate the results demonstrated by the benchmark indices of the art market (MENCONI, 2021).

## **2. Method**

The data used to construct the analysis depicted in this article were sourced directly from the collector who owned the artworks mentioned below. The data regarding the creation dates, purchase dates, sale dates, purchase prices, and sale prices of the 20 artworks in the collection were used to calculate the aging period (difference between creation date and purchase date), holding period (difference between purchase date and sale date), absolute return, and CAGR. Since the art collection was made by a Brazilian collector, the original purchase and sale values are denominated in Brazilian Reais (BRL). To compare the performance of the collection with assets denominated in US Dollars (USD), it was necessary to convert the purchase and sale values of the artworks to USD. Due to the difficulty of precisely obtaining the dates on which the transactions occurred, for the conversion of values from BRL to USD, the average of the Ptax Closing Exchange Rates for USD/BRL of the transaction year was considered. Aiming to standardize the analysis of annual returns across all compared assets, the only two artworks from the collection sold in the first weeks of 2024 had their capitalization/return calculation rationale estimated between their purchase year and 2023. To estimate the return of the art collection for each annual period, the sum of the CAGRs of each artwork was considered, weighted by the participation of each artwork in the total invested value in the period, following the appropriate rebalancing according to the entry of new artworks. The art index data were extracted from the Art Price Index, the IBOV (BRL) and IBOV (USD) data were extracted from the B3 website, the Selic Rate and USD/BRL Exchange Rate data were extracted from the BCB website, the IPCA data were extracted from the IBGE website, the FED Rate and CPI data were extracted from the St. Louis FED, the Gold data were extracted from the World Gold Council, and the S&P 500 data were extracted from Bloomberg.

3. Results

3.1 Empirical evidence on the strategy adopted in building the collection

The 20 artworks that compose the analyzed collection were acquired between 2006 and 2022 and were sold in auctions and private sales between 2023 and 2024. The collection includes works by artists such as Leda Catunda, Cildo Meirelles, Lenora de Barros, Nelson Leirner, and other Brazilian artists whose production was commercialized starting from the 1980s. However, the most representative historical creation period of the collection (90%) is from the 2000s.

Table 1. Return on Investment of the Collection's Artworks (2006-2023).

Artist	Artwork	Year of Creation	Purchase Date	Purchase Price (USDk)	Purchase Price (BRLk)	Selling Date	Selling Price (USDk)	Selling Price (BRLk)	CAGR (USD)	CAGR (BRL)
Leda Catunda	Sem título	2008	2009	2,0	4,0	2023	4,81	24	6,4%	13,7%
Ascânio MMM	Múltiplo 20	2006	2006	1,1	2,5	2024	5,01	25	9,0%	14,5%
Cildo Meireles	Duas notas de Zero dólar	1980	2008	1,4	2,5	2023	1,40	7	0,2%	7,1%
Jandyra Waters	Sem título	1980	2020	3,2	16,5	2023	0,94	4,7	-33,5%	-34,2%
Nilda Neves	Sem título	2016	2022	1,5	8,0	2023	2,40	12	55,1%	50,0%
Nilda Neves	Sem título	2017	2022	1,5	8,0	2023	4,50	22,5	190,8%	181,3%
Lenora de Barros	Procuo me (diptico)	2002	2009	0,3	0,6	2023	1,40	7	11,6%	19,2%
Nelson Leirner	Sotheby's	2007	2008	3,7	6,8	2023	2,50	12,5	-2,5%	4,2%
Nelson Leirner	Sotheby's	2005	2017	5,2	16,5	2023	2,50	12,5	-11,4%	-4,5%
Maria Lira	Sem título	2021	2022	1,5	7,5	2023	2,90	14,5	99,9%	93,3%
Andrey Rossi	Sem título	2020	2022	1,5	8,0	2023	2,00	10	29,3%	25,0%
Paulo Monteiro	Sem título	2009	2010	4,0	7,0	2023	8,01	40	5,5%	14,3%
Vanderlei Lopes	Sem título	2008	2008	1,4	2,5	2023	1,60	8	1,1%	8,1%
Érika Verzutti	Sem título	2013	2021	0,4	1,9	2023	2,90	14,5	187,1%	176,3%
Daniel Melin	Sem título	2007	2007	0,2	0,4	2023	0,84	4,2	9,2%	15,8%
Laura Vinci	Sem título	2006	2007	1,0	2,0	2023	1,60	8	2,8%	9,1%
Lyz Parayso	Sem título	2021	2021	2,8	15,0	2023	2,40	12	-7,0%	-10,6%
Mano Penalva	Tiras de lona	2019	2020	1,6	8,0	2023	2,00	10	8,9%	7,7%
Ernesto Neto	Escultura	2006	2007	2,1	4,0	2024	2,40	12	1,0%	7,1%
Nino Cais	Sem título	2006	2006	0,2	0,5	2023	1,60	8	12,1%	17,7%
<b>Total</b>				<b>36,5</b>	<b>122,2</b>		<b>53,7</b>	<b>268,4</b>		

When analyzing charts 1 and 2, it is noted that 65% of the artworks were acquired within 2 years after their creation. Considering an aging period of up to 10 years, the percentage of the portfolio included reaches 85%. Therefore, only 15% of the artworks in the collection were acquired more than 10 years after their creation, which aligns the collection with the risk dimension proposed by Whitaker and Kräussl (2023), where the collector acts as an investor in early-stage ventures. Additionally, it is valuable to highlight that although the average aging period of the collection is almost 6 years, the median holding period is 1 year, which emphasizes the predominance of newly created works in the portfolio.

Chart 1. Circular chart of the collection's aging period.

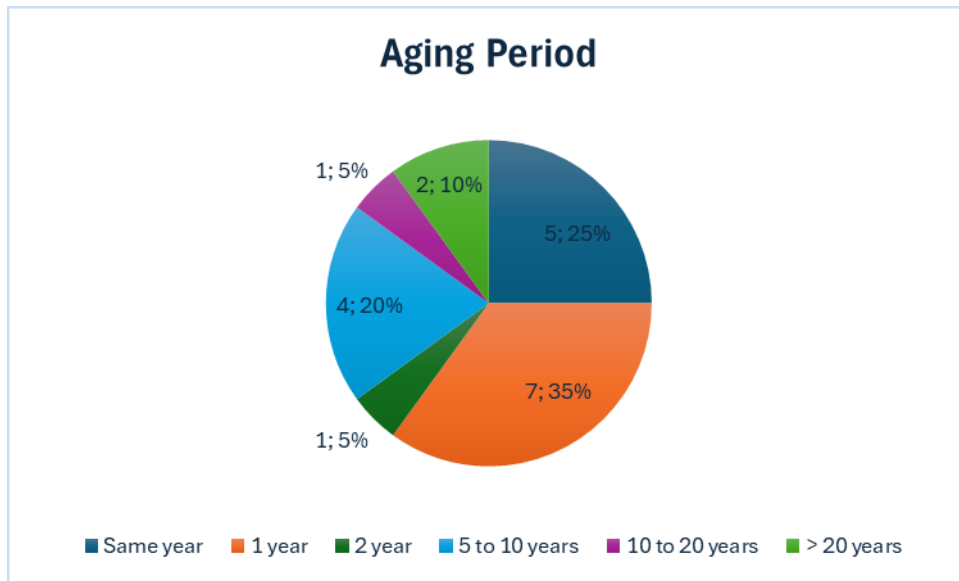
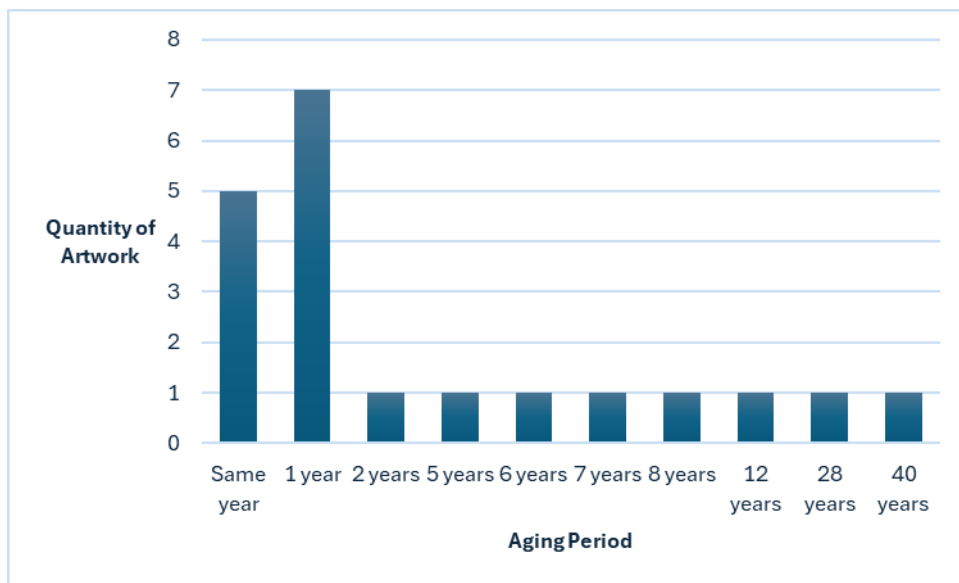


Chart 2. Column chart of the collection's aging period.



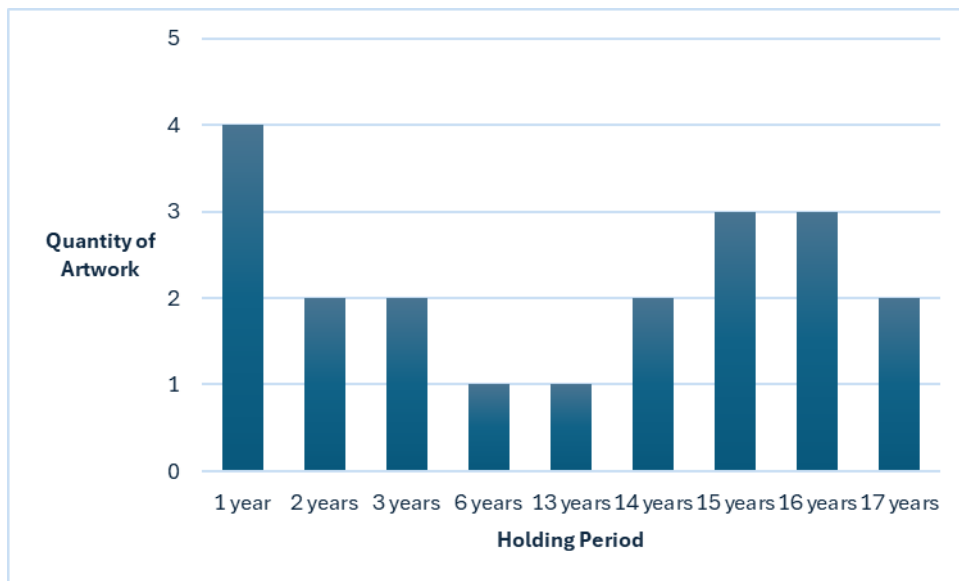
The average holding period of the collection was 9.5 years, a significantly shorter period compared to the seminal article by Mei and Moses, “Art as an investment and the underperformance of masterpieces” (2002). The median holding period was 13.5 years, and more than 50% of the artworks were held in the portfolio for more than 10 years. However, the most frequent holding period was only 1 year. Charts 3 and 4 illustrate that the adopted strategy consists of holding periods mainly concentrated up to 3 years and more than 14 years. Therefore,

while the strategy of acquiring newly created works seems dominant, the retention of these works in the portfolio does not follow a single strategy or direction.

Chart 3. Circular chart of the collection's holding period.



Chart 4. Column chart of the collection's holding period.



Another factor that aligns the strategy used in the observed collection with the strategy described by Whitaker and Kräussl (2023) is that the artworks with the most significant returns were those purchased at lower prices. In this sense, the trend line between CAGR and purchase price

showed a negative slope (Charts 5 and 6). Thus, acquiring works still valued at lower prices is an additional indication that the strategic orientation for the portfolio involves investing in artists whose future potential may yield good returns. The only negative CAGRs were recorded among the artworks that had higher purchase prices.

Chart 5. Scatter plot of the relationship between CAGR (USD) and purchase price (USDk) of the collection.

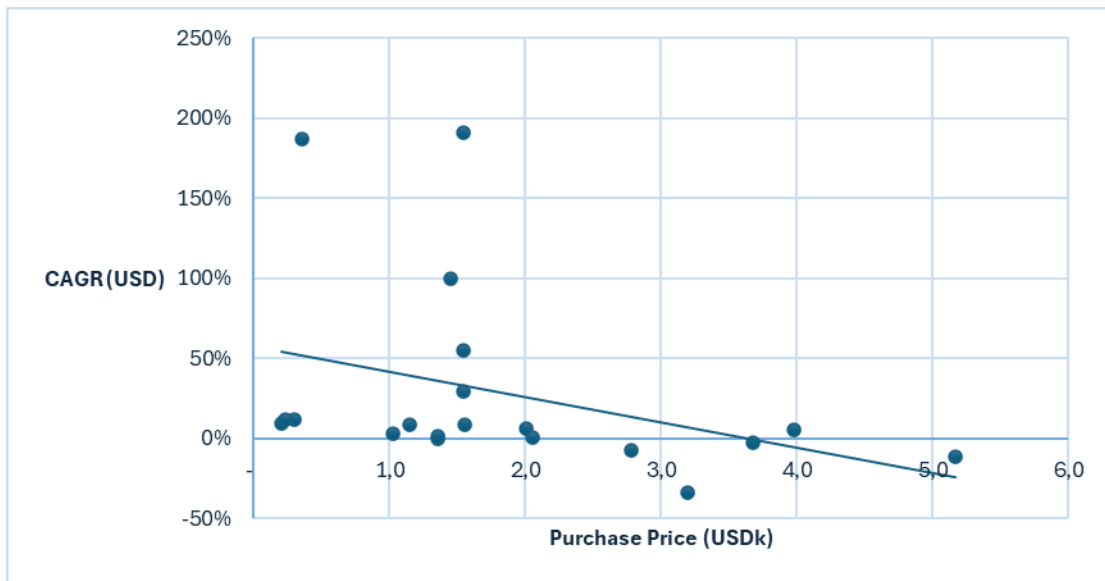
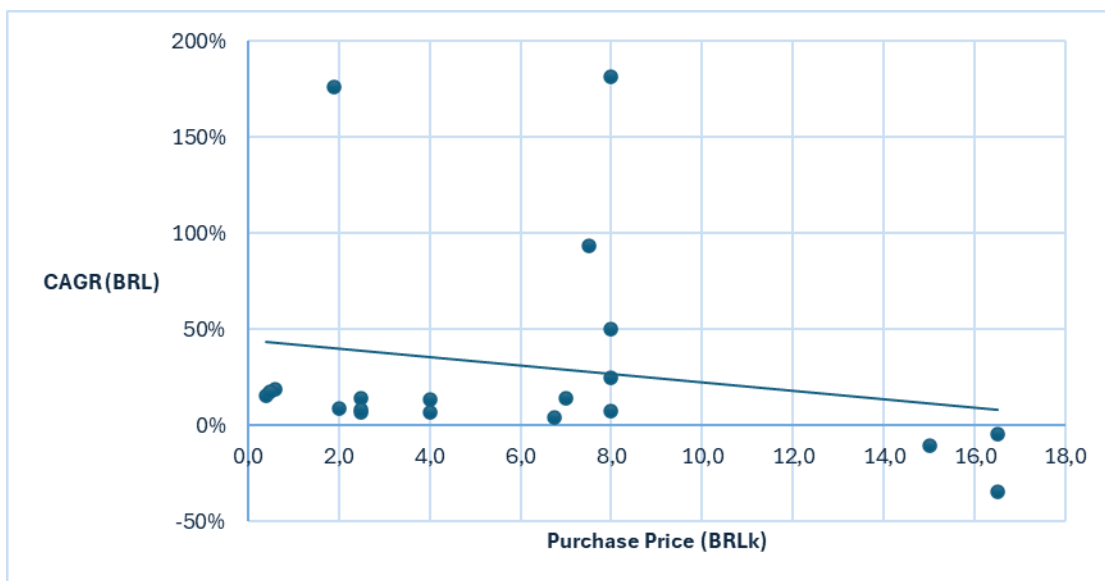


Chart 6. Scatter plot of the relationship between CAGR (BRL) and purchase price (BRLk) of the collection.



When comparing the profitability of investments (CAGR) with the difference between the creation date and the purchase date (aging period) of the artworks, there is again a tendency to acquire newly created works with the expectation of future appreciation. The most significant CAGRs captured by the portfolio of the collection are associated with shorter aging periods, as evidenced by the negatively sloped trend lines in Charts 7 and 8. Artworks with an aging period longer than the portfolio average, besides being notable exceptions to the adopted strategy, also did not result in financially significant positive returns.

Chart 7. Scatter plot of the relationship between CAGR (USD) and the aging period of the collection.

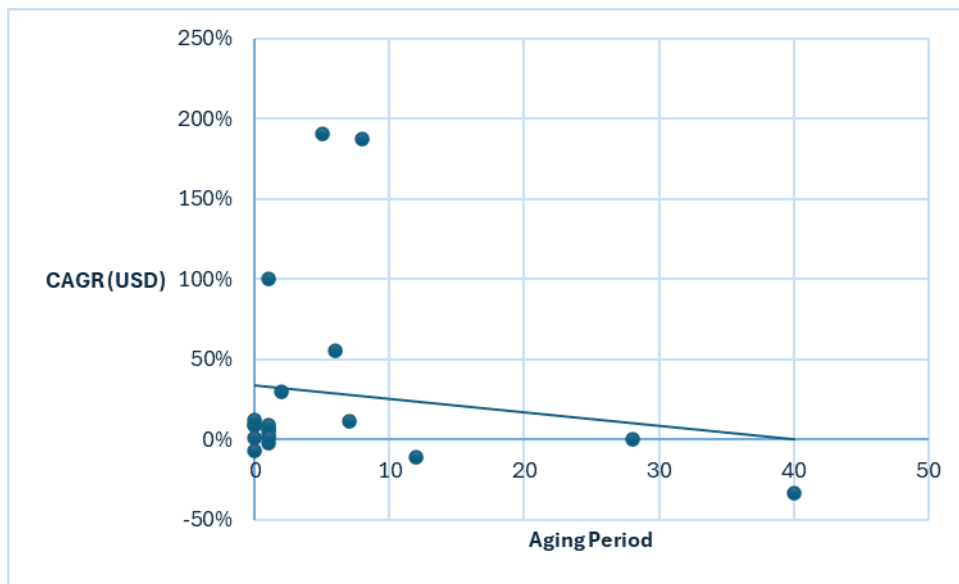
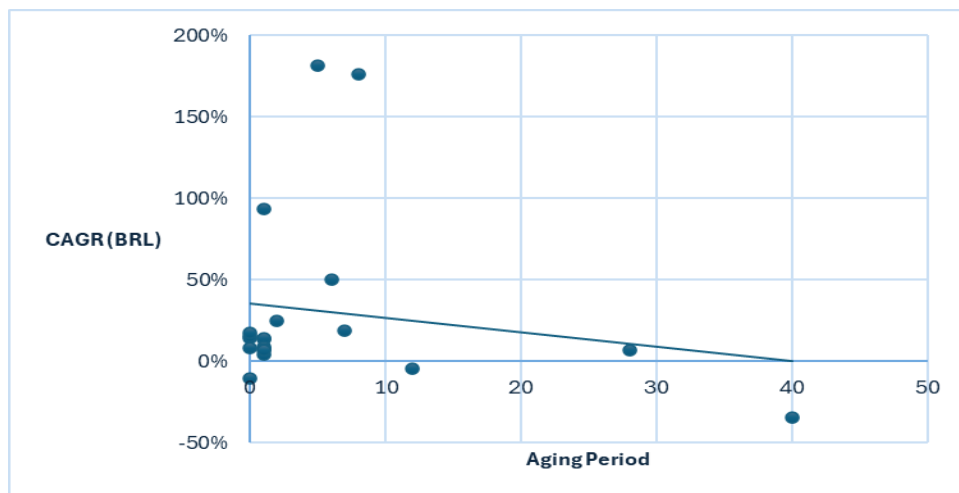


Chart 8. Scatter plot of the relationship between CAGR (BRL) and the aging period of the collection.



It is important to highlight the counterpoint when noting that artworks with the best financial returns predominantly had a holding period of less than 5 years. This finding may suggest that the relatively low purchase price of the top-performing artworks (Charts 5 and 6) is not necessarily related to the early career stage of the artists but possibly linked to opportunities to purchase works below market price.

On the other hand, these arguments are not necessarily mutually exclusive: investing in early-stage ventures can be accompanied by opportunistic investments and/or rapid appreciation trajectories of the assets. Additionally, it is possible to question whether the high holding period for artworks with low financial returns indicates a lack (and need) for an exit strategy for investments with underperforming results (WHITAKER AND KRÄUSSL, 2023). Charts 9 and 10 show a negative trend line in the relationship between CAGR and holding period.

Chart 9. Scatter plot of the relationship between CAGR (USD) and the holding period of the collection.

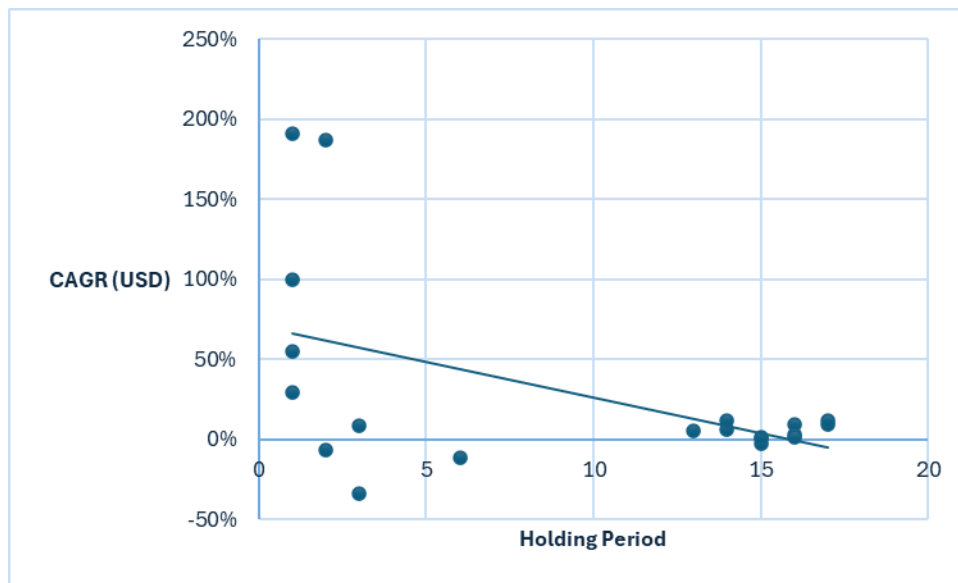
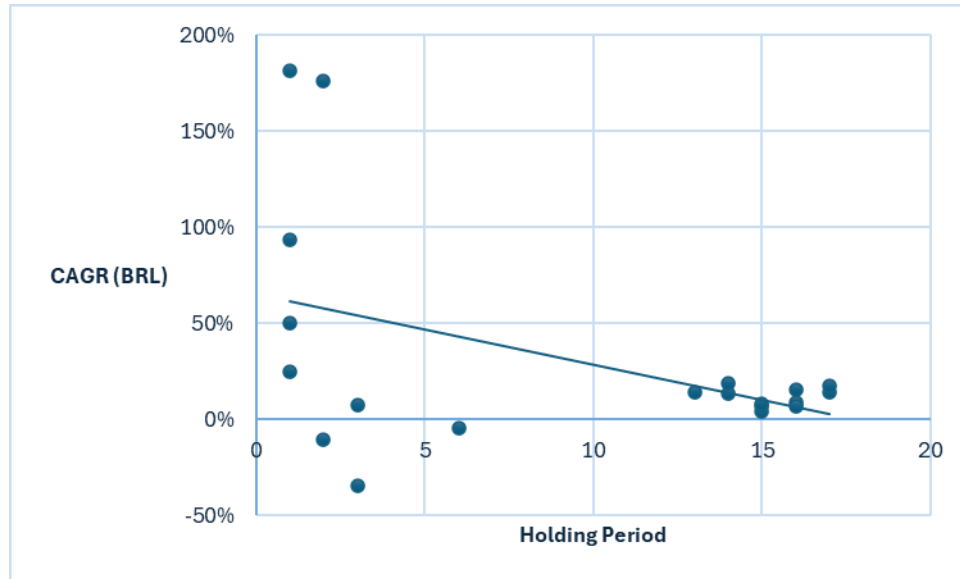




Chart 10. Scatter plot of the relationship between CAGR (BRL) and the holding period of the collection.



3.2 Comparative Returns of the Collection with Art Indices, Traditional Assets, Alternative Assets, and Macroeconomic Indicators

Between 2006 and 2023, over R\$ 120,000 (approximately US\$ 36,500 ) was invested in the analyzed collection. In local currency (BRL), the collection achieved an absolute return of 386% and a CAGR of 9.2%. This performance surpassed both the IBOV (BRL) and Brazilian inflation (IPCA – BR CPI) during the same period, which had absolute variations of 301% and 167%, respectively, and CAGRs of 8.0% and 5.6% (Table 2 and Chart 11).

In other words, the investment in art represented by the analyzed collection not only provided the Brazilian investor with a potential portfolio diversification tool but also served as a hedge against the corrosive effect of inflation on wealth. The Brazilian basic interest rate (SELIC) was the only local asset/indicator observed that outperformed the collection's return during the period, with an absolute return of 468% and a CAGR of 10.1%.

Table 2. Absolute Return (BRL) and CAGR (BRL) of the Collection, Financial Assets, and Brazilian Macroeconomic Indicators (2006-2023).

Asset	Total Return	CAGR
Angel Investor (BRL)	386%	9,2%
IBOV(BRL)	301%	8,0%
Selic (BRL)	468%	10,1%
IPCA(BRCPI)	167%	5,6%

Chart 11. 100 Basis Line Chart Comparing Returns in BRL of the Collection with Financial Assets and Brazilian Macroeconomic Indicators (2006-2023).

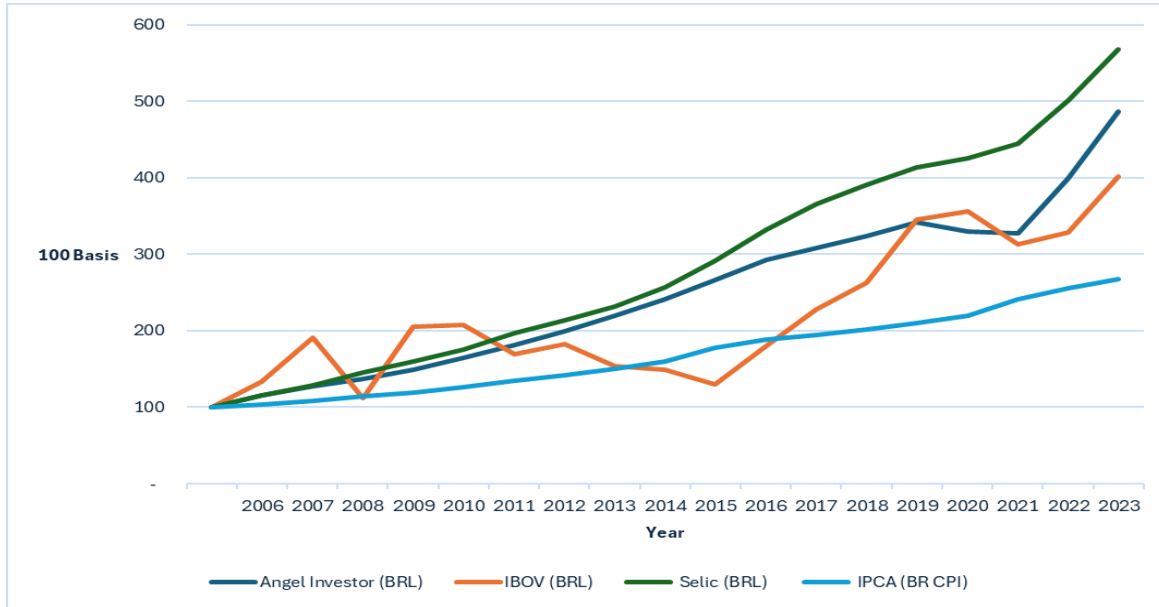


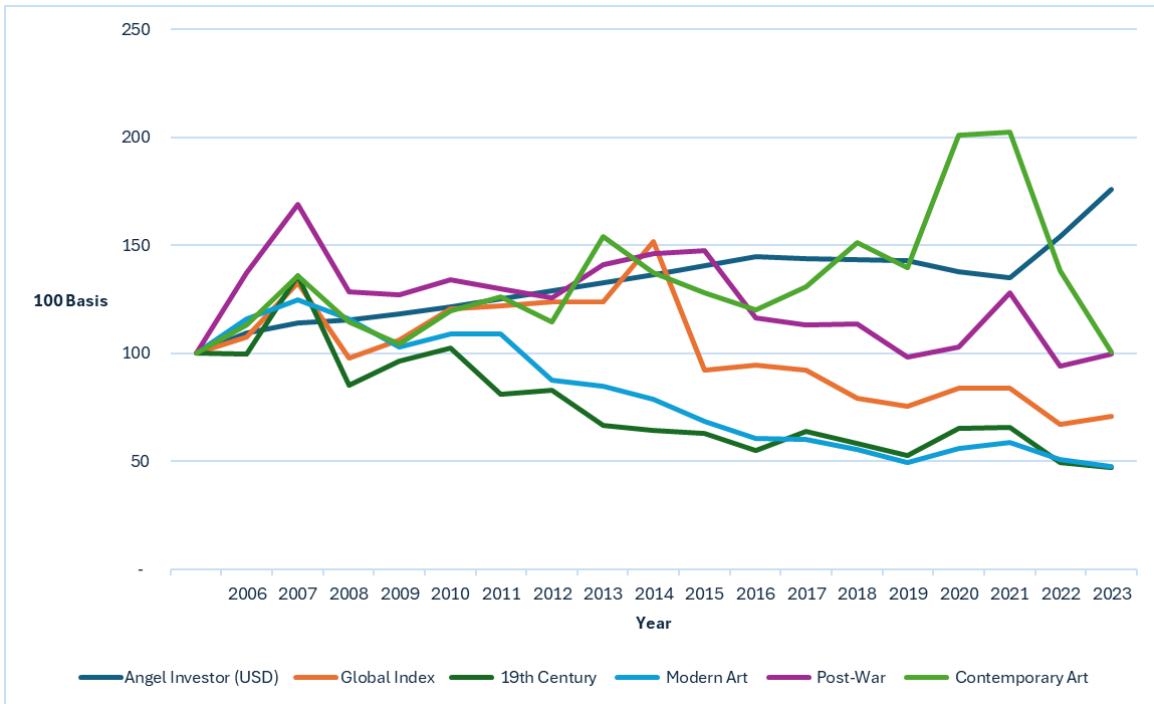
Table 3 and Chart 12 highlight that when compared to the returns of assets denominated in USD, the collection outperforms the art market benchmarks. When denominated in USD, the collection achieved an absolute return of 76% with a CAGR of 3.2%. The art market benchmarks “Global Index,” “19th Century,” “Modern Art,” “Post-War,” and “Contemporary Art” had, respectively, -29%, -53%, -52%, 0%, and 0% absolute variations, and -1.9%, -4.1%, -4.0%, 0%, and 0% CAGRs.

On one hand, the “Contemporary Art” index aims to reflect the aggregate movements of contemporary art over a period or time interval without necessarily giving superior emphasis to a specific set of artists or artistic movements. On the other hand, the investment strategy employed in building an art collection may be guided by aesthetic preferences, expectations of appreciation, or even various personal heuristics. In this sense, the collection's outperformance compared to the “Contemporary Art” index may suggest an additional reinforcing element of the angel investor strategy discussed in the reference article.

Table 3. Absolute Return (USD) and CAGR (USD) of the Collection and Art Market Benchmarks (2006-2023).

Asset	Total Return	CAGR
Angel Investor (USD)	76%	3,2%
Global Index	-29%	-1,9%
19th Century	-53%	-4,1%
Modern Art	-52%	-4,0%
Post-War	0%	0,0%
Contemporary Art	0%	0,0%

Chart 12. 100 Basis Line Chart comparing the USD returns of the collection with art market benchmarks (2006-2023).



The angel investor's collection was also compared with traditional USD-denominated assets (Table 4 and Chart 13) and macroeconomic indicators. Gold yielded an absolute return of 305% and a CAGR of 8.1%, the S&P 500 had an absolute return of 279% with a CAGR of 7.7%, the IBOV in USD achieved an absolute return of 94% with a CAGR of 3.7%, US inflation (CPI US) varied 56% over the period (CAGR 2.5%), and the FED Rate had an absolute variation of 28% (CAGR 1.4%).

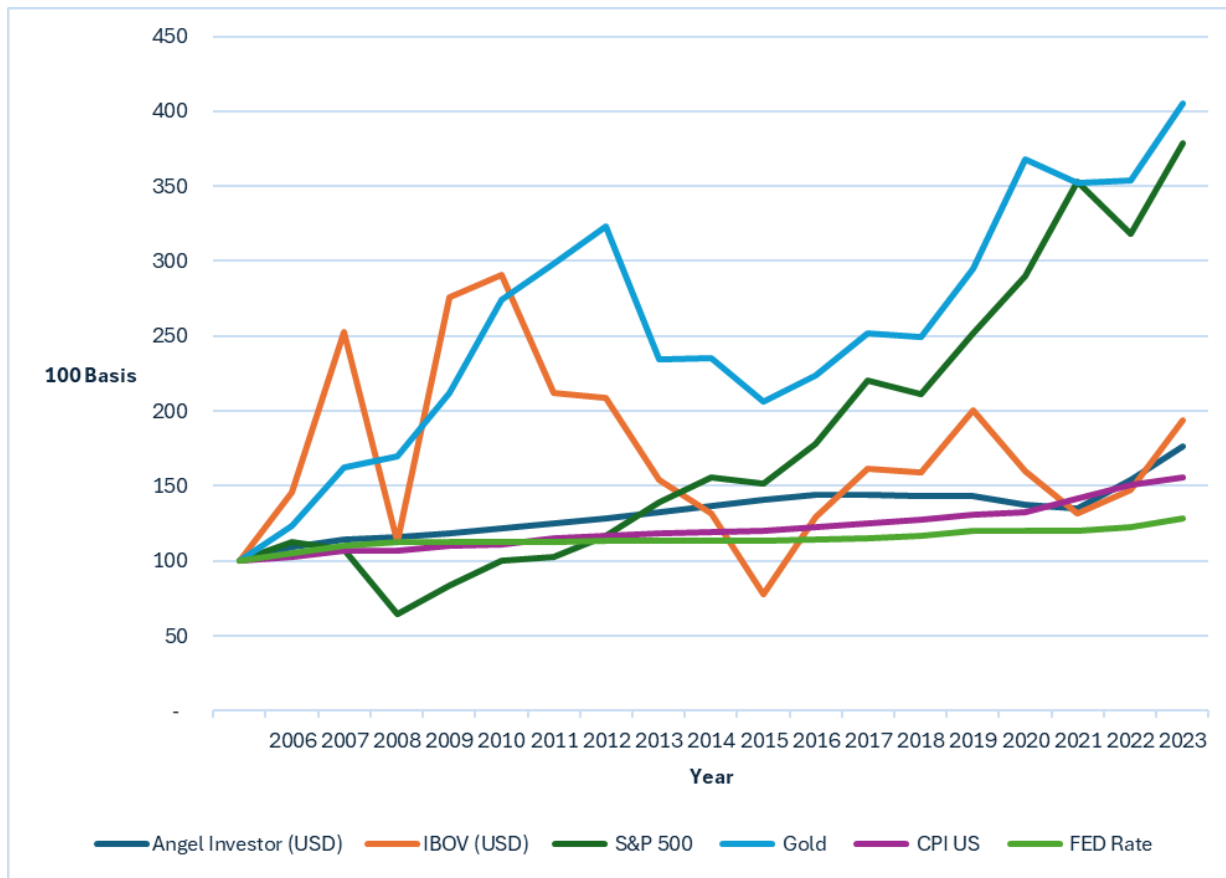
It is noted that the USD returns of the observed collection were sufficient to surpass the US base interest rate and US inflation during the period. Menconi (2021) demonstrates how, due to its low correlation with traditional market assets, art investment can contribute to reducing total risk and increasing the expected return of a diversified investment portfolio, thereby improving the risk-return ratio observed on the efficient frontier. Chemalle (2023) points to the portfolio diversification potential when combining art and gold investments, particularly during periods marked by high interest rates and rising inflation.

Finally, like the present work, the analysis of economist John Maynard Keynes' art collection (CHAMBERS et al. 2020) shows that, after eliminating any imbalances caused by sudden exchange rate fluctuations, art collections can be valuable as a portfolio diversification tool, performing competitively against the stock market. In this sense, a similar analysis based on data from a collection originally constituted in USD would be a valuable exercise.

Table 4. Absolute Return (USD) and CAGR (USD) of the Collection, Financial Assets, and Macroeconomic Indicators Denominated in Dollars (2006-2023).

Asset	Total Return	CAGR
Angel Investor (USD)	76%	3,2%
IBOV (USD)	94%	3,7%
S&P500	279%	7,7%
Gold	305%	8,1%
CPI US	56%	2,5%
FEDRate	28%	1,4%

Chart 13. 100 Basis Line Chart comparing the USD returns of the collection with financial assets and macroeconomic indicators denominated in USD (2006-2023).



#### **4. Discussion**

Throughout the previous pages, this work aimed to determine whether the studied Brazilian collection can be categorized as an angel investor strategy adopter according to the reference article (WHITAKER AND KRÄUSSL, 2023), at least concerning the risk dimension when investing in early-stage ventures to maximize returns. To this end, descriptive statistics and combinations of the collection data were analyzed. Given the concentration of low aging periods in the collection's construction, as well as the predominance of artworks with low acquisition costs among those achieving the best financial returns, it is reasonable to conclude that the studied Brazilian collection aligns with the angel investor strategy in the risk dimension as outlined in the reference article (WHITAKER AND KRÄUSSL, 2023). Additionally, it is possible to question whether the high holding period for artworks with low financial returns indicates the absence (and need) of an exit strategy for investments that perform below expectations. Potential exit strategies were discussed in the reference article and could be a valuable topic for future research on strategies for investing in early-stage ventures in the Brazilian art market.

The second half of the work compared the financial returns of the studied collection with traditional financial assets, alternative assets, and local and international macroeconomic indicators over the same periods. The performance of the analyzed collection was satisfactory when compared to local assets and USD-denominated art market benchmarks. The USD returns of the observed collection were sufficient to surpass both the US base interest rate and US inflation during the period. Menconi (2021) demonstrates how, due to its low correlation with traditional market assets, art investment can contribute to reducing total risk and increasing the expected return of a diversified investment portfolio, thereby improving the risk-return ratio observed on the efficient frontier. Chemalle (2023) highlights the portfolio diversification potential of combining art and gold investments, especially during periods marked by high interest rates and rising inflation.

Finally, this study aimed to expand the literature on the financial returns of art investments in real collections, not necessarily composed of high-end market artworks. This niche research is justified, as it is not possible to acquire or replicate the results demonstrated by art market benchmarks (MENCONI, 2021). While art market benchmarks are valuable for pricing and understanding the art market, studying real collections represents a unique advancement in the art economics segment. This approach provides financial comparisons that are more easily replicable than market benchmarks and explores how the risks involved in creating art are assumed and financed by market participants, in this case, collectors.

#### **Acknowledgments**

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