


Chapter 94

Selic rate variation and investors in variable income: analysis with B3 data

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ABSTRACT

The study aimed to analyze the relationship between the number of investors (Individuals) in variable income, comparing it with the variation in the basic interest rate (Selic) during the period between 2016 and 2020, assuming that there is a relationship inversely proportional to the variation of the Selic rate with the number of investors (individuals) on the Stock Exchange. That is, as the Selic rate is reduced, making investment in fixed income less attractive, the number of Stock Exchange users increases in the search for better returns on invested capital. The data

necessary for carrying out the survey was obtained exclusively from B3 through contact made by email. The historical series of the monthly values of the Selic rate were extracted directly from the official website of the Central Bank (BACEN), corroborated by information contained in the Brazilian Association of Entities of the Financial and Capital Markets (ANBIMA), Brasil, Bolsa e Balcão (B3 S.A.) and the Brazilian Institute of Geography and Statistics (IBGE). The results show negative variations in the Selic rate since the beginning of the period, reaching a minimum of 1.90%; on average, a reduction of 80.02%. Inversely proportional, the average number of investors in the period showed a constant increase, from 558,034 investors in 2016 to 2,690,799 in 2020, a percentage increase of 382.19%. There was an increase of 219.55% in the volume of capital transacted, from 111.28 billion in 2016 to 355.60 billion reais in 2020, considering annual average values. The results confirm the initial assumption that the number of investors in variable income is inversely proportional to the variation in the basic interest rate (Selic).

Keywords: Selic Rate, Individual Investors, Variable Income, B3, Investments.

1 INTRODUCTION

Since the first organizations formed to develop a Brazilian Stock Exchange in 1890, the country has gathered still little expressive results of capitalization in each of its varied exchanges spread throughout the country at the time, until at least the beginning of the 1990s, where, according to Proença (2005), from that decade on, due to the opening of the capital market to foreign investors, there was great optimism among professionals in the field. Expansion of business, greater professionalization, greater number of brokers (including foreign ones), growth of new emissions, improvement of the level of corporate governance, advances in the regulatory environment and the development of derivatives markets were some of the main expectations, and part of them were confirmed, above all after the stabilization of the currency in 1994.

The financial system has strategic importance in the economic dynamics of the country, hence the need to increase the level of knowledge available to those directly and indirectly involved with this system, especially due to the increasing complexity of its operations (ASSAF NETO, 2014). Brito (2020) states that as a process of globalization, stabilization and opening of the local economy, the Brazilian financial

market today is more solid, and has undergone significant transformations to strengthen the local capital market.

For Assaf Neto (2014), in addition to this entire financial system, any process of developing an economy requires the increasing participation of capital. Oliveira and Costa (2013) state that one of the main instruments used by central banks around the world to preserve the purchasing power of the currency, is the use of the basic interest rate.

In Brazil, due to risk aversion, individuals end up applying their money to investments linked to lower rates, which does not occur in countries where people have the culture of investing in stocks with the purpose of obtaining higher income, a factor from a premature financial education. The Selic rate, also known as the basic interest rate, serves as a reference for all other interest rates of the economy (CASAGRANDE; PRADO, 2017).

A high Selic rate inhibits high-risk investments such as variable income and derivatives, harming the stock market and fundraising by publicly traded companies (OLIVEIRA, 2016). In the event of a contrary situation, the stock market becomes more attractive because it increases the feasibility of a greater amount of investments through individuals and legal entities, thus promoting a strong migration of these investors for application in variable income through the Stock Exchange.

After the increase in movements in the 1990s, Wald (2006) demonstrates that 2006 was characterized by a significant increase in the volume of turnover on the stock exchange. The former Bovespa recorded, in February, a total volume of R\$ 46.3 billion.

However, even with a positive advance in the volume traded and the number of investors, these are exceptional users, and there is, for now, a very low number in relation to the population of Brazil and the largest exchanges on the planet. The country still lacks a financial education that gives the basis for maturity in this field, otherwise the country will remain unable to reach higher levels, leaving, definitely, the condition of an underdeveloped country.

The study aimed to analyze the relationship of the number of investors (Individuals) in variable income comparing it with the variation of the basic interest rate (Selic) during the period between 2016 and 2020.

It is assumed that there is a relationship inversely proportional to the variation of the Selic rate with the number of investors (individuals) on the Stock Exchange. That is, as the Selic rate is reduced, making the application in fixed income less attractive, the number of users of the Stock Exchange increases in the search for better remuneration of invested capital.

This article is organized as follows: In addition to this brief introduction and its objective in the first part, section two presents a literature review containing the theoretical support that will support the discussion of the data. In section 3, the article presents the methodological procedures, followed by the presentation and discussion of the results (section 4) and, finally, the conclusion.

2 LITERATURE REVIEW

2.1 FINANCIAL MARKET

Pinheiro (2014) defines the financial market as a set of people, companies and institutions that mediate the transactions of money applicators and lenders. For all this to work harmoniously, there is a need for rules, standards and supervision. All this forms a system called financial. According to Kerr (2011), the financial system is a set of institutions, tools, savers and investors for production and consumption activity. Financial markets are crucial for economic development, since they allow intermediation between savers and lending agents (BICHARA et al., 2011). According to Cavalcante et al. (2009), donors of resources have a surplus situation (they spend less than they receive) and the borrowers present a deficit situation (they spend more than their income).

According to Assaf Neto (2014), the need for knowledge of the financial system is increasing over time, explained by the importance it exerts in the economy the business segment of a country, as well as by the greater complexity that its operations present. Every process of developing an economy requires the participation of capital, which are identified through the savings available in the power of economic agents and directed to the productive sectors in need of resources through intermediaries and financial instruments. And it is due to this process of distribution of resources in the market that the economic and social function of the financial system is evidenced.

The financial system is composed of a set of public and private financial institutions, and its maximum regulatory body is the National Monetary Council (CMN). These institutions should allow, under the best possible conditions, the realization of flows of funds between borrowers and resource savers in the economy. The regulatory system is responsible for the functioning of the financial market and its institutions, supervising and regulating its activities through the National Monetary Council (CMN) and the Central Bank of Brazil (Bacen). The Brazilian Securities and Exchange Commission (CVM) is a regulatory body to support the financial system, acting more specifically in the control and supervision of the securities market (ASSAF NETO, 2014).

As a process of globalization, stabilization and opening of the local economy, the Brazilian financial market today is more solid, and has undergone significant transformations to strengthen the local capital market (BRITO, 2020).

In addition to the entire regulatory system, Oliveira and Costa (2013) state that one of the main instruments used by central banks around the world to preserve the purchasing power of the currency, is the basic interest rate, a subject that will be discussed in the following subsection.

2.2 BASIC INTEREST RATE (SELIC)

In general terms, the basic interest rate, also known as selic rate or only Selic, is nothing more than the interest floor to be practiced in the national economy. The Selic rate is not used for financing and lending at the end end of the financial system (individuals and corporations). Banks obtain as loans from each other

amounts signed from the Selic Rate, however, by lending such amounts to their clients the bank interest rate starts to aggregate, in addition to Selic, profit, administrative/operational costs and percentages of default risk (CHAVES et al., 2015). Oliveira and Costa (2013) assert that in Brazil the basic interest rate is Selic. The Central Bank of Brazil (BACEN), when it created the Monetary Policy Committee (Copom) in 1996, aimed to increase the degree of transparency of the decisions taken about Selic.

According to Caetano (2011), Copom's objectives are to program monetary policy, define the selic rate target and its eventual bias, and analyze the "Inflation Report". The evolution of the interest rate in Brazil has presented different moments over the course of some years, some of the decisions of the monetary authority, of gradual rise, have been implemented to accommodate the pace of expansion of aggregate demand and the resistance of inflation to the fall, in view of the need to ensure the convergence of inflation to the targets stipulated by the National Monetary Council (CMN).

A higher Selic rate makes it more attractive to buy government bonds, since these securities are better remunerated by the government, which does so with the intention of reducing the money in circulation, restricting the resources available for consumption and investments and, as a consequence, will cause a slowdown in the economy, putting it on the path to deflation (CASAGRANDE; PRADO, 2017).

On the other hand, a falling Selic rate encourages the withdrawal of capital from these government bonds and investors seek to place them in investments with better returns, such as variable income, stimulating the raising of funds by publicly traded companies on the Stock Exchange.

2.3 STOCK EXCHANGE

According to Assaf Neto (2011), stock exchanges are entities whose basic objective is to maintain a place in adequate conditions for the realization, among its members, of transactions for the purchase and sale of securities. It is the concern of the stock exchanges to preserve ethical principles in the negotiations carried out in their scope, and the rapid and efficient dissemination of the results of all transactions carried out.

Stock exchanges can play an important social role, benefiting all economic agents and society, as they help companies raise capital to apply it in investment projects, and allow small investors to be shareholders of large companies, thus participating in these projects and making more equitable the distribution of income of a company (KERR, 2011). Dantas (2020) states that the stock exchange is the market where shares of publicly traded companies and other securities are traded, being used as a means for large companies to raise funds to support their growth, that is, it is a form of long-term financing for these companies.

In general, a stock exchange is a market where transactions are made for the purchase and sale of agricultural products and raw materials or securities. The latter, represented by securities of private companies and government institutions, comprise, above all, actions. This is the place of market, the place where the transactions are carried out, the people who carry them out and the whole of these transactions.

There are two distinct types of exchanges: goods or trade and securities or financial exchanges (GOMES, 1997).

In Brazil, the São Paulo Stock Exchange (BOVESPA), created in 1890 and regulated in 1898, gained prominence in the national scenario only from 1960. There were also other Stock Exchanges, such as Rio de Janeiro, the so-called Commodities and Futures Exchange (BM&F), which was the main Brazilian Stock Exchange until the mid-1980s. In 1989 the Brazilian market migrated to BOVESPA due to problems presented on the Rio de Janeiro Stock Exchange (SILVA, 2008). According to Silva (2008), the concentration of business on the São Paulo Stock Exchange and the liquidity of the stock market did not justify the dispersion of the Capital Market among several exchanges, then agreements were formalized between the Brazilian Stock Exchanges aimed at centralizing the business on Bovespa until 2007, when finally these two largest Brazilian exchanges decided to make a merger, called BM&FBOVESPA (SILVA, 2008).

Kerr (2011) adds that, in Brazil, the stock exchange was BM&FBOVESPA, formed by the merger of two major São Paulo exchanges: the São Paulo Stock Exchange (BOVESPA) and the Commodities and Futures Exchange (BM&F). After 2017, there were new changes in the Brazilian Stock Exchange, a new merger was made, now between BM&FBOVESPA itself and Central Custody and Financial Settlement of Securities (Cetip), part of the Brazilian payment system, an electronic custody system, transaction registration and financial settlement in the public and private securities market. With this last corporate organization, the Brazilian Stock Exchange came to be called B3 - Brazil, Stock Exchange and Balcão.

The Bovespa Index is the most important indicator of the average performance of Brazilian stock market quotes. Its relevance stems from the fact that the Ibovespa portrays the behavior of the main securities traded in B3 and also its tradition, because the index maintained the integrity of its historical series and has not undergone methodological changes since its implementation in 1968. The basic purpose of the Ibovespa is to serve as an average indicator of market behavior. To this end, its composition seeks to get as close as possible to the real configuration of spot trading on the Stock Exchange (SELAN, 2015).

2.4 BRAZILIAN INVESTORS (INDIVIDUALS)

The Individual investor (or individual investor) is characterized as the decision-making agent who invests his own resources, the principal being harmed or benefited by any negative or positive changes in his/her equity arising from his investment decisions. Despite the possibility of intermediation and influence of third parties in their decision-making process (bank managers, fund managers, investment advisors, etc.), the responsibility for the final decision is entirely yours, and the equity involved, ultimately, is essentially its own (MARTITS; EID JUNIOR, 2009).

Also for Martits and Eid Junior (2009), the individual investor is the equivalent of the *English term "household"*, commonly used in microeconomics as the basic unit of analysis regarding consumer and savings decisions. The Individual investor opposes the institutional investor, characterized as a legal entity

that manages the equity of third parties and receives a commission or administration fee for this type of service (pension funds, investment funds, *private equity funds*, etc.).

Neto (2009) complements that the Individual Investor is every user who operates solely and exclusively for his own benefit, without commercial purposes. Individuals who use the information to choose their own investments are part of this category.

For both individuals and legal entities, there are possibilities for investments, whether in Fixed Income or Variable Income. The investor profile is also classified based on his interests, deadlines and disposition of risks. According to Jesus (2017), there are three different profiles of investors: Conservative, which privileges security and does everything possible to reduce the risk of losses; Moderate, seeks a balance between security and profitability, and is willing to take some risk, so that your money earns a little more than the safer applications; Bold, privileges profitability and is able to take great risks, so that your investment income as much as possible. Frame 1 brings these features together for better visualization.

Table 1: Investor Profile and Key Features

	Investor Profile		
	Conservative	Moderate	Bold
Features	Increased safety concern and concern about the risk of losses	Seeks a balance between safety and profitability	Search for greater profitability and is knowledgeable of the risks you run

Source: Prepared by the authors from Jesus (2017)

The Individual investor with his investor profile and his unique ability to absorb information and the reaction on account of them are important factors that move the stock market daily, and it is through these daily news that these and other more qualified investors are based to make their decisions to buy and sell papers. For Frankenberg (1999), it is worth identifying his investor profile, as this will help him better evaluate the future financial deals he will come across. Knowing your weaknesses, you will take precautions, avoiding further damage. In Brazil, 58% of the population does not have any kind of investment, a fact that, according to Cardozo et al. (2019) is associated with insecurity, lack of interest, political and economic instability, but, above all, the absence of a financial educational culture from an early age.

In the country, it is not very common for individuals to invest in the Stock Exchange, because they have little knowledge about the subject and end up being afraid to apply their money. This fear is increased by the volatility of this market and companies with corporate governance structure in development, which denotes the potential for improvement in transparency and communication with the market.

The market is formed by investors who make mistakes in the absorption of information and who can be influenced by other people who aim to make gains at their expense. In addition, investors end up interpreting information according to their beliefs and cultures, this demonstrates that the emotional can be an ally or enemy at the time of negotiations (MALUF, 2010). In Brazil, due to the low maturity of the

market and the aversion to risk, individuals end up keeping their money in investments with lower income rates, which does not occur in some countries where people have the culture of investing in stocks with the purpose of obtaining higher income (CASAGRANDE; PRADO, 2017).

According to information from the B3 database, the percentage of individual investors is around 99% of the total, being only 1% of institutional investors. The individual investor, even having participation of most of the stock market, is not the one who has the greatest contribution in the volume of trades on the stock exchange, the volume traded is more in the hands of institutional investors than in Individuals, are 29.87% and 19.29%, respectively. And the highest percentage is in the volume traded by foreign investors, with 46.23%, and the rest in other institutions. The percentages were based on the volume traded in April 2020, with a total amount of R\$ 285.40 billion (B3, 2020).

In 2020, Brazil's estimated population was 211.8 million (IBGE, 2020). Of the entire population that invests in some financial application, about 68.8% invest in the savings account (ANBIMA, 2020). Even with high volumes invested in savings, the number of Brazilians who have been investing in variable income is gradually increasing.

3 METHODOLOGICAL PROCEDURES

As for the objectives, the research is descriptive, since it intends to achieve and analyze the relationships between variables (GIL, 1999). Bibliographic research was necessary to support the theoretical framework indispensable to the discussion of the results, which, according to Lima and Mioto (2007), offers the researcher a possibility in the search for solutions to his research problem.

Data on the number of investors in variable income were obtained in B3 through contact made by electronic message. The historical series of the monthly values of the Selic rate were extracted directly from *the official website* of the Central Bank (BACEN), corroborated by the information contained in the Brazilian Association of Financial and Capital Markets Entities (ANBIMA), Brazil, Stock Exchange and Over-the-Counter (B3) and the Brazilian Institute of Geography and Statistics (IBGE). At first, the data received directly from B3 were inserted into an Excel spreadsheet® in order to facilitate systematization and preliminary analysis. In a second moment, the data obtained on the *websites* of the other institutions were gathered, enabling the integrated analysis of the data.

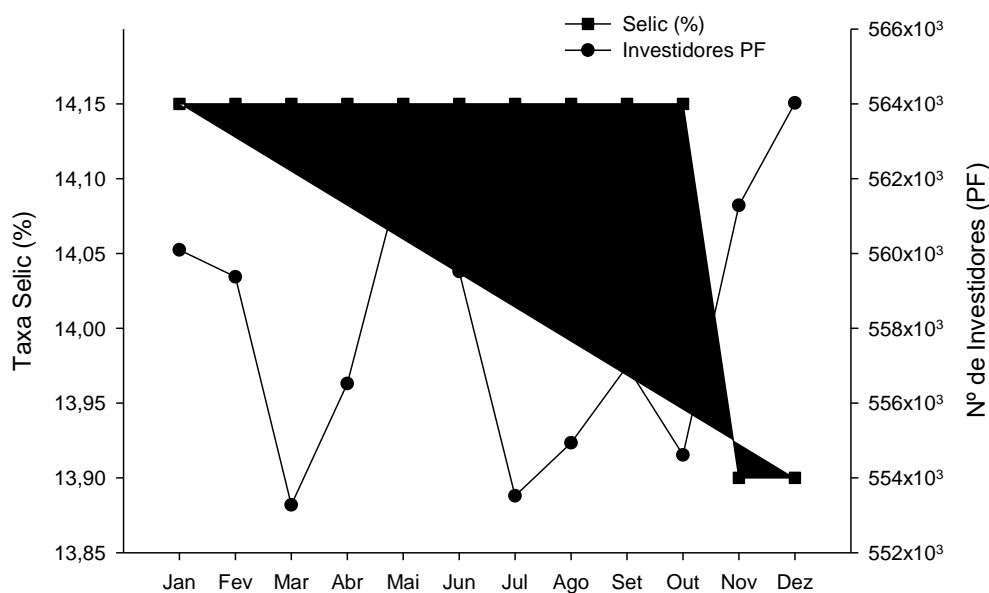
4 PRESENTATION OF DATA AND DISCUSSION

A preliminary reading shows that the change in the basic interest rate over the period surveyed has been a constant. In 2016, Selic was observed at a high level for almost the entire year, the rate starts the year at 14.15% and remains unchanged until October, when it shows a drop of 1.7%.. Strictly speaking, the basic interest rate is changed, upon resolution of the Monetary Policy Committee (CASAGRANDE; PRADO, 2017) as an instrument to contain the increase in inflation (CAETANO, 2011)

The year 2016 showed an increase in the number of individual investors on the Stock Exchange, which, even with strong fluctuations throughout the year, registered at the end of the year 3,929 new investors. To explain this variation in the number of investors during the period that the Selic rate remained unchanged, is in accordance with what was presented by Maluf (2010) in the literature review process, the market is also formed by irrational investors, who interpret information, and are translated from their cultural bases, making room for hasty decisions and promises of utopic gains in the short term.

Moreover, because it is also a more volatile and immature market in relation to older and developed exchanges, these global variables, related to the investor's emotional, can be considered important factors for the oscillation of the number of investors in variable income, as supported by Casagrande and Prado (2017). Figure 1 shows the variations in the Selic rate and the number of Individual investors throughout 2016, using data from the Central Bank of Brazil (Bacen) and B3 (Brazil, Stock Exchange and Over-the-Counter).

Figure 1: Selic rate changes and pf investor number from Jan./2016 to Dec./2016



The sum of the monthly volume traded in 2016 on the Stock Exchange totaled R\$ 1.3 trillion, and, when compared to the volume of January/2016 with that of December/2016 – beginning and end of the year – there was an increase of 48%, an occurrence analogous to that recorded by Wald (2006).

As for 2017, there was an increase in the volume traded on the Stock Exchange, reaching the mark of 1.79 trillion reais in the sum of the months of the year in question, representing an increase of 37% when compared to 2016. Regarding the number of investors, 2017 increased 13.37% when compared to January/2017 (565,263) with December/2017 (640,870), shown in Figure 2b. Conversely, the Selic rate fell, starting the year with 12.90% and ending (December/2017) at 6.90% (Figure 2a).

Figure 2a illustrates the relationship between the volume traded on the Stock Exchange and the variation of the Selic rate, both from January to December 2017. Figure 2b shows variations in the number of investors (PF) and the basic interest rate.

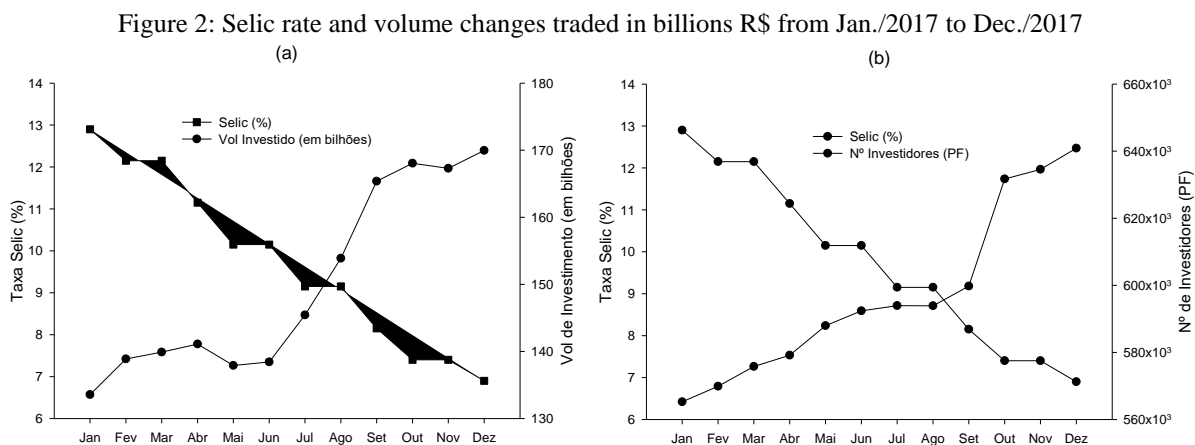
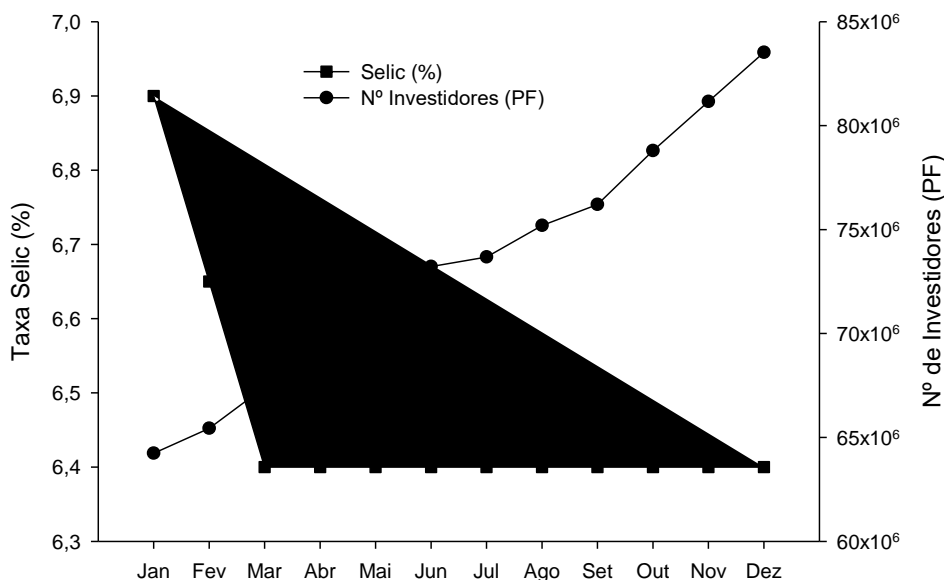


Figure 2a shows the change in the basic interest rate, which showed a reduction of 46.52% over the year, that is, considering the month of January/2017 and December/2017. Possibly, this reduction in Selic is one of the factors to explain the increase in the number of investors this year, as well as the volume traded, demonstrating an increase in attractiveness as proposed by Casagrande and Prado (2017).

The behavior of the basic interest rate in 2018 did not show similarity to the previous year (2017). The year began with a rate of 6.90% (January), remaining at this value until March/2018, when it suffered a reduction of 7.25% falling to 6.40%, remaining at this level until the end of the year (December/2018). Figure 3 shows the number of individual investors and the variation in the Selic rate throughout 2018.

Figure 3: Selic rate changes and number of PF investors from Jan./2018 to Dec./2018



Regarding the volume traded, the first quarter of 2018 presented an average volume of R\$ 188.55 billion, suffering a slight fall in the subsequent two quarters; in the last quarter (4th) exceeds the first quarter by 7.76% (Table 1). Regarding the number of investors, 2018 recorded 835,217 investors at the end of the year (December/2018), an increase of 30.02% compared to the beginning of the year (January/2018). Table 1 shows the quarterly average of the Selic rate and the volume traded on the Stock Exchange during the quarters of 2018.

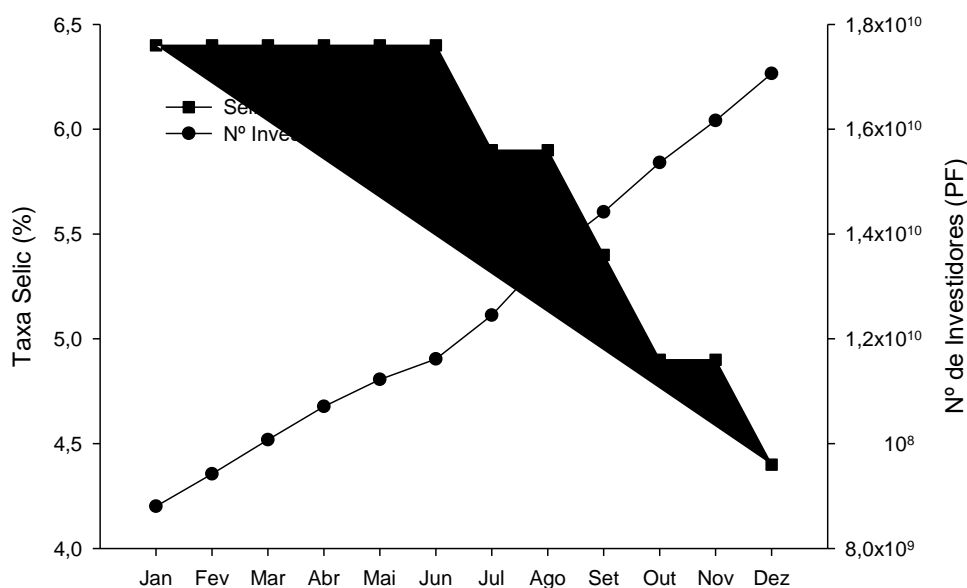
Table 1: Quarterly selic rate and traded volume averages from Jan./2018 to Dec./2018

	1st tri	2nd tri	3rd tri	4th tri
Selic	6,65%	6,40%	6,40%	6,40%
R\$ in billions	188,55	181,2	181,52	203,2

The quarterly average of the basic rate in the first quarter/2018 was 6.65%; while the averages for the following quarters remained at an average level of 6.40%, a reduction of 3.7593% (Table 1). The year 2019 was highlighted for reaching the mark of 1,000,000 individual investors, and by the end of that same fiscal year (December/2019) it was already advancing to reach twice that number. According to Kerr (2011) are small investors who become shareholders of large companies, participating in investment projects, making more equitable the distribution of income of a company. When compared to the same period of the previous year (Dec./2018) it recorded a 104% growth in the number of investors (PF).

The increase in the number of investors in variable income investments occurs, in general, when the basic interest rate is at a lower level, which makes the remuneration of fixed income investments less attractive (DANTAS, 2020; CASAGRANDE; PRADO, 2017). Figure 4 shows the variations in the Selic rate and the number of Individual investors for the year 2019.

Figure 4: Variations in the number of individual investors and the Selic rate of Jan./2019 and Dec./2019



Compared to the years previously analyzed (2016, 2017, 2018 and 2019), 2020 presented the largest volume traded, closing December with an amount of R\$ 452.62 billion. This significant volume of resources transacted in variable income is apparent from this, a correlated increase in interest for assuming greater risk by investors, in the search for greater remuneration of invested capital (MARTITS; EID JUNIOR, 2009). Thus, it is worth noting that the reach of this level of resources presented an inverse correlation with the basic interest rate, that is, as the volume reached the highest level, the Selic rate reached the lowest level (1.9%), index compared to the average value of the 1990s, and may be a sign that the financial market in general and variable income in particular goes down a path of solidity (BRITO, 2020). Figure 5 shows the variations in the Selic rate and the number of Individual investors for the year 2020.

Figure 5: Variations in the number of individual investors and the Selic rate of Jan./2020 and Dec./2020

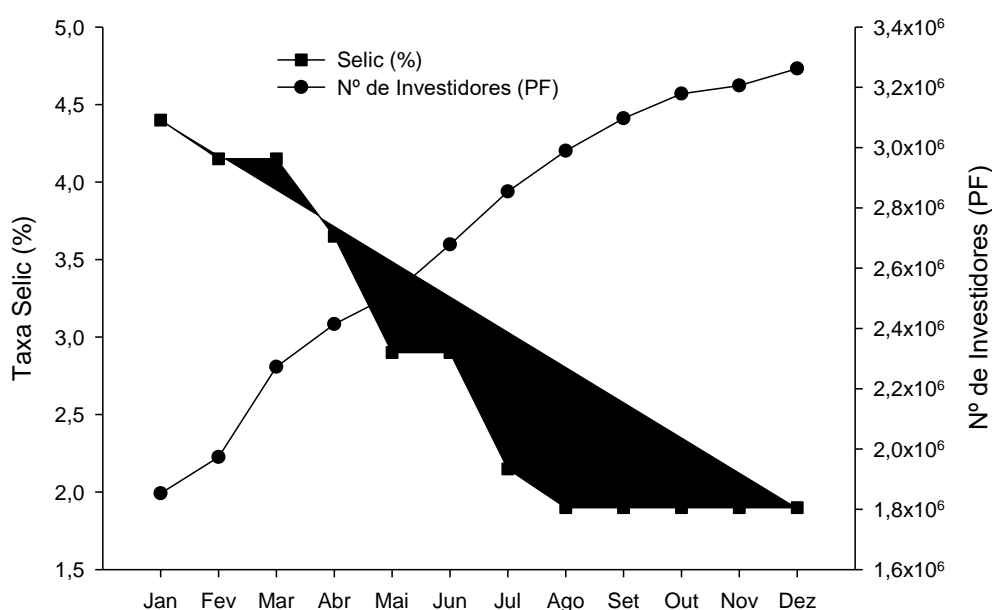


Figure 5 shows an inverse correlation between the basic interest rate and the number of investors. From January to August, Selic showed a steady drop, remaining at the same value from September until the end of the year, while the number of investors showed increasing values throughout the period. Of course, this increase in investments in variable income can signal an environment of optimism, accommodating the market at a more favorable level to expansion (PROENÇA, 2005). It is worth noting that in 2020 B3 exceeded the mark of three million investors, more precisely, 3,261,876 investors (PF), which represents, in the period, that is, from January to December 2020, an increase of 76%.

4.1 GENERAL ANALYSIS OF THE RESEARCHED PERIOD

In general, the Selic rate, the number of investors, as well as the total annual volume traded presented similar average percentages in the period analyzed (2016 - 2020). The basic interest rate in the period 2016 to 2020 showed a continuous decline, from an average annual percentage of 14.11% (2016) to 2.82% in 2020, a reduction of 80.02%. In the period analyzed, the average Selic rate was 7.79%. The highest

percentage of reduction of the average basic interest rate occurred from 2019 to 2020, a percentage of decrease of 51.55%, followed by a 33.61% reduction from 2017 to 2018. The third place in terms of fall was from 2016 to 2017 (31.05%), a figure very close to the second position. Finally, the lowest percentage of decrease was compared from 2018 to 2019 in the amount of 9.91%. Table 2 shows the average values of the basic interest rate (Selic) for each year of the period studied, as well as the change in percentage from year to year.

Table 2: Averages of the Selic rate for each year of the period surveyed, as well as the change in percentage from year to year

	Years				
	2016	2017	2018	2019	2020
Average Selic (%)	14,11	9,73	6,46	5,82	2,82
Variation (%)		31,05	33,61	9,91	51,55
Average Selic in the Period	7,79%				

As for the number of investors, a group of individuals willing to assume higher risk and, consequently, improve their profitability (OLIVEIRA, 2016), there is a dynamic inversely proportional to the variation of the Selic rate. The period from 2016 to 2020 recorded a percentage increase of 382.19% in the number of individuals investing in variable income. The period began (2016) with 558,034 users of the Stock Exchange to 2,690,799 in 2020, considering the average annual volume.

Percentage, from 2019 to 2020, it had the highest volume of investors, up 113.98%, followed by 2018 to 2019 with 71.96%. It ranks third in 2017 for 2018 with 22.46%; finally, the year 2016 for 2017 increased by 6.99%. In the global period, the average number of investors in variable income and, consequently, users of B3 was 1,166,933 individuals. Given that this dynamic is limited within the financial market and, according to the understanding of Bichara et al. (2011), this is a fundamental condition for the economic development of a country, considering the existence of *saving agents and resource-taking players* (CAVALCANTE et al., 2009). Table 3 systematizes this information for better visualization. It presents the average number of investors per year of the period, the change in percentage increase from year to year and the average number of investors users of the Stock Exchange.

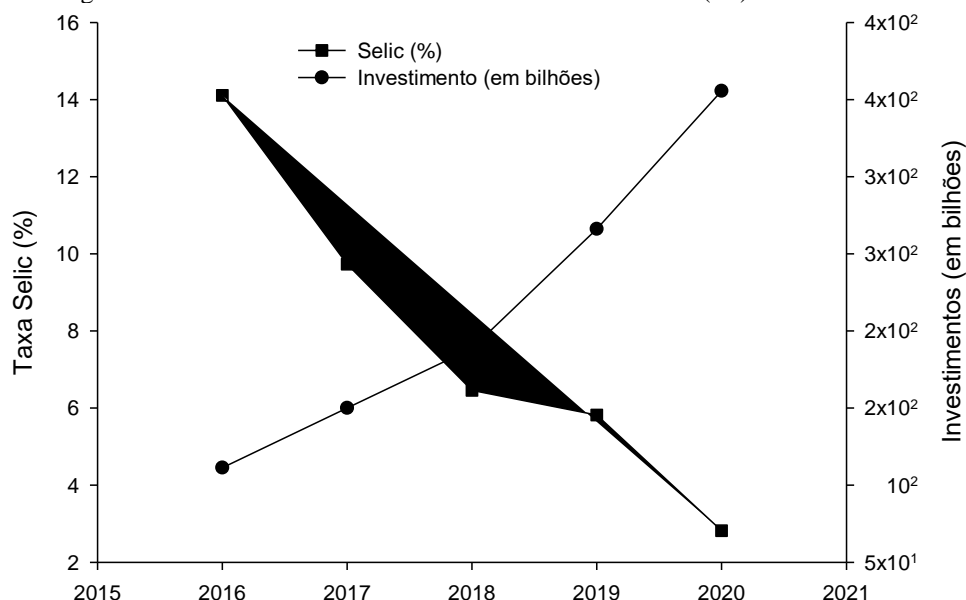
Table 3: Average number of investors per year variation and average number of investors in the period

	Years				
	2016	2017	2018	2019	2020
Average Investors (PF)	558.034	597,095	731.249	1.257.489	2.690.799
Variation (%)		6,99	22,46	71,96	113,98
Average Investors in the Period	1.166.933				

Regarding the average values of resources traded in B3 in the period surveyed, the following behavior is shown. The year 2016 moved R\$ 111.28 billion, equivalent to 51.92% of the average volume traded throughout the period (2016 to 2020). Despite the fact that this year (2016) recorded the lowest

volume traded, it is still representative, since it exceeds half of the average value traded. Subsequent years showed constant growth, even oscillating the percentage to more or less. Thus, from 2016 to 2017 there was a growth of 34.77% in the average annual volume of resources; from 2017 to 2018, an increase of 25.77%; from 2018 to 2019, 41.04%; and, from 2019 to 2020, an increase of 33.65% (Table 4). Figure 6 shows the average variations in the Selic rate and the number of investors (PF) from Jan./2016 to Dec./2020.

Figure 6: Average variations in the Selic rate and the number of investors (PF) from Jan./2016 to Dec./2020



The average global volume traded on the Stock Exchange in the period under analysis was R\$ 214.31 billion, and in the first year of the period (2016) for the last year (2020) there was an increase of 219.55%. Table 4 shows the average annual volume traded on the Stock Exchange, the change from one year to another and the total average volume of the period studied (2016 - 2020).

Table 4: Average volume traded per year, percentage change and total average volume of the period (in billions of reais)

	Years				
	2016	2017	2018	2019	2020
Average Traded Volume (in billions of reais)	111,28	149,98	188,64	266,06	355,60
Variation (%)		34,77	25,77	41,04	33,65
Average Volume in the Period (in billions)	214,31				

There is an increase in the interest of individuals for investments in variable income, especially in the search for better remuneration of their capital, contributing to the increase in the robustness of the financial market and, more generally, with the strengthening of the national financial system (ASSAF NETO, 2014).

5 CONCLUSION

The study aimed to analyze the relationship of the number of investors (Individuals) in variable income comparing it with the variation of the basic interest rate (Selic) during the period between the years 2016 to 2020.

The Selic rate, within the research period, showed negative variations since the beginning of the period (2016 - 2020), reaching a minimum of 1.90%. Regarding the average, it showed a reduction of 80.02%, from an average annual percentage from 14.11% (2016) to 2.82% (2020). Conversely proportionally, the average number of investors in the period increased constantly, from 558,034 investors in 2016 to 2,690,799 in 2020, a percentage increase of 382.19%.

The results of the research prove the initial assumption that the number of investors in variable income is inversely proportional to the variation of the basic interest rate (Selic). Consequently, the increase in the number of investors, there was a significant increase in the volume of transacted capital, from 111.28 billion in 2016 (average annual value) to R\$ 355.60 billion (average annual value) in 2020, an increase of 219.55%.

The research presents limitations, especially regarding the time frame adopted (five years), making it impossible to analyze the recorded historical data. Another limitation refers to the use of only two variables of analysis, namely the basic interest rate (Selic) and the number of investors (PF). Nevertheless, it is necessary to admit the possibility of a future research agenda that comprises a longer period of study, expanding the analytical perspective, besides eventually being able to include other variables. In practical terms, the research contributes to the debate on the financial market, noddedly on investments in variable income and the basic interest rate, with some preliminary aspects regarding the behavior of the individual investor, or individual, in the search for the best remuneration of invested capital.

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