
NON-OPERATING PROFITS PUBLICLY TRADED COMPANIES IN THE BRAZILIAN EDUCATION SECTOR: INTERFERENCE IN DIVIDEND POLICY?

Lucros não operacionais de empresas de capital aberto no setor de educação brasileiro: interferência na política de dividendos?

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Abstract: The aim of this work is to seek a correlation between non-operating profits and the dividend distribution policy by publicly traded companies in the Brazilian education sector through their respective payouts. Publicly traded companies listed on the B3 education sector were selected and analyzed with the other companies listed on the B3 and among them. The period covered was from January 2, 2017 to December 31, 2020. The variables studied were: payout and non-operating gross profit, in addition to yield and share price variation. The results of this study, by showing that publicly traded companies in the educational sector have higher non-operating profits than other companies listed on B3, can be justified by asset sales, given the mergers and acquisitions in the sector. Furthermore, this realignment could also justify the intra-sector analysis, where the payout of these companies was lower in those where the non-operating profit was higher. These results, in addition to expressing the rejection of null hypotheses, show how similar private higher education companies have become in relation to other publicly traded companies registered at B3 in terms of payout, yield and share price variation. This may show that university autonomy also meant the commodification of education.

Keywords: corporate finance; dividend policy; education sector.

Resumo: O objetivo deste trabalho é buscar correlação entre lucros não operacionais e a política de distribuição de dividendos pelas empresas de capital aberto do setor educacional brasileiro por meio de seus respectivos *payouts*. Foram selecionadas empresas do setor educacional de capital aberto listadas na B3 e analisadas com as demais empresas listadas na B3 e entre elas. O período abordado foi de 02 de janeiro de 2017 a 31 de dezembro de 2020. Foram estudadas as variáveis: *payout* e lucro bruto não operacional, além de *yield* e variação de preço das ações. Os resultados deste estudo, ao mostrarem que as empresas do setor educacional de capital aberto possuem lucro não operacional superiores às demais empresas listadas na B3, podem ser justificados por vendas de ativos, dados os movimentos de fusões e aquisições do setor. Além disso, esse realinhamento também poderia justificar a análise intrasetorial, onde o *payout* destas empresas foi menor naquelas onde o lucro não-operacional foi maior. Estes resultados, além de expressarem a rejeição das hipóteses de nulidade, mostram o quanto as empresas privadas de educação superior tornaram-se semelhantes às demais empresas de capital aberto registradas na B3 quanto a *payout*, *yield* e variação de preço das ações. Isto pode mostrar que a autonomia universitária também significou a mercantilização da educação.

Palavras-chave: finanças corporativas; política de dividendos; setor educacional.

1 INTRODUCTION

The educational services sector involves activities that process information and knowledge (Tureta et al., 2007). According to Campos (2017), education stands out in relation to character formation, knowledge of ethical values and the development of a critical view of individuals, which plays an important role in the construction of society. Brazil has consolidated its education system with two well-defined spheres: the public sphere, which involves federal, state, and municipal public institutions, and the private sphere, formed by private, confessional, community, and philanthropic institutions (Neves, 2012). Private educational institutions have significant participation in the national context, especially in higher education (Souza, 2017).

According to Carbonari (2011), Faro (2017) and Napolitano (2017), the expansion of higher education intensified from the 2000s, mainly after the constitution of 1988 and the Law of Directives and Bases of Education (LDB - nº 9.394, of December 20, 1996). From the mobilization of private resources and the orientation to meet market demand, this sector has shown great growth (Sampaio, 2014). Companies operating in the education area need to comply with specific legislation, maintain the quality of services and compete for customers (students), at the same time they need to implement adequate management systems and generate financial returns for their owners. The expansion of private educational institutions intensified competitiveness in this sector (Tureta et al., 2007).

The dividend is a portion of net income that is distributed to investors as a form of remuneration for their capital. The amount to be paid and the form of distribution are complex decisions that have generated numerous researches (Vancin, 2014). The optimal dividend policy is one in which the balance between current dividends and future growth is reached, maximizing the stock price (Lemes-Júnior et al., 2002). For a long time, dividends were not relevant to investors in Brazil, mainly due to the high inflation rates prevailing in the Brazilian economy and the absence of monetary correction on dividends (Procianoy, 2006). With the stability of prices in the economy after 1996, dividends became more valued, gaining prominence in companies' portfolios (Assaf Neto et al., 2007).

Brazil's dividend policy differs from that established in developed countries such as the United States and England. Mandatory configurations in the payment of dividends, aspects of accounting for operations and taxation on this type of income are examples of comparative differences (Brugni et al., 2011). Brazilian regulators, to improve legal protection for minority shareholders, established a mandatory minimum dividend through Law 6,404/76.

Despite this, according to Mota (2007), the conclusions of international studies cannot be applied directly to the Brazilian market, since there are several particularities, among which the following stand out: (a) existence of a mandatory minimum dividend; (b) possibility of paying interest on equity; (c) large concentration of ownership; and (d) dividends, from a fiscal point of view, are more advantageous than share buybacks. Also, according to the author, the existence of cash flow, the stability of these flows, the non-commitment to indebtedness, the concern with corporate governance and the existence of few investment opportunities are factors that lead companies to distribute a greater part of its profits in the form of dividends and/or interest on equity.

Gross profit is the overall profit a company makes. It is determined based on the values generated by a business. Briefly, it is the difference between total revenue and variable costs. In this case, fixed costs such as rent and security are not deducted (Investidorsardinha, 2021). Non-operating income is a portion of a company's profit or loss, which is distinct from capital acquired through the company's core activities (Statusinvest, 2021).

The aim of this work is to seek a correlation between non-operating profits and the dividend distribution policy by publicly traded companies in the Brazilian education sector through their respective payouts. This work is divided as follows: this introduction, followed by the theoretical

framework (part 2), where the literature on the subject is reviewed and working hypotheses are formulated. In section 3, the methodology used is explained, both for the formation of the sample and for the analysis of the data. The results are shown and discussed in section 4, where the hypotheses will be tested. The work ends in section 5, where the conclusions are resumed.

2 THEORETICAL FRAMEWORK

Rocha-Júnior (2013) demonstrated how education in Brazil has gone from being a “right” over time to gradually becoming a lucrative commodity. If initially it was up to the State to offer it to some segments of society, especially the elites, education was gradually being amalgamated by the commodity form. This new configuration of the capitalist mode of production, paved during the 1970s, especially by the introduction of neoliberal ideology, productive restructuring, the microelectronic revolution and fundamentally the hypertrophy of the financial sphere that further dynamized the universalization of the commodity form. Currently, under the aegis of interest-bearing capital and fictitious capital, socially produced wealth, according to the author, is drained and substantively appropriated, in the form of profits, interest and dividends by the bourgeois fraction, linked to the oligarchy of finance, that is, via the processes of financialization of social relations of production and wealth in the bourgeois society of the 21st century.

Such financial characteristics were also addressed by Oliveira (2017) and Carvalho (2013). The latter also showed that the mercantile character at the higher level becomes central both in terms of political interference in the decision-making process, through the performance of lobbies and benches in the National Congress that are financed by groups with greater economic resources, as well as by the difficulties faced by the public power in neutralizing the advance of the movement of concentration and internationalization of capital in the sector. Napolitano (2017) and Faro (2017) state that the basis of this process lies in the confusion in the concept of university autonomy, where freedom of thought was confused with financial freedom.

By investigating and critically analyzing the expansion policy of higher education in Brazil, which began in the 1990s and had as its focus the redefinition of the role of the State in the economy, Araújo (2021) demonstrated that business groups, called Education S.A, need to present positive economic results and value their shares. However, nothing prevents them from simultaneously offering a good service to society. The fact that these companies are listed on the Stock Exchange, on the other hand, facilitates their social control, due to the great demand for transparency in their ways of operating. Thus, the ways of demonstrating results become more complex and more detailed, which requires greater control and monitoring on the part of their managers. It is worth mentioning, however, that when profitability is combined with the quality of a publicly traded Educação S.A, its attractiveness to future investors is greater.

Rodrigues (2020) evaluated the risks evidenced by companies in the education sector listed on the Brazilian stock exchange. Regarding the risk factors highlighted, those related to the issuer of the shares, the company itself, were responsible for more than half of the information, with the growth strategy, through acquisitions and mergers, and the retention of management members appointed as the main risks that could adversely affect operations and revenues, and therefore the continuity of the company. Also, according to Rodrigues (2020), market-related risks were the main ones, given the financing policies or tax benefits granted by the government due to membership of Prouni and Fies (student funding promoted by the federal government). In addition, companies are concerned about the risks related to their sector of activity, given the large number of private institutions operating in the country. Another point considered by Araújo (2021) is the strong correlation with the economy. In times of greater challenge, there is a natural tendency to reduce the search for enrollments due to the fear of indebtedness. For students who are already enrolled, an increase in default rates is common.

Nazareth et al. (2017) suggest that regulating expansion can be a measure of prudence in times of crisis. Government programs linked to economic moments should only work as a springboard to boost the economic and financial movement of companies. However, value-based management cannot be conditioned exclusively to these external actions. The economic and financial results of companies in the sector can be influenced, in the long term, by the results of student assessments, as the demand for the institution can certainly be influenced and this is an indispensable variable in the search for the result. Organizations, therefore, must demonstrate a high capacity to implement value drivers that lead to an increase in operating margin, and must seek optimization in financial policies in such a way that they can also seek to reduce the weighted average cost of capital.

Table 1, based on data from the 2020 Higher Education Census (Ministério da Educação, 2022) shows the variation in the number of enrollments both in total and in private institutions between 2010 and 2020. During this period, the increase number of enrollments in the private sector has always been higher than the total, even during the years between 2015 and 2020, where the variation was smaller. These results agree with Nazareth et al (2017), who mention the existence of a “magic cycle” that would be succeeded by a “tragic cycle”, which were also found by Malvessi (2017) and Nazareth et al. (2017). In addition, according to Burgarelli (2017), with the increase in the use of Fies between 2010 and 2014, the dependence on government transfers to pay off studies increases. There is an increase in public spending, but with an equal number of students. However, there was a significant financial loss from the government with the lack of quality indicators, negative interest rates, lack of guarantor and high default rate.

Table 1 – Variation in the number of enrollments in the higher course

Period	Total		Private Institutions	
	Variation in the period (%)	Annual variation (%)	Variation in the period (%)	Annual variation (%)
2010 – 2020	36	3,12	41,9	3,56
2010 – 2014	22,7	5,25	23,9	5,5
2015 – 2020	8,13	1,97	10,6	2,57

Adapted from: Censo da Educação Superior de 2020 (Ministério da Educação, 2022)

Schneider (2016) showed that there were different reactions to cyclical changes in the education sector between 2014 and 2015. By analyzing equity investments in the stock market in the educational segment, and visualizing the impacts of government actions, the economy and the market situation on the educational segment, present on the São Paulo Stock Exchange, in 2014 and 2015, it was noticed that companies in the BM&FBovespa educational sector were strongly impacted by the new rules for obtaining the Fies. These changes made it difficult for students to access higher education institutions. Until the end of 2014, companies in the educational sector of the Brazilian Stock Exchange were considered defensive, even though the Brazilian political and economic scenarios presented many uncertainties.

At the end of 2014, however, according to Schneider (2016), the market's view changed in relation to shares, and the year 2015 began with strong falls in the values of the shares of companies in the sector. Smaller companies (Anima and Ser Educacional) felt more deeply the impact of the Fies news, both because of their size and because of their performance in face-to-face teaching, while their larger competitors (Estácio and Kroton) were more active in teaching to distance. It was estimated that about 50% of the budget of the benefit was cut with this new policy of admission to higher education from Fies, consequently, the four companies in the sector failed to collect a considerable amount. After a period of adaptation to the new rules of student financing, at the end of the period of analysis the companies were already stabilizing again.

Even within a company, however, the results can be different depending on the teaching model. Souza et al (2017), to analyze the economic performance of Kroton Educacional from 2011 to

2016, observed that the distance learning segment contributed the most to the company's profitability. This was the segment with the highest gross margin (between 69.9% and 82.5%) and the highest operating margin (between 45.4% and 60.4%) over the period analyzed. Kroton Educacional invested in the expansion of this segment and had a great increase in its total profitability between 2011 and 2016. The on-campus higher education segment, although it is responsible for most of the company's sales revenue, did not stand out in terms of profitability. Operating costs and expenses for this segment were relatively high. Thus, its gross margin varied between 28.4% and 45.0%, while its operating margin was between 9.5% and 34.5% (results much lower than in the distance learning segment). The authors conclude that each of Kroton's segments presented distinct characteristics in relation to economic performance, which exhibited different risk and return profiles, which agrees with Ghirardi and Klafke (2017), which showed that publicly traded groups increased the offer of distance learning in relation to public and other private schools between 2010 and 2014.

The dividend policy comprises, on the part of business managers, the decision to pay dividends to shareholders or retain the profits generated internally in the period. It is one of the most important decisions in managerial work and should seek to maximize investor wealth (Agrawal; Jayaraman, 1994). One of the consequences of the measures adopted by the organization, reflected by the financial performance, is directly related to the organization's dividend policy, which represents the profits distributed by the company (Akhtar, 2018).

Hahn et al. (2010) emphasize that each company has different objectives and goals, the distribution of dividends varies according to the interests of those in charge and the economic situation. Bartram et al (2012) emphasize that shareholders prefer the company to pay a greater fraction of its earnings since a lower retention rate reduces opportunities for managers to waste money on unprofitable projects or in other ways that are not advantageous to shareholders.

According to Ribeiro et al. (2013), the dividends to be received by the shareholder depend on a legal system and rigorous practices of Corporate Governance, which are created to minimize the conflicts of interest that predominate in the relationship established between the company and the stakeholders. Such mechanisms tend to encourage a dividend policy that tends to reward investors with higher percentages for investing their capital in the company.

In recent years, the interest of academic and business circles on the relationship between corporate governance and the policy of distributing profits to shareholders has been growing. La Porta et al. (2000) report that companies located in countries with greater legal protection for minority shareholders (based on common law) pay higher dividends when compared to countries where legal protections are less strict (civil law). Da Silva (2004) states that Brazil belongs to the French law tradition (civil law), which offers the least legal protection to investors. Therefore, a high concentration of capital in companies is to be expected, especially about voting capital.

Johnson and Shleifer (2001) consider the payment of a higher dividend payout a means of establishing a reputation for treating minority shareholders appropriately. Bohren and Odegaard (2001) found that the control and ownership structure influence the economic performance of Norwegian companies. A greater concentration of control and the use of non-voting shares are related to a loss of market value. In addition, the authors found evidence that firms where the majority shareholder has a large stake in the company tend to distribute higher dividends.

One of the first Brazilian studies relating dividend policy and agency conflict was carried out by Procianoy (1995), who analyzed agency conflicts between controlling and minority shareholders in companies traded on the São Paulo Stock Exchange, through the behavior of dividend policy. after the tax changes that took place between 1988-1989. The payment of dividends, in addition to being related to the control and ownership structure, works as a governance mechanism. In this way, companies that adopt corporate governance practices usually have good remuneration policies for their shareholders, paying high percentages of dividends annually.

Junger et al. (2022), when analyzing dividends in terms of value creation, presented a negative result with little impact, about the correlation regarding the generation of value through Tobin's Q. By analyzing their representation in the market-to-book, they present a positive and more representative impact, in a way that adds value. This divergence of results can be justified by the fact that value creation is something difficult to measure in an accounting way, since it depends on tangible and intangible factors, as stated by Kayo et al. (2006). Thus, they were not able to define precisely the signaling of dividends in relation to value creation.

Farinha (2002) analyzed the dividend distribution policy in the United Kingdom and found that there is a relationship between the payout and the ownership and control structure, since the payment of dividends contributes to the reduction of agency conflicts in the firm, consistent with Easterbrook (1984) and Jensen (1986). Farinha (2002) found a positive relationship between payout and ownership concentration above 30%. Recent studies by Fluck (1998) and Myers (2000) present models of dividend payment related to the agency theory, concluding that company management pays dividends to avoid monitoring actions by shareholders. In addition, Jensen (1986) considers the payment of dividends to allocate the company's cash.

Knowing and determining a company's gross profit is the first step towards reaching another important value in evaluating the profitability of services or products offered: operating profit. This is one of the indicators that are part of the DRE (Income Statement for the Year), an accounting report that provides a summary of the results achieved over a period (SUNO, 2021). It is an important document to be analyzed by potential investors. Companies listed on the stock exchange, for example, publish the DRE every three months.

The statements published in accordance with the format approved by regulatory bodies, both from the governmental sphere and from the accounting class, present the headings called operating income and non-operating results (Padoveze; Benedicto, 2003). The concept of operability in the income statement is shown in two headings: first, the concept of operating profit, which presents the income resulting from the company's normal sales and service activities, minus the costs and expenses necessary to obtain these revenues; and second: the non-operating results, which show the income from costs arising from activities not contained in the previous item, which are usually activities of deactivation of permanent assets, represented in the income statement by the revenue from the sale of permanent items and the permanent asset write-off expenses. The table 2 shows the main terms used for construction of the concept of the non-operating profit and their respective meanings.

Table 2: Summary of Financial Terms

Term	Meaning
Revenue	Money raised by selling a particular product.
Cost	expense directly linked to the production of goods or services. It is divided into fixed cost: that which does not change even when there is variation in production or sales, and variable cost, which accompanies the increase or decrease in business activities.
Expense	Expenditure related to maintaining the business, with no direct impact on the final product
Gross profit	Revenues minus costs, but only variable costs are discounted from revenues– which are those that may be related to sales made or the purchase of raw material for production.
Operating profit	Operating profit is the profit derived exclusively from the company's operation and in the financial market, which presents the income resulting from the company's normal sales and service activities, minus the costs and expenses necessary to obtain these revenues; it is produced solely and solely by the operation of the business, excluding any operating, administrative or commercial expenses.
Non-operating profit	Non-operating results, which show the income from costs arising from activities not contained in the previous item, which are usually activities of deactivation of permanent assets, represented in the income statement by the revenue from the sale of permanent items and the permanent asset write-off expenses

Adapted from: Padoveze; Benedicto (2003), Investidorsardinha, (2021), Maisretorno, (2021).

Operating profit is the profit derived exclusively from the company's operation and in the financial market. It is also known as EBIT. To determine the company's operating profit, it is sufficient to deduct operating, commercial, and administrative expenses (Investidorsardinha, 2021). It is a form of profit measurement whose main objective is to establish a relationship between a company's revenue with its operating expenses and the return obtained through its core activity (Maisretorno, 2021).

The valuation of companies, according to Ikuno et al (2011), is necessary in the face of several negotiation processes and can be carried out through different methods such as the discounted cash flow, the multiples method, the equity value, among others. Ikuno et al. (2011), when studying the evaluation reports of public offerings of shares published by the Securities and Exchange Commission in the period from 2005 to 2010, using a documentary and qualitative research with the application of a content analysis, observed that the treatment given to non-operating assets in most reports that adopt the Discounted Cash Flow and that contain the keyword “non-operating assets” considers such items in their assessment as adjustments after calculating the present value of the companies. However, some reports clearly stated that they did not consider such items in their assessment. The authors conclude that the discussion that permeates the literature in relation to non-operating assets is reflected in practice.

Padoveze and Benedicto (2003) state that a permanent critical review of accountants is necessary regarding the classification of expenditure and revenue elements in terms of the concept of operability. This review is of paramount importance, since the conclusions of the financial analysis and investment performance evaluation, as well as the return on capital, may be biased by incorrect classifications, significantly harming the decision-making models and the performance of the managers responsible for such decisions.

Operating profit is profit derived solely from the operation of a business. It cannot be confused with gross profit (Renovainvest, 2021). In the latter, only variable expenses are discounted – which are those that may be related to sales made or the purchase of raw material for production, for example (Renovainvest, 2021). Operating profit is that produced solely and solely by the operation of the business, excluding any operating, administrative or commercial expenses. To get there, it is necessary to calculate the gross profit and deduct operating expenses. Subsequently, operating revenues must be added, which are those not linked to a core activity of the company (Suno, 2021). The account, therefore, is this:

$$\text{Operating Profit} = \text{Gross Profit} - \text{Operating Expenses} + \text{Operating Revenue}$$

Thus, non-operating profit, arising from activities not related to the company's scope, would be the result of subtracting gross profit from operating profit.

Non-operating income is the portion of an organization's income that is derived from activities unrelated to its core business operations. It may include items such as dividend income, investment profits or losses, as well as gains or losses incurred on foreign exchange and asset sales. Non-operating revenue is also called ancillary or peripheral revenue (Investopedia, 2022).

Silva and Kirch (2022), to seek a correlation between non-operating profits and the dividend distribution policy by companies in the Brazilian electricity sector through their respective payouts, analyzed using Student's t test and ordinary least square (OLS) and demonstrated that the electricity sector stood out from the other sectors for having lower non-operating profit, higher yield and lower annual appreciation than the other sectors, with no difference in payout. The intrasectoral analysis showed an inverse relationship between non-operating profit and payout as well as non-operating profit and dividend yield. Companies in the electricity sector with high non-operating profits are related to low valuation, yield and payout, and this factor may be a poor prognosis metric for the asset. According to the authors, these findings showed how the electricity

sector differs from other sectors, requiring different strategies for investors who wish to obtain greater profits, such as considering high non-operating income as a factor of lower profitability and asset valuation.

In view of the above, regarding companies in the educational sector in relation to other sectors, two hypotheses were formulated:

H_{0a} : There is no difference in non-operating profits between companies in the educational sector and other sectors, since their financialization process made them similar to other sectors, according to Carvalho (2013) and Rocha-Júnior (2013).

H_{1a} : there is a difference in non-operating profits between companies in the education sector and other sectors.

Also, in view of the above, regarding companies in the educational sector, two hypotheses were formulated:

H_{0b} : Non-operating profits are not correlated with the payout of companies in the education sector, since they are not part of net income, which is strictly related to the payment of dividends (INVESTOPEDIA, 2022).

H_{1b} : Non-operating profits are related to the payout of companies in the education sector.

3 METHODOLOGY

The methodology of this study is similar to that used by Silva and Kirch (2022): public companies listed on B3 were selected from the Yahoo Finance website (Yahoo Finanças.com, 2021). The time covered was from January 2, 2017 to December 31, 2020. Data as revenue, gross profit and non-operational profit from their respective Income Statement for the Year. Data extracted from this site also served to calculate the two major variables of the study: payout and non-operating gross profit. The payout was calculated from the dividends paid in the current year divided by the net earnings per share. Gross non-operating profit was obtained by subtracting gross operating profit from gross profit. In addition, data on the variation of stock prices on the last day of each year were obtained. To calculate the yield, the payment of each dividend was divided by the share price on the day of payment. All payments during the year were added up and recorded as yield in that respective year.

Within the intrasectoral analysis of the education sector, the study variables were tested with companies in the education sector divided into two groups: the group with non-operating profit/gross profit ratio above the 75th percentile and the group with this ratio below the 25th percentile.

Data analysis was performed using Student's t test and OLS test using Eviews software. For the educational sector, a dummy variable was used (value 1, when belonging to the sector). However, given the peculiarity of the financial sector, whose statements do not differentiate operating income, they also gained a dummy variable (value 1, when belonging to the sector). The level of statistical significance was set at 0.1.

4 RESULTS

The survey at B3 revealed five publicly traded companies within the educational sector listed on B3: Bahema Educação (code: BAH13), Cogna Educação (code: COGN3), Yduqs Participações (code: YDUQ3), Anima Holding (code: ANIM3) and Ser Educacional (code: SEER3). The next sections deal with inter- and intra-sector analysis.

4.1 Intersectoral analysis

Table 3 shows, by means of mean and standard error, the proportion between non-operating profit and gross profit (LNO/LB), payout, yield and annual variation in the share price of publicly traded companies listed on B3, excluding the educational sector. The total number of companies was 84, making a total of 314 companies-year. A sample, however, without the financial sector, which has the peculiarity of LNO/LB always equal to zero, was also selected. Thus, in this new configuration, 75 companies remained, making a total of 278 company-years. Companies in the financial sector are shown, totaling 9 companies and 36 company-years. Finally, data were collected from 5 companies in the educational sector during the period covered, leading to a total of 20 companies/year.

Table 3 - Sample description (expressed as Mean \pm standard error)

	Publicly traded companies not belonging to the Educational sector	Publicly traded companies not belonging to the Educational sector (excluding the financial sector)	Publicly held companies belonging to the financial sector	Education Sector Companies
NO profit/Gross profit	0.35 \pm 0.05	0.39 \pm 0.06	0 \pm 0	0.8 \pm 0.06
Payout	0.47 \pm 0.06	0.46 \pm 0.07	0.58 \pm 0.1	0.3 \pm 0.08
yield	0.03 \pm 0.002	0.024 \pm 0.002	0.05 \pm 0.006	0.025 \pm 0.005
Δ price	0.33 \pm 0.035	0.35 \pm 0.04	0.12 \pm 0.05	0.39 \pm 0.17

Abbreviations: NO profit: gross non-operating profit; Δ price: annual price variation.

4.1.1 Analysis using student's t test

Table 4 shows the analysis of variables between the educational sector and the other sectors. There was a statistically significant difference in terms of LNO/LB, which was higher in the educational sector. The payout, yield and share price variation, in turn, did not show statistically significant differences. Even with the exclusion of the financial sector, the results remain the same.

Table 4 - Analysis using Student's t test (p value)

	Companies in the Education Sector versus other sectors	Companies in the Education Sector versus other sectors (excluding the financial sector)
NO profit/Gross profit	0.04*	0.07*
Payout	0.56	0.59
yield	0.8	0.89
Δ price	0.7	0.82

Abbreviations: NO profit: gross non-operating profit; Δ price: annual price variation; * statistical significance.

4.1.2 Ordinary least square analysis

Table 5 shows the LNO/LB ordinary least square regression in relation to the educational sector. The results show that the non-operating profit of the educational sector is statistically significant, being higher, and thus coinciding with the results of the Student t test. When using the dummy for the financial sector, whose LNO/LB is zero, the finding that the educational sector has a proportion of non-operating profit over gross profit was maintained that is higher than the other non-financial sectors.

Table 5 - Analysis through OLS

Dependent variable	Independent variable (coefficient)				
	C	EDUC	LNO/LB	FIN	PAYOUT
LNO/LB	(0.35)***	(0.45)**			
LNO/LB	(0.38)***	(0.41)**		(-0.38)**	
PAYOUT	(0.48)***	(-0.16)	(-0.02)		
PAYOUT	(0.47)***	(-0.15)	(-0.01)	(0.11)	
DPRICE	(0.26)***	(0.12)	(0.06)		(0.01)
DPRICE	(0.28)***	(0.11)	(0.06)	(-0.17)	(0.01)
YIELD	(0.03)***	(-0.006)	(-0.002)		
YIELD	(0.03)***	(-0.005)	(-0.002)	(0.02)*	

Abbreviations: LNO/LB: gross non-operating profit divided by gross profit; c: constant in the intercept; EDUC: Educational sector; FIN: financial sector; DPRICE: annual variation of the share price. * = $p < 0.1$; ** = $p < 0.05$; *** = $p < 0.01$.

Also in table 5 is the payout as a dependent variable, both for the educational sector, LNO/LB and the financial sector. Except for the coefficients, there was no significant relationship between the variables, similar to that shown in the t test. As for the stock price variation as a dependent variable, both for the educational sector, LNO/LB and the financial sector. Except for the coefficients, there was no significant relationship in the educational sector, which valued more than the non-financial sectors.

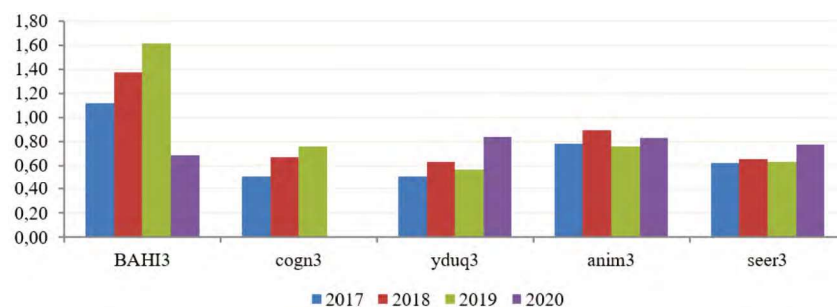
Yield as a dependent variable, compared to the educational sector, non-operating profit and the financial sector showed a Durbin-Watson test, established at 1.23 and 1.24 respectively, which shows autocorrelation. In this case, either a panel analysis should be carried out, or, as in this case, the results should be viewed with reservations. Basically, the results are similar to those performed with the t test, which showed that the yield of the financial sector was higher than the other sectors. There are, however, no significant coefficients regarding LNO/LB and the educational sector.

In short, resuming all the above analyses, it is evident that the educational sector has a higher non-operating profit than the other sectors; payout, yield and share price variation did not differ between sectors. Thus, the null hypothesis H_{0a} is rejected.

4.2 Intrasectoral analysis of the education sector

The intrasectoral analysis begins with the description of the main study variables in relation to companies in the educational sector. Graphic 1 shows the ratio of non-operating profit to gross profit in the 5 companies included during the period from 2017 to 2020. Except for the BAH13 asset, the other companies showed this ratio similar to each other and also over time. BAH13, in turn, except for 2020, which was at levels similar to the other companies, showed a higher proportion between non-operating profit and gross profit. This fact may be due to a different moment of this company in the business cycle.

Graphic 1 - Non-operating profit/gross profit by company and by year

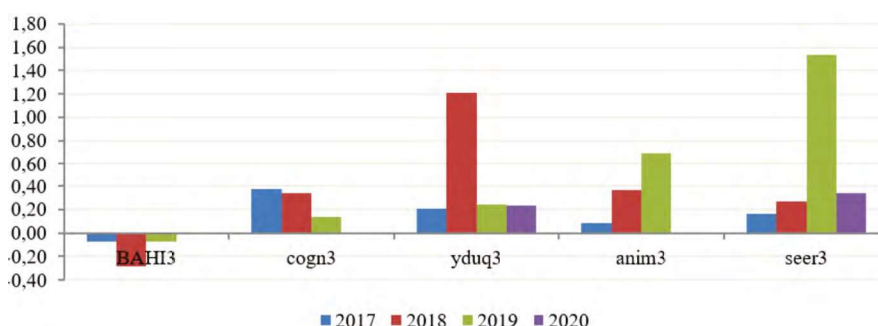


Source: own authorship.

Graphic 2 shows the payout of each company in the education sector in each year. Unlike the regularity shown in the proportion between non-operating profit and gross profit, the payout of companies was more heterogeneous, both between companies and between periods. First, BAH13 again differed from the others, as it was the only company to have presented a negative payout, that is, payment of dividends even with an operating loss.

Second, in two moments, payout above 100% was paid, that is, payment of dividends above net income, cases of YDUQ3 in 2018 and SEER3 in 2019. These two situations described, both for BAH13, as for YDUQ3 and SEER3, show possible use of non-operating income to pay dividends. Finally, of the 19 companies-years in the education sector, in 11 of them the payout was between 10 and 40% of net income.

Graphic 2 – Payout by company and by year



Source: own authorship.

The analysis of the educational sector, as described above in the methodology, defined two groups: the first, with LNO/LB values above the 75th percentile (set at 0.84) and the second group, with percentile lower than 25th (set at 0.63). Table 6 shows the sample arrangement and Student's t test results. There were no statistically significant findings between the two groups, except for the LNO/LB which was higher in the 75th percentile group.

Table 6 - Analysis of companies in the education sector using Student's t test

	percentile > 75	percentile < 25	p value
	Mean ±standard error	Mean ±standard error	
NO profit/Gross profit	1.17±0.15	0.55±0,026	0.008*
Payout	0.03±0.12	0.25±0,04	0.16
Yield	0.02±0.006	0.02±0,003	0.71
Δ price	0.66±0.64	0.84±0,17	0.82

Abbreviations: NO profit: gross non-operating profit; Δ price: annual price variation; * statistical significance

4.2.1 Least squares analysis of the education sector

Table 7 shows the relationship between payout and the educational sector. Despite the low value of the Durbin-Watson test, discussed above, the results showed differences in the payout between the groups, unlike the Student's t test. The group with the highest LNO/LB had a lower payout than the group formed by the sample below the 25th percentile. Non-operating income related to lower payout was also a finding found in the work by Silva and Kirch (2022) in relation to the electricity sector. Unlike these, the education sector with high non-operating profits, unlike the electricity sector, did not show statistically significant changes in terms of yield and asset valuation.

Table 7 - Analysis of the education sector through OLS

Dependent variable	Independent variable (coefficient)		
	C	NO25	NO75
PAYOUT	(0.44)**	(-0.16)	(-0.4)*
YIELD	(0.03)**	(-0.009)	(-0.01)
DPRice	(0.22)	(0.64)	(0.23)

Abbreviations: LNO/LB: gross non-operating profit divided by gross profit; c: constant in the intercept; NO25: LNO/LB group below the 25th percentile; NO75: LNO/LB group above the 75th percentile; DPRICE: annual change in share price. * = $p < 0.1$; ** = $p < 0.01$.

Resuming, payout is lower in the group with higher non-operating income, rejecting the null hypothesis H_{0b} , while yield and share price variation in both groups are not different.

5 FINAL CONSIDERATIONS

The Brazilian education sector has suffered in recent years with a growing concentration of the private sector, as well as a change in the management model much closer to that carried out by companies in other sectors, different from the philanthropic and confessional pattern present before the legal changes. Constitution of 1988 and the Law of Guidelines and Bases for Education (LDB - No. 9,394, of December 20, 1996). In these mergers and acquisitions processes, many adjustments were made, both on the initiative of the companies themselves to seek cost reduction, and because of legal determinations to avoid excessive market concentration (Napolitano, 2017).

The results of this study, by showing that publicly traded companies in the educational sector have higher non-operating profits than other companies listed on B3, can demonstrate the possible results of these movements for asset sales, justified by the reasons described above. Furthermore, this realignment could also justify the intra-sector analysis, where the payout of these companies was lower in those where the non-operating profit was higher.

These results, in addition to expressing the rejection of null hypotheses, show how similar private higher education companies have become in relation to other publicly traded companies registered at B3 in terms of payout, yield and share price variation. This agrees with Carvalho (2013) and Rocha-Júnior (2013), who show that university autonomy also meant the commodification of education with the consequent appropriation of profit.

It is important to highlight the approach of the financial sector, which was carried out in the analysis by OLS. As it is a sector in which non-operating profit would be “null”, this condition allowed a separate analysis that showed some peculiarities of the sector: a) as well as the other sectors, including the education sector, the payout and the price variation of the actions showed no differences between groups; b) different from the educational sector, the yield was higher than in the other sectors.

The use of financial parameters associated with econometric models can help to better explain the paths of these companies and, consequently, of this very important sector within the Brazilian reality.

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