THE RELATIONSHIP BETWEEN FINANCING POLICY AND FINANCIAL PERFORMANCE IN THE BRAZILIAN TEXTILE INDUSTRY

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─Abstract ─

This article analyzes the financing policy of the leading companies that comprise the textile industry in Brazil from 1998 to 2006, as well as the influence of this policy on firm performance. Variables were used as performance metrics traditional ROA and ROE for a representative sample of 180 companies with revenues of U.S. $ 7.99 Billion. The structure of the research was supported by multiple regression analysis and developed in two phases: the entire sample and with the 10 largest companies by market share.

The results show significant influence and a negative correlation between performance and debt. There was also that the best results have debt less than 45% of the capital structure. Therefore, the search terminates further discussions within the financing policies of firms.

Key Words: *Financing Policy, Brazilian Textile Industry, Finance.*

JEL Classification: G32

1. INTRODUCTION

The Brazilian economy has experienced profound changes in the last two decades and expands interest in stabilizing its financial system, launching a foundation for sustainable economic growth, from increased competitiveness and integration of these international trades.

In this context, the Brazilian textile industry has sought a new strategic positioning, in view of strong competition from Chinese products based on cost and lack of experience in operations in markets with high added value. The result was a hard start and that cost the stocks of several companies and many jobs.

Nevertheless, access and availability of credit in Brazil is still a major limiting growth of the economy, in effect, there is a nascent capital markets related to dimensions when the country's economic and financial system addicted to titles governments, given the high domestic interest rates.

Thus, this study proposes to examine the behavior of longitudinal shape of the debt of the textile industry in Brazil and to relate it to business performance. The motivation of this research was to understand what degree of influence of capital structure in the performance of textile companies in Brazil?

The research was structured differently from traditional studies the current capital structure, as a rule, the level of indebtedness of firms is explained by different variables. However, the theoretical orientation here is that the debt affects the performance of companies, so it should explains the results and not be explained by them.

The established hypothesis is that the level of debt has positive influence on corporate performance, because the tax benefit and greater demand for shareholder returns (ROE). In the interest in giving strength to work, the article is structured as follows: The next sections presents a brief literature review, following the methodological procedures are presented for discussion then deliver the outcomes. The conclusion and bibliography conclude the work.

2. THEORETICAL FUNDAMENTALS

There is a consensus in the literature that the financing policy of firms as well as investment management and dividend policy are considered the three major decisions in corporate finance (GITMAN, 2004), (ROSS, WESTERFIELD, JAFFE, 2002) and (ASSAF NETO, 2010). The administration of the investments portfolio, the company's initial paradigm propositions of Modigliani and Miller (MM) on the irrelevance of capital structure to firm value (MODIGLIANI and MILLER, 1958) and the conventional thinking that admits an optimal point that minimizes financing costs (DURAND, 1952). It is noteworthy that Modigliani and Miller later recognize the importance of debt capital in the amount of business

because of the effect of debt service reduction in income taxes (MODIGLIANI and MILLER, 1963).

The assumptions developed about this theory are closely geared to the identification of the total capital cost of the company, as well as minimizing the cost of capital (WACC) and maximization of shareholder wealth. Despite the differences to the value of companies, both doctrines posit that a higher debt to a third party resulting in a greater demand for return to shareholders (ROE), for otherwise it is considered that the cost of capital rises more rapidly than debt capital, which indicates a direct relationship between Debt on Equity (D / E) (ASSAF NETO, 2010).

The discussions involving the financing policy of firms, from the postulates of Durand and especially Modigliani and Miller have expanded in subsequent decades is complementing or contradicting the foundations laid in order to present three new areas: Trade-off , Pecking Order and Agency.

The central issue involves the trade-off theory is the limitation imposed by the direct and indirect costs of bankruptcy that a company would incur high debt levels or the characteristics of the business. Thus, firms with high volatility in its operating results tend to prefer lower levels of debt relative to the average (SAPPHIRE 1989) and (Titman, 1984).

The Pecking Order theory developed by Myers and Majluf (1984) assumes that because of information asymmetries between firm owners and the market, companies prefer to use the limit of own resources in the business for further funding from third parties to use and a final step the issue of new shares.

The Agency Theory developed by Jensen and Meckling (1976) based on different interests of the parties involved in the business, initially, between managers and owners, has expanded the company to foreign creditors, especially when the firm has large amounts of debt to the banks and other institutions.

It is observed that the three theories debt levels reflect directly and similarly to the ROE. Therefore, the theoretical hypothesis to be tested is that the higher the level of indebtedness of the higher returns to shareholders.

In the interest of building a multivariate analysis that helps to explain the ROE, with emphasis on the capital structure of companies, we set up an exploratory

model by pooling the results from the company's operational efficiency (EBIT / Sales), efficiency of investment (Sales / Assets) and firm size (Sales and Assets).

To some extent, the proposed model covers the central concepts of the DuPont model, so this is an exploratory approach, but with assumptions based on a theoretical model widely used in introductory finance textbooks.

3. METHODOLOGY

The paper's methodological orientation quantitative research from secondary data from the base of Gazeta Mercantil, thus became a group of companies available for the textile sector and do not represent a random sample of the universe, but a worked together for the convenience of the data.

Among the possible statistical techniques to be used, we opted for the multivariate multiple regression, because of its current use in organizational studies (HAIR, *et al.* 2005), as well as their potential impact (GUJARATI, 2008). Thus, the technique chosen in the best interests of this research.

The sample average over the computed time 178 companies whose 2006 revenues totaled U.S. $ 7.99 Billions of current values (March/2011). Thus, there is a representative sample of the industry.

The data was tabulated on spreadsheets, where they were used, only the companies that made all the financial information. In addition, data that exceeded four standard deviations from the average were ignored.

The data was transferred to the software Gretl 1.9.4 (GNU Regression Econometric Time - Library series) where besides the regression analyses were provided the necessary tests to check the fit of the model. The equations of the regressions to test the proposed exploratory model were:

$$ROA_i = \beta_1 + \beta_2 OM_i + \beta_3 SC_i + \beta_4 AT_i + \beta_5 LA_i + \beta_6 LR_i + \varepsilon_i$$

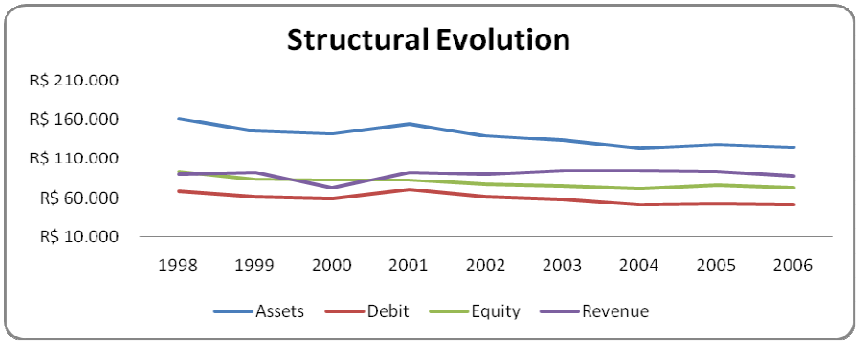
$$ROE_i = \beta_1 + \beta_2 OM_i + \beta_3 SC_i + \beta_4 AT_i + \beta_5 LA_i + \beta_6 LR_i + \varepsilon_i$$

So, OM – operation margin (EBIT/Sales); SC – Structural capital [D/(D+E)]; AT – Assets turner (Sales/Asstes); LA – logarithm of assets; LR – logarithm of revenue and the error term.

4. ANALYSIS OF RESULTS

The data presented in Figure 1 are the average behavior of variables over time, with local values adjusted for inflation (IGP-M March 2011). There is a trend in reducing the size of firms measured by the size of its assets, but with the maintenance of revenue.

Figure 1 - Structural Evolution of the Textile Industry

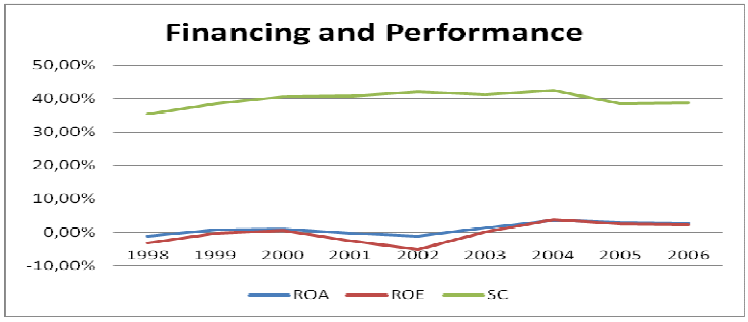


Source: Authores (U$ 1,00 = R$ 1,62)

This evidence confirms the change of strategic direction of Brazilian companies that have sought to add value to products and operate in different market segments.

Nevertheless, the debt profile of this industry over the period under review shows preponderance in the use of equity for the financing of their investments, however, there is a marginal decline in the use of equity over the use of debt by the year 2004.

Figure 2 - Financing Policy and Performance of the Brazilian Textile Industry



Souce: authors

It appears that the level of debt [D / (D + E)] rose to 2004, when he returns to levels seen at the beginning of the period analyzed. However, the behavior of the average profitability of the sector does not have a profile perfectly correlated, as there is an increase of profitability in the first two years, but the return is more representative, only at the end of the period, precisely when the debt is reduced.

Therefore, it is necessary a closer approach to the relationship between the variables highlighted in order, to identify the degree of relationship between politics and the importance of funding and performance of companies in this sector.

Following are the results of the eighteen regressions cross sections divided into two blocks.

Table 1 - Results of Regressions from 1998 to 2002: Dependent Variable ROA

Dependent Variable: ROA																					
	Coefficient					Standard Error					t					p - value				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Const.	-0,156	0,031	0,016	-0,074	-0,087	0,054	0,057	0,062	0,075	0,061	-2,882	0,540	0,259	-0,995	-1,418	0,004	0,590	0,796	0,321	0,158
Oper_Marg	0,102	0,069	0,032	0,144	0,088	0,013	0,013	0,009	0,018	0,014	7,399	5,278	3,582	7,936	6,338	0,000	0,000	0,000	0,000	0,000
Struc_Cap	-0,122	-0,117	-0,151	-0,080	-0,151	0,027	0,031	0,029	0,036	0,030	-4,420	-3,721	-5,206	-2,222	-5,087	0,000	0,000	0,000	0,028	0,000
Asset_turn	0,068	0,011	-0,023	0,048	0,059	0,187	0,018	0,011	0,024	0,021	3,634	0,613	-2,169	1,992	2,832	0,000	0,541	0,031	0,048	0,005
L_Asset	0,039	0,005	-0,011	0,026	0,029	0,010	0,011	0,009	0,013	0,012	3,904	0,483	-1,247	2,016	2,521	0,000	0,630	0,214	0,045	0,013
L_Reven	-0,027	-0,004	0,019	-0,021	-0,021	0,008	0,010	0,007	0,011	0,010	-3,294	-0,400	2,530	-1,878	-2,224	0,001	0,690	0,012	0,062	0,028
			1998	1999	2000	2001	2002				1998	1999	2000	2001	2002					
Aver Depend Variable			-0,010	0,007	0,009	-0,002	-0,011	Stand dev depe variab			0,084	0,099	0,104	0,121	0,099					
Wast sum square			1,058	1,758	1,645	1,834	1,101	Stand w ast regression			0,070	0,090	0,094	0,100	0,081					
R-square			0,308	0,192	0,210	0,335	0,341	R-adjust square			0,292	0,173	0,189	0,317	0,322					
F (5,215,222,194,190,173)			18,64	10,25	10,02	18,52	17,32	P-value (F)			0,000	0,000	0,000	0,000	0,000					

Source: Authors

Table 2 – Results of Regressions from 1998 to 2002: Dependent Variable ROE

Dependent Variable: ROE																					
	Coefficient					Standard Error					t					p - value				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Const.	-0,231	0,063	0,017	-0,168	-0,234	0,095	0,116	0,109	0,124	0,125	-2,432	0,541	0,155	-1,355	-1,871	0,016	0,589	0,877	0,177	0,063
Oper_Marg	0,154	0,135	0,057	0,190	0,155	0,024	0,027	0,016	0,030	0,028	6,324	5,025	3,672	6,286	5,424	0,000	0,000	0,000	0,000	0,000
Struc_Cap	-0,278	-0,188	-0,099	-0,239	-0,405	0,048	0,064	0,051	0,060	0,061	-5,734	-2,920	-1,945	-3,986	-6,670	0,000	0,004	0,053	0,000	0,000
Asset_turn	0,118	0,044	-0,039	0,117	0,187	0,033	0,036	0,019	0,040	0,043	3,582	1,212	-2,045	2,910	4,363	0,000	0,227	0,042	0,004	0,000
L_Asset	0,063	0,018	-0,025	0,050	0,077	0,018	0,022	0,015	0,022	0,024	3,551	0,796	-1,622	2,311	3,262	0,001	0,427	0,107	0,022	0,001
L_Reven	-0,045	-0,021	0,033	-0,038	-0,061	0,015	0,020	0,013	0,018	0,019	-3,064	-1,048	2,482	-2,073	-3,122	0,003	0,296	0,014	0,040	0,002
			1998	1999	2000	2001	2002				1998	1999	2000	2001	2002					
Aver Depend Variable			-0,031	-0,002	0,006	-0,025	-0,051	Stand dev depe variab			0,148	0,200	0,173	0,198	0,208					
Wast sum square			3,264	7,369	5,108	5,068	4,602	Stand w ast regression			0,125	0,185	0,165	0,166	0,166					
R-square			0,301	0,162	0,119	0,314	0,381	R-adjust square			0,284	0,143	0,095	0,295	0,363					
F (5,215,222,194,190,173)			17,97	8,37	5,07	16,81	20,60	P-value (F)			0,000	0,000	0,000	0,000	0,000					

Source: Authors

The proposed exploratory model showed better adherence to the ROE ROA, however, it should be noted that as this is a cross section analysis, the model fit is acceptable, given its stated goal.

It is noteworthy that the level of debt had negative impact on ROE and ROA in every year and the significance was greater than 99% in all years, except in ROA in 2001. It is also among the explanatory variables that capital structure was the most predominant.

Table 3 - Results of regressions from 2003 to 2006 and 10 +: Dependent Variable ROA

Dependent Variable: ROA																				
	Coefficient					Standard Error					t					p - value				
	2003	2004	2005	2006	10+	2003	2004	2005	2006	10+	2003	2004	2005	2006	10+	2003	2004	2005	2006	10+
Const.	-0,087	-0,143	0,213	0,078	-0,268	0,071	0,083	0,088	0,072	0,127	-1,237	-1,726	2,432	1,081	-2,113	0,218	0,086	0,016	0,282	0,037
Oper_Marg	0,069	0,097	0,212	0,049	0,013	0,016	0,022	0,029	0,016	0,004	4,395	4,341	7,444	3,104	3,151	0,000	0,000	0,000	0,002	0,002
Struc_Cap	-0,145	-0,149	-0,069	-0,174	-0,193	0,033	0,041	0,046	0,042	0,044	-4,377	-3,600	-1,500	-4,118	-4,372	0,000	0,000	0,136	0,000	0,000
Asset_turn	0,076	0,115	-0,089	0,051	0,099	0,002	0,023	0,030	0,022	0,018	3,425	4,987	-2,928	2,337	5,516	0,001	0,000	0,004	0,021	0,000
L_Asset	0,026	0,062	-0,088	0,002	0,058	0,015	0,017	0,022	0,016	0,017	1,712	3,655	-3,960	0,123	3,476	0,089	0,000	0,000	0,902	0,001
L_Reven	-0,018	-0,052	0,083	-0,005	-0,036	0,013	0,015	0,020	0,014	0,014	-1,395	-3,499	4,135	-0,372	-2,589	0,165	0,001	0,000	0,711	0,011
			2003	2004	2005	2006	10+					2003	2004	2005	2006	10+				
Aver Depend Variable			0,013	0,036	0,031	0,024	0,029	Stand dev depe variab				0,101	0,126	0,131	0,103	0,075				
Wast sum square			1,127	1,903	1,761	1,019	0,307	Stand w ast regression				0,085	0,108	0,108	0,090	0,057				
R-square			0,312	0,280	0,345	0,265	0,448	R-adjust square				0,290	0,258	0,324	0,236	0,418				
F(5,163,168,157,127, 93)			14,23	12,61	15,94	9,168	15,08	P-value (F)				0,000	0,000	0,000	0,000	0,000				

Source: Authors

Table 4 - Results of regressions from 2003 to 2006 and 10 +: Dependent Variable ROE

Dependent Variable: ROE																				
	Coefficient					Standard Error					t					p - value				
	2003	2004	2005	2006	10+	2003	2004	2005	2006	10+	2003	2004	2005	2006	10+	2003	2004	2005	2006	10+
Const.	-0,177	-0,360	0,149	-0,025	-0,347	0,153	0,158	0,136	0,142	0,311	-1,153	-2,280	1,091	-0,173	-1,116	0,251	0,024	0,277	0,863	0,267
Oper_Marg	0,142	0,170	0,294	0,069	0,019	0,034	0,043	0,044	0,031	0,010	4,151	3,987	6,644	2,233	1,916	0,000	0,000	0,000	0,027	0,058
Struc_Cap	-0,262	-0,288	-0,213	-0,315	-0,369	0,072	0,079	0,071	0,084	0,109	-3,637	-3,659	-2,979	-3,764	-3,396	0,004	0,000	0,003	0,000	0,001
Asset_turn	0,174	0,244	-0,063	0,085	0,165	0,048	0,044	0,047	0,043	0,044	3,625	5,557	-1,338	1,965	3,729	0,000	0,000	0,183	0,052	0,000
L_Asset	0,052	0,122	-0,100	0,020	0,080	0,033	0,032	0,035	0,031	0,041	1,593	3,760	-2,882	0,654	1,950	0,113	0,000	0,005	0,514	0,054
L_Reven	-0,042	-0,099	0,103	-0,012	-0,051	0,028	0,028	0,031	0,027	0,034	-1,498	-3,509	3,311	-0,449	-1,484	0,136	0,001	0,001	0,654	0,141
			2003	2004	2005	2006	10+					2003	2004	2005	2006	10+				
Aver Depend Variable			0,000	0,038	0,027	0,02	0,033	Stand dev depe variab				0,215	0,241	0,204	0,193	0,163				
Wast sum square			5,302	6,870	4,253	3,980	1,851	Stand w ast regression				0,184	0,206	0,168	0,177	0,141				
R-square			0,290	0,293	0,344	0,193	0,285	R-adjust square				0,267	0,271	0,322	0,162	0,247				
F(5,163,168,157,127, 93)			12,81	13,44	15,82	6,09	7,43	P-value (F)				0,000	0,000	0,000	0,000	0,000				

Source: Authors

The results achieved during the period from 2003 to 2006 and analysis of the ten companies with the best performances confirm the analysis carried out previously. It appears that the model has statistical significance, so as to present to explain the better adherence to ROA the ROE.

It appears that the capital structure of companies in the textile sector in Brazil has negative influence on the performance with high statistical significance for the ROE for all years and including the top 10 in performance. In addition, again, the capital structure was the variable that most weight in the performance of companies. In relation to the ROA, capital structure influence negative statistically significant in all years except the year 2005.

Thus, the empirical results obtained show that capital structure influences the performance of companies, however, not positively but negatively. The statistical significance of this variable was high for all years in the ROE and ROA in seven years, which confirms the robustness of the data.

5. CONCLUSION

Evidence of the sector over the period, compared with the theories discussed have an unexpected result, since the level of debt has a negative influence on ROE, whereas it should be positive, given the tax benefits and greater risk as a result. In addition, the theories of agency and Trade-off are not sufficient to support the results because the level of debt is relatively low, to consider costs associated with bankruptcy and attending to different interests.

Perhaps the Pecking Order theory may help explain the results, by assuming that the textile industry is still positioning itself and the market does not yet know the consequences of reorganizations that are occurring in this industry, in fact, there are greater asymmetries of information and need a funding policy with greater weight to equity.

An exogenous variable and that the industry can contribute to the negative effects of a higher debt is the value of real interest rates prevailing in Brazil during the period, exceeding 15% p.a., one of the highest rates in the world. Thus, it presents an opportunity for further research in this sector, including the effect of market interest rates, as well as continuity for the following years (2007, 2008, 2009, 2010), the purpose of observing the behavior of the sector and its financing policy.

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