

FINANCIAL SLACK AS DRIVER OF BRAZILIAN FIRMS' GROWTH

SLACK FINANCEIRO COMO MOTOR DO CRESCIMENTO DAS EMPRESAS BRASILEIRAS

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ABSTRACT

Purpose – To determine the influence of the financial availabilities, as a component of organizational slack, on firms' growth. Researchers' discussions concerning organizational slack reveal instances of heterogeneity and divergence in literature on both from theoretical and empirical perspectives.

Design/methodology/approach – We developed an embracing theoretical framework drew on confirmatory factor analysis and structural equation modeling techniques, we refined and tested indicators for financial slack. We restored just financial availabilities data about Brazilian corporations listed on the B3 market.

Findings – We cannot confirm that all of the states of the financial slack affects organizational growth.

Research limitations/implications – We make further research directions to deepen financial slack knowledge on corporate growth.

Practical implications – For practitioners, we provide new methodological and indicator directions to scale slack and impact on organizational growth.

Originality/value – Research and discussion on organizational choices about generating and taking advantage of slack are essential when considering risk, fund raising and liquidity positions to support organizational growth.

Keywords - Financial Slack; Organizational Slack; Organizational Growth; Performance; Financial Measures.



RESUMO

Propósito – Determinar a influência das disponibilidades financeiras, como um componente do “slack” organizacional, no crescimento das empresas. As discussões dos pesquisadores sobre a “slack” organizacional revelam exemplos de heterogeneidade e divergência na literatura, tanto a partir de perspectivas teóricas quanto empíricas.

Metodologia – Desenvolvemos um arcabouço teórico abrangente baseado na análise fatorial confirmatória e em técnicas de modelagem de equações estruturais, refinamos e testamos indicadores de “slack” financeiro. Restauramos apenas os dados de disponibilidades financeiras sobre as empresas brasileiras listadas no mercado B3.

Resultados – Não foi possível confirmar que todos os tipos de “slack” financeiro afetam o crescimento organizacional.

Limitações e implicações da pesquisa – Ampliamos pesquisas existentes com o intuito de aprofundar o conhecimento do “slack” financeiro no crescimento corporativo.

Implicações práticas – Para os profissionais, fornecemos novas orientações metodológicas e indicadores para dimensionar “slack” e o impacto no crescimento organizacional.

Originalidade/valor – A pesquisa e a discussão sobre as escolhas organizacionais sobre como gerar e tirar proveito da folga são essenciais ao considerar o risco, a captação de recursos e as posições de liquidez para apoiar o crescimento organizacional.

Keywords – “Slack” Financeiro; Folga Organizacional; Crescimento Organizacional; Desempenho; Medidas Financeiras.

1 INTRODUCTION

The issue of organizational growth was the subject of a significant number of studies between 1970 and 1990, when large conglomerates and internationalized corporations built and expanded their operational bases (Eisenhardt & Schoonhoven, 1990).

In the same period, investigations into organizational slacking dealt with issues about performance cycles, innovation, and risk taking in decision making (Singh, 1986). Since then, a significantly small number of research efforts has devoted time to this topic, making the investigations an objectively defined bias field, ranging from studies in strategy, organization theory and finance.

The underlying question is that organizations have not stopped growing, but the spaces and drivers for growth have changed a lot, for example, given the congestion of large players or new technological dependencies. The fact is that organizations continue to depend on the alternance of allocation of sometimes scarce resources and on the use of slacks to take advantage of opportunities of face threats.

Authors that study organizational slack deal with issues such as performance, innovation capacity, and organizational longevity, which are fundamental for research in the Organizational Science area. We found, however, instances of heterogeneity and divergence in literature on both from theoretical and empirical perspectives.

With regard to the theoretical prospects, we identified two perspectives that suggest contrasting effects of organizational slack. According to the first, resources can render services that may be idle at a specific moment and this slack can function as an incentive for organizational growth and renewal (Penrose, 1959), as well as it may be used to foster integrity, thus increasing firms' chances of long-term success (Fleck, 2009).

Agency theory (Jensen & Meckling, 1976), on the other hand, suggests that excessive organizational slack can be used to further the interests of individuals to the detriment of the interests of firms (Davis & Stout, 1992; Tan & Peng, 2003; Love & Nohria, 2005; Jacobsen, 2006; Hicheon, Heechun, & Lee, 2008; Ju & Zhao, 2009; Wan & Yiu, 2009).



In what concerns empirical research, we found studies that have shown distinct and sometimes contradictory results as to the impacts of organizational slack. Given the low convergence of ideas and results of the theoretical and empirical levels, we aim at analyses the relationship between slack — in this study, just financial availabilities — and growth in Brazilian firms.

In order to understand if slack influences organizational growth we organized this paper into four sections. Firstly, we define slack, present its main characteristics, and organize the cumulated knowledge in slack into a framework that relates to its properties (types, states, and measures), and results of slack (impacts on the organization).

We formulated and developed the hypotheses concerning the relation between the financial slack component, and organizational growth, and present the proposed procedures. In sequence, we present the results of exploratory and confirmatory factor analysis, based on a 2015' sample of B3 (BM&FBOVESPA) public Brazilian firms.

Finally, we confront the results with the extant literature, introduce academic and managerial implications, present research limitations, and give directions for further research.

2 THEORETICAL FRAMEWORK

2.1 Definition and characteristics of organizational slack

Most of the researchers do not distinguish the differences among the definitions of slack (Moses, 1992), although the three most cited references (Cyert & March, 1963; Bourgeois, 1981; Nohria & Gulati, 1997) consider different contexts, sources, types, functions, states and outcomes of slack as shown in comparative Exhibit 1. Such diversity of contexts and perspectives relating to the study of organizational slack indicates the theme's potential interest for various domains, e.g. economics, social sciences, political science, strategic management, operations, and research methods (scale measures development).

Regarding the definition of the slack construct, 65 of the examined articles referred to the seminal notions developed by Cyert & March (1963), Bourgeois (1981) or Nohria & Gulati (1997). Six others used other sources, while the remaining 11 failed to define slack. Exhibit 2 depicts the papers according to literature on which they built the construct. .

Most of the accessed works did not provide differences among definitions (Moses, 1992), despite the fact that the three most common references (Cyert & March, 1963; Bourgeois, 1981; Nohria & Gulati, 1997) present different perspectives, antecedents, types, functions, states and impacts of slack.

These authors considered, for instance, the socio-political (Cyert & March, 1963), economic (Nohria & Gulati, 1997) and instrumental (Bourgeois, 1981) perspectives, suggesting that the negotiation between different coalitions during decision making (Cyert & March, 1963) and the organization's failure to use their resources in a more adequate manner (Nohria & Gulati, 1997) may be antecedents of the organizational slack.



Exhibit 1 – Three more cited “slack” references consolidation

Cyert & March (1963, p. 42)	
Slack Definition	Slack is “this difference between total resources and total necessary payments”
Slack Context	Sociopolitical
Slack Sources	Bargaining and negotiation between coalitions with different interests
Slack Types	Financial (payment to shareholders, prices, wages); self-esteem (privileges for executives, creation of units without concern for increased revenue) and image (public services beyond the essential)
Slack Functions	Allow several interests coexist in an organization, permitting its functioning
Slack States	Do not distinguish in different states
Slack Outcomes	Indirectly helps organizations to stabilize and adapt to possible variations in the environment
Bourgeois (1981, p. 30)	
Slack Definition	“Organizational slack is that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment”
Slack Context	Develop measures for slack
Slack Sources	Does not consider the sources of slack
Slack Types	Financial (payment to shareholders, prices, wages); self-esteem (privileges for executives, greater budgetary autonomy); resources for production (inventory, personnel, equipment, delivery, performance requirement, quantity of alternatives for problem solving), and innovation (new products, markets and processes, R & D and market research)
Slack Functions	Maintain coalitions (inducement); conflict resolution; buffer workflow, and political
Slack States	Actual and potential
Slack Outcomes	Innovation, and satisficing (decision taking that meet acceptable criteria, instead of an optimal solution)
Nohria & Gulati (1997, p. 604)	
Slack Definition	Slack is “the pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output”
Slack Context	Economic impact of the slack
Slack Sources	Difficulty in optimizing the use of resources
Slack Types	Financial (capital expenditure, revenue and innovation); resources for production (labor, spare capacity); Navigation (missed opportunities or unidentified)
Slack Functions	Facilitates cooperation between rival coalitions and protects coalitions of unforeseen circumstances, prevents unhealthy conflicts; reduces coordination costs and processing information; allows adjustments to fluctuating demand
Slack States	Distinguish in different states
Slack Outcomes	Innovation or inefficiency

Source: developed by the authors



Exhibit 2 – Main sources for slack definition

Source	Reference
Cyert & March (1963)	Antle & Eppen (1985); Baucus (1988), 1994); Bromiley (1991); Chate- lin-Ertur & Nicolas (2011); Cheng & Kesner (1988); Donada & Dostaler (2005a), 2005b); Duizendstraal & Nentjes (1994); Fernández & Wise (2010); Greve (2003); Horton (1987); Hvide & Møen (2010); Ju & Zhao (2009); Lavie & Rosenkopf (2006); Litschert & Bonham (1978); Miller, Lant, Milliken, & Korn (1996); Miller & Leiblein (1996); Prietula & Watson (2000); Wally & Cher-Min (2000); Wiseman & Bromiley (1996); Wyckoff (1990); Young et al. (1993)
Bourgeois (1981)	Arora (2008); Bourgeois & Singh (1983); Chen & Huang (2008); Cyert & March (1963); Dehning, Dow, & Stratopoulos (2003); Flynn & Farid (1991); Greenley & Oktemgil (1997); Herold et al. (2006); Huang & Chen (2010); Lawson (2001); Lee & Grewal (2004); Lenway & Rehbein (1991); Lopez (2004); Marino & Lange (1983); Moses (1992); Pinsonneault & Kraemer (2002); Riahi-Belkaoui (1998); Sharfman et al. (1988); Sharma (2000); Verdú-Jover, Lloréns-Montes, & García-Morales (2006); Wefald et al. (2010a)
Nohria & Gulati (1997)	Ching-Chou & Hsin-Hua (2010); Chiu & Liaw (2009); García-Morales, Lloréns-Montes, & Verdú-Jover (2008); Peng et al. (2010); Voss et al. (2008)
Bourgeois (1981); Cyert & March (1963)	Bateman & Zeithaml (1989); Bowen (2002); Daniel, Lohrke, Fornaciari, & Turner Jr (2004); Haas (2006); Hicheon et al. (2008); Love & Nohria (2005); Tan (2003); Tan & Peng (2003); Wan & Yiu (2009)
Cyert & March (1963); Nohria & Gulati (1997)	Dembla, Palvia, & Brooks (2007); Geiger & Cashen (2002); Seifert, Morris, & Bartkus (2004)
Bourgeois (1981); Cyert & March (1963); Nohria & Gulati (1997)	Álvarez-Gil, Berrone, Husillos, & Lado (2007); Lin et al. (2009)
Slack is defined according to other authors	Damanpour (1987); Heng & Xiuhao (2010); Patrick & Trussel (2011); Poynter & White (1984); Ruiz-Moreno, García-Morales, & Llorens-Montes (2008); Subramanian & Nilakanta (1996)
Slack is not defined	Jacobsen (2006); Meyer (1982); Panzano & Billings (1994); Richtnér & Åhlström (2010); Rosner (1968); Schiff & Lewin (1968); Singh (1986); Su et al. (2009); Wefald et al. (2010b); Yasai-Ardekani (1986); Young (1999)

Source: developed by the authors.

Intent on gathering different perspectives from the most quoted authors (Cyert & March, 1963; Bourgeois, 1981; Nohria & Gulati, 1997), this study synthesizes these definitions as follows: organizational slack is a set of resources added to those that are necessary to maintain the organization's current level of production. Those resources vary in nature (people, operational assets, relationships, time, control, technology and financial resources) and are present in various degrees of user-friendliness (available, potential and recoverable).

Thus, slack can be measured in different ways and may present several functions (generating or destroying value). These functions, in their turn, may influence a company's capacity for innovation, performance (for which growth is a necessary condition), risk related and top management behavior, as well as tendency to adopt simplistic strategy models and to interpret environmental issues as threats. For this synthesis, value creation consists of securing benefits that rank above slack development and maintenance costs (Lepak, Smith & Taylor, 2007).

But only the existence of organizational slack is not enough to provide better performance: without the mediation of a consistent strategic planning and management process, synergy effects decline, as evidenced by Fadol, Barhem & Elbanna (2015) studying 102 United Arab Emirates health organizations.



From the standpoint of the life cycle of organizations supported by entrepreneurial capital, Paeleman & Vanacker (2015) identified effects of moderation between financial and human resources slack and the performance of organizations supported by angels or venture capitalists, which are more determinant in the extraction value of human resources, especially when CVs maintain a higher proportion of invested capital.

For Marlin & Geiger (2015), in view of the existence of several types of slack — almost always interconnected by the financial slack — not only the quantity of slack would be relevant to understand the performance of the organizations, since there is no unanimity about the role of slack neither in the short nor in the long term. Thus, the way to package the various types of slack could be more or less determinant for performance, and stems from the managerial astuteness of the application of free resources in the various forms enabled by strategic decisions (Marlin & Geiger, 2015).

When studying the antecedents for development of organizational slack according to Sharfman's typology — industry, organization and interest groups — Quintas and Beuren, (2011) point out that there is no conceptual uniformity, but evolution around approaches that focus on the themes of innovation and strategy. However, the metrification and measurement of slacks still remains as a point to be explored.

2.2 Financial slack: controversies and implications

The occurrence of extraordinary financial resources beyond the needs of the operational cycle of a firm has been studied from several angles and reasons, but often, confronting the logic of efficiency with that of flexibility (George, 2005).

Authors who defend the maximization of financial management results argue that the existence of financial slacks may imply misallocations relative to the interests of shareholders considering value creation, while those that point to the additional availability as support for organizational flexibility argue that some loose coupling may favor innovation and growth that will revert not only to shareholders but to stakeholders in an amplified fashion (Smith & Kim, 1994; Chang et al., 2007). So, there is some beyond financial reasoning on the trade-offs considering financial slack policy — and this affects transactions as a whole: “Too much slack encourages managerial misbehavior and exacerbates corporate agency problems. Too little slack prevents the firm from exploiting profitable investment opportunities” (Triantis, 2000).

Almazan (2010) discusses the existence of extraordinary financial resources as mechanisms adopted by companies that are located in industrial clusters, especially when they are installed in the vicinity of high-tech cities. Thus, growth opportunities would affect financial decisions in a recursive manner and could provide better conditions for advantages in fundraising.

Modi and Mishra (2011) investigated the financial performance of US publicly traded manufacturing companies based on Tobin's Q, on stock returns and on asset returns, in a 16-year window, finding results that corroborate propositions that oppose maximization of financial efficiency with the occurrence of decreasing returns.

For Bradley; Shepherd & Wiklund (2011, a), the existence of resources available in the form of slack is essential for the permanence and the creation of value by companies born in difficult times. From the analysis of 951 firms at a young age, it was identified that the financial slack functions as a shock absorber and as an enabler of experimentation and organizational flexibility. Bradley; Shepherd & Wiklund (2011, b) also consider that financial slack can be a double-edged sword, since it has a direct effect on growth, but it can attenuate the entrepreneurial attitude.



Zona (2012), analyzing Italian companies, discusses the importance of the existence of financial slack as an organizational resource that induces innovations during periods of crisis and, in general, as a driver of investment performance.

Leary and Roberts (2005) discuss financing and capital structure decisions from a pecking order perspective, noting that the need for “relaxed” resources for R & D or intangible investments can lead to distinct patterns of financial slack formation: firms with greater volatility in cash flows tend to rely more on slack than those already mature and established.

Thus, the availability of extraordinary financial resources to support organizational growth through projects in which some information uncertainty, bounded rationality and asymmetry — R&D, M&A, diversification, CSR projects and so on — prevails in capital structure decisions (Hadlock & James, 2002) would lead to different approaches (types), availability (states), and patterns (metrics) as to the existence and purpose of the financial slack.

The existence of financial slack has been specifically researched to seek evidence regarding the price and performance of shares traded on stock exchanges. For Beuren, Starosky Filho and Krespi (2014) there would be evidence of an inverse relationship between slack and short-term performance — although in the long term there is a decrease in effect — when analyzing 273 companies from 2006 to 2010.

In the period from 2010 to 2014, Heinzen, Furtado Sell & Silva (2016) identified that the financial slack in isolation does not generate effects on the return of shares traded on the stock exchange — a sample composed of Brazilian companies, with less financial slack and Chilean companies, with more financial slack; with higher returns for Brazilian companies when they adopted the Price Earning Ratio, Price Cash Dividends and Price Book Value variables.

2.3 Slack characteristics in a framework

Following the recommendations of Johnson, Langley, Melin, and Whittington (2007), this investigation developed a framework (Figure 1) which structured the data gathering and analysis. In that vein, the following three questions will guide the analysis of slack’s characteristics: (i) What kind of slack? (Types); (ii) In what quality? (States); and (iii) How much slack? (Measures).

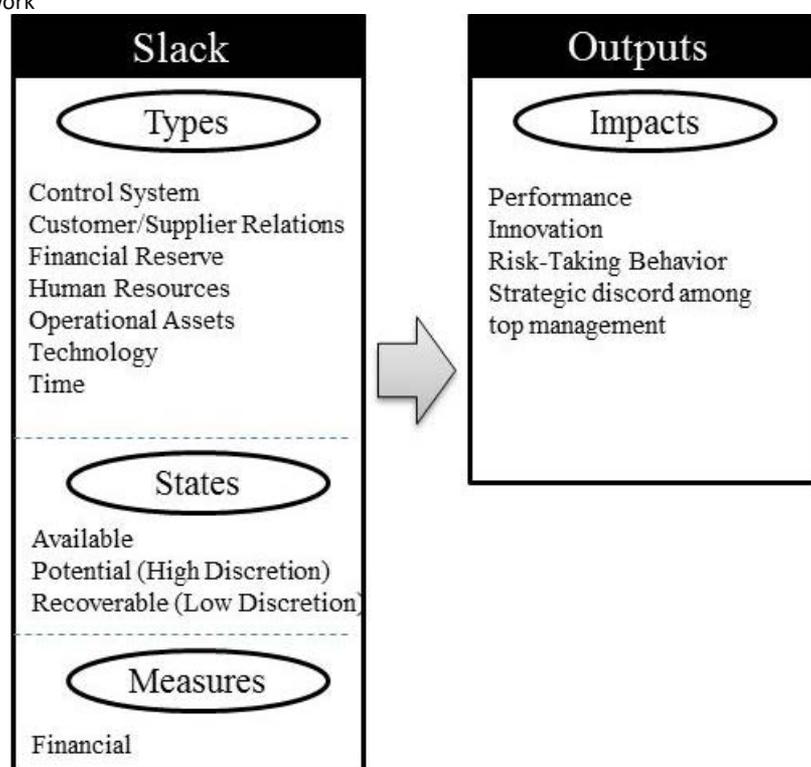
2.3.1 Types

This review has identified human resources, time, client-provider relationship, and financial surpluses as potential candidates for slack. Despite an apparent convergence of definitions, intangibility of this type of resource is still an issue for discussion. Whereas some papers defend that slack must be tangible (Sharfman, Wolf, Chase, & Tansik, 1988; Lin, Cheng, & Liu, 2009), others consider concepts such as company-client relationship to be a type of slack (Donada & Dostaler, 2005a, 2005b). For a presentation of accumulated knowledge on slack, both tangible and intangible resources have been considered.

Slack of human resources may be perceived in cases where the number of people working for a company is greater than what is needed for company activities (Poynter & White, 1984). However, this type of slack may also be characterized by the difference between an employee’s best performance and his/her average performance (Young, Fisher, & Lindquist, 1993), or by means of the skills workers have and do not use (Voss, Sirdeshmukh, & Voss, 2008). Surplus in human resources is hard to identify and, therefore, hard to reallocate (Love & Nohria, 2005; Voss Et Al., 2008).



Figure 1 – Framework



Source: the authors

Slack in the form of time is indicated in cases where organizations need to develop new products or deal with sensitive technologies (Haas, 2006; Richtnér & Åhlström, 2010), particularly technologies that may potentially damage the surrounding society, i.e. nuclear power plants (Lawson, 2001). Some studies thus recommend to allocate slack in the form of time in order to learn about the use and risk of dealing with such technology, which enables production of the knowledge that is needed to avoid further risks to society (Lawson, 2001; Richtnér & Åhlström, 2010).

Allocating extra resources for publics whose interests may create value defines the client-provider relationship as another type of slack (Donada & Dostaler, 2005a, 2005b; Voss et al., 2008). Expenses with integrating client and provider systems, and the availability of working teams to improve client products, are examples of relational slack that may help managers reduce the impact of environmental changes. Based on these initiatives, a supplier may influence decisions related to changes by the most relevant clients (Donada & Dostaler, 2005a, 2005b).

Operational slack is a surplus of production-dedicated resources. Despite the ease of access to this type of resource, the specificity therein (function limitations) and the lack of other resources associated with its use (i.e. human resources) restrict the use of slacks of this sort. So, operational resources cannot be immediately reallocated to other activities (Voss et al., 2008).

Finally, at moments of turbulence, the availability of accumulated financial resources is yet another type of slack. This slack can be used to acquire new technologies and hire more human resources, which will enable slack in technology and personnel. In their turn, these slacks may be useful for the creation of new services. In this context, companies invest in control systems, so much so that diversified services and personnel are uncoordinated in a way that harms organizational performance (Meyer, 1982).

2.3.2 States

Slack may be classified according to how easily slack generating resources can be reallocated, which may be found as available, recoverable and potential. The available slack corresponds to company resources for immediate use, though not incorporated to company activities yet. Recoverable slack also refers to company resources, but, unlike available slack, these resources are dispersing amidst productive resources. Lastly, potential slack deals with the company's capacity to secure resources available from the environment (Bourgeois & Singh, 1983).

The idea of considering the different states of slack originates from an assessment of financial resources. Efforts to reallocate a company's cash resources, or resources from accounts receivable and available credit lines are different, because they require various skills and resources that will turn slack into a production resource (Bourgeois & Singh, 1983). Like financial resources, other types of slack may also present different states. The difference between states of slack leads managers to use resources differently, because the greater the availability of a resource, the greater the capacity for reallocation in different situations (Sharfman et al., 1988).

Also, different states of slack may lead to different impacts on the organization. For instance, available or potential slack may have a positive effect on organization performance, whereas recoverable slack may present a reverse effect (Ju & Zhao, 2009). Additionally, the capacity to deal with slack in different states is a function of the planning horizon, because managers need more time to reallocate recoverable slack than to reallocate available slack (Wefald, Katz, Downey, & Rust, 2010a).

2.3.3 Measures

Measures of organizational slack can be classified according to temporal characteristics and the degree of subjectivity. Concerning the former, the relative view considers the level of slack along time, comparing past and current slack (Tan, 2003), whereas the absolute perspective considers only the current level of slack. When it comes to the latter, the subjective view considers the perception of individuals, and the objective view considers the use of observable measures (Marino & Lange, 1983). Though there are various forms to organize the measures of slack, most studies classify those measures according to how easy it is to recover (see dimension States).

In the literature on measuring slack in different states, prevailing measures are based on financial availability indicators. Additionally, the studies have not dedicated to analyzing differences between measurements related with the same state of easy reallocation of slack. Pre-approved credit lines (Sharfman et al., 1988) and share price/profit ratio (Bourgeois & Singh, 1983) are examples of metrics to quantify the capacity to secure financial resources available from the environment. However, though they measure the potential slack, the resources considered in these metrics have different origins (financial institutions and investors) and generate different impacts on the organization, i.e., reduced tax burden and risk sharing (Ross, Westerfield & Jaffe, 2002).

Measurements of potential slack reflect organization's capacity to acquire resources available from the environment (Bourgeois & Singh, 1983). To this state, most financial slack measures identified are related to an organization's capacity to fund its activities by means of credit lines or resources from potential shareholders. However, some researches also suggest production driven measurements, such as raw materials, potential skills, and machine capacity (Sharfman et al., 1988).

The measurements of recoverable slack reflect an organization's capacity to reallocate resources or to increase the efficiency of resources used (Bourgeois & Singh, 1983). Similar to what has been identified in measurements of potential slack, measurements of recoverable slack may be financial, material for operation, machinery and human resources. Most measurements identified



for this state compare an organization's indirect expenses with their capacity to generate revenue.

The metrics for available slack consider company owned resources that may be reallocated without the need for restructuring current activities (Bourgeois & Singh, 1983). Research studies have measured financial resources, either relative or absolute, as available slack.

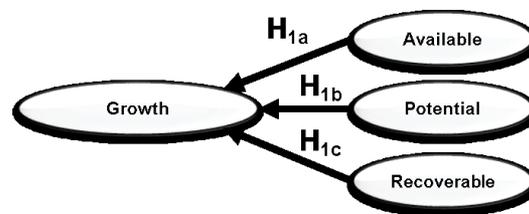
3 PROCEDURES

In order to test if financial availabilities — slack — has a positive effect on organizational growth, we developed the following hypotheses drawn in the extant literature:

- Hypothesis 1a. Available Financial Slack has a positive effect on organizational growth.
- Hypothesis 1b. Potential Financial Slack has a positive effect on organizational growth.
- Hypothesis 1c. Recoverable Financial Slack has a positive effect on organizational growth.

In line with this, and drawn on the extant literature concerning the measures of slack states, we developed a model in order to identify the three states of slack as antecedents of organizational growth. Based on the recommendations of Guasch et al. (2002), as well as the aforementioned sources of reference, the following research hypotheses were identified from the model depicted in Figure 2, as well as the indicators presented in Exhibit 3.

Figure 2 – Conceptual model



Source: the authors

Although we recognize the importance of the many types of slack in their several states, these resources have direct and indirect effects on firms that should be accounted on financial statements. Therefore, the authors considered measures drawn on financial measures.

3.1 Sample selection and data collection

For this survey, we selected a representative sample of 290 Brazilian firms which publicly trade their shares in the Brazilian market (B3 - BM&FBovespa), according to the availability of required financial information on Bloomberg Terminal®.

In order to investigate the possible relations between slack (independent factor) and organizational growth (dependent factor), we used statistical methods capable of revealing such relationships. Thus, we developed a structural equation model, so cross-sectional analysis in 2015 could be observed.

Exhibit 3 – Measures of Financial Slack

Measures	Reference
Growth	
Total equity growth (2015-2014)	Bloomberg, 2016
Book value per share growth (2015-2014)	Bloomberg, 2016
Cash from operations growth (2015-2014)	
Revenue growth (2015-2014)	
Potential Slack	
Equity to Debt Ratio	Bromiley (1991); Cheng & Kesner (1997); Chiu & Liaw (2009); Geiger & Cashen (2002); Herold, Jayaraman, & Narayanaswamy (2006); Lin et al. (2009)
Cash and Equivalents	Sharfman et al. (1988)
Current liabilities / Stockholder equity	Moses (1992)
Long Term liabilities / Stockholder equity	Moses (1992)
Long-term Debt / Net Worth	Bourgeois & Singh (1983)
Recoverable Slack	
Sales, General & Administrative Expenses/ Sales	Bourgeois & Singh (1983); Bromiley (1991); Cheng & Kesner (1997); Chiu & Liaw (2009); Geiger & Cashen (2002); Herold et al. (2006); Love & Nohria (2005); Moses (1992); Wefald, Katz, Downey, & Rust (2010b); Wefald et al. (2010a)
Accounts payable	
Current Ratio	Lin et al. (2009)
Accounts receivable / Sales	Bourgeois & Singh (1983) & Moses (1992)
Inventory / Sales	
(Current Assets – Current Liabilities) / Sales	Moses (1992)
Non-current assets / sales	Moses (1992)
Available Slack	
(Current Asset–Current Liabilities) / Total Asset	
Debt/Total Asset (inversed)	
Quick Ratio	Ju & Zhao (2009)
(Gross profit – Net profit)/Sales	
Loans	
Sales Expenses	
Retained Earnings	
Dividends / Net Worth	Bourgeois & Singh (1983)
(Cash; Securities – Current Liabilities) / Sales	Bourgeois & Singh (1983); Riahi-Belkaoui (1998); Moses (1992)
Retained Earnings / Total assets (year t-1)	Tan (2003)
Net Income / Sales	Moses (1992)
Change in stockholder equity / Sales	Moses (1992)

Source: The authors



3.2 Scales development

In order to define scales to measure the three states of slack, we used an exploratory factor analysis (EFA). Thus, the six stages proposed by Hair, Anderson, Tatham, and Black (2010) were followed, namely (i) objectives of analysis, (ii) research planning, (iii) hypotheses for analysis, (iv) determination of the factors and assessment of the general goodness of fit, (v) interpretation of the factors, and (vi) validation of the factor analysis.

So, this is a hypothetical deductive study, based on a multivariate quantitative technique, which seeks to describe the existence of dependency relations to enable a better understanding of how much the availability of financial resources, somewhat idle, contributes to the growth of organizations, using the formative latency of data obtained in accounting statements to construct the model variables, both dependent and independent.

3.3 Measurement model

Departing from a set of hypotheses and approaches, researchers must formulate models with specific aims to represent reality. Therefore, we mean to depict adequately the characteristics of the reality under analysis to build an adequate model. Beside this, the model is an abstract and straightforward representation of the studied reality to simplify the maintenance, adaptation, and its reuse.

Therefore, the results accrued from the exploratory factor, we performed a structural equation modeling (SEM) for confirmatory factor analysis, as recommended by [Hair et al. \(2010\)](#). In order to achieve this, we followed these seven stages: (i) to set up a theoretical model, (ii) to develop a path diagram, (iii) to transform the path diagram into a set of structural equations, (iv) to select the data entry matrix to be used, (v) to evaluate and analyze the model, (vi) to assess the need of adjustment of the model, and (vii) to interpret and modify the model. In this work, we used AMOS v.17 software to transform the path diagram into structural equations.

4 RESULTS AND ANALYSIS

4.1 Exploratory factor analysis of dependent variables

Initially, the Kaiser–Meyer–Olkin (KMO) and Bartlett sphericity statistics were applied, both leading to acceptable values according with by Hair et al. (2010) and Malhotra (2001), indicating the possibility to use the exploratory factor analysis method. Then we used the anti-image-matrix to measure the explanatory power of the model's indicators. The values greater than 0.5 in the principal diagonal lead us to consider the indicators as significant.

We identified the communalities and the loading factors in order to verify the attunement of the representation of the variables with the factors, as well as the level of association of the variables with only one factor (HAIR et al., 2010). Considering the communalities below 0.5 for two indicators, we revealed that a common factor possibly does not successfully explains the variance of the indicators (HAIR et al., 1998). However, a single factor represents the four indicators and the eigenvalue is greater than 1 (HAIR et al., 1998).

In order to assess the measurement reliability of the dependent variable, Cronbach's α was calculated at 0.66. Although, George and Mallery (2003) point out that a Cronbach's α between 0.60 and 0.70 is questionable, we proceed with this construct because the existent literature concerning slack did not presented indicators to measure growth, in the context of the relationship between this construct and slack, see Exhibit 4.



Exhibit 4 – Exploratory factor analysis summary – dependent variables

Variables	Mean	s	Factor	Extraction*
Total Equity Growth (2015-2014)	7.08	19.01	0.90	0.82
Book Value per Share Growth (2015-2014)	4.49	18.54	0.85	0.72
Cash From Operations Growth (2015-2014)	6.53	20.77	0.60	0.36
Revenue Growth (2015-2014)	8.77	21.15	0.43	0.19
Eigenvalues				2.09
Explained Variance				52.19%
Cronbach's alpha				0.66
Bartlett – Sig.	0.00			
KMO	0.57			
Cumulative Explained Variance	52.19%			
* Communalities				
n = 290				

Source: developed by the authors.

Even in view of the low communalities determined for the variables “Cash From Operations Growth” and “Revenue Growth”, these were maintained in view of being an exploratory analysis and with the purpose of preserving the nomological network, taking into account that the admissibility of a construct is that at least some of its components are observable and confirmed from the underlying theory (CRONBACH; MEEHL, 1955).

4.2 Exploratory factor analysis of independent variables

We repeated the same procedure adopted for the factor analysis of the dependent variable for the factor analysis of the independent variables. At the end of the analysis by the latent root criterion, three factors presented the best fit to consolidate the indicators accrued from the theoretical background, as eigenvalues greater than 1.0 for the model with up to three factors were obtained (Hair et al., 1998).

The differences between the factor set forth in the previous model and the one obtained by exploratory factor analysis were (i) the exclusion of Potential Slack (Hair et al., 1998), which did not reveal communality greater than 0.5, and (ii) the unfolding of Available Slack into Relative Available and Absolute Available. The scales for relative Available and Recoverable Slack are acceptable according to its Cronbach's α – 0.75. and 0.73, respectively (George & Mallery, 2003). Differently, we obtained a Cronbach's α of 0.82 for recoverable, which George and Mallery (2003) classify as good (see Exhibit 5).

Exhibit 5 - Exploratory factor analysis summary – independent variables

Variables	Mean*	s	Factor**			Extraction Communalities
			Relative	Absolute	Recoverable	
Net Income / Sales	122.58	1,479.28	0.99			0.98
(Gross profit – Net profit) / Sales	122.86	1,479.33	0.99			0.98
Change in stockholder equity / Sales	11.06	134.28	0.99			0.98
Non-current assets / Sales	33.28	276.72	0.91			0.89
Retained Earnings / Total assets (year t-1)	0.80	4.98	0.79			0.62
Payables & Accruals (R\$ x 103)	711.24	3,715.63		0.98		0.95
Selling Expenses (R\$ x 103)	588.15	2,068.83		0.89		0.79
Loans (R\$ x 103)	3,910.86	22,295.16		0.86		0.74
Retained Earnings (R\$ x 103)	223.00	5,743.33		0.79		0.64
Working Capital (***) / Sales	- 9.32	143.80			0.99	1.00
Quick Availability (****) / Sales	- 10.21	144.78			0.99	1.00
SG&A/Sales	- 1.07	15.30			0.99	0.99
Eigenvalues			4.38	3.22	3.11	
Explained Variance			36.53%	25.88%	25.48%	
Cronbach's alpha			0.75	0.73	0.82	
Bartlett – Sig.	0.00					
KMO	0.71					
Cumulative Explained Variance	87.89%					

* Values are expressed according the local GAAP

** Rotated factors

*** (Current Assets – Current Liabilities)

**** (Cash + Short Term Securities – Current Liabilities)

n = 290

Source: the authors

4.3 Confirmatory factor analysis

After performing exploratory factor analysis, we conducted a confirmatory factor analysis (CFA). The main objective of CFA is to test the validity of the constructs identified by exploratory factor analysis (Garver & Mentzer, 1999). After conducting the first five stages of the CFA procedure, the need to adjust the model to the data obtained in the research was identified (stage 6), where-

by the offending estimates were verified and the goodness of fit measures were compared to the established values (Reisinger & Turner, 1999; Hair et al., 2010; Devellis, 2011). In these steps for the measurement model test, the Recoverable Slack construct was not statistically significant, and therefore we removed it from the model.

After the discarding this construct, we test the convergent validity of the measurement model by means of comparing Average Variance Extracted (AVE) and Squared Interconstruct Correlation (SIC). Considering an AVE (0.757 for relative available and 0.614 for Absolute Available Slack) higher than SIC (0.001) the model achieved the discriminant validity (Gallagher, Ting, & Palmer, 2008). We analyzed convergent validity through factor loadings which were all significant and greater than 0.5 (Gallagher et al., 2008).

After the analysis of both the convergent and discriminant validities, we assessed the goodness of fit indices of the model. All the measures complied with the theoretically established standards, except for Parsimony Goodness-of-Fit Index (see Exhibit 6).

4.4 The revisited model and revision of research hypotheses

In order to analyze the impacts of financial slack on organizational growth, we refined the research hypothesis drawn on the revisited model as shown below (see Figure 3):

- Hypothesis 1a'. Relative Financial Available Slack has a positive effect on organizational growth.
- Hypothesis 1a''. Absolute Financial Available Slack has a positive effect on organizational growth.

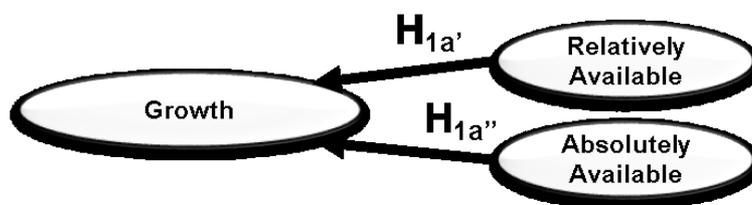
Exhibit 6 - Goodness of fit indexes

Index	Parameter	Author(s)	Result
<i>Absolute goodness of fit measurements</i>			
P-value of X ²	> 0.05	Hooper, Coughlan, and Mullen (2008)	0.36
CMIN/DF	< 2	Tabachnick and Fidell (2007)	1.07
RMR	< 0.10	Blunch (2008)	
<i>Relative goodness of fit measurements</i>			
NFI	> 0.90	Klem (1995)	0.98
CFI	> 0.90	Klem (1995)	0.99
TLI	> 0.90	Klem (1995)	0.99
<i>Parsimony-based goodness of fit measurements</i>			
PRATIO	> 0.6	Blunch (2008)	0.67
PGFI	> 0.6	Blunch (2008)	0.52
<i>Goodness of fit measurements in non-central X² distributions</i>			
RMSEA	< 0.05 < 0.08 is acceptable	Blunch (2008)	0.02
PCLOSE	> 5%	Kline (2015)	94%

Source: the authors



Figure 3 - Conceptual model after CFA



Source: the authors

After processing the structural model, we only confirmed the hypothesis concerning Absolute Financial Slack. However, despite the fact that standardized regression weights was statistical significance, this construct revealed a weak relation of 0.20 with the organizational growth scale. Finally, Absolute Financial Available Slack helps to explain only 4% of organizational growth's variation.

5 FINAL REMARKS

In view of our purposes to investigate the effects of financial slack on the organizational growth of Brazilian companies, we formulated study hypotheses and developed framework and data modeling that could identify, albeit weakly, the relationship between Absolute Slack and Organizational Growth, whose implications and limitations we will enunciate in the sequence.

Putting forward the slack measurement developed by several authors, we initially seek to develop a model that considers the three states of financial slack (available, potential and recoverable). However, we could establish a scale for only two slack states, namely recoverable and available (the last one unfolded in absolute and relative).

Regarding the hypotheses H1b — Potential Financial Slack has a positive effect on organizational growth — and H1c — Recoverable Financial Slack has a positive effect on organizational growth —, the relationship between not immediate Available Slack and organizational growth could not be tested due to the lack of valid and reliable scales.

On the other hand, the H1a was unfolded in two hypotheses. The relationship between Relative Available Slack and growth (H1a') was not statistically significant, and the relationship between Absolute Available Slack is weak although it is significant. Therefore, the result leads us to find **slack has a weak influence on organizational growth of Brazilian firms.**

In that vein, in the tug-of-war between agent theorists and Penrosians, the findings in this article lead us to agree with the first ones, leastwise in Brazil.

Regarding the implications to the practitioners, this study shows that the mere existence of organizational slack does not lead to any competitive advantage. Thus, in order to seek organizational growth, managers should elicit the mechanisms through which the use of resources (including slack resources) leads to organizational growth (Penrose, 1959; Barney, 1991; Fleck, 2009).

Furthermore, the insights given by agency theorists became valuable for practitioners. It is possible that some Brazilian firms maintain certain levels of organizational slack in order to achieve individuals' interests at the expense of shareholders' interests (Davis & Stout, 1992; Tan & Peng, 2003; Love & Nohria, 2005; Jacobsen, 2006; Hicheon et al., 2008; Ju & Zhao, 2009; Wan & Yiu, 2009). In that vein, executives have to establish mechanisms of incentives and control to avoid slack building to induce self-interest behavior.

This research also sets forth some academic contributions collating different perspectives from several authors. Most of quantitative studies concerning organizational slack does not propose

an overarching model to relate great part of slack measurements. Therefore, this research seeks to essays to seed attempts to stablish a robust slack measurement model.

Whereas that many types of resources can constitute organizational slack, the use of financial measures as a proxy for slack can reduce the content validity, because these variable may not adequately reflect the organizational slack construct (Devellis, 2011). In the same vein, the construct organizational growth deserves more attention concerning a model development. Due to this research gap the scale developed to measure organizational growth presented a low Cronbach's α , which can influence even the validity of the findings (Pedhazur & Schmelkin, 1991; Devellis, 2011).

Furthermore, it is important to stablish that the literature used to develop the measurement model do not exhaust all the cumulated knowledge on slack or on organizational growth. Additionally, we looked at this phenomenon on a variance oriented standpoint that do not seek to elicit the mechanisms through which managers create and employ slack envisioning organizational growth (Mohr, 1982). Researches in that perspective focus on variables that represents important aspects or attributes of the studied phenomenon, and use statistical methods for data analysis, e.g. analysis of variance (ANOVA), regression analysis, exploratory factor analysis, and structural equation modeling. Its main objective is to generalize the findings for several situations in which theoretical propositions apply (Poole & Van De Ven, 2004).

Differently, process-oriented research focuses in longitudinal analysis of sundry events that unfolds in a determined time span. Then, explanations of this sort of study tends to be more complex than in variance-oriented research inasmuch as processes are dynamic and present multiple connections among these events that compose them (Poole & Van De Ven, 2004).

For future research, two main types of studies can be envisaged: variance and process-oriented research (Mohr, 1982). Process-oriented studies can be useful to gain an understanding of the functioning of slack generation mechanisms (e.g. organizational learning mechanisms) and how slack's origin influences organizations' innovation or performance capacity. The framework used in the present article (Figure 1) may serve as a starting point for such studies.

With respect to slack creation mechanisms, future research could offer insights into the conditions that help identify which resources could constitute slack generators. As for the influence of the conditions that originate slack, future studies could identify the conditions that are necessary for the appearance of slack and waste. In this context, it would be very useful to distinguish these two concepts. With this aim, process studies could investigate mechanisms capable of creating (destroying) value based on slack and how value could be captured. Thus, these studies could consider the effects of competition – attempt to replicate innovations used by other firms to create value – and isolation mechanisms – barriers that inhibit the actions of competitors – on the capture of value resulting from the management of slack (Lepak et al., 2007).

Variance studies could help develop multidimensional measures of slack, considering their various types and states, as well as differences between the measures identified. This approach could also be useful to quantify the impacts of slack on organizations and the influence of the context in this relation. Thus, the development of new measurement scales could, for example, provide the means for testing the influence of the cultural and economic characteristics of specific geographic regions on the creation and use of slack and thus the effects of this influence on the organization. Studies of this kind encompass areas like anthropology, sociology, and international business.

Finally, studies using the variance approach could create measurement models for each of the dimensions presented in Figure 1 and test the relations among these dimensions using structural models.



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1. Definition of research problem	√	√
2. Development of hypotheses or research questions (empirical studies)	√	√
3. Development of theoretical propositions (theoretical work)		√
4. Theoretical foundation / Literature review	√	√
5. Definition of methodological procedures	√	√
6. Data collection		√
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