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Internationalization Strategies: A Theoretical Approach to the Input Mode Choices in the Foreign Market and the Inclusion of Real Options Modeling for Decision Making

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Abstract

This theoretical essay aims to present the main approaches to the strategic decisions of internationalization and enter a discussion on the inclusion of real options theory in decision making that involves the input mode choices in the international market. Multinationals are faced with the acting choices in international trade, foreign direct investment (FDI) and the contractual relationship. The relevance of this study is through the introduction of a discussion of the new approach (real options) to input mode setting in the international market. Therefore, we present the main approaches to international business theory as well as its extensions. The methodology was descriptive. The strategic decision to internationalization involving the choice of input mode is a special case of diversification strategies. Three approaches to strategic decisions on internationalisation have been identified: the product life cycle approach, vision-based on dynamic features and capabilities and approach of real options. The approach of real options is a response to the needs of managers to capture the uncertainty and turn it into opportunity. It was not possible to identify trends in the approaches of the international theory and the strategy of input modes; however, the contribution of this paper is focused on strengthening and broadening the discussion on the use of an approach that provides for the capture of uncertainty not held by other theories existing related to international business. It is observed that no theory overlaps the other, but they complement each other: the approach of the product life cycle is complemented by the approach of the resource-based view and dynamic capabilities; the discussion is expanded with consideration of environmental uncertainty captured by approach to real options theory that provides the transformation of uncertainty into opportunity.

Keywords

Internationalization, Strategy, Product Life Cycle, Resource Based View, Real Options, Brazil

1. Introduction

The internationalization process grew after the Second World War. In Brazil, the process began in the 1990s. It is, therefore, a variable resulting from the globalization of the economy, which had multinational companies as its main agents. Faced with increased competitiveness, national companies needed to restructure and go in search of new markets. All this dynamic resulting from globalization provokes an academic reflection on the main approaches of international business theory.

Over time, several approaches emerged that strengthened the theory of international business. Mello Dias (2012) in his doctoral thesis integrates different theoretical approaches in order to produce an unprecedented and comprehensive view on the choice of entry mode in the foreign market and its impact on the performance of Brazilian subsidiaries; the researcher divides them into static and dynamics, including the Resource Based View (RBV) approach as static. Li and Rugman (2007) extend the current of thought related to international business, considering the choices of multinational companies regarding location and choice of mode of entry in the market considering an environment of uncertainty.

Having as main objective of this article the presentation of the main approaches on the strategic decisions of internationalization and inserting a discussion about the insertion of the theory of real options in the decision making that involves the choices of the mode of entry in the international market, the sections will be divided from the as follows: Section 2 is composed of the theoretical framework that will begin by presenting the main ideas of some authors on international strategy regarding the mode of entry; in order to make a decision regarding the entry mode, the manager deals with exogenous and endogenous uncertainties, which is the reason for the existence of Section 2.2, where the importance of taking uncertainty into account for the elaboration of strategies using the real options approach is highlighted; in Section 2.3 the discussion will be guided by the existing choices regarding the input mode; in Section 2.4 one of the main entry modes will be presented, which is through foreign direct investment; the last section, number 2.5, will present the studies by Li and Rugman (2007) who presented a methodology capable of helping in the choice of entry mode in an environment of uncertainty, demonstrating the contribution of the theory of real options to the approaches to strategic decisions in international Business. Chapter 3 will be dedicated to the classification of the methodology adopted for the construction of this theoretical essay. Then, in the fourth chapter, the entire discussion of the described approaches will be exposed as well as the identification and justification of the most efficient approach in an environment of uncertainty. The last chapter (5) will rescue the article's initial proposed objective and identify, in light of the presentation of the entire theoretical essay, if the research theme proposed in the initial objective was achieved.

The contribution and innovation to the academic and international business world is justified by the identification and presentation of the main currents of thought that contribute to the elaboration of strategies and decision making regarding the location and mode of entry into the international market considering macro and microeconomic uncertainty. The international business manager may resort to this theoretical essay to enlighten and reduce his conflicts at the moment of defining ways of entering new markets.

2. Theoretical Framework

2.1. Researchers in International Strategy: Entry Mode

Mota (2007) carried out a study on how to enter the international market as well as its selection. For the author, it is necessary to have a clear understanding of local strategies, to then analyze the internationalization strategy specifically, since the strategic decisions on how to enter a country that is not of origin and the selection of these markets have an important character in the continuity of the company. Li and Rugman (2007) carried out similar research where they emphasized an extension of the current of research related to international business, considering the choices of multinational companies regarding location and choice of mode of entry into the market under uncertainty, relating it to opportunity.

All these studies have contributed to broadening approaches to international business theory. For Barney (2011: p. 426), from an international strategy perspective, the critical observation about the product life cycle is that a product or service can be in different stages of the life cycle in different countries. Thus, a company can utilize the resources and capabilities developed during a particular product lifecycle stage in its home market for that lifecycle and other resources and capabilities in the non-domestic market. This can sustain a company in its economic performance. Therefore, confirming the thinking of Barney (2011: p. 426), to define the strategy for entering international markets, a prior study is necessary to identify the stage in which the product is in the life cycle in the foreign country.

To define the mode of entry into a foreign market, a prior study of the main approaches of International Business theory is necessary. They are divided in different ways by different authors. Bueno and Domingues (2011) and Varanda et al. (2010), divided the theories into those that address economic and behavioral aspects. Mello Dias (2012), in his doctoral thesis, divides them into two large groups: static and dynamic approaches, as follows **Table 1**:

Table 1. Classification of the main approaches of international business theory.

	Static	Dynamics
Mello Dias (2012)	Hymer's Direct Investment	Product Life Cycle
	Transaction Costs	Internationalization of the Uppsala School
	Internalization	
	Dunning's Eclectic Paradigm	
	Resource Based View	
	Institutional Theory	
	Economical	**Behavioral**
Bueno & Domingues (2011)	Venom Model: comparison of production and marketing costs	Uppsala: understands internationalization as a process composed of several phases that can be sequential or not.
	Eclectic Paradigm: uses the principles of transaction cost theory for internationalization decisions; uses the internationalization theory of Buckley and Casson (2002); *apud* Bueno & Domingues (2011).	Born Globals: they are already created based on international strategies, including the immediate opening of subsidiaries abroad. One of the main ways of entering the foreign market is the strategic alliance that allows access to foreign resources for production and marketing.

Source: Adapted from Bueno and Domingues (2011) and Mello Dias (2012).

It appears that the authors do not disagree regarding the classification of theories, only regarding the nomenclature of the classifications. Between the two approaches pointed out by Mello Dias (2012), for the author, the static approach provides greater grounds for choosing the entry mode. However, none of the theories above contemplates, in a satisfactory way, the environmental uncertainty, the options of thoughts of the decision maker.

Barney (2011) also states that international strategies can be seen as a special case of strategy diversification. Companies implement international strategies when they have business opportunities beyond their borders.

It is observed that Mello Dias (2012) inserts some more current approaches such as, for example, the Resource-Based View. A few years ago, Forte and Moreira (2006), developed a study discussing how companies need to make use of strategic resources for their insertion in the international market, according to the author, the strategic choice of internationalization requires a high commitment of resources, encouraging the evolution from theoretical approaches to the Dynamic Resource and Capabilities Based View. Mello Dias (2012) intensified his study by proposing a conceptual model using three theoretical approaches: the Resource-Based View (as previously mentioned, this approach focuses on the resources and capabilities that generate competitive advantage for companies);

institutional theory, which adds the relevance of locational variables (market) and institutional theory, which addresses the relevance of transnational distance.

2.2. Taking Uncertainty into Account: The Real Options Approach

To talk about uncertainty, it is necessary to think about the different possibilities that exist for a manager at different times. The more volatile the market and the global and sectoral economy, the greater the uncertainty and the consequences for the organization. With globalization, technological evolution and the expansion of the frontiers of organizations, managers were led to lead their thoughts to different possibilities to be considered at the time of decision making. Ghemawat (2002: p. 22) states that "the evolution of ideas about business strategy was influenced by competitive thinking in the second half of the twentieth century." It addresses key issues in applying competitive thinking to business strategy with a look at the historical development and diffusion of theories of competition and business strategy. Ghemawat's article closes with a discussion of the possible implications of the emergence of a market for such ideas. The author emphasizes that in the last fifteen years or more, what has absorbed most of the attention of strategists and dynamized thinking are several lines such as:

- Thought options.
- Dynamic systems.
- Diffusion of technologies.
- Change management.

All these lines of thought lead to the emergence of several theories, including one that provides the agglomeration of all possibilities and uncertainties in a decision, such as the theory of real options.

In the international market, resulting from the study of researchers, several theories are present, however, they cannot consistently respond to market dynamics and the uncertainties that the manager has at the time of decision making.

Researchers Li and Rugman (2007) contributed to the evolution of these thinking options cited by Ghemawat (2002: p. 22), expanding the current of research related to international business and considering the various possibilities of choices of a multinational related to location and choice of market entry mode under uncertainty. These authors make it clear that the traditional theories of international business based on the economic cost of transaction have not satisfactorily considered the uncertainty at the time of decision-making by the manager at the time of internationalization. They see uncertainty as an opportunity and present the real options approach as an alternative to capturing this uncertainty. This statement is ratified by researchers Li and Rugman (2007), these authors claim that uncertainty implies risks and also opportunities. Companies can benefit from uncertainty by creating real choices while remaining flexible in response to new information (Rivoli & Salorio, 1996 *apud* Li and Rugman, 2007). For the authors Li and Rugman (2007), the main decisions that are extremely important and that companies should consider when carrying out foreign investments are:

the choice of location (where) and the choice of entry mode (how).

Other authors corroborate this thought, for Filippo (2011) the theory of real options appears as a mathematical representation of the phenomenon "uncertainty" in a syntactic form to assist in the construction and execution of the Strategy.

Filippo (2011) states that the theory of Real Options is an analogy of financial options and tested by Meyrs (1977) apud Filippo (2011), however, since the 1950s, managers' dissatisfaction with traditional theories that do not considered uncertainty. There was, therefore, the need to adapt the language to the new moment and create a mathematical representation of the new phenomenon: uncertainty. Filippo (2011), separated the theory of real options into two perspectives: reasoning and modeling. The reasoning view captures managerial thinking by inserting the supposed existing actions and options in the face of different scenarios. Modeling combines economic models with financial options pricing techniques (more appropriate when there is a need for quantitative analysis).

Therefore, the Real Options Theory arises from the need to create a more modern theory of economic analysis of investments resulting from dissatisfaction with traditional theories, which were not able to capture the uncertainties in the decision-making process and strategy elaboration. When wishing to operate in the international market, the manager must know when to act in countries where uncertainty is greater or lesser. For this, the real options approach presents itself with a strong mathematical representation that provides the valuation of the decision to be taken.

2.3. Choice of Input Mode

Cerceau and Lara (1999) state that the choices that organizations have, when talking about entry strategies in foreign markets, are: export, contractual agreements (licensing), franchising, manufacturing contract and Direct International Investments such as Joint Venture, control subsidiary (shareholding control) and strategic alliances. Mota (2007) emphasizes that the main variables such as the degree of commitment, risk, control mechanisms and the potential for benefits and profits are positively correlated, with direct exports being less risky and direct investments being more complex. According to this author, companies that are starting out choose exports.

Mello Dias (2012) researched 224 industrial companies with 738 international subsidiaries distributed across 55 countries, the author identifies in his thesis that the level of ownership, the size of the company, the level of economic development of the host country, as well as the institutional distance and geographic distance between countries are significant variables to explain the choice of entry mode. The use of a wholly-owned subsidiary (instead of a Joint Venture) should be prioritized when the company is larger, has a higher level of economic development in the host country, has a smaller institutional distance between countries and a smaller geographic distance.

To understand the choices made by firms when operating in another market, according to Li and Rugman (2007), attention must be paid to the microeconomic and behavioral conditions of the choice between entering another market or exporting. Dunning (1977) apud Li and Rugman (2007), presents a theoretical framework that can contribute to the understanding of companies' choices to internationalize. The companies called Transnational by the authors are faced with the choices of international trade, foreign direct investment (FDI) and contractual relationships.

2.4. Foreign Direct Investment (FDI)

Padoveze et al. (2017: p. 517) define foreign direct investment as "those carried out by multinational companies. It is the transfer abroad, made by a multinational company, of capital, administrative resources and technical assets". It is characterized by being a long-term investment, involving stock control, administrative and daily operational activities. The return is in the form of dividends or distributed profits. For Li and Rugman (2007), FDI configures a kind of substitution of exports, by allowing internal production, to where it was previously exported, as occurs in firms that are strategically installed to export, or when there is a demand from subsidiaries for inputs from the matrix. In the case of contractual relations, there is a transfer of a specific asset (production technology, patent or trademark, etc.) to another company abroad, which starts to produce according to the rules defined in the contract. For Li and Rugman (2007), in FDI and international trade there is a choice to internalize production. The costs related to granting a license are related to the possibility of losing control of the know-how disseminated through the contract. In this way, FDI appears as the preferred form of companies in developing countries that have accumulated important competitive advantages.

Hyner (1960, apud Mello Dias, 2012) was the first to explain foreign direct investment (FDI) as an extension of the theory of industrial organization to the international scenario. For Hyner (1960, apud Mello Dias, 2012) entering and operating in other countries entail higher costs for companies, compared to operating in the domestic market. If there were perfect competition, complete mobility of factors and technology available in the international market, there would be no incentive for the internationalization of production and local companies would be as competitive as foreign ones. Local companies have privileged information regarding endogenous and exogenous variables. For Hyner (1960, apud Mello Dias, 2012), organizations must have specific advantages such as availability of capital, technology, and management resources. According to Hyner's theory (1960, apud Mello Dias, 2012), the choice of entry mode depends on the degree of market imperfection.

In Brazil, foreign direct investments fell in relation to 2001. These are mostly invested in services, as shown in **Figures 1-3** below.

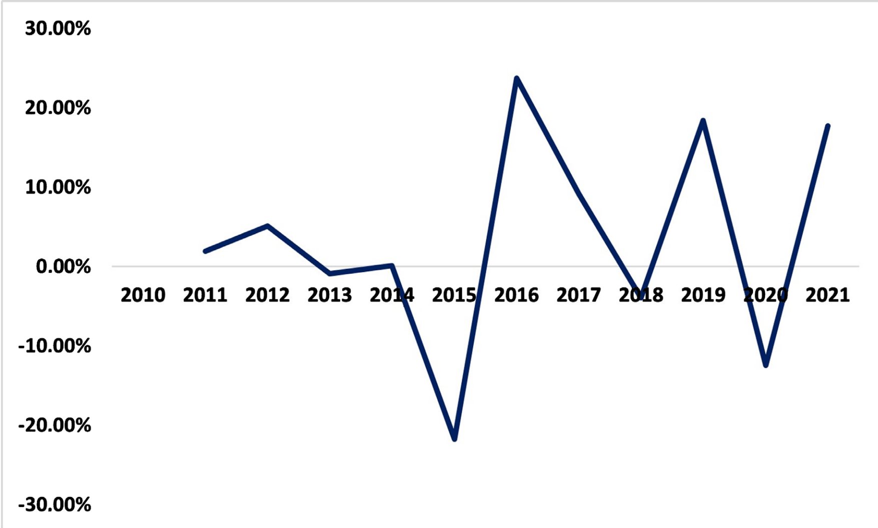

Figure 1. Adapted from data obtained from the Central Bank of Brazil, http://www.bcb.gov.br/.

According to Figure 1 above, the average percentage of investment from other countries in Brazil has been falling since 2001, increasing from 2010 to 2011. The drop occurred during periods of economic crisis, in the years 2001 to 2008.

Analyzing the behavior in subsequent years, a drop from 2012 to 2013 (731.2 to 724.8 billion US$) of −0.88% and a significant reduction in the periods from 2014 to 2015 (725.9 to 568.20 billion US$) of approximately −22% encouraged by the domestic political crisis that resulted in the process of empeachment of the president Dilma Rousseff in 2016, a period in which the country recovered foreign direct investment with an increase of 24% (568.20 in 2015 to 703.30 billion US$ in 2016). In the pandemic period there was another negative impact with a drop of approximately −12.43% (874.00 in 2019 to 756.4 billion US$ in 2020). In the post pandemic period there was a recovery with a rise of 17.77% (from 765.40 in 2020 to 901.40 billion US$ in 2021. The figures reported in this paragraph for direct investments in the country consist mostly of the value in equity participation and to a lesser extent of intercompany transactions.

In view of the above, it can be observed that external and internal variables impact the behavior of the direct investment variations, causing a movement in the transactions included in the balance of payments, exchange rate fluctuations (exchange rate), asset pricing, and other events.

Therefore, the strategic sectors of the economy (Agriculture, Livestock and Mineral Extraction, Industries and Services) have a significant participation in the composition of capital for direct investment in the country. These sectors suffer the consequences of environmental hazards (internal and external) and impact the growth variation of Direct Investment in Brazil, as shown in Figure 2.

When analyzing which sector has the largest share of foreign direct investment stock, it is observed that the service sector accumulates the largest foreign direct investment.

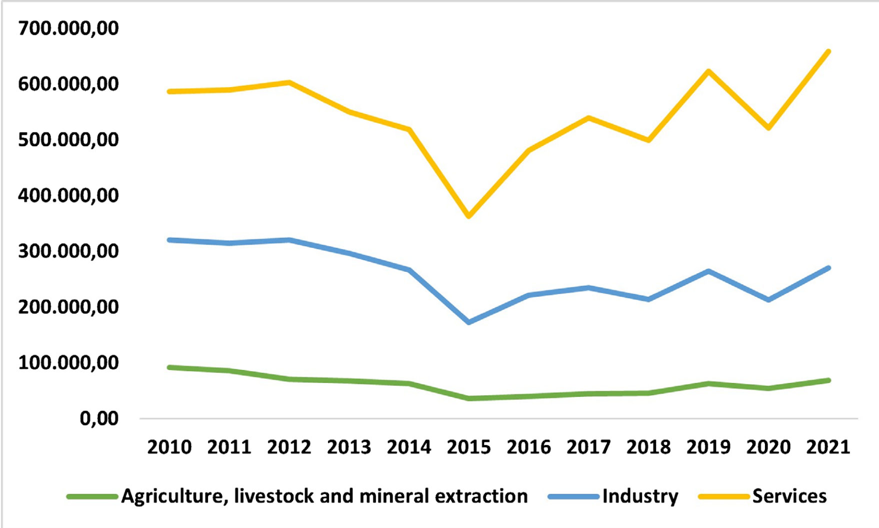

Figure 2. Adapted from data obtained from Central Bank of Brazil, http://www.bcb.gov.br/.

The drop in foreign direct investment in the country of −0.88% from 2012 to 2013 described above was impacted by the drop in the three sectors: agriculture, livestock and mineral extraction from 70.68 to 68.33 billion US$, industry sector from 250.12 to 228.45 billion US$ and the service sector from 288.67 to 253.86 billion US$. The sector that had the biggest drop in investment was services (−10%).

When analyzing later periods, it is observed that from 2012 to 2015, investments fell. The drop in the years 2014 and 2015 of −22% was impacted by the drop in foreign direct investment of −43% in the agriculture, livestock and mineral extraction sector (from 63.02 billion to 35.94 billion US$) which has oil as the most relevant activity, in this period the country was going through a domestic crisis and the main oil extraction company was going through a governance and investigation crisis. Brazil was going through a devaluation of the dollar in relation to the domestic currency due to a decrease in the dollar supply and a foreign exchange crisis. The second sector contributing to the drop in foreign investments in Brazil was Industry with a drop of −33% (from 204.45 to 136, 76 billion US$). The third sector Services contributed the smallest drop of −24% (from 250.95 billion to 189.81 billion US$).

In the years 2017 to 2018 the indentified drop in direct investment in Brazil was approximately −3.9% (from 767.8 to 737.9 billion US$). This drop was impacted by the industry (−12%) and services (−6%) sectors. Despite the recovery in foreign investment from 2018 to 2019 of 18.44%, in the years 2019 to 2020 (the pandemic period) there was a drop in foreign direct investment of −12.43%, all sectors were impacted sharply: Agriculture, livestock and mineral extraction (from 63.21 to 54.63 billion US$) by -14%, Industry (from 202.13 to 158.75 billion US$) by −21% and Services (from 357.98 to 307.93 billion US$) by −14%. In the period 2021 the economy begins to recover and Direct Investments in Brazil increase considerably as described above.

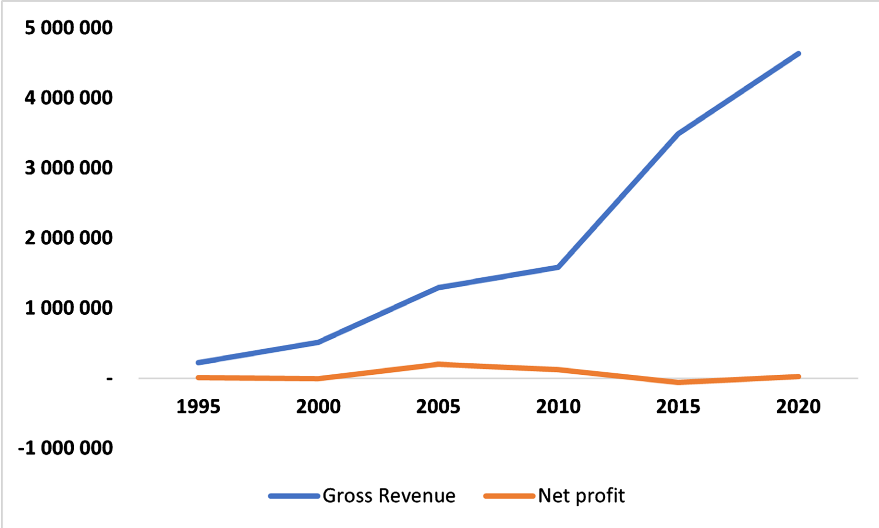

Figure 3. Adapted from data obtained from the website http://www.bcb.gov.br/.

There is a growth in income, however, the same does not occur with the profit margin that is the result of the ratio between net income and income of companies with foreign capital. The drop in net margin is the result of increased costs, which may be operating or non-operating.

It can be observed that in 1995 the revenue in Brazilian currency (Real) was R$ 223.06 million and the profit obtained was 5.6 million (2.51% of the revenue). However, in 2000, in spite of the revenue having increased 129% in relation to 1995, the net margin was negative −1.33% because the companies of Direct Investment in Brazil had a total loss of R$ 6.8 billion. In 2005 there was an economic recovery with companies' revenues of R$ 1.294 billion and a profit margin of 15.27% (profit of R$ 197.67 billion), representing an increase of 34.29% in net profit in relation to 1995. Analyzing the profit margin in dollars, it is observed that in 2005 for each US$ 100.00 of revenue the companies generated US$ 15.27 in profit.

In the year 2010, revenue grew 22% compared to five years ago (2005), but the profit margin decreased from 15.27% in 2005 to 7.8% in 2010. Making a comparative analysis from 2005 to 2010, the companies' profit fell by −3.74%.

Analyzing the results of the next five years, in the period 2015 the revenue grew by 120% compared to 2010 (from R$ 1587 to R$ 3486 billion) but the profit margin was negative by −1.72%, that is, for every US$ 100 of revenue the companies promoted a loss of −US$ 1.72.

In the period 2020 the revenue grew only 33% compared to 2015 (from US$ 3486 billion to US$ 4639 billion). The profit margin was positive by 0.55%, that is, for every US$ 100 of revenue the companies generated US$ 0.55 of profit.

The economic environment in Brazil has been strongly marked, over the years, by various plans to control inflation and the currency, strong labor and tax regulations have contributed to rising costs and maintenance of companies. The strong environmental dynamic causes investors to fear investing in industry, services, and agriculture, causing a drop in investments over the periods studied. This uncertainty, if well modeled by the real options approach, could become an opportunity for investors to avoid capital flight.

2.5. Li and Rugman Researchers' Approach

This section was dedicated to the cited authors Li and Rugman (2007), because they developed an approach that, according to Barney (2011: p. 225), makes it possible to estimate the value of strategic flexibility. Barney (2011: p. 440) states that a company implements an international strategy when it wants to diversify its business operations through foreign countries. Therefore, companies can organize their international business operations through a variety of ways or options that can be through export, licensing, Joint Venture, mergers, acquisitions, subsidiaries, and others. This can be done by adapting a methodology adopted in the financial market for financial options to the value of real options. This approach considers environmental uncertainty, something frequent in daily life in Brazil and the world.

The Real Options Theory, addressed by Barney (2011: p. 225) and applied in the article by Li and Rugman (2007) shows the application of four main research themes in international business: the impact of multinationality on company performance, the advantages of using Joint Venture to enter a market, choice of market entry dynamics and the ideal moment for investment decisions. The authors presented a methodology enabling the choice of entry mode in the international market such as Joint Ventures (JV), Wolly owned subsidiaries—WOS (Wholly-owned Subsidiaries), export and licensing.

The authors divided their approaches into four categories:

- 1st category—uses a real options approach to explain the relationship between multinational company, operational flexibility and performance. The Real Options Theory suggests that the choice of location can be used to increase the operational flexibility of a multinational (Li & Rugman, 2007). Specifically, a network of subsidiaries provides the multinational company with flexibility to switch to outsourcing, production, or distribution within the network when the environment changes (Li & Rugman, 2007).
- 2nd Category—Joint Ventures can be seen as a real option; as well as the conditions under which Joint Ventures (JV) have the highest value option. These studies suggest that a JV can be seen as a real option because it provides a company with the ability to exploit potential through acquiring the partner's equity (i.e., the option to grow), or to avoid deteriorating losses with selling the equity to its partner or dissolving the JV (i.e., the option to abandon), depends on how the uncertainty will be resolved in the future (Li & Rugman, 2007).
- 3rd Category—Consider the dynamic choice of market entry mode. Li and Rugman (2007) were the first to address the ideal time to switch between three entry modes: investment licensing, export and FDI.

- 4th Category—examines the ideal moment for multinational companies to enter a market. Li and Rugman (2007) emphasized that the option to postpone an investment makes it possible for the option to wait for more relevant information to emerge and thus reduce uncertainty. The option to grow is also emphasized in this category.

To examine the impact of uncertainty on the strategic investment decisions of international companies, the authors employ an option modeling approach by applying the binomial model of Cox, Ross and Rubinstein (1979 *apud* Li & Rugman, 2007).

The authors divided the simulation into two categories of choice: location and entry mode.

For the construction of the choice of location simulation, Li and Rugman (2007) assumed two possibilities: China and Canada. Uncertainty is in how much consumers are willing to pay, the popularity of products (income, preference and others); On the supply side we have local competition, government policy plays a role in influencing market supply, demand, or price. According to the results found, it appears that, if the costs were the same, China would bring more profits than Canada. Higher market price volatility in China leads to higher profits. If costs are differentiated, branch in China will bring in less profit than in Canada.

The input mode depends on the magnitude of uncertainty (σ) and type of uncertainty (B).

Li and Rugman (2007) systematize the choice of entry modes into three: entry in the form of Wolly owned subsidiaries—WOS, Joint Venture and Export and/or Licensing. These different entry modes generate two types of option: grow or leave.

The main differences in relation to the entry modes pointed out by Li and Rugman (2007) were:

- 1st They require different levels of investment: Investment in Wolly owned subsidiaries—WOS is greater than investment in Joint Venture which is greater than investment in export and licensing. Therefore: IWOS > IJV > IEXP/LIC.
- 2nd Different costs of options: according to the cost of the entry mode, it is possible to exercise the option of growth or abandonment, as shown in **Table 2** below:
- 3nd Difference is in the ability to receive information reducing, consequently, uncertainty. Roberts and Weitzman (1981) and Folta (1998) cited by Li and Rugman (2007) distinguish between two types of uncertainty exogenous and endogenou (**Figure 4**):

Exogenous uncertainty is not affected by a firm's actions and can only be revealed over time. Uncertainty in the macroeconomic environment, such as political and macroeconomic conditions, belongs mainly to this type. Endogenous uncertainty can be reduced by an individual firm through investments. Uncertainty

Table 2. Options suitable for input mode.

Input modes	Growth choice	Choice of abandonment
WOS	It does not require any capacity expansion costs. MNE can realize WOS' full ability to seize market opportunities.	This option provides zero profit.
JV	Expanding into a WOS requires acquiring the local partner's equity limiting losses. $\left(I_{WOS} - I_{JV}\right) + A$ $I_{WOS} - I_{JV}$ = the local partner's accounting value. A = premium or discount paid for local partner equity. The amount you should be willing to pay to your partner is restricted to A ≤ I_{JV}	The irreversibility problem may be less severe within a JV because the MNE can exercise the abandonment option by ceding its assets to the local partner in: $\left(I_{JV} - S\right)$ *S positive implies a discount on the sale of equity capital of a company to its partner. Assumption: $S \leq I_{JV}$ (the MNE makes no profit by dissolving the JV).
EXP/LIC	Expanding to a WOS requires additional investments $\left(I_{WOS} - I_{e/l}\right)$	This option provides zero profit.

Source: Adapted from Li & Rugman (2007: p. 695).

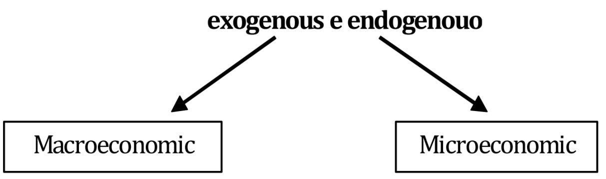

Figure 4. Types of uncertainty exogenous and endogenous.

in the microeconomic environment, such as market conditions and demand and the firm's level of competition, such as partner relationships belong mainly to this type. Endogenous uncertainty can be reduced by the individual firm through investments (**Table 3**).

The authors compare the ability to capture uncertainty with the two types of uncertainty addressed (exogenous and endogenous) and reach the following conclusions (**Table 4** and **Table 5**).

The greater the uncertainty in the market, the more likely it is that exporting/licensing and a JV will be preferable to a WOS.

When market uncertainty is high and endogenous, a JV is more preferable than export/licensing. When it is low and exogenous, a WOS is more preferable than a JV and export/licensing.

The studies by Li and Rugman (2007), have contributed to the international business strategy approach to entry mode and location by presenting, in an empirical way, the use of the real options approach to assist in decision making regarding location and entry mode. Taking into account Barney's thought about

Table 3. Mode Influence of endogenous and exogenous variables to capture information.

The price can be influenced by factors:		Ability to capture information
Endogenou	When the MNE is able to invest in the host environment to discover the trend of market demand and supply.	WOS and JV have more ability to capture information due to ownership advantages. To calculate the option value, we will introduce the parameter B that represents the capture of additional benefits from reduced uncertainty.
Exogenous	The market price of a product is often influenced by local government regulations and interventions.	The smaller the B parameter, the more the uncertainty is exogenous, and the larger it is, the more the uncertainty is endogenous.

Source: Adapted from Li & Rugman (2007: p. 696).

Table 4. Best option according to the ability to capture uncertainty.

Ability to capture uncertainty	Best Option
B < 100 (exogenous uncertainty)	Export/Licensing
B > 400 (Endogenous uncertainty)	WOS ou JV

Source: Adapted from Li & Rugman (2007: p. 696).

Table 5. Capacity to capture the uncertainty related to the option.

Ability to capture uncertainty	Best Option
B > 300 σ < 50 (low and exogenous uncertainty)	WOS
B > 300 σ > 70 (High and endogenous uncertainty)	JV

Source: Adapted from Li & Rugman (2007: p. 696).

the need for a diversified set of strategies for an internationalization decision, this approach becomes efficient when taking into account environmental uncertainty. However, this approach did not consider the product's life cycle stage in the foreign country, and despite adopting the local demand to measure the degree of uncertainty, the need to know how much consumers are willing to pay for the product was not addressed.

3. Methodology

This study is characterized as descriptive research, because it intends to expose the main approaches on the theory of international business addressed by some authors regarding the mode of entry into foreign markets.

According to Vergara (2009) descriptive research exposes characteristics of a certain population or a certain phenomenon. It can also establish correlations between variables and define their nature. It has no commitment to explain the phenomena it describes, although it serves as a basis for such an explanation.

As for the means, Bibliographic research procedures were used.

According to Vergara (2009), the bibliographical research is the systematic study developed based on published material in books, magazines, newspapers, electronic networks, that is, material accessible to the public. It provides analytical tools for any other type of research, but it can also be exhaustive. Published material can be primary or secondary sources.

Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar.

4. Discussion

Mello Dias (2012) combines strategy approaches related to international business to relate entry mode decisions with the performance of subsidiaries in emerging countries, as in the case of Brazil; the author divides them into static and dynamic. Li and Rugman (2007) intensify the discussion by inserting a choice approach that considers uncertainty at the moment of decision as to location and entry mode. According to Li and Rugman (2007), uncertainty is little considered by traditional theories, which is not the case with the real options approach. For these authors, multinationals are faced with choices regarding international trade, Foreign Direct Investment (FDI), and the contractual relationship. FDI is the transfer abroad, by a multinational company, of capital, administrative resources, and technical assets. In Brazil, when analyzing which sector has the largest stock of foreign direct investment, it is observed that the services sector accumulates the largest foreign direct investment. There is a growth in multinational companies' revenues, however, the same does not occur with the profit margin, which is the result of the relationship between net profit and revenues of companies with foreign capital. The fall in net margin is a result of the increase in costs, which can be operational or non-operational. The average percentage of investment from other countries in Brazil has been falling since 2001, rising from 2010 to 2011. The drop occurred during the periods of economic crisis, from 2008 to 2010. This drop is caused by environmental uncertainty and strong labor and tax regulations, contributing to the increase in maintenance costs. This uncertainty provokes a retreat of investors from investing in industry, services, and agriculture, causing a drop in investments throughout the periods studied. If this uncertainty were well modeled by the real options approach, it could become an opportunity for investors to avoid capital flight.

Li and Rugman (2007) empirically present the use of the real options approach to investment in China and Canada; this methodology is efficient in an uncertain environment, providing high returns in more volatile environments.

5. Conclusion

Considering that the objective of this article is to present the main approaches to internationalization strategic decisions and to discuss the insertion of the theory of real options in decision making that involves the choices of the mode of entry into the international market, it is observed that, according to the thinking of Barney (2011), this decision involves a special case of strategy diversification. It is important to take into consideration, according to the studies presented in this article, the product life cycle approach to identify the stage of the life cycle at which the product is in the foreign country so as to use the appropriate resources and capabilities. Concomitantly, not less important, it becomes relevant, for the decision as to the entry mode, the approach of the vision based on resources and dynamic capabilities as a differential approach for the elevation of competitiveness in the foreign location. As an extension of the approaches studied Li and Rugman (2007) present, in an empirical way, the real options approach considering as a key factor for the exercise or not of the option the uncertainty that they classified as endogenous and exogenous. An important contribution of the real options approach to approaches on internationalization strategic decisions regarding the entry mode is the fact that it considers environmental uncertainty.

It is not possible to identify trends in international theory approaches to entry mode strategy; however, the contribution of this article is centered on strengthening and broadening the discussion about the various existing approaches related to international business theory, which are neither better nor worse than others, but complementary and diversified. The product life cycle approach is complemented by the resource-based view and dynamic capabilities approach. The discussion is broadened with the consideration of environmental uncertainty captured by the real options theory approach.

For continuity of this study, a bibliometric study is suggested to identify trends of the most used approaches for strategic decisions regarding the mode of entry.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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