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CONTENTS

SUMÁRIO

GLOBAL PRODUCTION CHAINS AND VALUE ADDED: CHINA'S POSITION IN THE CONSUMER ELECTRONIC INDUSTRY

Isabela Nogueira de Morais*

The objective of this article is to map China's presence in global production chains in the electronics industry, with special emphasis given to value added. It discusses whether China is upwards in the global value hierarchies and if the country is getting distance from the traditional contractor manufacturing position, generally responsible for standardized activities with less qualification and less value added. In order to do so, the article presents the concept of global value chains, characterizing its actors and the position of the lead firm in aggregating value. In the sequence, it draws a map of Chinese foreign trade, reinforcing the relevance of regional integration to its global insertion and underlining the distinctions between processing and ordinary trade. Once reviewing the literature about the value added of Chinese exports, the article comes to some relevant conclusions about the recent domestic value added performance in the electronics sector. Finally, the article presents two case studies on Chinese lead firms in the sector analyzed, Lenovo and Huawei, in order to illustrate the diversity of strategies for the creation of lead firms in that country.

Keywords: global productive chains; value added; electronic industry; China.

CADEIAS PRODUTIVAS GLOBAIS E AGREGAÇÃO DE VALOR: A POSIÇÃO DA CHINA NA INDÚSTRIA ELETROELETRÔNICA DE CONSUMO

O objetivo deste artigo é mapear a presença da China nas cadeias globais de produção da indústria eletroeletrônica de consumo, com atenção especial à problemática da agregação de valor. Discute-se se o país está ou não avançando na hierarquia das cadeias de valor e se distanciando da posição de mero montador contratado, responsável pelas atividades padronizadas e de menor qualificação. Para tanto, apresenta-se o conceito de cadeias de valor globais (CVGs), caracterizando-se os atores e a centralidade da firma líder na agregação de valor. A seguir, mapeia-se a geografia do comércio exterior chinês. Destaca-se a relevância da integração regional para a inserção global e traçam-se as distinções entre o comércio para processamento e o comércio ordinário. Ao rever a literatura existente sobre agregação de valor das exportações chinesas, o artigo chega a algumas conclusões relevantes sobre a trajetória do valor adicionado (VA) domesticamente no segmento de eletroeletrônicos de consumo. Por fim, o artigo apresenta estudos de caso sobre duas firmas líderes na indústria eletrônica chinesa, Lenovo e Huawei, a fim de ilustrar a diversidade de estratégias para a criação de firmas líderes no país.

Palavras-chave: cadeias produtivas globais; valor agregado; indústria eletroeletrônica; China.

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1 INTRODUCTION

The fragmentation of the manufacturing processes in the last decades has significantly changed the global commerce. An important part of the interchange has been taking place within internationally distributed industries, leading to the slicing up of the value chain. The so-called global productive chains have reached their state of art within the consumer electronic industry, in which the manufacturing process can be easily spread out in different and independent productive stages, setting up a modular industrial architecture. Other than for the raw material purchases and the outsourcing of intermediary goods, these complex articulated chains of commerce and investments characterize themselves by the fragmentation of parts, components and service production and, essentially by the hierarchical distribution associated with the capability of adding value. This new design, originally boosted by the investments made by Japan on the Asian tigers during the eighties and by the North American remarkable demand for final use products, has gained a new dimension with the meteoric expansion of the Chinese industry and with its exporting process strategies (Medeiros, 2010).

The purpose of this article is to identify the presence of China in global production chains on the consumer electronic industry, with special focus on the issue of value added. The slicing of the manufacturing process allows that the holders of intangible assets (trademark, Research & Development, design & conception, commercialization) retain the major portion of the value added, leaving for the developing countries the less qualified and standardized activities – on their turn subject to high competition and low profit margins and value added. Such division of work intensifies the inequalities in the value chain, creating traps for the less developed countries. As already summarized by Medeiros, on the one side, the imports of intermediary goods may displace local suppliers, imposing a negative effect over jobs and income; on the other hand, they increase the access of exporters to external markets, bringing positive effects over the same variables. The key question, therefore, "is the degree in which the expansion of the industrial exports resulting from the manufacturing integration allows the increase of the industrial value added and, consequently, the internal income" (Medeiros, 2010, p.259).

The fast growth of the Chinese foreign trade is well-known, in respect to its diversification and sophistication of the manufactured exports. From a major textile and simple manufacture exporter in the 80s, the country became mainly a seller of electrical and electronic goods during the nineties and of machines as of the following decade. It is not by accident that the "Made in China" is the label more commonly found in products available around the world.

The connection between aggregated exports and value added, however, is quite less evident. A country with an export list full of final products of medium and high technology may, also, be a mere assembler, having only lightly

processed re-exported merchandise and keeping a high technological content on its imports. This is the classic case of the Mexican *maquiladoras*, which are the anti-example of competitive insertion in the global value chains. It is also the case of the Apple family products (MacBooks, iPods and iPads) that carry on a label a little closer to reality and which mentions the beginning and the end of the chain: "Designed by Apple in California / Assembled in China".

In the case of China, there is a significant disagreement in the literature whether the country is or is not making progress in the hierarchy of global value chains and whether it is distancing itself from its low rank in the classic case of the iPod. On the one side, the low profit margins of the domestic electronic industry and the fact that two thirds of the manufacture exports come from the companies with foreign investment, would be an evidence that little progress have been made, according to Sturgeon & Kawakami (2010) and Song (2007). In spite of the unprecedented swiftness through which China got itself industrialized, the country would be facing difficulties in order to move beyond the low aggregated value niches and increase its profit margins.

Other authors, however, argue that China's insertion in the electronic global chains does not represent a classic case of an export program with no technical progress. For Unctad (2005) and Medeiros (2010), along with the traditional policies to encourage its insertion in the global chains (such as tariff exemptions for the importation of components destined to the manufacturing of exportable end products), the country matched a macro-economic regime based on very high level of investments, capital control, depreciated exchange rate and a technological and industrial policy which allowed the creation of a link between exports and the expansion of the internal market, leading to a continuous rate of high growth. In other words, China would have combined the export procedure strategy with the search for higher domestic autonomy, keeping a concomitant expansion of the industrial value added thanks to the policies on technological absorption and increase of the urban industrial salaries. Besides, the fast development of its internal market has allowed the country to overcome the limits arising out of a specialization focused exclusively on low labor costs, and opened valuable opportunities for the enlargement of its rising national brands.

Effectively, what makes the Chinese journey quite differentiated (…) is the effort for absorption of the technical progress by the local companies and to shift their kind of specialization. The aggressive policy of technological absorption of foreign companies in partnership with Chinese companies determines, jointly with the classically Japanese and Korean efforts to form "national champions" vertically integrated, a distinctive characteristic of China and totally different from the passive insertion in the value chains which typically characterizes the processing export [countries]. Although it is still globally modest, it is remarkable

the fact that the P&D effort in China is more intense within the state companies and collective companies (Medeiros, 2010, p. 284).

In order to properly delineate China´s position in the value added chain in the electronic industry, this article reviews the literature that has quantified the value added of exports by sector and examines both the processing export industry as well as those called "ordinary" industry (with domestic supplies). This is because the presence of basic assembly lines based on suppliers networks known in the literature as CM (contract manufacturers), EMS (electronics manufacturing services) or ODM (original design manufacturing) is predominant in the Chinese electronic export industry. Preferential customs policies for processed exports have led to an important differentiation in the intensity of import components for the exporting industry in comparison with the one aimed for the internal market. In other words, the companies import parts and other intermediary components from abroad with countless tariff incentives guaranteed by the central or local government, and after the production and assembly, they export the final product for the global market (Koopman, Wang & Wei, 2008). As the same benefits are not valid for the consumption goods destined to the domestic market, the national content, in these cases, tends to be higher.

In the following section, it is debated the concept of the global value chains which is used as a conceptual framework in this article, showing actors and the centrality of the leader company in adding value. In section three, it is briefly presented the geography of the Chinese foreign trade and its triangular nature, pointing out the importance of the regional integration for the global insertion and the distinctions between trade for processing and the ordinary commerce. Section four reviews the existing literature about the value added on the Chinese export and comes to some significant conclusions on the tendencies of the domestically value added of exports in the segment of consumption electronics. Section five develops two case studies about leading companies in the Chinese electronic industry, focusing on the Lenovo and Huawei cases. The last section summarizes the conclusions.

2 PRODUCTION CHAINS: WHAT THEY ARE AND WHAT ARE THEIR IMPLICATIONS

The act of dividing production into distinct units or processes is not, at first, something new and, much less, limited to Asia or the electronics industry. As Flores (2010) summarized, the combination of different processes or suppliers to create a final product is, long since, part of the logic and the practice of production. What can be considered a modern phenomenon is "a better and more rigid division of procedures, together with the division of all the production process for different places in the world, even with different owners (…). Essential for the process division, the different group of operations needs to be efficiently de-

tailed so they can be executed 'anywhere', its several parts and products being eventually combined to compose a (final) product, in one or more countries" (Flores, 2010, p. 59).

Besides the organized division of production and the codification of processes/products that supports this fragmentation, there are specific relationships between the companies involved which are necessary to advance the process in the direction of a "productive integration." Nevertheless, according to what Machado (2010) points out, the phenomenon under study here is more than a simple purchase and sale of goods and services. It is about an "intermediate case" between the simple *outsourcing* (acquisition of goods and services produced by third parties) and the vertical integration (result of the merge and acquisitions intra-company). At productive integration, the relationships between the companies involved alliances, partnerships, cooperation, and strategic agreements with motivations sometimes distinct from short-term market logic as, for example, the agreements for the transfer of technology.

The global production chains are, in reality, a complex system of value added. Each producer acquires inputs and adds value to the intermediate good in the form of profits and labor payment, which, on the other hand, will compose the costs of the next production phase. However, as the trade statistics are measured in raw terms, including both the intermediate and the final goods, they count *n* times the value of intermediate goods which cross the national borders more than one time. That is why a net exporter of final high technology goods does not necessarily add much value, especially if their role in the chain is simply that of as assembler (more details at section 4).

One of the key theoretical references for the Asian productive integration, developed by Akamatsu (1961) and that became known as the "flying gooses" model, suggested that the advanced countries (in the case of Japan), when dividing the productive process and leaving stages of intensive labor for developing countries in the region, were also sharing technology and innovation. In a second phase of the development process, these countries could gradually move away from the labor-intensive industries and step up in technology sectors and higher hierarchies of value added, as South Korea, Singapore and Hong Kong did.[1]

Also following the Akamatsu model, Lemoine and Unal-Kesenci (2004) sustain that, for developing countries, the import of components and the assembly can be the fastest way to acquire advanced technology and join the global

1. The "flying gooses' model" was criticized by Medeiros (2001) for expecting a peaceful integration and high technologic progress without taking into consideration the domestic demand component. In the revision used by us, besides the centrality given to the domestic demand we also stress the importance of the State stimulus in technology absorption and in the promotion of micro and macro policies that may facilitate the incorporation of foreign technology.

production chains with high international demand. They argue that the extraordinary Chinese performance in the foreign trade is due to its involvement in the production segmentation processes, which allowed the country to rapidly diversify the exports and, especially, become stronger in the machine and equipment sectors. Using data until 2001, the authors conclude, however, that the sophistication of the export agenda did not help in the development of "traditional" sectors based on domestic inputs, which would be evidence that the nexus between the export assembly industry (processing) and the domestic or ordinary industry were still very weak. This article questions Lemoine e Unal-Kesenci's conclusion, and using data from 1997, 2002 and 2007 shows that from 2007 on there is a significant change in the value added pattern (section 4).

A step to be followed in the characterization of the productive division was the development of the concept of production chains, making the value added along the chain a key element in the analysis. The academics of global value chains (GVC) emphasize that the analysis of the global integration processes must be done considering three dimensions: *i*) the governance scheme between companies, or the character of the *links* between tasks (or phases) of the value chain; *ii*) how the power of companies, suppliers, unions, workers, regulating agents, the State and other actors involved in the chain is distributed and exercised; and *iii*) the role played by the absorption of technologies by the different players (Gereffi, Humphrey & Sturgeon, 2005; Sturgeon, Van Biesebroeck & Gereffi, 2008). In short, the analytical value chain allows the understanding of the governance dimensions, the power of agents and institutions.

Through this analytical scope, the next sub-section characterizes the relationships between different companies and production phases and tries to offer a general framework to access the relative power of the different agents from a value added perspective. From the perspective of the general structure of governance, we know that the electronics industry chain is driven by the buyer – brands like Apple, that are not usually factory owners, but whose demand is so great that it directly coordinates some global production chains. The power disparity between the chain's players, as it was suggested, will bring this analysis closer to its captured value dimension.

2.1 Governance and power in the electronics industry's value chains

Several characteristics of the electronics industry allow it to be the most dynamic and geographically extensive global production chain among all the other productive sectors. A first simple reason is that for the parts and components of electronic goods, as well as for the majority of final products, the value/weight ratio is high, which makes the long distance transportation relatively cheap.[2]

2. Final products such as notebooks and components of high value added frequently use air transportation (Sturgeon & Kawakami, 2010, p. 9).

The agility and relatively low costs of transport allow the companies to perform its "arbitration of operational costs" in a global scale, exploring the different advantages of labor, scale and the national policies of investment stimulus.

A second reason for the global characterisctic of the electronics industry lays on the production chain architecture, essentially modulated, with its main products and productive processes being deeply formalized, codified, standardized and computerized.[3] The standardization involves the product design, several aspects of production (such as assembly, test performance and inspections) until the logistic control and production planning. Sturgeon and Kawakami argue that this modularity was possible because the myriad of electronic goods that proliferated especially from the 1970s is deep rooted in the North-American and European military industry from the 1950s and 1960s, which facilitated the development of standards for the description of components, systems and production processes. The codification, standardization and, therefore, the high degree of modularity allows the system's components and other elements to be replaced without the need for redesign, in the same manner as suppliers can be easily replaced with no changes in the product (Sturgeon & Kawakami, 2010, p. 9-10).

The characterization of the main business actors involved and the inter-company relations is key at the global value chains scheme (GVC).[4] There are evidently other actors involved that are not mentioned here, such as software vendors and distributors, but a simplified scheme such as the one that will be further exposed will allow a clearer discussion about the value capture between the companies involved.

The first and most important players are the *lead firms*, those which are responsible for the brand, intellectual property, knowledge of the market, and the marketing of products and customer service. These firms lead the value chain through its "buying power", generally associated to the brand, the technological advantages and financial capabilities, in turn related to its market penetration power, which allow large scale orders. Some examples of the major lead firms are presented in the third column of table 1. Although incomplete and static, the table illustrates that the majority of the consumer electronics lead companies is based in the United States, Japan and some countries in Eastern Europe. The most ancient and well established exceptions are two lead South Korean firms (Samsung and LG), but recently, the emergence of new Asian brands draws

3. See *The Economist*, "A third industrial revolution: special report", April 21st, 2012, available online at: <http://www.economist.com/node/21552901>.

4. We are especially following in this section the work of Sturgeon e Kawakami (2010) e Linden *et. al*. (2007).

our attention.[5] One of them is Acer, active in the personal computers market, headquartered in Taiwan. And three other brands from continental China: Lenovo, also active in the personal computers sector, the company became globally known with the purchase of IBM's personal computer's division (PCs) in 2004; Huawei, the second major global producer of equipment and telecommunication networks in 2011, right behind Ericsson; and ZTE, a competitor of Huawei.

In some specific industries, such as personal computers and mobile phones, there is a second essential player, frequently able to achieve higher profit margins than the lead firms: they are the leaders of technological platforms. The most notorious case is Intel, platform leader in the personal computer industry which can, unilaterally, alter central points of a GVC because of its market power and technological dominance (Baldwin & Clark, 2000). What makes Apple an essentially particular case in this industry is the fact that it occupies both the position of lead firm and lead platform, given that its products' operational system is under its property.

TABLE 1
Main segments, products and lead firms in the consumer electronics industry

Main segments	Examples of final products	Examples of lead firms
1) Computers	Desk computers and notebooks	Acer, Apple, Dell, Fujitsu, HP, IBM, Lenovo, Siemens
2) Peripherals and other office equipment	Printers, fax machines, copiers, scanners	Acer, Cannon, Epson, Fujitsu, HP, Kodak, Lexmark, Sharp, Xerox
3) Other consumer electronics	Televisions, consoles for electronic games, audio and video equipment	Apple, Hitachi, LG, NEC, Nintendo, Philips, Samsumg, Sharp, Sony, TCL, Toshiba, Vizio
4) Servers and devices for data storage	Internal, external and portable systems of storage and backup	EMC, Hitachi, HP LeCie, Maxtor Quantum, Seagate, Toshiba
5) Telecommunications and data networks	Public and private telecommunications, mobile phone and internet infrastructure, mobile telephones	Alcatel, Cisco, Ericsson, Huawei, Motorola, Nokia, Nortel, ZTE

Source: Based on Sturgeon & Kawakami (2010), with changes made by the author. It excludes electronics for the auto industry, space and military industry, medical products and industrial automation.

5. In South Korea, the development process of local brands, strongly supported by the State (such as Samsung, LG, Hyunday) through *chaebols,* is one of the classical examples in the literature as success cases of "late development". In Taiwan, on the other hand, with the exception of Acer, which became the second major personal computer brand on the world, the island has not distance itself from the position of contract manufacturer. On the contrary, this position has established itself with the expansion of its operations in continental China. According to Sturgeon & Kawakami (2010), the direct competition with its clients could put future orders at risk. The difficult balance lied in knowing how to remain a supplier, expand its operations in China, advance the assembly (EMS type) to also aggregate *design* (ODM) and, still, create its own brands. As Sturgeon and Kawakami summarize, the distinctions between South Korea and Taiwan reflect differences in strategy. As a result, the authors defend that Taiwan is making the transition to a "compressed development" model, which is not a simple variation of "late development" (Sturgeon & Kawakami, 2010, p. 17).

The third players in the chain are the companies hired for production (EMS) or also for the design (ODM) of products of which they do not own the brand. The exponential growth of contract manufacturer (CM) in general is one of the most obvious transformations caused by the global value chains. It is notorious that, besides the CM be mainly headquartered in Taiwan, the United States, Canada, Singapore and some other industrialized countries, its factories are spread throughout developing countries with an abundance of cheap labor. The plants installed in continental China were especially noted because of the impressive production scale and, in recent years, because of the problematic work conditions in dormitory-factories that led not only to protests, but also to numerous suicide cases.[6]

The services performed by contract manufacturers include the purchase of components, the assembly of circuit boards, the final assembly of products and testing. The largest electronics production and assembly company in the world is Foxconn, with its headquarters in Taiwan and factories in China, Vietnam, Czech Republic and a factory under negotiation in Brazil. It is important to note that the United States comes in second place as the host country for assembly companies, which means stating that the country is not only the headquarter of the main lead firms, but that it also in second place as the headquarter of the assembly companies. When design services are also present, the contract manufacturers are called ODM. This was a path chosen by many large companies from Taiwan, according to table 2: to concentrate not only in production but also include design services. This is particularly possible at the personal computers industry, according to Sturgeon and Lee (2005).

TABLE 2
Five main hired producers (HP) in different regions (2009)

HP	Types of services	Revenue in 2009 (US$ millions)
Taiwan		
Foxconn	EMS	44,065
Quanta Computer	ODM	23,265
Compal Electronics	ODM	19,424
Wistron	ODM	16,226
Inventec	ODM	12,349

(Continues)

6. See *Le Monde Diplomatique Brasil*, "Na China, a vida segundo a Apple", 20.07.2010, available online at: <http://www.diplomatique.org.br/artigo.php?id=1193>.

(Continued)

HP	Types of services	Revenue in 2009 (US$ millions)
North America		
Flextronics (the United States & Singapore)	EMS	30,949
Jabil Circuit (the United States)	EMS	11,685
Celestica (Canada)	EMS	6,092
Sanmina-SCI (the United States)	EMS	5,177
Benchmark Electronics (the United States)	EMS	2,089
Others		
Venture (Singapore)	EMS	2,428
Elcoteq (Luxembourg)	EMS	2,090
SIIX (Japan)	EMS	1,360
Beyonics (Singapore)	EMS	1,120
Zollner Elektronik (Germany)	EMS	970

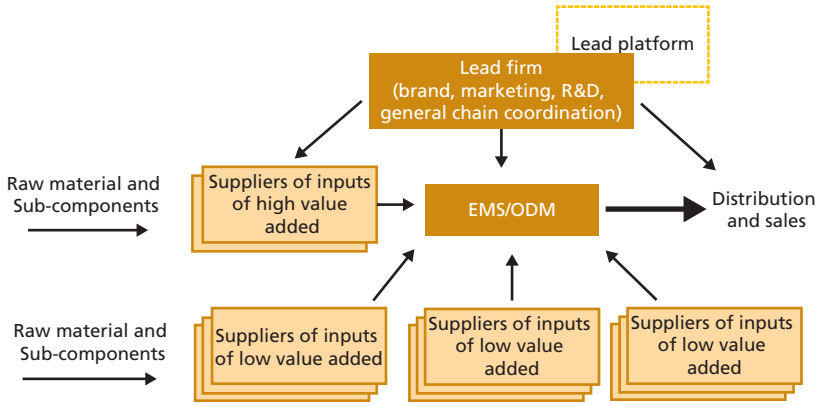
Source: Sturgeon & Kawakami (2010, p.13).

The key aspect in characterizing ODMs or EMS is that, besides disposing of an expressive market share (both from components' demand and production of final goods perspectives), these firms have narrow profit margins and low market power once they are easily replaceable and do not dispose of the buyer's advantages. Even if they acquire expressive volumes of components and parts, their buying power is low given that the purchases are made on behalf of the lead firm. In addition, contracts for key components such as micro-processors of high value added are negotiated directly between the lead firm and the semiconductor manufacturing companies. "As a result, the electronics contract manufacturing sector has long been characterized by intense competition, low profitability and dramatic consolidation, even as it has experienced rapid growth" (Sturgeon & Kawakami, 2010, p. 14).

The firms that provide EMS or ODM services are, in short, the delivery points of a series of components of low value added, such as resistors, capacitors and other easily replaced that, because of the low cost, reserve to their suppliers low gross profit margins. Following the production chain map from Linden *et. al.* (2007), there are still a few components of high value added, such as visual displays, integrated circuits and hard disks that, because of the technological sophistication and the degree of innovation, help to differentiate the final product. In virtue of its high cost and the relevance of the brand, these last components generally represent an important share of the value added, as in the iPod case, which will be described below. At the main axis of value addition is, as expected, the lead firm. Using a similar map as reference,

the authors estimate the value added at each stage of the iPod's chain, as it will be discussed in section four.

FIGURE 1
Stylized production chain of the consumer electronics industry



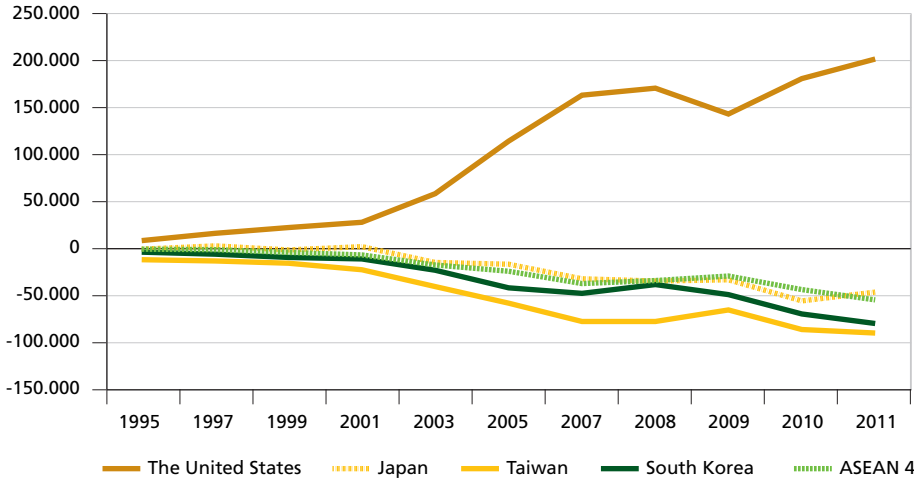
Source: Own elaboration based on Linden et. al. (2007)'s productive chain map.

3 PROCESSED EXPORTS, ORDINARY EXPORTS AND THE INSERTOIN OF THE CHINESE FOREIGN TRADE INTO THE GLOBAL CHAINS

The commercial and financial triangulation that links China to the United States and Europe, on the one hand, and to the countries in East Asia in the other, was already widely discussed in the literature. Characterized by Holst (2002) and Tong & Zheng (2008) as a "triangular commerce", by Medeiros (2007) as the "China as a double pole at the world's economy" and by Runbaugh & Blancher (2004) as a "transmission belt" of goods and investments, the authors discuss the Chinese position as a "final factory" for the production of goods that largely provides to the Eastern central economies, and, on the other hand, its position as an importer of machines, parts, pieces and components from other East Asian countries.

The commercial result is that the gigantic surpluses that China has been accumulated with the central countries (and notably with the United States) have been accompanied by deficits (more modest, however, guaranteeing China a general commercial surplus in the balance of trade) with the majority of neighboring countries in East and Southeast Asia – particularly Taiwan, South Korea, Japan and the Association of Southeast Asian Nations (ASEAN 4 – Thailand, Malaysia, Philippines and Indonesia) – which, as a result of the segmentation of the region's production, established themselves as major suppliers of parts, pieces, components and machines for the Chinese industry.

GRAPH 1
China' balance of trade per country or group of countries (US$ millions) – data reported by China
(US$ millions)



	1995	1997	1999	2001	2003	2005	2007	2008	2009	2010	2011
The United States	8,610.1	16,439.0	22,517.2	28,137.7	58,682.1	114,439.1	163,567.9	171,023.6	143,341.8	181,046.1	201,886.9
Japan	-537.8	2,843.7	-1,352.7	2,153.2	-14,739.4	-16,421.4	-31,934.1	-34,446.7	-33,047.2	-55,692.1	-46,299.1
Taiwan	-11,686.1	-13,042.4	-15,576.8	-22,337.6	-40,356.1	-58,130.7	-77,567.3	-77,460.9	-65,219	-86,058.7	-89,801.6
South Korea	-3,605.3	-5,802.7	-9,418.5	-10,858.1	-23,033.2	-41,712.6	-47,653.0	-38,205.9	-48,875.4	-69,572.9	-79,796.5
ASEAN 4	-508.1	-905.7	-4,077	-6,737.8	-17,323.6	-23,928.0	-37,114.1	-33,909.0	-29,184.0	-43,601.7	-54,448.8
Thailand	141.0	-512.7	-1,345.1	-2,376.7	-4,998.9	-6,172.5	-10,691.2	-10,020.1	-11,619.8	-13,452.1	-13,345.2
Malaysia	-789.5	-573.1	-1,931.8	-2,982.8	-7,845.5	-9,486.8	-11,007.8	-10,646.2	-12,704.1	-26,628.1	-34,250.6
Philippines	754.3	1,012.7	471.7	-326.0	-3,214.1	-8,182.0	-15,619.9	-10,372.5	-3,357.8	-4,679.9	-3,736.9
Indonesia	-614.0	-832.5	-1,271.8	-1,052.1	-1,265.0	-86.5	204.8	-2,870.2	-1,502.3	1,158.4	-2,116.1

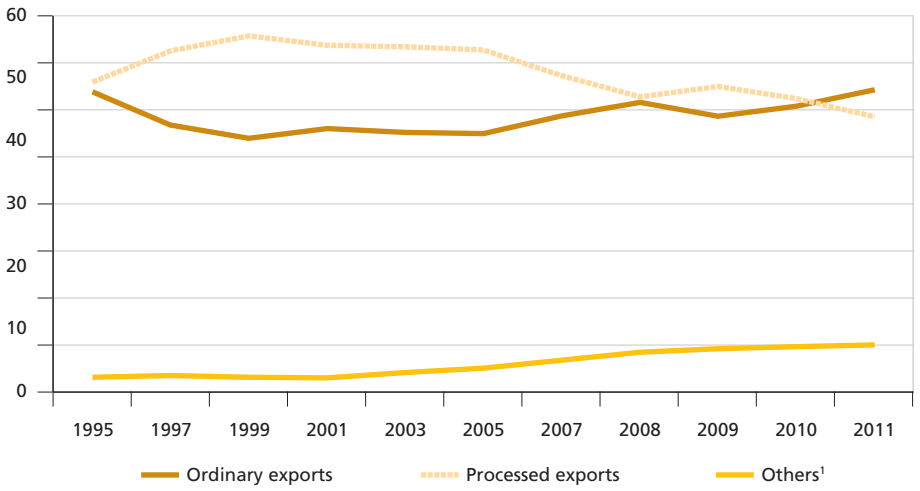
Sources: China Statistical Yearbook, several years, and the UN Comtrade for data from 2010 and 2011.

The triangulation had a fundamental implication for the regional integration of East Asia: when establishing themselves as ultimate buyers in the markets that are external to the region, the productive complementarity could advance with no restrictions from the Asian countries' external accounts perspective. In other words, the Asian productive integration, differently than the Mercosur, was consolidated with a relatively low level of tensions in the external accounts of the countries involved.[7] And, evidently, it also means to state that "the successful Chinese trade is crucially connected to the global processes of production fragmentation" (Flores, 2010, p. 73).

7. See Medeiros (2010) for a comparison between the Asian and the Mercosur integration.

Combined with the triangular character, a second essential characteristic of the Chinese foreign trade resides on the fact that a significant part of its external sales are "processed exports", goods that use parts, pieces and components (processed imports) with tariff advantages that will serve as inputs for the country's industry and that, after processing, will be exported.[8] From the mid-1980s, the Chinese authorities have used a myriad of instruments to promote such exports, including tariff exemptions or reductions for the processing of imports. The distinct tariff policy led to a segmented trade regime, in which the processed imports are explicitly differentiated from the "ordinary exports" (produced with local inputs). According to the official data, the processed exports reached the sealing of 57% of the total exports in 1999, against 41% of ordinary exports in the same year, and it has continually declined since then. Besides the fallback, the processed exports in 2011 represented 44% of the total exports, against 48% of the ordinary exports.[9]

GRAPH 2
2A – Exports according to the commercial regime
(In % of the total)



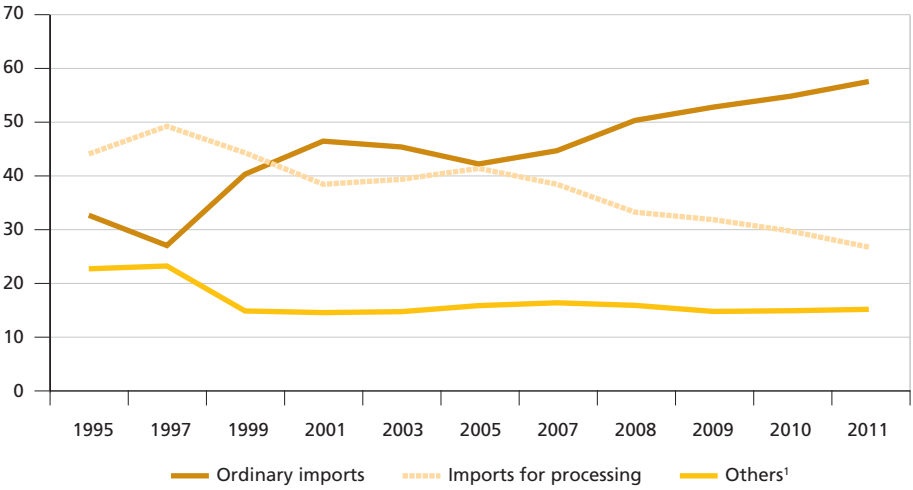
8. According to the definition of the General Customs Administration of China, "customs procedure under which certain goods can be brought into China Customs territory for manufacturing or processing with subsequent exportation" (Jin, 2006, p. 6).

9. The normal and processed trade statistics are released in HS of 8 digits. In the calculations included in this article, the processed exports include the trade regimes that appear under the definition of "process & assembling" and "process with imported materials" at the statistical yearbooks. These data are considered relatively precise because they involve tariff exemptions and tax reductions, depending on the value added and are, therefore, under the intense monitoring of the customs authorities.

	1995	1997	1999	2001	2003	2005	2007	2008	2009	2010	2011
Ordinary exports	47.99	42.71	40.62	42.16	41.56	41.37	44.17	46.33	44.12	45.70	48.33
Processed exports	49.55	54.52	56.92	55.44	55.19	54.69	50.61	47.20	48.85	46.94	44.01
Others (*)	2.46	2.77	2.47	2.40	3.25	3.95	5.22	6.47	7.03	7.37	7.66

2B – Imports according to the trade regime

(In % of the total)



	1995	1997	1999	2001	2003	2005	2007	2008	2009	2010	2011
Ordinary imports	32.84	27.22	40.46	46.60	45.51	42.37	44.81	50.43	52.91	54.94	57.66
Imp. for processing	44.23	49.34	44.43	38.60	39.49	41.54	38.59	33.42	32.06	29.91	26.96
Others[1]	22.93	23.43	15.12	14.80	14.99	16.09	16.60	16.15	15.03	15.16	15.39

Source: General Customs Administration of China, own calculations.
Note: [1] Others include donations, other external aid, lease, goods on consignment, compensations, projects hire, etc.

It is important to make an observation here about the Chinese processing industry. When the special economic zones were created in the Chinese coast in the 1980s, its primary objective was to create effective channels for the absorption of two key components for the economic development and that are classically rare in underdeveloped countries: strong currency and more advanced production technologies. This means that the processing industry is not, classically, the locus of the value aggregation in the production chain. Its goal is to attract dollars to prevent imbalances and crisis in external accounts and absorb the production, management and marketing knowhow and, above all, technology, creating the possibility of a rise in the value added scale in subsequent phases, through the

sophistication of this processing industry itself (nationalizing the production of components with higher value added) and, preferably, through the creation of national leading brands. Given the country's commercial surplus and the collection of reserves in foreign currency, is unquestionable that the first goal of the processing industries (collect foreign currency) has been reached. The absorption of advance technologies, on the other hand, is a harder element to measure, subject to frequent disputes.

It is relevant to note that in 2011, for the first time since the rise of the Chinese export *boom*, the ordinary exports had a larger share in comparison with processed exports in the Chinese foreign trade. For Zhang (2012), the "normal" exports became majoritarian in 2011 due to a new feature of the Chinese export profile, continuously concentrated in heavy industry and capital-intensive products, in particularly machines and steel products, which make less use of the global value chains than the electronics industry, for example. Zhang argues that another reason is that the domestic content of processed exports is growing rapidly. In line with this argument, at the import side, the purchase of goods for processing have persistently retreated since 2005, falling from 41.5% of the total amount imported on that same year to 27% in 2011. The impact that these changes have had on the value added of Chinese exports will be discussed in the following session.

4 CHINA'S PLACE IN THE VALUE ADDED HIERARCHY OF GLOBAL CHAINS

Some of the most remarkable studies about China's position in the global value chains were dedicated to specific products, as in the widely commented case of the iPod. The Apple products in general are classical examples of the insertion in the lower hierarchical spheres of value for the developing countries. Its productive architecture illustrates the important share of the lead firm and, in this case, also the lead platform, in capturing value in the global chains, while the countries concentrating in assembly even if registering relevant commercial surpluses in the balance of trade, retain a very small share of the value added.

Dedrick *et al.* (2008) and Linden *et al.* (2007), when dissociating the value captured by the iPod through its gross profits,[10] conclude that Apple, alone, captures 36% of the value of an iPod 30 GB of the 5th generation sold in the USA, in the form of gross profit margins, even if the major part of the industrial production is manufactured in China by a multinational headquartered in

10. Gross margins do not include the share of the value for the labor and, therefore, are different than the concept of value added. Formally, the value added of a company is defined as the value of its production minus the value of the intermediate goods acquired to produce, being, therefore, generally equal to the returns of the production factors. Similarly, the value added by a product in a country (called domestic value added or domestic content) is the value of the product minus the value of the components imported used directly or indirectly for its production.

Taiwan (in this case, Foxconn). At second place in appropriation of gross profits is Toshiba, responsible for the 30 GB hard disk (which, alone, represents half of the components costs) and by the video module (display module, which represents 14% of the components costs). The authors estimate that, in the aggregate value, 12% of the iPod 30 GB's value stays, therefore, in Japan, in the form of gross profits, host country of the companies responsible for the components with a higher value added. The gross margins for Taiwan, host country of the assembly companies, are only 2%.

These studies do not reveal what value share of an iPod goes to labor, in the form of salaries and, therefore, the Chinese share is not evident, and is hidden behind the total costs with other parts, pieces, components and direct salaries, that add 37% of the iPod value in the aggregate. In any case, the conclusion is that, when not owning the brand, and when concentrating itself in components of low value added (the 'commodities' of the electronics industry) and in the assembly, China captures a very small share of the final value, even if its commercial surplus is high. The "winners" of this chain in terms of gains in value are, respectively, the United States, holder of the brand, and Japan, responsible for the components of high value added (such as the hard disk). And, in the case of the United States, such advantage in terms of the appropriation of profits, is not seen in the country's balance of trade.

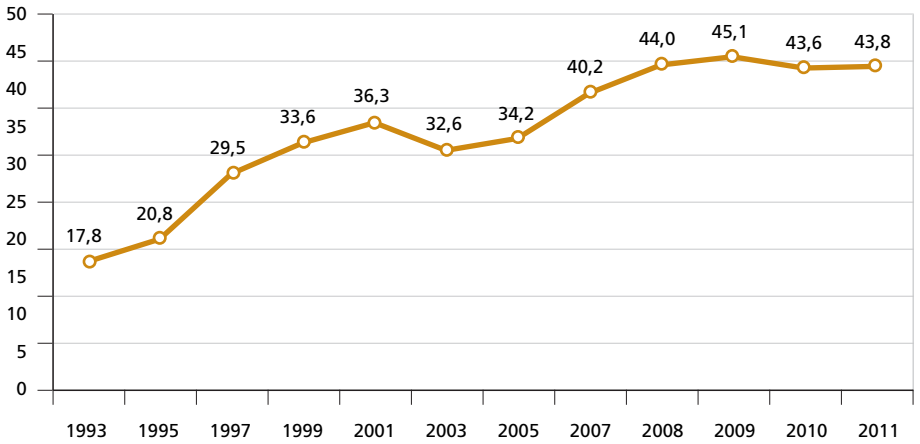
The iPod is an example of the productive integration model with low value added for the countries that do not dispose of neither the brand (in this case detained by the United States), neither concentrate themselves in more technologically sophisticated components (here, Japan). China is, then, at the final end of the hierarchy, given that the most sophisticated components are imported, and the brand holders and the unattainable assets are foreign.

But when the analysis is extended beyond the iPod case and the recent literature based on totally on the Chinese agenda is also revised, the conclusion is that the country has expanded the value added of its exports, especially since the last decade. Koopman, Wang & Wei (2008) and (2012) and Lau *et al*. (2006), using distinct methodologies, estimate the value added domestically by the Chinese exports using the data from the foreign trade and the country's product-input matrix.[11] In general, for the period between 1995 and 2007, these studies point out to a domestic value added between 35% and 60% of the total exports, and, speaking exclusively of the processed exports, something around 20% and 40%.

11. All use the product-input matrix of 2002, an exception is the work from 2012, which uses the 2007 matrix.

These results are not very distinct from the calculation performed below using only the aggregated statistics of foreign trade and, particularly, for the processed exports. Calculated as the difference between the value of processed exports (*Pexp*) and the imports for processing (*Pimp*) divided by the value of the processed exports [(*Pexp-Pimp*)/*Pexp*], the value added of processed exports in relation to the inputs imported for processing would have gone from 17.8% in 1993 to 43.8% in 2011. The peak would be reached in 2009, when the value added domestically had reached 45.1%. This means that, on the other hand, the foreign share of the value added of Chinese processed exports would be around 55%.

GRAPH 3
Value added domestically by processed exports, according to data collected from the Chinese customs
(in % of the total exported)



Source: General Customs Administration of China, own calculations.

More sophisticated calculations were done by the economic literature, crossing the data from the product-input matrix and the Chinese foreign trade, as already mentioned. The most relevant contributions until now seem to be the studies of Koopman, Wang & Wei (2008; 2012), which will be detailed below, and that developed a specially useful methodology for China because it separates the value addes for the processing industry from the normal or ordinary industry – or, according to the authors' definition, a model to estimate the shares of the value added domestically in the case of countries in which the processed exports are disseminated or predominant. The authors use data from the input-output matrix of 1997, 2002 and 2007, released by the National Statistics Office, in

order to detail the total exports and imports by sector, and the data from the foreign trade released by the Customs General Administration to determine the relative share of processed and ordinary exports in each sector. They divided, thus, the national economy in a block for processing and another for normal, each one with its own input-output structure.[12]

The conclusions that can be reached from the results shown by Koopman, Wang & Wei (2012) are relevant. First of all, as expected, the domestic VA of the processed exports is substantially lower than the VA of the ordinary industry. However, it is exactly the domestic VA of processed exports that is growing faster, increasing the weighted sum of the total Chinese exports' VA. They calculate that the domestic VA of the total exports, which had been around 54% in the first two yeas analyzed (1997 and 2002), increased to 60.6% in 2007. In the case of manufactured goods exports, the increase is more expressive, with the domestic VA going from 50% to 60% within the same period. The growth, as already pointed out, is especially significant for the processed exports, increasing from 21.0% to 37.3% between 1997 and 2007 (table 3). The increase in the value added in the processing industry is another significant fact, which suggests that countries initially situated in the lower end of the value hierarchy can ascend through the national production of more sophisticated pieces, parts and components.

The ordinary exports, on the other hand, had a retreat in the domestic VA from 94.8% to 84.0% in the average between 1997 and 2007, which, in fact, reflects the non-processing industry's expansion towards more sophisticated sectors that necessarily demand a higher level of verticalization in production. In reality, a domestic VA that is extraordinarily high in the ordinary industries (as in the case of 1997, near 95%) is an indicator of low integration between these industries and, more importantly, of the predominance of technologically delayed sectors. The domestic content of textiles and basic goods as the *coque*, for example, remains around 90%, while the domestic content of the heavy industry, even if not so integrated to the global chains as the electronics industry, oscillates between 70%-80%.

12. The following data are directly observable though the input-output matrices: raw product of the sector *i*, goods *i* used as intermediary inputs for the setor *j*, value added in the sector *j*, total imports of goods by the sector *i*, and final total demand excluded the exports of goods *i*. The authors combined the data from the input-output tables with the trade shares processed to determine the values of: imports of goods by the sector *i* used as intermediary inputs to produce processed exports, imports of goods for the domestic production and normal exports, normal exports by the sector *i*, and processed exports by the sector *i*. More details about the model, including the formulas, can be found in Koopman, Wang & Wei (2012, p. 3-6).

TABLE 3
Domestic and foreign value added of the total, ordinary and processed exports
(In % of the total exported)

	Total exports			Ordinary exports			Processed exports		
	1997	2002	2007	1997	2002	2007	1997	2002	2007
Total goods									
Domestic VA	54.0	53.9	60.6	94.8	89.6	84.0	21.0	25.4	37.3
Foreign VA	46.0	46.1	39.4	5.2	10.4	16.0	79.0	74.6	62.7
Manufactures									
Domestic VA	50.0	51.3	59.7	94.5	89.0	83.6	20.7	24.8	37.0
Foreign VA	50.0	48.7	40.3	5.5	11.0	16.4	79.4	75.2	63.0

Source: Calculations by Koopman, Wang & Wei (2012). Developed by the author.

The VA results according to the companies' property regime (state owned, collective, private, 100% foreign or joint ventures) that are represented in the following table are less precise because they were calculated through the exclusive use of data from each sector's foreign trade (the input-output tables do not differentiate the companies' property regime). As it was also expected, these estimates show that the exports of companies that are 100% foreign have the lowest domestic VA, but it has been increasing relatively fast: going from 33.4% in 2002 to 44.1% in 2007. The fastest growth of the domestic VA was, however, obtained by the joint ventures between foreign and Chinese companies, increasing from 43.6% in 2002 to 56.9% in 2007. The exports from private Chinese companies, on the other hand, carry the highest domestic content and went from 83.9% to 80.8% in the years observed, while the state owned companies remained around 70% in both years.

The most remarkable element in the following table seems to be the growth in the domestic content of exports produced by joint ventures or by companies with completely foreign capital, with an increase of more than 10 percentage points between 2002 and 2007. This result suggests that foreign exporter companies, traditionally at the lower end of the value hierarchy by property regime, are using more intermediary inputs manufactured in China at its final product, leading to an increase of domestic content, as Koopman, Wang & Wei (2012, p. 8) also point out: "This is presumably also linked to more multinationals moving their upstream production to China."

TABLE 4
Value added domestically by the exports according to the companies' property regime (In %)

Companies by property status	Share of processed exp. in the total exported	VA of ordinary exports	VA of processed exports	VA – weighted sum	Share of the exp. in the total exported
2002					
Foreign	87.5	90.1	25.3	33.4	28.9
Joint ventures	70.5	89.4	24.5	43.6	22.9
State owned	32.2	89.6	26.4	69.3	38.1
Collective	27.4	89.6	28.2	72.8	5.8
Private	9.0	89.6	26.3	83.9	4.3
All companies	55.7	89.3	26.1	53.9	100
2007					
Foreign	83.0	83.8	36.0	44.1	38.1
Joint ventures	59.5	83.6	38.7	56.9	17.7
State owned	25.8	83.4	39.5	72.1	18.9
Collective	24.0	83.1	42.0	73.3	4.0
Private	9.6	84.9	42.0	80.8	21.3
All companies	50.0	83.9	38.7	60.6	100

Source: Calculations by Koopman, Wang & Wei (2012). Developed by the author.

Finally, tables 5A and 5B, with sectorial data organized according the weighted sum of the domestic value, allow us to the tendency among different sectors. The first general conclusion, supporting what had been discussed in regards to table 3, is that there is an improvement in the domestic value in all sectors. In 2002, among the 57 manufacturing sectors included in the input-output table, fifteen had a domestic VA share lower than 50% and, collectively, responded for 35% of the Chinese total exports on that same year. In 2007, the number of sectors with a VA share lower than 50% had declined to ten, and its share of the total Chinese exports had retreated to 32%.

At the opposite side, the number of industries with a high domestic VA increased significantly between 2002 and 2007. The number of sectors with a share of domestic VA higher than 75% went from 12 to 25 and its share of the total exports increased from 10% in 2002 to more than 30% in 2007. Among such sectors with a high domestic VA (those which are at the end of the tables, sorted in ascending order), besides the traditional labor-intensive industries, such as textiles and furniture, capital-intensive industries begin to surface, such as the auto industry, industrial machinery and steel products, a result of the economic advancement and its expansion towards more sophisticated segments.

TABLE 5
5A – Value added domestically by the exports manufactured, by sector (2002)
(In %)

Description of the industry	Decomposition of the VA (%)			Processed exp. (%)	Foreign companies exp. (%)	Total exp. (%)
	Ordinary	Processed	Weighted sum			
Telecommunications equipment	87,5	5,3	12,5	91,2	88,4	3,2
Ship building	82,3	14,7	17,5	95,8	21,0	0,6
Computers	83,6	18,7	19,3	99,1	89,7	7,0
Office and cultural equipment	79,7	19,3	23,3	93,4	71,6	4,3
Electric household appliances	88,2	6,8	23,9	79,1	56,9	1,9
Household audio-visual appliances	82,5	21,3	27,0	90,6	62,3	5,2
Printing, reproduction and recording equipment	91,1	19,7	31,9	83,0	62,7	0,3
Plastics	84,4	10,3	36,6	64,5	51,2	2,4
Electronic components	84,6	32,8	38,1	89,3	87,5	3,4
Steel production	89,0	12,8	44,3	58,8	86,1	0,0
Generators	85,2	32,0	44,3	76,8	55,8	0,9
Other electronic and telecommunication equipment	97,8	36,0	45,3	84,9	84,9	1,8
Rubber	90,6	12,2	48,9	53,1	44,4	1,6
Non-ferrous metal pressing	86,2	7,5	49,3	46,9	48,7	0,4
Measuring equipment	85,8	32,9	49,5	68,6	51,8	1,8
Paper and paper products	90,8	12,4	51,1	50,7	57,0	0,5
Furniture	88,3	12,5	52,5	47,2	56,8	1,7
Articles for sports, cultural activities, etc.	87,5	38,2	52,7	70,6	56,3	3,3
Non-ferrous metal foundry	88,9	10,6	53,6	45,0	17,4	0,8
Ferroalloy	83,6	13,0	54,8	40,8	13,1	0,2
Synthetic materials	80,5	37,1	55,2	58,3	65,4	0,3
Refined oil and nuclear fuel	79,4	5,5	55,7	32,1	24,9	0,8
Metallic products	90,3	10,2	55,7	43,2	45,6	4,4
Other transportation equipment	86,0	12,7	55,8	41,2	50,5	1,2
Other electrical machines and equipment	88,4	40,1	56,2	66,8	60,1	5,6
Special chemical products	82,9	31,4	58,7	46,9	48,4	0,8
Other manufactured products	89,2	31,3	59,0	52,2	37,6	1,7
Wool textiles	91,1	8,8	60,1	37,8	42,6	0,3
Inks, printing ink, pigments etc.	83,5	8,3	61,6	29,1	44,4	0,4

(Continues)

(Continued)

Description of the industry	Decomposition of the VA (%)			Processed exp. (%)	Foreign companies exp. (%)	Total exp. (%)
	Ordinary	Processed	Weighted sum			
Motor vehicles	89,6	10,0	61,6	35,2	48,2	0,8
Glass and its products	86,8	16,5	63,6	33,0	48,8	0,5
Leather, furs and related products	91,9	40,4	63,9	54,3	50,3	4,5
Chemical products for daily use	85,3	26,8	64,1	36,3	43,6	0,4
Clothing	91,3	34,3	65,6	45,1	39,2	7,0
Chemical fibers	80,2	9,2	65,7	20,5	29,2	0,0
Other special industrial equip.	89,3	32,0	66,4	39,9	44,0	1,3
Boilers, motors and turbines	85,9	13,1	66,5	26,7	28,4	0,4
Other industrial machines	90,1	38,6	67,6	43,7	43,7	3,5
Cast iron	86,8	11,0	68,8	23,7	3,0	0,1
Railroad transportation equipment	83,9	14,6	70,1	19,9	5,9	0,1
Wood products, bamboo, rattan and straw	87,8	11,3	72,8	19,6	45,6	1,0
Fabrics and knitting articles	90,6	34,7	72,9	31,6	34,2	5,8
Machines for agriculture, forestry, fishing etc.	85,7	13,9	72,9	17,8	20,8	0,1
Pesticides	77,0	11,5	72,9	6,3	14,4	0,2
Other textiles	89,5	11,7	74,3	19,5	19,5	0,3
Production of textiles	90,1	28,9	75,5	24,0	31,8	1,4
Cotton textiles	91.8	35.6	75.7	28.7	28.8	3.3
Fire resistant materials	90.5	15.4	76.2	19.1	49.8	0.1
Machines for metallurgy	87.2	18.8	78.1	13.3	27.0	0.2
Drugs	90.2	24.3	79.1	16.9	28.7	0.7
Ceramics and porcelain	88.2	14.8	79.8	11.4	33.1	0.7
Other mineral and non-metallic products	90.4	16.7	80.1	14.0	35.7	0.4
Fertilizers	84.4	9.7	81.1	4.5	21.7	0.1
Basic chemical raw material	87.1	43.7	82.0	11.7	18.8	2.0
Laminated steel	90.2	40.5	82.3	16.0	16.8	0.3
Cement, lime and plaster	91.0	20.3	86.0	7.0	77.7	0.1
Coque	91.4	13.2	89.4	2.6	5.3	0.3
Total commercialized	**89.6**	**25.4**	**53.9**	**55.7**	**51.8**	**92.4**

Source: Calculations by Koopman, Wang & Wei (2012). Developed by the author.
The sectors/segments selected in the table follow the same sectors/segments represented in the Chinese product-input matrices from 2002 and 2007, and fit the Chinese four digits classification for economic activities.

5B – Value added domestically by the exports manufactured, by sector (2007)
(In %)

Description of the industry	Decomposition of the VA (%)			Processed exp. (%)	Foreign companies exp. (%)	Total exp. (%)
	Ordinary	Processed	Weighted Sum			
Household audio-visual appliances	75,9	29,6	32,6	93,4	79,1	2,5
Computers	75,7	33,0	33,9	97,9	93,3	11,3
Office and cultural equipment	74,1	33,1	36,5	91,7	86,4	1,6
Other electronic and telecommunication equipment.	68,0	34,7	39,7	84,8	81,6	1,4
Telecommunications equipment	75,2	35,3	43,6	79,3	83,6	5,9
Ship building	83,9	39,1	43,8	89,4	16,5	1,1
Refined oil and nuclear fuel	68,7	20,1	44,4	50,1	27,3	0,7
Measuring equipment	80,0	37,8	45,8	81,2	73,3	2,5
Synthetic materials	76,4	34,0	47,7	67,7	66,1	0,6
Electric household appliances	82,0	35,6	51,8	65,1	61,7	2,7
Other electrical machines and equipment	80,3	33,7	52,1	60,5	65,9	4,9
Rubber	81,8	27,0	53,4	51,8	41,9	1,7
Plastics	80,8	31,1	55,1	51,7	54,7	1,7
Articles for sports, cultural activities etc.	83,0	45,6	58,4	66,0	64,9	2,1
Special chemical products	76,7	34,0	61,6	35,3	51,2	0,8
Chemical fibers	76,4	51,9	62,6	56,2	48,7	0,3
Other special industrial equip	82,5	43,0	65,2	43,8	54,7	2,7
Generators	80,3	51,2	66,6	47,2	50,3	0,7
Railroad transportation equipment	77,7	54,1	69,0	37,0	12,2	0,1
Leather, furs and related products	90,4	40,4	69,2	42,5	46,0	2,4
Paper and paper products	85,5	57,6	69,2	58,4	62,8	0,4
Metallic products	85,1	39,7	70,1	32,9	49,5	4,4
Boilers, motors and turbines	81,6	38,7	70,6	25,6	37,8	0,5
Non-ferrous metal pressing	78,6	56,1	71,2	32,7	41,4	1,0
Other manufactured products	86,5	48,1	72,3	36,8	41,5	1,6
Inks, printing ink, pigments etc.	76,5	56,8	72,6	20,1	47,3	0,3
Pesticides	73,9	53,6	72,9	4,8	19,5	0,1
Chemical products for daily use	80,8	58,4	73,3	33,5	55,5	0,3
Non-ferrous metal pressing	76,2	56,4	73,3	14,6	19,6	0,8
Other transportation equipment	81,0	54,9	73,8	27,8	46,5	0,9
Chemical basic inputs	80,8	42,5	74,9	15,6	26,4	1,9
Motor vehicles	84,0	47,4	75,3	23,7	42,0	2,0
Machines for agriculture, forestry, fishing, etc.	80,6	57,7	75,6	21,9	32,7	0,1
Other industrial machines	83,6	56,2	75,6	29,0	49,9	3,4
Cast iron	75,9	50,6	75,6	1,1	24,3	0,1

(Continues)

(Continued)

Description of the industry	Decomposition of the VA (%)			Processed exp. (%)	Foreign companies exp. (%)	Total exp. (%)
	Ordinary	Processed	Weighted Sum			
Ferroalloy	75,7	53,3	75,6	0,4	8,8	0,4
Furniture	86,7	56,1	76,2	34,2	56,0	2,0
Printing, reproduction and recording equipment	86,4	61,0	76,5	39,0	44,4	0,2
Glass and its products	83,3	59,0	76,7	27,2	46,4	0,6
Wool textiles	89,4	57,9	76,9	39,8	46,8	0,2
Machines for metallurgy	81,2	56,8	77,3	16,0	36,4	0,3
Laminated steel	80,0	52,9	77,8	8,3	22,6	3,8
Fertilizers	81,0	57,3	77,9	13,2	9,5	0,3
Cotton textiles	88,0	45,8	78,9	21,5	26,1	2,1
Clothing	89,5	53,9	79,0	29,7	36,9	4,6
Drugs	87,6	37,5	80,3	14,5	32,3	0,8
Wood, bamboo, rattan and straw products	84.6	58.4	80.4	16.1	33.1	1.0
Steel production	80.8	51.7	80.8	0.2	7.1	0.3
Ceramics and porcelain	83.4	58.2	82.0	5.2	29.9	0.5
Production of textiles	88.4	54.9	82.4	18.1	35.1	1.8
Textiles and kitting articles	88.2	51.6	82.5	15.6	25.7	5.7
Other mineral and non-metallic products	86.0	56.6	83.0	10.1	25.1	0.5
Other textiles	86.6	56.8	83.9	9.0	14.7	0.2
Fire resistant materials	86.6	55.1	84.7	5.8	51.6	0.1
Cement, lime and plaster	89.0	52.9	88.4	1.7	29.6	0.1
Coque	89.6		89.6	0.0	11.4	0.3
Total commercialized	**84.0**	**37.3**	**60.6**	**50.1**	**55.7**	**91.3**

Source: Calculations by Koopman, Wang & Wei (2012). Developed by the author.
The sectors/segments selected in the table follow the same sectors/segments represented in the Chinese product-input matrices from 2002 and 2007, and fit the Chinese four digits classification for economic activities.

In second place, in the main segments of the consumer electrical and electronics and cars exports, the Chinese improvement in the aggregation of value is clear, representing a phenomenon almost widespread. These sectors, with processed exports generally representing more than two thirds of the total exports and that, were also among the ones with the fastest growth within that period. All the following segments showed an improvement in the weighted sum of the value added between 2002 and 2007: computers, telecommunications equipment, household electrical appliances, household audio-visual appliances, motor vehicles, and office, and educational and cultural equipment. Together, they represent 26% of all Chinese exports in 2007. The only segment in which the weighted sum of domestic VA fell is the other electronic and telecommunication equipment.

There are different reasons for the improvement in the value added in the segments listed. In all cases, but at different paces, the VA share of the processing industry improved. On the other hand, in some cases, the improvement was also followed by an expansion of the ordinary and/or Chinese capital industry, as in the case of telecommunication equipment and motor vehicles. Not by chance, these are two of the sectors with the greatest expansion of national Chinese brands, especially Huawei, ZTE, Haier and Gree.

The segment with the fastest progress is the telecommunication equipment, which alone represented 5.9% of the total exports in 2007. Its share in the weighted sum of the domestic VA grew significantly, going from 12.5% to 43.6% within the period analyzed. In this case, there are two relevant movements in course: the value added of the processed exports grew very fast (from 5.3% to 35.3%) and, at the same time, the share of the Chinese capital industry in exports, together with the Chinese ordinary exports, grew significantly. This suggests a general progress of the segment in terms of value added, both at the processing industry and the Chinese ordinary and capital industries. This justifies the choice of Huawei, the main Chinese telecommunications company, for the brief case study presented in the following section.

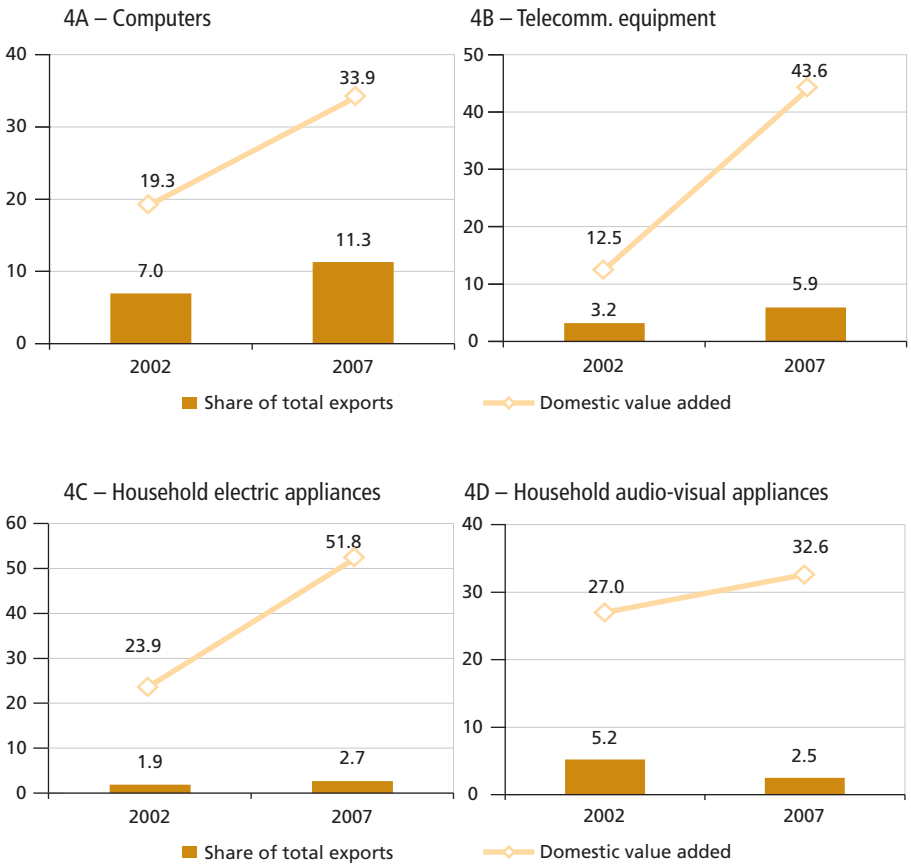
A similar phenomenon occurred with the motor vehicle sector, where the expansion of the VA added in the processing industry was expressive (from 10% to 47.4%) and was accompanied by a retreat in the share of both the foreign firms and the processed exports in the total exports. These last ones dropped from 35.2% to 23.7% of the total, what shows that the automotive industry is much less integrated into the global value chains than the electronics industry.

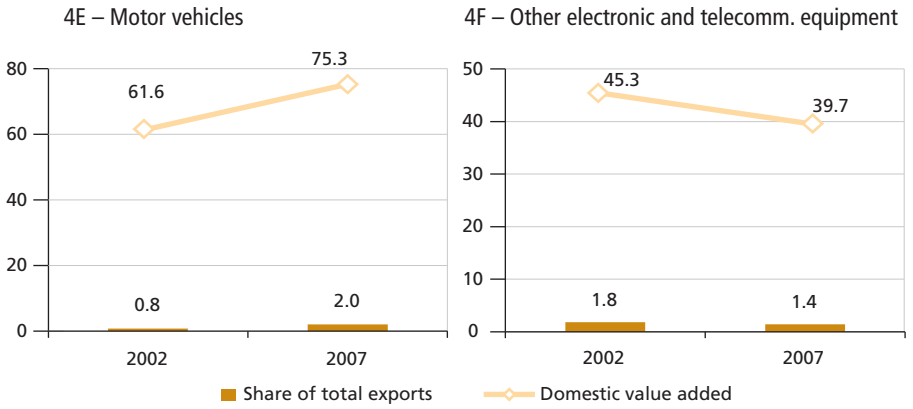
A different pattern was observed in the computer segment, which alone represented 11.3% of the total Chinese exports in 2007. The improvement in the value added was also significant, going from 19.3% to 33.9%, but in this case, the Chinese brands do not seem to have played an important part in the change, given that the share of foreign companies in the total exports continued to increase in the period, from 89.7% to 93.3%. The improvement in the domestic value in this segment was a result of the improvement in the value added of processed exports, which went from 18.7% to 33%. These data do not capture, however, the recent external sales boost of Lenovo, which begin to grow very fast after 2008. Within that period, the Chinese multinational's share in the global market of PCs went from 7% to 13% according to the data provided by Gartner consulting.[13] Given its recent central position in the global PC industry and its path, very different than Huawei's, the company will be subject to another case study in the next section.

13. Gartner Press Release January, 15th, 2009, available at: <http://www.gartner.com/it/page.jsp?id=856712> (last access in May 23rd, 2012) and data from the graph 5 as follows.

Within the household electric appliances sector, the pattern observed for computers is repeated: strong rise in the VA of processed exports, increasing the weighted sum of the total VA, but accompanied by a slight increase in the participation of foreign firms. However, in this segment, differently than the computers, the Chinese firms still detain a relevant share of the export market, around 40%.

GRAPH 4
Value added domestically by exports in selected segments from the electrical and electronics industry and other commodities
(In %)





Source: Developed by the author based on the data from the previous tables (5A and 5B).

In sum, the improvement in the value added of Chinese exports was accompanied by two important phenomena within the perspective of the country's rise in the global value chain's hierarchy: there was an expressive increase in the domestic content of processed exports and a growing participation of ordinary exports in more technologically sophisticated sectors, especially in the heavy industry. Such increase in the domestic content of processed exports was caused by different phenomena, depending on the sectors observed. In some of them, as computers, the behavior was driven by foreign firms, which have introduced more sophisticated stages in the production process in China. That is what Zhang (2012) observes, when commenting on the results from Koopman *et al.* (2010) and the growth in the value added of processed exports:

> this reflects the fact that more of the value chain of many products is now located within China: suppliers of parts are increasingly setting up shop to be close to the location of final assembly. Foreign companies are setting up R&D centers and moving the production to more sophisticated parts to China (Zhang, 2012, p. 2-3).

In other cases, and the telecommunications sector is an emblematic example, the improvement in domestic content came with the increasing participation of the Chinese capital industry in the total exported. And, in this case, the growth of the total value added is much more significant than the behavior of the computers segment, for example. The key factor is that the gain in value added occurred with the formation of lead firms, and not only with the inclusion of more sophisticated components in the work of EMS or ODM.

It seems important to remember that the main goal of the Chinese processing industry is to be a channel for the absorption of strong currency and technology. As mentioned earlier, if the success of the first goal is unquestionable given the

dimension of Chinese reserves and its commercial surplus, the technological progress of local brands is, on the other hand, subject to many controversies. This article will now observe the Chinese capital electronics industry, supposedly benefitted from technology and knowhow absorbed by the assembly industry, holder of local brands that began arriving in the West through Huawei, ZTE, Lenovo, TCL and Gree. This is the national industry that will be investigated in more detail because it has the potential to ascend structurally in the CGV's hierarchy.

5 LEAD FIRMS IN THE CHINESE ELECTRICAL AND ELECTRONICS INDUSTRY

Learning how to progress in the rank from EMS or ODM firms without a brand to domestically develop lead firms that are able to join the global chain seems to be the key element for countries that wish to advance in the hierarchy of value added (section 2). Assembly plants of western brands of high international value and low value added in China (such as the Apple line) or mass manufacturers of low cost appliances, operating with low margins, and focused on the domestic market (that absorb business models and technologies from abroad and adapt its products for the Chinese consumer market)[14] can be shortcuts to the fast accumulation of capital. But they do not ensure a relevant position within the global value chains. Nevertheless, has China being successful in creating lead firms in recent years? Is there any pattern for the emergence of such brands?

Even if we look only to the electronics and information technology sectors, it is impossible to establish a single model for the property structure or the internationalization of Chinese lead companies. What they all have in common is the intense State support from its foundation to its present, the innovation (including deliberate copy) and the wide penetration in the Chinese internal market before their international expansion.

In fact, the internal market is a fertile ground for the consolidation and emergence of lead national brands. China is not only the major producer of electronic goods, but in recent years has become the largest consumer of several durable goods, such as automobiles and personal computers, surpassing the United States' consumption in 2010.[15] Such internal market has favored several

14. This second model, called "incremental innovation" by both consulting companies GaveKal and RedTech Advisors, has been a shortcut for many Chinese firms. They benefit not only from its ability to innovate, but from the low cost, mature distribution chain, knowledge of the Market and extraordinary domestic demand.

15. In 2010, the country consumed 13.5 million cars, against 10.4 million in the United States. In the second quarter of 2011, China surpassed the United States in the personal computer sectors, being responsible for 22% of the global consumption of PCs, against 21% consumed by North-Americans. See *Bloomberg*, "China ends US's reign as largest auto market", January 11th, 2010, and *The Wall Street Journal*, "China passes US as the world's biggest PC market", August 24th, 2011.

Chinese lead brands, allowing them relevant or leading presence in the domestic market, as is the case of Lenovo, Huawei, ZTE, Gree, Haier and TCL in the electronics and information technology sectors.[16]

Next, two case studies about emerging Chinese companies in these two sectors have been used: Lenovo, which became the second major global PC brand in market share in 2011, and Huawei, which since 2010 is the second major provider of infrastructure equipment for mobile telecommunication and one of the Chinese companies with more resources invested in R&D. With very distinct strategies, the case of the two companies may shed some light over the diversity of paths being tested for the development of local bands.

5.1 Case study I: Lenovo

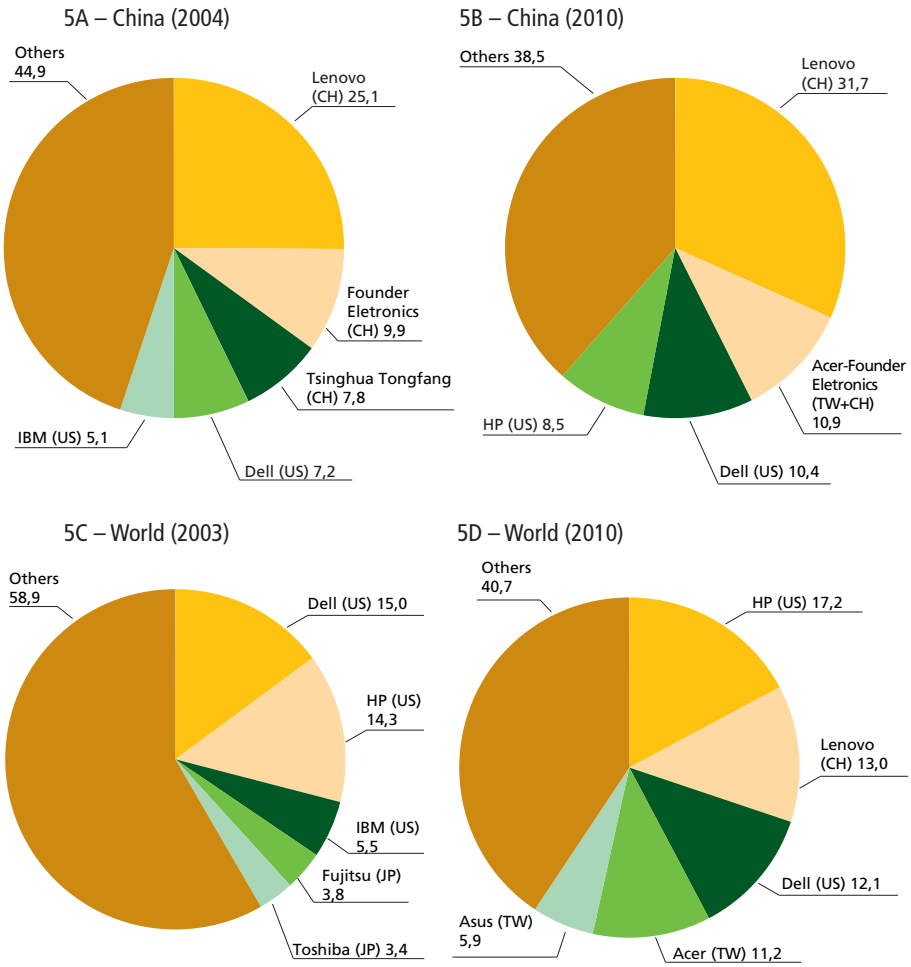
Lenovo combined intense state support with aggressive acquisitions or international joint ventures (from IBM in the United States to NEC in Japan), which made its property structure, internal architecture, leadership and innovation sources very distinct from the "national champions" models that were developed in Japan and South Korea. Besides becoming the second major PC brand in the world in 2011, the company has operated with low profit margins and grew especially in the sectors which the north-American traditional lead firms (IBM, Dell e HP) have neglected exactly as a result of its low margins.

Originally called Legend, the company was founded in 1984 by the Institute of Computer Science of the Chinese Academy of Sciences as part of an effort from the Chinese government to develop an advanced national industry in technologically sophisticated fields. Simultaneous to the research and development work, the company also focused on the production of foreign computers, automatically turning these profits into R&D in creation of its own production line. The State support happened along the 1990s and took several forms. Early in the decade, when the internal demand for PCs was irrelevant, the government demand was responsible for driving Legend's sales. One of the most important instruments to stimulate the national information technology industry (IT) were the so-called "Golden Projects", several e-government projects aiming at the construction of an IT infrastructure in all State agencies, schools and hospitals, with projects going from internet business services to tax evasion control (Hatford, 2000). In 1994, the government launched another stimulus program, now to support the national brands, and Legend was one of the main beneficiaries through expressive loans.

16. The internationalization of Chinese companies is even stronger in the raw material and basic products sectors, driven by great state-owned companies as CNOOC, Sinopec, PetroChina, Baosteel and State Grid, and is part of a movement with strategic dimensions that is beyond this article's scope of analysis.

From the mid-1990s, besides governmental purchases, Legend benefitted from the protection of the internal market, and soon became the major producer of personal computers, boards and integrated systems in China.[17] It was when the company opened its capital in the Honk Kong stock market, always ensuring, at the same time, the State's major share through the Academy of Sciences. Between 1997-98, when the demand for PCs had its first high, the company rapidly established itself as the major Chinese supplier, with approximately 22% of the market. The company's share in the Chinese consumer Market increased to 25.1% in 2004 and to 31.7% in 2010 (graph 5).

GRAPH 5
Market share in the personal computers segment[1]



Note: [1] Personal computers include desktops, laptops and netbooks, but not tablets, these later ones dominated by Apple.
Source: IDC and Gartner.

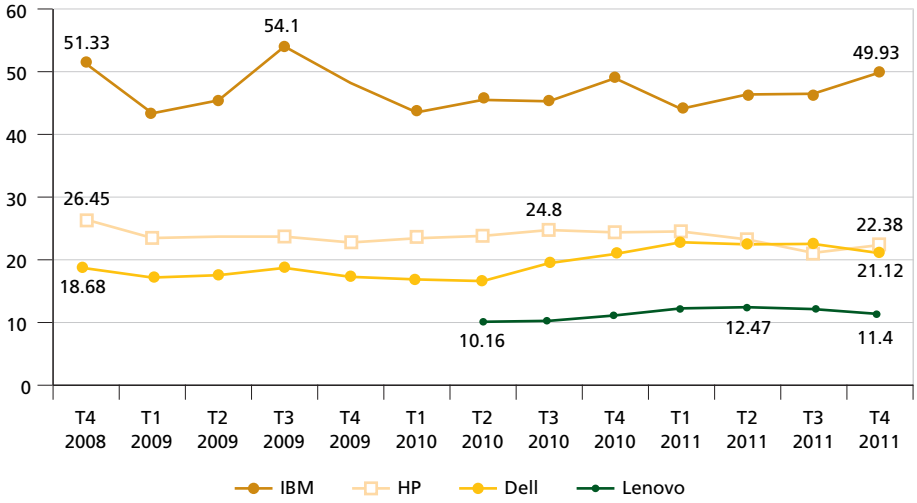
17. Today, the company's line of products include notebooks, desk computers, servers, equipment for data storage, peripherals, smart televisions, digital products, cell phones etc.

As the restrictions to imports started to be abandoned, Legend began a bold acquisition process not only to remain competitive in China but particularly to expand globally. The purchase of IBM's PC division in 2004, which caused its transformation into Lenovo, provided not only the knowhow of a brand consolidated in the West, but especially a large R&D center in the United States and another one in Japan; three assembly plants in China and one in India; regional distribution networks around the world; and a group of business and financial development and corporate planning in Singapore. When it comes to property, it is important to note that besides highly internationalized, the company remains semi-public. In 2009, 45% of Lenovo shares were negotiated in the market; 42% belonged to Legend Holding; 7% to investment banks; and 6% to IBM. The company is still semi-public because the Chinese Academy of Sciences detains 65% of Legend Holdings and, therefore, keeps its share of 27% from Lenovo (Ling, 2006; Sturgeon & Kawakami, 2010).

Lenovo's fast paced growth in the global market, reaching the second position in the PC's global market share in 2010 (graph 5), reflects, on the one hand, the rapid expansion of the company in developing countries but, on the other, the departure of its competitors from this segment. In fact, the company has concentrated its expansion in China, the largest global market, and also in the large countries with a fast development, especially Brazil, Russia e India. On the other hand, there was an explicit retraction of traditional competitors, notably HP and Dell, that publicly announced they are concentrating in sectors with higher profit margins and less volume, such as more sophisticated IT services and equipment. These movements reflect a structural change in the personal computers segment, seen for a long time as one of the top IT sectors, and now concentrated in low cost product and small margins. Certainly, the prompt arrival of Asus, focused on low cost netbooks, is a proof of this change.

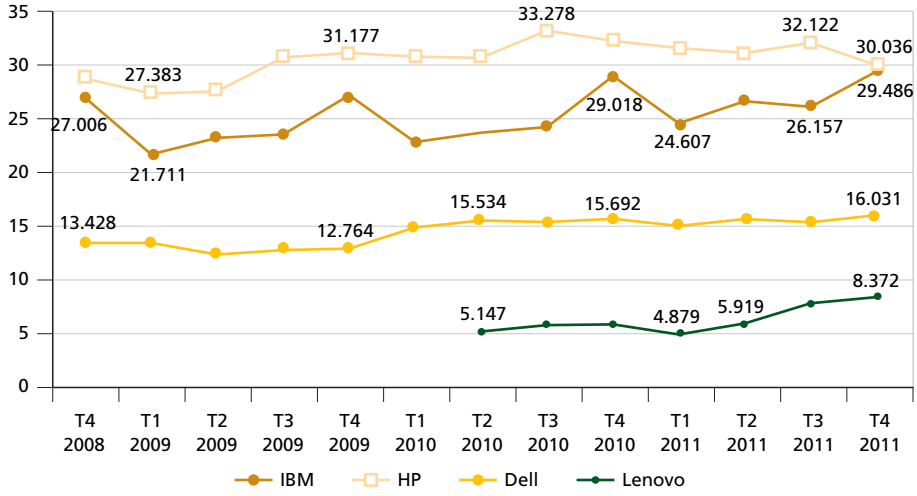
Lenovo's gross profit margins, when compared to its direct competitors – around 11% between 2010 and 2011, against margins around 20% to 23% for HP and Dell in the same period – are evidences of the sector's structural change and the low margins currently guaranteed by the personal computer sector. The same occurs in regards to revenue. Besides the growth, Lenovo's revenues in the last quarter of 2011, around US$ 8 billion, are significantly lower that Dell's (US$ 16 billion) and that the revenues of IBM and HP (both around US$ 30 billion).

GRAPH 6
Gross profit margins of the main suppliers of systems and hardware for PCs
(In %)



Source: PWC, available at: <http://www.pwc.com/gx/en/technology/scorecard/systems-and-pchardware.jhtml>.

GRAPH 7
Revenues of the main suppliers of systems and hardware for PCs
(In US$ millions)

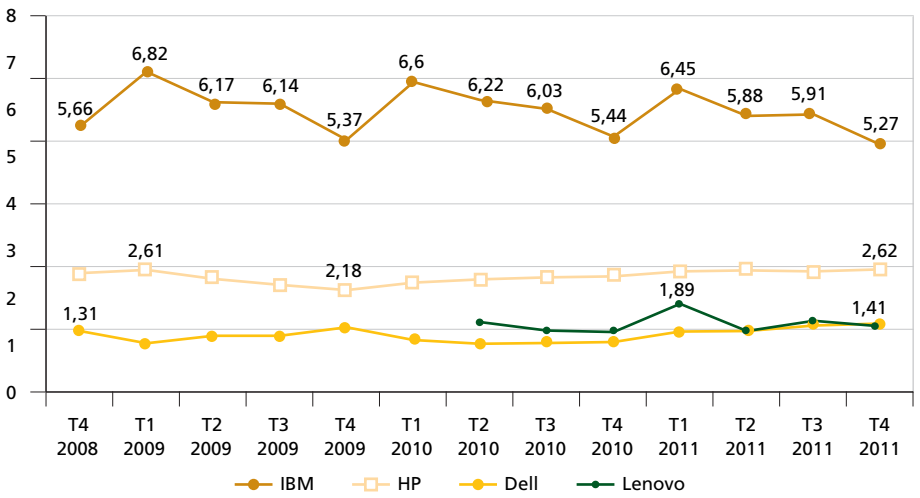


Source: PWC, available at: <http://www.pwc.com/gx/en/technology/scorecard/systems-and-pchardware.jhtml>.

Lenovo's second place in the market share of personal computers is, therefore, a relative success that proves the main challenge for local IT bands: the fast pace of

the technological change that characterizes the sector. The company has presented a moderate investment in R&D: approximately 1.5% of its sales in 2011, very close to what Dell invests and below the baseline of 2.5% that HP and Asus invest, this latter growing expressively in the global market (Redtech Advisors, 2011).

GRAPH 8
R&D as a share of the total sales
(In %)



Source: PWC, available at: <http://www.pwc.com/gx/en/technology/scorecard/systems-and-pchardware.jhtml>.

The company has, since 2011, publicly announced that it wishes to expand its participation in more profitable sectors and mature markets.[18] In 2011, the company made other international moves: acquired Medion AG, a German manufacturer of consumer electronics and multimedia, and announced the formation of a joint venture with the Japanese firm NEC Corp, creating the NEC Lenovo Japan Group, a partner that aims at Lenovo's expansion in the personal computer sector in Japan. Lenovo kept 51% of the new joint venture, while NEC kept the remaining 49%.

5.2 Case study II: Huawei

Huawei is a case of an endogenously Chinese company, headquartered in Shenzhen, Guangdong, with capacity for relevant innovation and its own technological development, with R&D centers in China, India, Russia, Germany, the United States and Sweden. Its expenses with R&D reached 11.6% of the revenues in 2011 (table 6), which do not exclude, however, frequent cases of accusations of patent and

18. See, for example, the statements of President Liu Chuanzhi at: China Daily, August 19th, 2011, "Lenovo posts record US$ 5.9b sales revenue."

copyright infringement, as in the most notorious case of its dispute with Cisco.[19] The company was founded in 1988 by Ren Zhengfei, a former official of the body of engineers from the People's Liberation Army who remains the Chief Executive Officer (CEO) since then. From an importer of PBX equipment, when created, the company started manufacturing equipment and, in the early 1990s, began selling other telephone appliances all around China. Gradually, Huawei entered the transmission equipment and telecommunications network sectors. In 2011, it was the second major supplier of equipment for telecommunications network in the world, both in market share and revenues, behind the Swedish Ericsson and before Alcatel-Lucent, Nokia, Siemens, Networks and ZTE, providing equipment and operational services for internet and telephone companies and operators, besides rapidly penetrating the sector of final user appliances, especially in the smartphones market.

In 1996, the company began its international expansion, competing with Cisco, Ericsson and Fujitsu in low income countries such as Bangladesh, Iraq and Nigeria, in which the low cost is a key element. At the turn of the century, Huawei started to also compete in developed markets, and since 2004, its external sales exceeded its domestic sales. With half of its employees outside China, its revenues have grown abroad very fast (table 7). Its clients include some of the major telephone operators, as British Telecom, Vodafone, Telefonica, Deutsche Telekom, France Telecom, China Mobile and Vivo, in Brazil (PWC, 2005; Huawei, 2012).

In 2010, Huawei had 15.7% of the telecommunication network's global infrastructure market, against a 19.6% share detained by Ericsson.[20] The distance between the two competitors became practically irrelevant in 2011, when both reached US$ 32 billion in revenue and the difference represented something around two weeks of Huawei's sales (table 6).

TABLE 6
Ericsson and Huawei's financial performance in 2010 and 2011
(In billions and in %)

	Ericsson		Huawei	
	2011 (US$)[1]	2011 (US$)[1]	2011 (CNY)	2010 (CNY)
Revenue	32.9	32.4	203.9	182.5
Gross profit	11.6	12.1	76.4	80.4
Gross profit margin (%)	35.1	37.5	37.5	44.0
R&D (as a % of revenues)	14.4	11.6	11.6	9.7

Note: [1] The exchange rate from 12.31.2011 was used to make the conversion of the Swedish krona and the renminbi to the Dollar.
Sources: Huawei Investment & Holding (2012), annual report, available at: <http://www.huawei.com/ucmf/groups/public/documents/attachments/hw_126991.pdf>, Ericsson (2012), annual report, available at: <http://www.ericsson.com/thecompany/investors/financial_reports/2011/annual11/>.

19. See PWC (2005) for details.
20. Business Week, April 18th, 2011, available at: <http://www.businessweek.com/news/2011-04-18/huawei-closes-in-on-ericsson-as-sales-triple-over-five-years.html>.

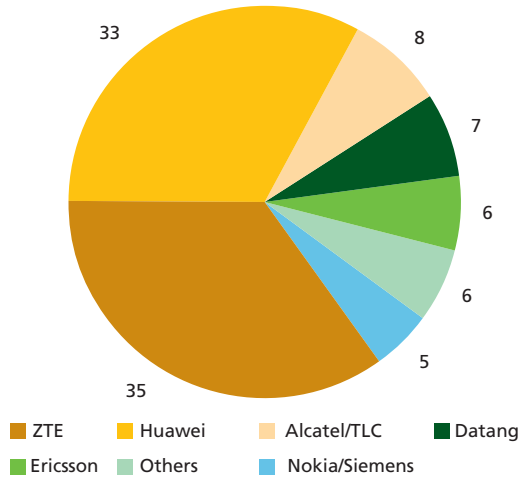
TABLE 7
Huawei's revenue in China and abroad in 2010 and 2011
(in billions of CNY)

	2011	2010	Var. (%)
China	65.6	62.1	5.5
Exterior	138.4	120.4	14.9
Total	**203.9**	**182.5**	**11.7**

Source: Huawei Investment & Holding (2011), annual report, available at: <http://www.huawei.com/ucmf/groups/public/documents/attachments/hw_126991.pdf>.

Together with ZTE (second major Chinese telecommunications company of State origin), Huawei dominates the IT market in China. In the third generation of mobile networks, and using a standard developed domestically,[21] both Chinese companies had 68% of the domestic market in 2010 (graph 9).

GRAPH 9
Chinese Market share in the 3G mobile internet networks segment (2010)
(In %)



Source: RedTech (2011).

Besides its success in China, developing countries and Europe, Huawei faces a strong resistance to penetrate the United States because of the North-American authorities' caution with information security and control. Officially presented as a private company, Huawei's ownership is frequently under speculation. The company has no open capital in any stock market and, officially, 1.42% of its capital is detained by the founder and CEO, Ren Zhengfei. The other 98.56%

21. See RedTech (2011) for more details.

of the capital, according to the company information, are the property of approximately 61 thousand Chinese employees, being managed by the Shenzhen Huawei Investment Holdings Co Ltd. Union. The shares are divided among employees according to performance criteria, responsibility and results, and complement the company's incentive structure. Only Chinese employees may hold such shares (Saarinen, 2010). As the details on the distribution of shares are not released, North-American authorities, including the Pentagon, accuse the company of being associated with the Chinese People's Liberation Army.[22] Therefore, it is relevant to note that even with the North-American protectionism and Huawei's insignificant presence in the United States, the company had reached the second place in the telecommunications' infrastructure equipment sector.

6 CONCLUSIONS

Chinese exports not only became more sophisticated in the last decade but are also currently adding more value domestically. Differently than what the literature using data from the early 21st Century[23] suggested, the most recent estimates state that the country is rising in the value added chain, both as a result of the growing participation of ordinary exports in more sophisticated sectors and segments, and the increase in the value added by processed exports. According to Koopman, Wang & Wei (2012), the value added from the total exports, which was approximately 54% both in 1997 and 2002, increased to 60.6% in 2007. This increase was pushed by the processing industry, with its value going from 25.4% in 2002 to 37.3% in 2007, and by the increase in ordinary exports within the total exports.

Especially in the electronic and automobile industries, the growth of the Chinese exports' value added is a clear phenomenon. All these sectors showed an improvement in domestic value added between 2002 and 2007: personal computers (from 19.3% to 33.9%, respectively), telecommunications equipment (from 12.5% to 43.6%), household electrical appliances (from 23.9% to 51.8%), household audiovisual appliances (from 27.0% to 32.6%), motor vehicles (from 61.6% to 75.3%), and office, educational and cultural equipment (from 23.3% to 36.5%). There is still plenty of space for the extension of the domestic VA in most segments, and there are no signs that this increasing trend is saturated. Nevertheless, even if there are no data about the domestic VA from 2007 on, the business data for processing suggest that the ordinary exports kept growing in the subsequent years (from 44% in 2007 to 48% in 2011) and the imports for processing suffered an important drop within that same period (from 38% to 27%).

22. *The Wall Street Journal*, "US works to counter electronic spy risks", December 12th, 2011.
23. Lemoine and Unal-Kesenci (2004) is the most cited reference.

Telecommunication equipment, which alone represented almost 6% of the total exports, was the segment with the most relevant progress. Its value added grew expressively, from 12.5% to 43.6% between 2002 and 2007. In this case, both the value added of processed exports increased rapidly (from 5.3% to 35.3%) and, at the same time, the Chinese capital industry share within exports, together with the ordinary exports, grew significantly. This suggests, as previously mentioned, a generalized progress of this sector, from a value added perspective, both for the processing industry and the ordinary and Chinese-capitalized industries. And it justified our choice for Huawei in the case study developed for this article.

In other segments, such as personal computers and household electrical appliances, the behavior was influenced by foreign firms, which introduced to China more sophisticated steps in the production process. The strong increase in the value added of processed exports, influencing the weighted sum of the total VA, was accompanied by a slight increase in the participation of foreign companies within exports. As a result of the growing and recent participation of Lenovo in the personal computers sector, our expectation is that the future data also show an increase in the participation of Chinese firms in the PC's exports.

Both brief case studies in the previous section tried to illustrate the diversity of paths for the emergence of Chinese lead firms. In the case of Lenovo, the combination of State support with aggressive acquisitions or international joint ventures made its ownership structure, internal architecture, and leadership and innovation sources radically different from the models developed in Japan and South Korea, for example, and Huawei's pattern. Lenovo's narrow profit margins and its dominance in the sector which has been neglected by traditional lead firms is also another difference in comparison to Huawei, which has grown within the most advanced sectors and competed directly with traditional lead brands. The expectation is that this consolidation and emergence of new Chinese lead firms will keep growing, being benefitted by a large internal market, varied forms of governmental support, access to credit and strong capacity for capital accumulation.

There are extremely relevant changes in course with: *i*) the Chinese rise in the value added chain of processed exports; *ii*) sophistication and expansion of its ordinary exports; and *iii*) internationalization of its lead firms, according to what this article tried to highlight. Based on the findings presented here, the challenges to Brazil are evidently great and represent a vast field for future researches.

REFERENCES

AKAMATSU, K. A theory of unbalanced growth in the world economy. **Review of world economics**, v. 86, p. 3-25, 1961.

BALDWIN, Carliss; KIMBERLY, Clark. **Design Rules:** unleashing the power of modularity. MIT Press, Cambridge, MA, 2000.

DEDRICK, Jacson; KRAEMER, Kenneth; LINDEN, Greg. **Who profits from innovation in global value chains?** A study of the iPod and notebook PC. *In*: INDUSTRY STUDIES ANNUAL CONFERENCE. Irvine, California: Personal Computing Industry Center, 2008.

FLORES, R. A fragmentação mundial da produção e comercialização: conceitos e questões básicas. *In*: ABDI – AGÊNCIA BRASILEIRA DE DESENVOLVIMENTO INDUSTRIAL. **Integração produtiva**: caminhos para o Mercosul. Brasília: ABDI, 2010. (Série Cadernos da Indústria ABDI, v. 16). Available at: <http://www.abdi.com.br/Estudo/Integra%C3%A7%C3%A3o%20Produtiva%20Caminhos%20para%20o%20Mercosul.pdf>.

GEREFFI, Gary; HUMPHREY, John; STURGEON, Timothy. The governance of global value chains. **Review of international political economy**, v. 12, n. 1, 2005.

HATFORD, K. Seeds for success: building China's information technology. **Harvard Asia Pacific review**, v. 4, n. 2, p. 19-23, 2000.

HOLST, D. **An overview of China´s trade emergence and East Asian trade patterns to 2020**. Tokyo: DBI, July 2002. (Research paper).

JIN, Hongman. **Country paper**. *In*: INTERNATIONAL WORKSHOP ON COUNTRY PRACTICES IN COMPILATION OF INTERNATIONAL MERCHANDISE TRADE STATISTICS. Bangkok: UNSD, 12-15 Dec. 2006.

KOOPMAN, R. *et al*. **Give credit where credit is due**: tracing value added in global production chains. Cambridge, MA: NBER, Sept. 2010. (Working Paper, n. 16.426).

KOOPMAN, R.; WANG, Z.; WEI, S. **How much of Chinese export is really made in China**? Assessing domestic value-added when processing trade is pervasive. Washington: NBER, Mar. 2008. (Working Paper, n. 14.109).

_____. Estimating domestic content in exports when processing trade is pervasive. **Journal of development economics**, v. 99, n. 1, 2012.

LEMOINE, Françoise; UNAL-KESENCI, Deniz. Assembly trade and technology transfer: the case of China. **World development**, v. 32, n. 5, p. 829-850, 2004.

LINDEN, Greg; KRAEMER, Kenneth; DEDRICK, Jason. **Who captures value in global innovation system**? The case of Apple's iPod. Irvine: PCIC, 2007. (Working paper).

LING, Zhijun. **The Lenovo affair:** the growth of China's computer giant and its takeover of IBM-PC. Singapore: Wiley, 2006.

MACHADO, João Bosco. Integração produtiva: referencial analítico, experiência europeia e lições para o Mercosul. *In*: ABDI – AGÊNCIA BRASILEIRA DE DESENVOLVIMENTO INDUSTRIAL. **Integração produtiva**: caminhos para o Mercosul. Brasília: ABDI, 2010. (Série Cadernos da Indústria ABDI, v. 16). Available at: <http://www.abdi.com.br/Estudo/Integra%C3%A7%C3%A3o%20 Produtiva %20Caminhos%20para%20o%20Mercosul.pdf>.

MEDEIROS, Carlos. A China como duplo polo na economia mundial e a recentralização asiática. **Revista de economia política**, v. 26, n. 3, p. 381-400, 2007.

_____. Integração produtiva: a experiência asiática e algumas referências para o Mercosul. *In*: ABDI – AGÊNCIA BRASILEIRA DE DESENVOLVIMENTO INDUSTRIAL. **Integração produtiva**: caminhos para o Mercosul. Brasília: ABDI, 2010. (Série Cadernos da Indústria ABDI, v. 16). Available at: <http:// www.abdi.com.br/Estudo/Integra%C3%A7%C3%A3o%20Produtiva%20Caminhos%20para%20o%20Mercosul.pdf>

PWC – PRICE WATERHOUSE COOPERS. **Redefining intellectual property value**: the case of China. China: PwC, 2005. Available at: <http://www.pwc. com/en_us/us/technology-innovation-center/assets/ipr-web_x.pdf>.

REDTECH ADVISORS. Consumer electronics: incremental innovation. **Profile Report, GaveKal Dragonomics**, Jan. 2011.

RUNBAUGH, Thomas; BLANCHER, Nicolas. **China**: international trade and WTO accession. Mar. 2004. (IMF Working Paper). Available at: <http://www.imf.org/external/pubs/ft/wp/2004/wp0436.pdf>.

SAARINEN, J. Who really owns Huawei? **IT News**, Sydney, 28 May 2010.

SONG, Lei. **Modularization, modularity traps and competitiveness**: towards an architecture analysis of China's AV industry. *In*: ITEC WORKSHOP. Kyoto, Oct. 2007.

STURGEON, Timothy; VAN BIESEBROECK, Joahennes; GEREFFI, Gary. Value chains, networks and clusters: reframing the global automotive industry. **Journal of economic geography**, n. 8, p. 297-321, 2008.

STURGEON, Timothy; KAWAKAMI, Momoko. **Global value chains in the eletronics industry**: was the crisis a window of opportunity for developing countries? Sept. 2010. (Policy Research Paper, n. 5.417). Available at: <http://goo.gl/tVofAi>.

STURGEON, T.; LEE, J.-R. Industry co-evolution: a comparison of Taiwan and North American electronics contract manufactures. *In*: BERGER, S.; LESTER, R. K. (Eds.). **Global Taiwan**: building competitive strengths in a new international economy. New York: M.E. Sharpe, 2005.

TONG, Sarah; ZHENG, Yi. China's trade acceleration and the deepening of an East Asian regional production network. **China & world economy**, v. 16, n. 1, p. 66-81, 2008.

UNCTAD – UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT REPORT. **TDR – Trade and Development**. New York; Geneva, 2002.

YING, T. China ends U.S.'s reign as largest auto market (update 2). **Bloomberg News**, New York, 11 Jan. 2010. Available at : <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aE.x_r_l9NZE>.

ZHANG, Janet. How much does China need exports? **Ideas report, GaveKal Dragonomics**, 21st Mar. 2012.

CRISIS AND PERPLEXITY: THE ECONOMISTS IN FACE OF THE RUPTURE OF THE PATTERN OF GLOBAL GROWTH

Emilio Chernavsky*

More than four years after the deepening of the most acute international economic crisis verified at the postwar, the world seems to be moving to a prolonged period of low growth. It is argued that this situation results from the high degree of uncertainty caused by the rupture of the pattern of global growth that prevailed in the last quarter century, precipitated by the outbreak of the economic crisis that made clear the unsustainability of the trends towards the strong growth of internal and external indebtedness, especially in the US, which had enabled until then the reproduction of that pattern maintaining satisfactory growth rates. Since the mainstream in economics, perplexed with the outbreak of the crisis, does not recognize on its impact on the confidence in the reproduction of the growth pattern the central element to explain the high degree of uncertainty responsible for the negative prognostic for the world economy, it is suggested it may contribute little in finding outlets for the situation.

Keywords: global crisis; pattern of growth; perplexity.

CRISE E PERPLEXIDADE: OS ECONOMISTAS DIANTE DA RUPTURA DO PADRÃO DE CRESCIMENTO GLOBAL

Mais de quatro anos após o aprofundamento da mais aguda crise econômica internacional verificada no pós-guerra, o mundo parece caminhar para um período prolongado de baixo crescimento. Defende-se que esta situação é resultado do elevado grau de incerteza provocado pela ruptura do padrão de crescimento global vigente no último quarto de século, precipitada pela eclosão da crise econômica que escancarou a insustentabilidade das tendências ao forte crescimento do endividamento interno e externo, especialmente nos Estados Unidos, que haviam permitido a reprodução, até então, daquele padrão, mantendo taxas de crescimento satisfatórias. Mostra-se que a corrente dominante na ciência econômica, perplexa com a irrupção da crise, não reconhece o impacto desta sobre a confiança na reprodução daquele padrão de crescimento o elemento central para explicar o elevado grau de incerteza responsável pelos prognósticos negativos para a economia mundial e, sugere-se, pouco pode contribuir na busca de saídas para a situação.

Palavras-chave: crise global; padrão de crescimento; perplexidade.

JEL: B40, F02, G01

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1 INTRODUCTION

In late 2012, the economic outlook in most of the globe for the near future was strongly negative. The United States, in slow recovery from the 2008-2009 recession, found themselves facing the possibility of a 'fiscal cliff', in which legal changes agreed between the two major parties of the country, if effectively implemented, could lead to a generalized increase in taxes and a sharp reduction in public spending, and drive it to a severe recession in the world's largest economy.[1] The euro zone, as a whole in recession since the third quarter of 2012 and with some of its economies facing this situation for years, was facing record levels of unemployment and watching the sustainability of the sovereign debt of several countries, as well as the region's economic and financial governance, being constantly questioned. Likewise, also without yet recovering from the deep crisis in 2009, the United Kingdom and Japan closed 2012 in recession and with bleak expectations to overcome it in the short term. Even China, which had been growing at double-digit rates for almost two decades, with the sharp drop in world demand for manufactured goods and the difficulty in directing quickly a significant portion of the aggregate demand for domestic consumption, greatly reduced the pace and has grown in the last two quarters of 2012 at annual rates close to 8%. The drop in the global demand for raw materials that this movement produced led, in turn, to a decrease in activity level also in many emerging producers of basic materials, which were benefiting from the Chinese growth. With all these elements, it did not seem wrong to say, in line with many analysts in academia and private institutions and officials, that the world was moving to a more or less prolonged period of low growth, in which the uncertainty about the future economy has rarely been greater. The press release that introduced the Global Economic Prospects – the World Bank June, 2012 GEP was, in this sense, revealing: "Developing countries should prepare for a long period of volatility in the global economy (...) and also for harder times"(World Bank, 2012).

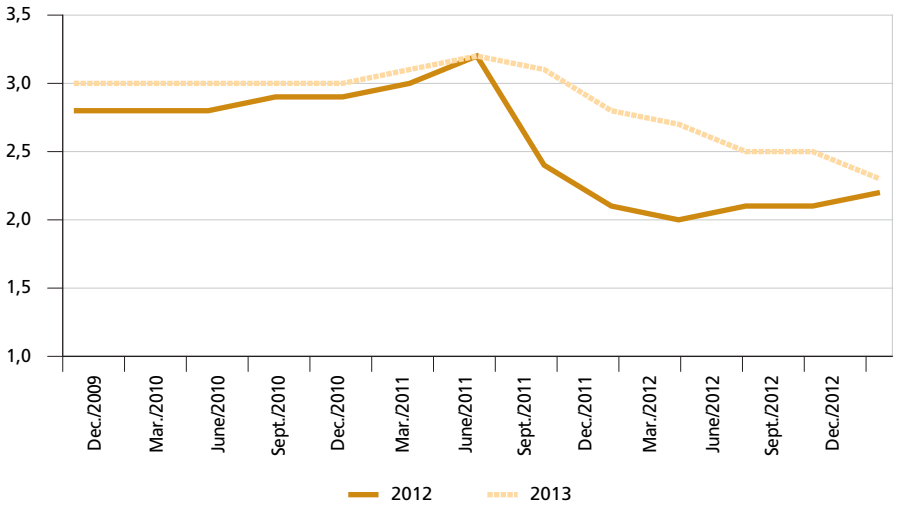
The generalization of this perception occurred four years after the bursting of the bubble in the United States housing market, which triggered the deepest global economic crisis recorded in the post-war era, and from which the global economy has not actually recovered. Indeed, although the good economic performance seen in much of the world in 2010 has given a large number of analysts in private and official[2] institutions the impression that the growth path would be, despite the slowness of the difficulties and strong asymmetries between countries, in the process of being taken over, the fragility of the recovery became

1. The austerity measures were only partly implanted and recession did not occur. However, the growth rate remained only moderate and with uncertain prospects.

2. See, for example, also in the GEP/World Bank press release, but in the issue that introduced the January/2011 report: "The world economy is moving from a post-crisis bounce-back phase of the recovery to slower but still solid growth of the growth this year and next."

increasingly clear. It is not surprising, therefore, that, from mid-2011, in the wake of increased distrust of the sustainability of the sovereign debt of some European countries, the accumulation of negative evidence meant that the outlook for the global economy (notwithstanding the marked differences between different groups of countries) began to deteriorate rapidly. This movement can be seen in graph 1, which shows the quarterly evolution of gross domestic product (GDP) growth expectations for 2012 and 2013 contained in the forecasts produced by the Economist Intelligence Unit.

GRAPH 1
Evolution of forecasts for the growth rate of the world GDP
(In %)



Source: Global Forecasting Service, Economist Intelligence Unit. Data available by subscription in <http://gfs.eiu.com/PastReports.aspx>.

The explanations suggested by the mainstream in economics for this situation rely, generally, on the high current degree of uncertainty and the paralysis of existing investments and restraint in consumption it generated. In this view, the high uncertainty is mainly caused by doubts over the sustainability of sovereign debt of several European countries and the region's capacity, to keep in this context the single currency and the financial stability and implement necessary structural reforms to increase the competitiveness of some of its members and, less and less, by the political stalemate in the definition of the public budget in the United States. Recently, the uncertainty about the sustainability of the Chinese growth – and of the political system itself – has also been mentioned with a certain frequency in a scenario in which that growth relies more heavily on the expansion of domestic consumption. Less orthodox currents in economics, in turn, point to the insistence of European governments and community bodies in implementing

austerity policies as responsible for the situation. The downward momentum of the global economy would therefore be largely the result of a series of wrong decisions taken by policy makers in key countries. In all these explanations is the implicit idea that, once resolved some – important – policy coordination issues, and taken the right decisions in the conduct of monetary and especially fiscal[3] policies, the conditions would be set for consumption and especially the investment to expand again and thereby the economic growth globally would be, somehow, resumed on a similar basis to those in force until the outbreak of the crisis and, luckly, without the vices which originated it.

This dominant view ignores, as will be discussed later, decisive changes in the working conditions of the global economy. Such changes, directly responsible for the current economic situation, have emerged as a result of the 2008 financial crisis and make the pattern of growth in force in the world until the outbreak of the crisis can no longer be resumed.

The failure to recognize these changes and the insistence on the possibility of return, which the same change necessarily frustrate, to the "normality" provided by this pattern, reveals some myopia of an approach in economics that has increasingly neglected the realism of its propositions.[4] Thus, it is not surprising that the mainstream in economics, characterized by such approach, has received with perplexity the radical change on the conjuncture since the last quarter of 2008. Without, as will be shown below, having foreseen or even entertained the possibility of a crisis of the proportions of the one that befell the world economy, the economic establishment assumed unanimously that the 2009 global recession resulted directly from the financial meltdown of the last quarter of 2008. Nevertheless, it did not recognize in the crisis possible important lasting effects, and did not associate to its development the predicted low growth more than four years after its outbreak. In contrast, it has sought the explanation for this situation in factors that are somehow external to the functioning of the economy.

In the next section we analyze the initial impact of the crisis on the world economy and, in the following one, the economists' majority reaction to his outburst. In the fourth and last we discuss the collapse, detonated by it, of the global growth pattern that had prevailed in the last quarter century, identifying in this break the crucial element in the explanation of the uncertain prognosis of overcoming the current situation.

3.The answer to the question about what would be the correct fiscal policy is not, even in the bosom of the economic establishment, unanimous. And there are diametrically opposed recommendations that depend on the theoretical position of the analyst, new Keynesian or new classical.

4. See Chernavsky (2011).

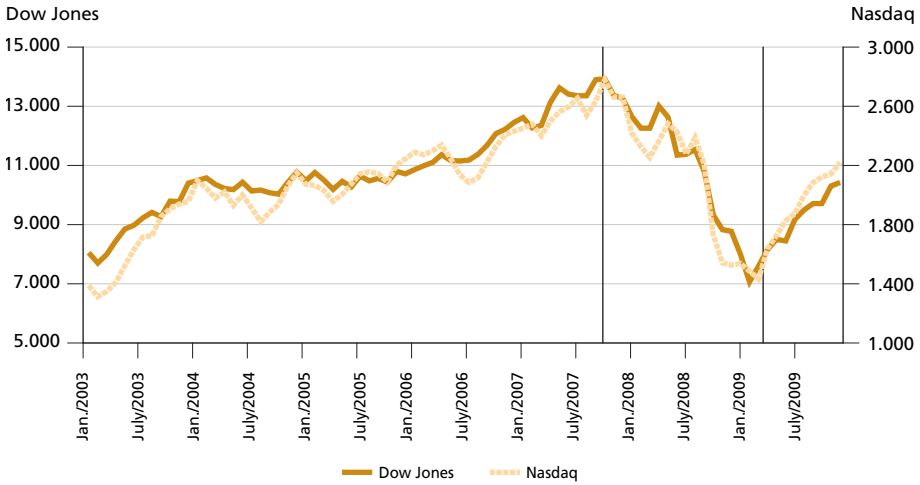
2 THE 2008 CRISIS

The break on September 15, 2008 of Lehman Brothers, then the second largest investment bank in the United States and with a long history of 158 years, unleashed a wave of panic in financial markets not seen for decades. The collapse of the traditional institution – occurred just days after the merger of Merrill Lynch (another one of the hitherto largest investment banks in the country) with Bank of America, thereby avoiding its own bankruptcy – is one of the major landmarks in a period of great turbulence along which several major financial institutions of the country suffered extensive losses and saw its own survival as seriously threatened. In that same period, the bankruptcy of both the leading global insurance market firm (American International Group – AIG) as those of the two biggest real estate sector companies (private, but guaranteed by the United States government) of the country (Fannie Mae and Freddie Mac), which together had about half the secondary mortgage market, could only be avoided thanks to the massive injection of funds from the United States Treasury that ended up, in practice, assuming their control.

The difficulties of the United States financial sector, which increased sharply in the last quarter of 2008, had their trigger in the collapse of the subprime mortgage market and the consequent burst, in July 2007, of the bubble that had been formed in the housing market in the country throughout the 2000s. However, far from being restricted to the housing market, the crisis spread itself progressively to the various segments of the financial market, which are tightly integrated: adjustable rate mortgages, commercial papers (short-term, unsecured bonds issued by companies), insurers securities, loans on mortgages, debentures, loans for cars, credit cards, and student loans (Foster, 2008). According to the Bank for International Settlements – BIS – all assets were affected, except the safer ones, and key parts of the international financial system became dysfunctional (BIS, 2008, p. 1). The questioning of the ability of financial institutions, including the largest, in keeping themselves solvent in the face of the accumulation of heavy losses, then became a central focus of tension.

The traditional stock index Dow Jones intensely reflected this movement, losing a third of its value in 2008, *the biggest drop in any post-war year*, exceeding therefore the large falls observed during the oil crises of the decade 1970 and the bursting of the technology bubble in the early 2000s. The decline continued until mid-March 2009, causing the accumulated losses in just over a year to exceed 50%. The great losses of the United States stock exchanges can be seen in graph 2, which shows the evolution of the Dow Jones (with left axis) and Nasdaq (right) between the beginning of 2003, when the numbers reached before the crisis early in the decade had been recovered, and the end of 2009.

GRAPH 2
Stock indices – Dow Jones and Nasdaq (20013-2009)



Source: Bloomberg. Available in <http://www.bloomberg.com/markets/stocks/movers_index_ibov.html>.

Initiated in the United States, tensions quickly crossed the country's borders and began to intensely shake financial markets around the world. Also in Europe, the indexes of major stock markets, and also the other securities markets, collapsed. The stock exchanges in the United Kingdom, France and Germany fell, respectively, 31%, 43% and 40% over 2008,[5] and almost 14 percentage points more by mid-March of the following year, at which time the stock exchanges around the world reached the lowest values. As in the United States, the heavy financial losses and liquidity problems over 2008 led traditional European financial institutions to face serious difficulties from which they released themselves, and only partially so, when they surrendered into state control. In Asia, the Tokyo and Hong Kong stock exchanges fell, respectively, 42% and 48% in 2008, and more than 11% in the weeks that followed. Falls also happened in Latin America: the Mexico City stock exchange fell 24% in 2008 and over 18% by mid-March 2009, while the Sao Paulo stock exchange, that already in December 2008 had practically stabilized, accumulated an annual fall of 41%. In Brazil, as in other developing countries, the liquidity problems caused by the widespread difficulties in renewing and raising of new funds abroad that followed the abrupt reversal in financial flows, associated with heavy losses in the domestic and foreign capital markets and cash pressures that some important domestic financial institutions faced, led to the occurrence of major assets reforms in the financial sector.

5. The data relating to movements in the stock exchanges have been taken from the site Bloomberg.com, available at <http://www.bloomberg.com/markets/stocks/movers_index_ibov.html>.

Those had to rely on a significant participation of the State and caused an increase in the degree of concentration of the sector.[6] Meanwhile, some of the largest exporters, in addition to a considerable number of medium-sized companies that, strongly encouraged by banks, had ventured in previous years in business with foreign exchange derivatives, suffered considerable non operating losses that eventually led to their sale or merger.[7]

With the deepening of the international financial crisis after the collapse of Lehman Brothers, the difficulties rapidly reached the real sector across the globe. The transmission was primarily through the mistrust that befell a large number of financial institutions and the very high aversion to risk that was spreading rapidly in the markets, leading to a sudden contraction in global liquidity. Reflecting the reduction in the volume of loans and the recognition of heavy losses, banks' balance sheets shrunk at record levels during the fourth quarter of 2008 (BIS, 2009, p. 19). The volume of assets held by them, which had expanded considerably over the decade, was reduced in the third (basically in September) and fourth quarters of 2008, more than 10%.[8] In the first quarter of 2009, despite the unprecedented measures taken by governments and central banks around the world seeking to inject liquidity into the system,[9] the banks' assets lost over 5.5%. The bonds issuance, heavily affected by the fall in the share price, faced similar restrictions. With extremely scarce credit and an atmosphere of colossal uncertainty, new private investment ceased immediately and the real global economy walked quickly to recession, as can be noted in graph 3.

The output growth rate for the world as a whole, whose average was around 3% per year in the 1980s and 1990s and exceeded 4% in the 2000s (and 5% in 2006 and 2007), declined in 2008, with the strong shock occurred in the last quarter of the year, to little less than 3% and plummeted in 2009, - 0.6%, featuring *the first global recession of the post-war period*. In the case of the developed countries, the growth rate fell from an average of just over 3% in 1980s and around 2.5% in the years 1990 and 2000 to only 0.2% in 2008 and -3.4% in 2009, an unprecedented rate in the post-war period. Although it most strongly affected developed countries, the abrupt reversal also befell the developing countries, which after growing at an annual average of nearly 3.5% in the 1980s and 1990s, grew in the 2000s, under the impetus of Asian countries, especially China, at rates above 6%. After a sharp decline in growth

6. The most important examples – but not the only ones; in fact, many smaller institutions were heavily affected during the period – involve Itaú and Unibanco banks, which were merged on November 3, 2008 giving rise to the largest national financial group, and bankVotorantim, 49.9% of which was sold to Bank of Brazil next January. See about Freitas (2009).

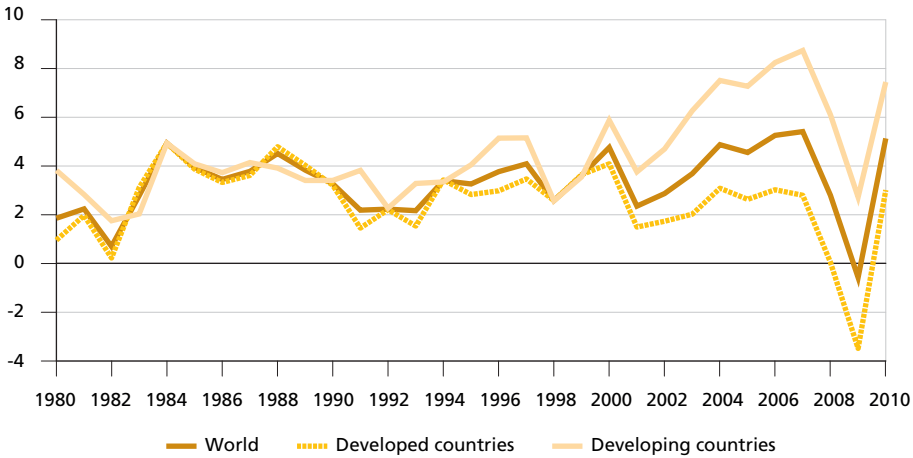
7. Regarding the financial losses of productive enterprises, see Farhi and Borghi (2009).

8. See Statistical Annex, BIS (2008) and BIS (2009).

9. For the Brazilian case, concerning the Bank of Brazil, Caixa Economica Federal, the BNDES and the Credit Guarantee Fund, and other government measures during the crisis, see Chinamea *et al*. (2010). On the role of the Central Bank during the crisis, see Mesquita and Toros (2010).

already in 2008, the average rate for this group of countries in 2009 fell to 2.8%. The fall was particularly acute, indicating a deep recession in the countries of the former Soviet Union (-6.4% in 2009) and Central and Eastern Europe (-3.6%).

GRAPH 3
Gross domestic product at constant prices – per year variation
(In %)



Source: World Economic Outlook Database October 2012. International Monetary Fund. Available in <http://www.imf.org/external/pubs/ft/weo/2012/02/weodata/index.aspx>.

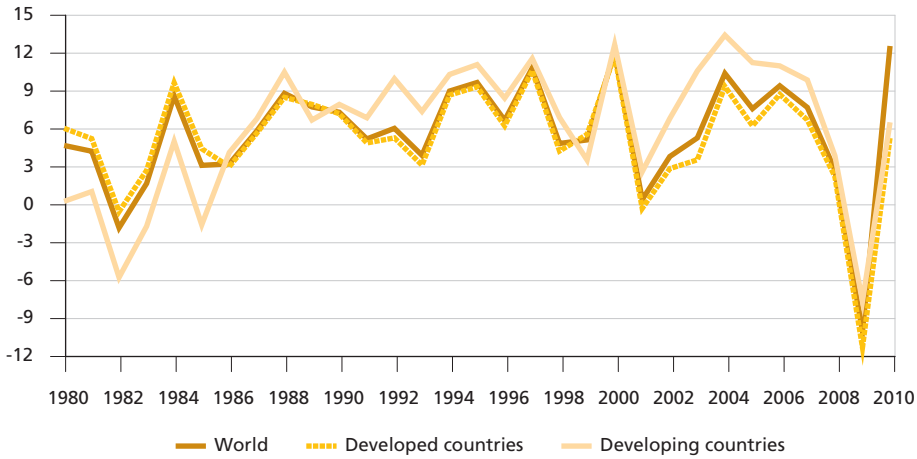
In this context, the unemployment rate, which had been declining in the years preceding the crisis in virtually all regions of the world, was reversed and began to grow. If at the global scale the estimated numbers indicated a still relatively contained growth just under 1% between 2008 and 2009 (ILO, 2010), the growth rate for OECD member countries already showed a significantly higher growth (2.2%).Thus, in 2009 it grew up to 8.1% in these countries, the highest since data began to be harmonized and consolidated in 1988 (for the G7 countries, the rate of 8.0% was highest from the beginning of the series harmonized 1978).[10] Although with a lesser impact, many countries in other regions, especially – but not only – in Eastern Europe and the former Soviet Union, were also strongly affected by the rising unemployment, with the aggravating circumstance that, in these cases, its effects are more perverse due to the lower reach of their social protection nets if compared with developed countries.[11] Far from being reversed quickly, the negative impacts of the global crisis on employment levels remained intense. Accordingly, in early 2011, data from the International Labour

10. Data extracted from OECD.StatExtracts. Available in <http://stats.oecd.org>.
11. For a recent study on the subject see for example, Cook (2010).

Organisation (ILO)[12] for 2010 still showed an increase in the unemployment rate in most countries for which data were available, although some improvements have been identified in certain cases, particularly in Brazil, Russia, and among the developed countries, Germany.

Even more than in the labor markets, the sharp reduction in the growth rate of the global product was reflected most acutely in the volume of international trade, which after growing at rates always above 5% since the mid-1980s and, after overcoming the crisis in the early 2000s, grew at an average rate of 7% next year – therefore higher than the average rate of product growth. With the worsening of the crisis, the global trade grew only 2.8% in 2008 and fell, in 2009, by almost 11%, by far the largest annual decline recorded in the post-war period. As we see in graph 4, which shows data on world exports from the beginning of the 1980s, the fall in foreign trade in 2009 was especially acute in the case of developed countries (about 13.5%), where it was growing up in the 2000s at rates slightly lower than the growth of the global average. The trade of developing countries, in turn, which had been growing driven by Asian countries (particularly China) since 2000 to the staggering average rates of about 10%, more than three points above the global average, also saw a sharp decline of 8% in 2009 .

GRAPH 4
Exports of goods and services – per year variation
(In %)



Source: World Economic Outlook Database October 2012. International Monetary Fund. Available in http://www.imf.org/external/pubs/ft/weo/2012/01/weodata/index.aspx.

12. Data taken from International Labour – ILO Department of Statistics. Short term indicators of the labor market. Available in <http://laborsta.ilo.org/sti/sti_E.html>.

The aggregated data leave no doubt as to the depth of the crisis that hit the world economy from the end of 2008. Not only its severity was unprecedented in the post-war period, as its consequences, certainly different between countries, were then – and still are – largely unknown. Even after four years of its most acute moment, the uncertainty about the future has never been greater.

3 FROM ERRONEOUS PREDICTIONS TO PERPLEXITY IN FACE OF THE CRISIS

Given the depth of the crisis and its impact on the lives of billions of people around the world, it seems perfectly reasonable to ask, as did the Queen of England on her visit to the London School of Economics on November 5, 2008, "why did nobody see it coming?" (Greenhill, 2008). This question is even more appropriate if we consider that the crisis that worsened in the last quarter of 2008, although it is certainly by far the most serious since the 1930s, could not then be seen as especially unique,[13] since the last three decades have seen an unprecedented increase in the frequency and severity with which financial crises were arising around the world (Bordo *et al.*, 2001). Considering the vast amount of resources used in economic research in academia, governments and the private sector around the world, it remains puzzling that the developments that have taken on such importance have not been seen in advance by a significant number of researchers working in public and private organisms so that, ultimately, it could even have been avoided.

A forecast is not interpreted here as early identification of the precise moment at which a particular fact or economic process – in the case examined, the collapse of global financial markets – will occur or start, which in most cases is even impossible.[14] In contrast, it is understood as forecast the identification that the conditions necessary for these events or processes to occur are or will be present in a given situation and time, which makes its effective occurrence possible or even probable.[15] From this prediction, measures can be taken to prevent it from materializing or to decrease its possible adverse effects. In this sense, if the mechanisms that govern the operation of financial markets had effectively been well understood by the economics science, the conditions – that were present and – ultimately allowed the collapse would have been identified and its occurrence in the sense adopted here, would have been expected.

13. While having elements in common to other financial crises that preceded it, however, the consequences of the 2008 crisis are fundamentally different. Indeed, given the size of the financial imbalances that detonated it, and the conditions which prevailed in the real economy, its start, unlike previous crises, initiated the process of collapse of the global growth pattern which prevailed until then.

14. On the limits to forecasting and behavior in the face of rare events with extreme impacts as are financial crises, see Taleb (2007).

15. Thus, one does not expect it to be possible to predict that the x phenomenon *will* occur in y date, but that the conditions are present so the x phenomenon *may* occur over the z period.

However, as pointed out by Rodrik (2009) and Spaventa (2009), few have been those who clearly warned for the accelerated growth of the systemic risks that made the specter of a serious global crisis increasingly present. "Most economists failed to prevent the policy makers about the threatening crisis in the system and ignored the work of those who have" (Colander *et al*., 2008, p. 2). Among those who anticipated the arrival of the crisis from the theoretical framework of mainstream economics, the one who achieved greater notoriety certainly was Nouriel Roubini,[16] who since 2005 had been predicting the financial collapse that ended up occurring in 2008. Also noteworthy are the works of Robert Shiller (2005; 2007) , who since 2005 showed that the growth in housing prices in the United States that occurred since the 1980s was unsustainable, and Raghuram Rajan (2005) that, within the IMF showed how recent developments in the operation of financial markets accentuated real fluctuations and could easily degenerate into crises. Also worth mentioning are some studies from economists from the Bank of International Settlements – BIS, the only official institution expressing growing concerns about the financial situation (Borio, 2006; White, 2006). Such warnings, however, aroused generally little or no attention in academia and government, even sometimes being ridiculed.

Instead, the dominant perception was similar to that represented by the position of the International Monetary Fund - IMF expressed at the World Economic Outlook Update in July 2008 (IMF, 2008a). The institution just a few months before the collapse of the financial markets in September, unable to predict the severity of the crisis that was approaching at a rapid pace, hoped that the slowdown in the global growth rate observed since the last quarter of 2007 would end in the second half of 2008, with the recovery taking place during 2009. Even more shocking is the statement made in the introduction to the report, that the *top priority* for policymakers, less than three months before the collapse of global financial markets that led to the deepest economic crisis of the post-war period, should be placed in the combat against rising inflationary pressures:

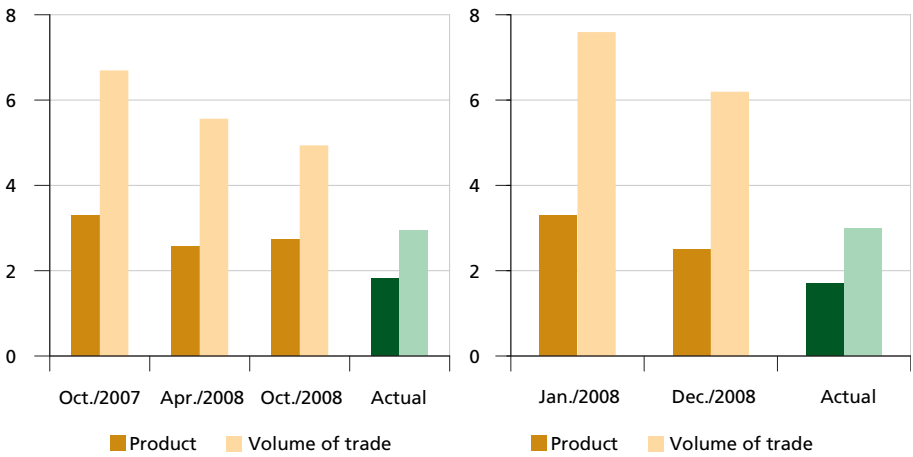
> Against this background, the top priority for policymakers is to head off rising inflationary pressure, while keeping sight of risks to growth. In many emerging economies, tighter monetary policy and greater fiscal restraint are required (…). In the major advanced economies, the case for monetary tightening is less compelling, (…), but inflationary pressures need to be monitored carefully (IMF, 2008, p. 1).

This type of prescription, that shortly after would prove as mistaken, was, however, in full agreement with the predictions then constructed for almost all public and private institutions and international organizations whose regular activities include carrying out studies on the global economy and predictions about the behavior of macroeconomic variables. The brutal mistake of these predictions, some of which are briefly discussed below, is striking.

16. See, for example, Roubini and Setser, 2005 and Roubini 2008.

In this sense, graph 5 shows the comparison between, on the one hand, the forecast growth rates of both the world product (at market exchange rates) and the volume of international trade for the year 2008 built by two of the most (if not in fact the most) important multilateral institutions that produce economic forecasts and, on the other, the actual data for both rates. The estimates used are those compiled by the IMF World Economic Outlook Databases – WEO, and the World Bank in Global Economic Prospects – GEP. On the left, the graph shows the IMF forecasts built in October 2007, April 2008, and October 2008, respectively, thus with twelve and six months in advance and contemporaneously to the collapse of the global markets, compared to the numbers recorded on the database published by the IMF in October 2009, i.e., just one year later, the numbers that are considered here as those which express the values actually realized in 2008.[17] The right hand graph shows the World Bank estimates for the same year 2008 contained in the GEP's from, respectively, in 2008 (published in January of that year) and 2009 (published in December 2008), i.e., nine months before and two months after the collapse of the global markets, also compared to the numbers recorded in the report released by the World Bank one year after the outbreak of the crisis, the GEP 2010 published in January of that year.

GRAPH 5
Growth of global product and volume of trade in 2008 – predicted *versus* actual amounts
(In %)



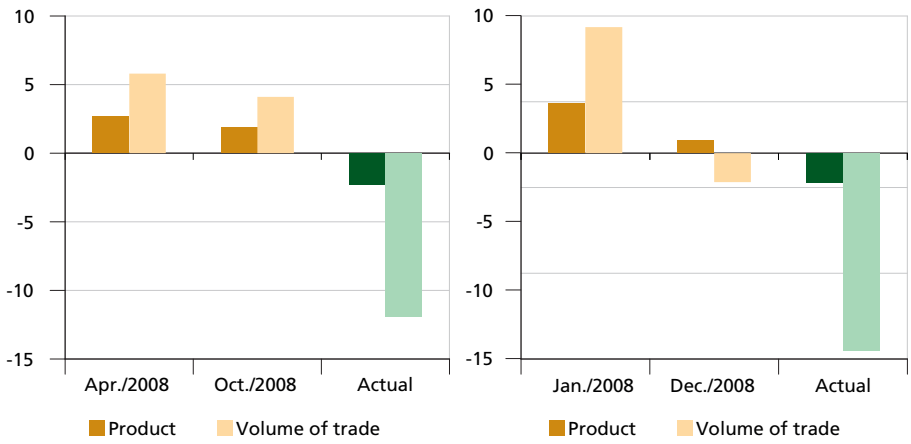
Source: World Economic Outlook Databases – International Monetary Fund.
Global Economic Prospects – World Bank.

17. The choice for the use of data published with about one year lag to capture the 'real' values seeks to achieve a compromise between the too preliminary estimates and therefore subject to significant changes, and fully consolidated estimates that incorporate information (changes in weights, methods etc.) that the analysts certainly could not have at the time of the forecast. The intention of this commitment is to employ the most appropriate benchmark to evaluate the accuracy of the forecasts. For a justification of the choice of an equivalent lag see Juhn and Loungani (2002, p. 51).

One can see from the graph the gross error of the forecasts made by both institutions less than a year before the worsening of the economic crisis. Such projections projected, for 2008, an expansion of the product, respectively, 80% and 94% higher than the one that prevailed, and an expansion of the volume of international trade 127% and 153% higher than the observed. Even the forecasts constructed with the year already in progress and published by both institutions in October and December 2008 – therefore already in the midst of financial collapse – still projected growth for the product almost 50% higher than that which was confirmed just a few months after and a growth in trade 67% (IMF) and 107% (World Bank) higher than the real one.

When analyzing the forecasts issued in the same reports which pointed to the following year, 2009 – therefore with a greater lag, of one to two years in advance – and comparing them with the values subsequently seen, the size of the discrepancies jumps scarily as seen in graph 6.

GRAPH 6
Growth of global product and volume of trade in 2009 – predicted *versus* actual amounts
(In %)

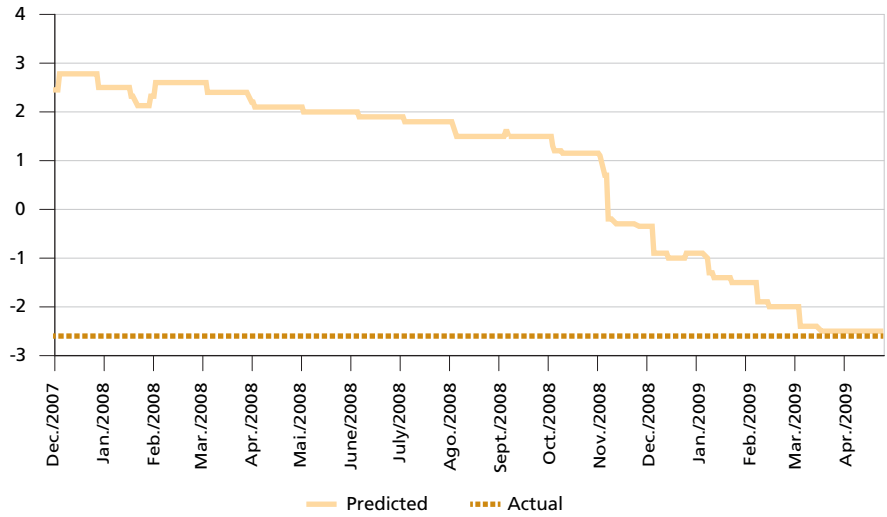


Source: World Economic Outlook Databases – International Monetary Fund.
Global Economic Prospects – World Bank.

The serious projection errors in the period preceding the deepening of the crisis, that help to understand the perplexity demonstrated later by some in face of the intensity of its effects, far from restricting themselves to the mentioned multilateral organizations, constitute the rule when the forecasts built by professional analysts around the world are examined. Thus, comparable errors were also committed by other major multilateral institutions – such as the OECD and the European Commission – as well as by companies and

organizations linked to the private sector. As an example of the mistakes made in this case by private agents, we can see in graph 7 forecasts for the growth rate of the United States GDP in 2009 produced between December 2007 and April 2009 and collected daily between economists by Bloomberg, a private company that operates as a leading global provider of information used by professionals operating in financial markets whose data and analysis influence, therefore, the decisions taken in those markets around the world. The predicted values at each time are compared to the value that was finally seen later, shown in the graph as a dashed line.

GRAPH 7
Product growth in the United States in 2009 – predicted *versus* actual amounts
(In %)



Source: Bloomberg.

While in 2009 the United States GDP *fell* by 2.6%, the largest annual decline since the 1930s, until April of the previous year forecasts compiled by Bloomberg pointed to a growth of about 2.5%. This value was gradually reduced over the months, but even in early November 2008, therefore, almost two months *after* the collapse of Lehman Brothers in mid-September, it was still anticipated that the following year's product would grow little more than 1%. It was only then, when the effects of the crisis worsened rapidly, that growth forecasts plummeted, dropping in a few days to -0.3% and reaching -2.5% at the end of March 2009, value that would undergo few modifications throughout that year and that proves very close to the amount actually seen and released at the beginning of the following year, of -2.6%.

Consistent with the perception that led to such misconceptions, in the month before his appointment as chief economist of the IMF on September 1, 2008, Olivier Blanchard took pleasure in praising the state reached by macroeconomics that, after decades of intense disputes, had finally stabilized around a set of ideas shared by most macroeconomists:[18]

> For a long [time] (…), the field looked like a battlefield. Over time, however, largely because facts do not go away, a largely shared vision both of fluctuations and of methodology has emerged. Not everything is fine. (...) [But] none of this is deadly. The state of macro is good (Blanchard, 2008a, p. 2).[19]

Far from demonstrating just an individual conviction of limited scope, this kind of statement shows quite clearly the dominant perception about the state of macroeconomics in the 2000s. Another example of this perception is given by the Nobel laureate Robert Lucas in his speech at the 2003 annual meeting of the American Economic Association:

> Macroeconomics was born as a distinct field in the 1940s, as a part of the intellectual response to the Great Depression. The term then referred to the body of knowledge and expertise that we hoped would prevent the recurrence of that economic disaster. My thesis in this lecture is that macroeconomics in its original sense has succeeded: Its central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades (Lucas, 2003, p. 1).

In the same line, Michael Woodford proudly stated in his speech on Convergence in Macroeconomics at the American Economic Association – AEA held in January 2008:

> the current moment is one in which prospects are unusually bright for the sort of progress that has lasting consequences, due to the increased possibility of productive dialogue between theoretically and empirical work, on the one hand, and between theory and practice on the other (Woodford, 2009, p. 277).

With this view of macroeconomics, it is not so surprising that only thirteen days before the collapse of Lehman Brothers, when commenting in an interview with a magazine by the IMF itself about the possible macroeconomic scenarios, the same Blanchard said:

> one can think of many bad scenarios where low activity makes the financial crisis worse, and macroeconomic policy has little room for maneuver. At the same time,

18. See, about the new consensus in macroeconomics that embodies this vision, for example, Arestis (2009).

19. The deepening of the international financial crisis occurred a few days after this statement revealed his mistake, and later contributed for Blanchard to come to question himself about the actual ability of science to know how to conduct the macroeconomic policy. See about this Blanchard *et al*. (2010).

> we can easily think of most optimistic scenarios, and I actually see them as more likely (Blanchard, 2008b).[20]

Clearly, as demonstrated by the above passages, in early 2008 the prevailing sentiment among most economists was that the financial crisis, the effects of which already manifested themselves unequivocally especially – but not only – in the real estate market since the middle of the previous year, was relatively unimportant. This, conclusion in any case, was confirmed by the results obtained from an examination of the dominant macroeconomic models.

There is nothing in these models to suggest the possibility that the type of collapse seen in 2008 could occur. The bursting of the housing bubble was not conceivable in an environment in economics in which prevailed the idea that such bubbles simply could not exist. In addition, according to Krugman (2009), this *a priori* belief, and not the empirical evidence was at the basis of the defenses made by Greenspan's about the lack of a bubble in the United States housing market.

In such an environment, the emphasis given in economics to the study of the causes of financial crises was reduced. As stated by Colander *et al.*:

> little exploration of early indicators of system crisis and potential ways to prevent this malady from developing. In fact, if one browses through the academic macroeconomics and finance literature, "systemic crisis" appears like an otherworldly event that is absent from economic models. Most models, by design, offer no immediate handle on how to think about or deal with this recurring phenomenon (Colander *et al.*, 2008, p. 2).

Recent evidence of this conclusion, pointing to the inability of the dominant models in explaining the occurrence of systemic crises[21] can be found in the study by Rose and Spiegel (2009). Aiming specifically at understanding the causes of the 2008 financial crisis to, then, develop a model able to predict in advance the occurrence of similar events, his work seeks to relate statistically the severity of the impacts of the crisis in each country with the state assumed by the variables normally associated with the "fundamentals" of the economy, identifying those that are relevant to explain the crisis. In spite of carrying out a comprehensive test with over sixty of these variables, the study is not able to establish a clear

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20. Inevitable is the analogy with two known statements made by Irving Fisher, then one of, if not the most, renowned economist on the planet, a few days before the New York Stock Exchange bubble burst on October 24, 1929, which marks the beginning of the Great Depression: "*There may be a recession in stock prices, but not anything in the nature of a crash*" (New York Times, 09/05/1929). "*Stock prices reached what looks like a permanently high plateau. I do not feel there will be soon if ever a 50 or 60 point break from present levels (...).I expect to see the stock market a good deal higher within a few months*" (10/17/1929).

This type of wrong prediction followed by the stock market crash and the Great Depression costed Fisher much of his personal wealth and prestige in academia. They clearly show the distance of the economics of the time in relation to the reality that unfolded before it, manifested in its inability to understand and make valid statements about it.

21. For a critique of the limitations of economic models, see Lawson (2003).

relationship between, on the one hand, the factors most frequently cited by the dominant approach in economics to explain the occurrence of the crisis and, on the other, its impact on different countries. This indicates that prevention systems created from models (at least those built from the dominant approach) would hardly be able to predict the occurrence of systemic crises.

In this context, it should not be so surprising that the irruption of an economic crisis with proportions that, according to Soros (2008), had not been seen since 1929, was received with a degree of perplexity usually unimaginable by most economists. Perhaps the greatest evidence of this feeling is the reaction of a character like Alan Greenspan, chairman of the United States Federal Reserve for almost twenty years until his retirement in late 2006, celebrated by the global financial markets and acclaimed as a sage of economics by the mainstream media, by the economic establishment in most of the world, and even, as demonstrated over the years in his hearings before the United States Congress,[22] by the vast majority of lawmakers in his country, belonging to both major parties. In a long testimony before the Congressional Committee on Oversight and Government Reform on October 23, 2008,[23] Greenspan acknowledged that the crisis "has turned out to be much broader than anything could have imagined," and that he felt distressed because he found a defect, he did not know how significant or permanent it could be, in the worldview that had guided him for forty years or more and that guided the profound changes, occurred under his mandate, in the participating institutions and the functioning of financial markets in the United States and around the world, which became increasingly deregulated. Suggesting that he had made a mistake, he said: "Those of us who have looked to the self-interest of lending institutions to protect shareholders' equity, myself especially, are in a state of shocked disbelief" (Greenspan, 2008, p. 2).

Indeed, the housing bubble had revealed the problems with the risk management theories and asset pricing on which rested much of the financial innovations that had occurred in recent decades. When real data from a period of uncertainty replaced those related to the period of euphoria corresponding to the two and half previous decades with which the models typically used for building policy recommendations were generated, the modern risk management paradigm that was dominant until then collapsed, and with it the whole intellectual edifice that supported it.

22. For example, in his last congressional hearing still as Fed Chairman, on November 3, 2005, Greenspan heard comments like this, made by Congressman Jim Saxton: *"You have guided monetary policy through stock market crashes, wars, terrorist attacks and natural disasters (...). You have made a great contribution to the prosperity of the United States and the Nation is in your debt"* (JEC, 2005).

23. See comments on the declaration in, for example, Andrews (2008) and Wall Street Journal (2008).

To the manifest inability to predict the advancement and prevent the deepening of the crisis, was added the perception of cacophony in the statements given by economists once the crisis was installed, both in relation to the interpretations of the causes of the sudden financial collapse and the measures necessary to alleviate its most perverse effects. The theoretic and practical convergence imagined by the macroeconomists in the "great moderation" period seemed to have brutally evaporated, breaking the (then perceived) fragile consensus between new classical purists and new Keynesians.

The perplexity demonstrated before the advent and progression of the crisis as well as the conflicting reactions that followed it fostered an increase questioning of economics – particularly in macroeconomics and finance – and economists in wider sectors of society and within the profession itself. Reflecting a widespread impression, one could say that the profession of economist would have

> failed in its duty to society to provide as many insight as possible in to the workings of the economy and in providing warnings about the [limitations of the] tools it created. It has also been reluctant to emphasize the limitations of its analysis (Colander *et al.*, 2008, p. 14).

More than that, for many, the economists had become accomplices of the crisis, after all,

> economists [were those] who legitimized and popularized the view that unfettered finance was a boon to society. They spoke with near unanimity when it came to the "dangers of government over-regulation." Their technical expertise – or what seemed like it at the time – gave them a privileged position as opinion makers, as well as access to the corridors of power (Rodrick, 2009).

Certainly, the effective importance of the economists as a profession in the definition of the choices made by governments and private agents in general, and specifically their participation in the decisions that paved the path to global economic crisis, are important issues that deserve further investigation that will not, however, be undertaken in this work. Anyway, considering that, on the one hand, the major institutional changes observed in recent decades, which were strongly defended – and even eventually implemented – sometimes by members of the mainstream in economics, were crucial in the developments that led to the expansion of the systemic risks that resulted in the crisis, and on the other, that most economists were unable to identify the tensions and assess the potential for damage before they manifested themselves, it is not difficult to agree with the statement by Colander *et al.* that the global financial crisis had made clear "a systemic failure of the economics profession" (2008, p. 2).

In this context in which mutual criticism multiplied publicly among economists of different currents inside mainstream economics (in addition, of course, to the attacks from outside) that shortly before were thought as finally convergent, the popular British magazine The Economist asked "What went wrong with economics?" It even allowed itself to state that "of all the economic bubbles that have been pricked, few burst more spectacularly than the reputation of economics itself" (The Economist, 2009).

4 CRISIS AND THE BREAK IN THE PATTERN OF GLOBAL GROWTH

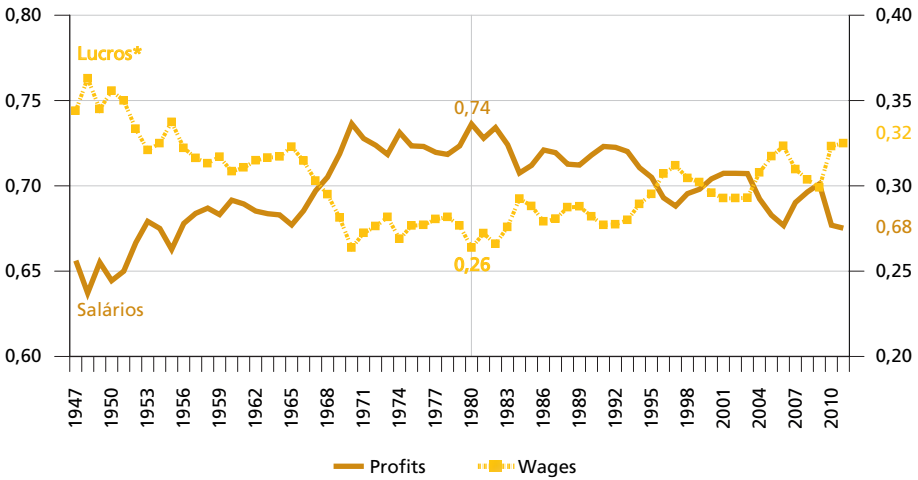
If the widespread myopia of the economic establishment in the face of the evidences that heralded the advent of the crisis prevented the governments from taking measures to avoid its occurrence or at least attenuate its impact, the non-recognition of its lasting effects on the economy has hindered the understanding of the situation of low global growth recorded since 2011 and hampered its overcoming.

This situation finds its central explanation in the slow expansion of investment and consumption in much of the planet caused by the global environment of high uncertainty prevailing in recent years, which five years after the beginning of the crisis does not seem yet close to dissipate. Certainly, the political deadlocks and mistakes made in the conduction of macroeconomic policies mentioned in the introduction of this work certainly contributed to the maintenance of the uncertainty. However, it is argued that the main element that explains this environment is found in the rupture, precipitated by the outbreak of the international financial crisis, of the confidence in the reproduction of the global growth pattern that prevailed in the last quarter century. Without that confidence, the uncertainty becomes generalized and growth cannot be resumed on a sustainable basis.

From the late 1970s until the deepening of the crisis in the last quarter of 2008, the "normal" operation of the international economy was characterized by the presence of a specific pattern of growth within which two fundamental destabilizing tendencies developed whose explosive potential worsened over time and peaked in the second half of the 2000s. Despite – indeed, *precisely because of* – the presence of these trends, while the overall confidence of the agents in support of this pattern remained robust, the world economy could maintain a high pace of growth, despite the upheavals caused mainly by the regular outbreak of more or less localized financial crises.

Indeed, far from being minor elements, the two destabilizing trends mentioned comprise the two *core* elements of that growth pattern. The first is a result of the fact that wages, especially in the developed countries and in the United States in particular, and in contrast to what occurred in the pattern of growth that had worked in the thirty golden years of the post-war period, progressed at a pace consistently slower than that of productivity. With this, the share of national income appropriated by them reduced progressively,[24] while the share of profits grew. This movement, in the United States, can be seen in graph 8:

GRAPH 8
Participation of wages and profits in national income – the United States
(In %)

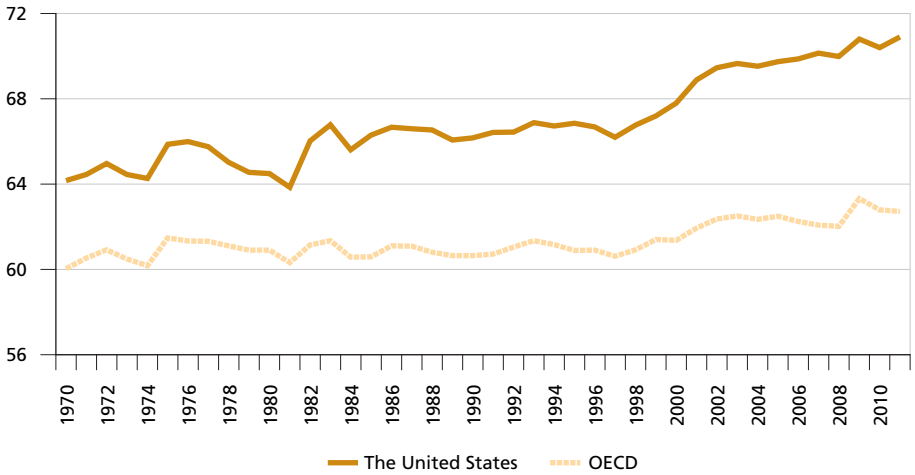


Source: Bureau of Economic Analysis, U.S. Available in <http://www.bea.gov/>.
Note: * The share of profit includes income from business owners, corporate profits, rents and interest received.

This development took place in a period in which the share of consumption in the product of developed countries, rather than decreasing, expanded considerably, also especially in the United States, as can be seen in graph 9:

24. In the United States, this evolution seems not to have been found for the group of workers who receive higher wages, as shown by Dumenil and Levy (2012). However, the behavior of higher labor income with respect to its use for consumption is significantly different than what is found for the other groups.

GRAPH 9
Consumption – the United States and OECD
(In % of GDP)



Source: OCDE Stats. Available in <http://stats.oecd.org/>.

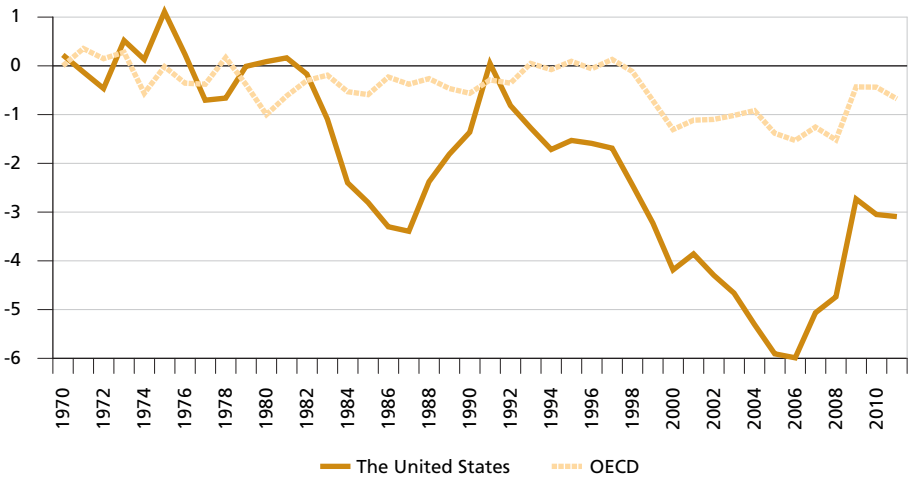
This growth in consumption observed despite the relative stagnation of wages required that part of the funds accumulated in the form of profits would somehow be channeled into it, which was only possible thanks to the massive credit expansion that occurred in the last decade as a result of the intense process of financial disintermediation and deregulation promoted since the early 1980s but that accelerated in the 1990s and which led, in the period preceding the outbreak of the crisis, to the explosion of household debt, again, more clearly in the United States. The explosive growth of that debt,[25] unrelated to the evolution of their respective income streams, is the first of the destabilizing trends outlined above. Thanks to their presence, however, while the volume of loans remained in expansion, often thanks to incentives from the government itself, allowing the realization of current profits and feeding back the rising expectations of future profits, the world economy was effectively able to maintain a high growth rate – although in the case of developed countries, a mediocre one when compared to those seen in previous decades.

The expansion of consumption fueled by credit growth did not, however, come accompanied in the United States and, subsequently, either in other developed countries, by a corresponding increase in production. Indeed, the

25. Such indebtedness, whose counterpart was largely held by commercial banks, has been largely replaced, in the years that followed the bursting of the housing market bubble and as a result of the actions taken to prevent the collapse of the financial system, by the government indebtedness.

consumption growth occurred with an increasing relative share of imported goods and services, which required on the part of these countries the accumulation of growing current account deficits. This could only be possible in a world where globalization had already made strides and in which the United States had the international value reserve currency par excellence. This accumulation can be seen in the following graph 10.

GRAPH 10
Current Account – the United States and OECD
(In % of GDP)



Source: OCDE Stats. Available in <http://stats.oecd.org/>.

The growing external deficits, especially in the United States, with their counterpart in the explosive growth of the public debt accumulated largely by foreigners, are the second destabilizing trend which allowed, while surplus countries continued financing such deficits, expanding consumption, and thus, the maintenance of continued growth.

From the above discussion arise, therefore, the two central destabilizing trends which paradoxically allowed the reproduction of the growth pattern characterized by them for more than two decades, and which did not arise in the previous period: firstly, the continued expansion of the level of household debt to allow consumption growth despite the restriction on wage growth and, secondly, the continued expansion of foreign indebtedness, especially in the United States, which allowed that consumption growth without an equivalent expansion of production in these and other countries in deficit. The feed backing of such trends, which is what allowed the sustaining of the current growth pattern, could only occur continuously while the confidence of the agents with respect to the

continued expansion of domestic and foreign credit was maintained. On its turn, the credit expansion depends on the maintenance of the trust that, in general, it will be refunded. And this can only occur, within that pattern of growth, if those trends continue to work. The confidence of the agents thus assumes, on this clearly circular logic, a fundamental role. When the panic caused by the spiral of losses in the months that followed the collapse of Lehman threw open the incompatibility between, on the one hand, the face value of a considerable portion of the debt held by households and financial institutions around the world and, on the other, the streams of income with which these debts would have to be honored, the continuation of those trends was doubted and confidence waned. Doubts regarding the support of this very growth pattern became widespread and greatly increased the volatility of the expectations about the future. Under these conditions, the situations in which the positions of the agents became suddenly and strongly conservative have become much more frequent, producing real effects on the economy that fed back the uncertainty. The contraction of credit and the level of activity then assumed a self-fulfilling character, and the economy entered a rapidly declining path.

This is precisely the situation in which the world economy has been living since the drop in confidence precipitated by the bursting of the United States real estate bubble in mid-2007 and that has accelerated considerably since September 2008 with the Lehman Brothers bankruptcy. This breakdown in trust refers not only to the United States or worldwide housing market, nor only to the goods traded in interconnected global markets - much of which has even recovered the pre-crisis levels -, or even to the solvency of a relevant part of the international financial system. Nor it refers to falling growth expectations caused by a cyclical reversion of investments and therefore of the activity level in much of the world. The most important loss of confidence occurred exactly in relation to the possibility of recovery of the two destabilizing tendencies that characterized the growth pattern prevailing until just before the crisis, and thus the viability of the pattern itself. Thus, the maintenance of the progression of the level of household debt – especially but not only in the United States – as well as the huge external deficits, especially the United States' (as well as, for some, the very role of the dollar as the central currency in the international financial system), is now subject to considerable questioning. If the increase in demand made possible in recent decades shows to be undeliverable, the confidence in the reproduction of the growth pattern breaks down. With no trust, the reproduction of that pattern becomes, in fact, impossible. The uncertainty increases, investment contract and consumption, when possible, decreases. In this context, the economy necessarily slowly creeps.

This does not mean, of course, that will not occur, as was especially the case in 2010, improvements in situational awareness of the agents and even bouts of euphoria, foreshadowing an eventual recovery. However, far from pointing to the beginning of a sustained process of growth in the previous molds, such outbreaks are compatible with the situation of instability and stagnation that must characterize the economy in most of the world in the coming years, until a new pattern of global growth will eventually emerge. It is not certain, however, that this new standard can bring back, particularly in developed countries, the growth rate that prevailed in the years preceding the crisis deepening.

By looking for policy measures that governments can eventually take, and that could lead to a return to the global growth pattern that prevailed in the past 25 years, mainstream in economics will be able to contribute little in the search for solutions to the situation. This is so because the establishment and effectiveness of this pattern were only possible in a historically peculiar political and economic set of conditions – which will not be discussed here –, both in terms of the developed economies and emerging markets internal structures, especially in the United States and China, and the relationship between them. Certainly, this situation is no longer present, and is unlikely to repeat itself again. If it returns, accelerated growth will occur in different bases.

REFERENCES

ANDREWS, E. L. Greenspan concedes error on regulation. **The New York times**, New York, 23 Oct. 2008. Avaliable at: <http://www.nytimes.com/2008/10/24/business/economy/24panel.html>.

ARESTIS, P. **New consensus macroeconomics**: a critical appraisal. New York: The Levy Economics Institute of Bard College; University of Cambridge, May 2009. Available at: <http://www.levyinstitute.org/pubs/wp_564.pdf>. (Working Paper, n. 564).

BIS – BANK FOR INTERNATIONAL SETTLEMENTS. **BIS quarterly review**, Dec. 2008.

_____. **BIS quarterly review**, June 2009.

BLANCHARD, O. J. **The state of macro**. Cambridge, United States: NBER, 2008a. (Working Paper, n. 14.259).

BLANCHARD, O. J.; DELL'ARICCIA, G.; MAURO, P. **Rethinking macroeconomic policy**. 2010. Avaliable at: <http://www.imf.org/external/pubs/ft/spn/2010/spn1003.pdf>.

BORDO, M. *et al*. Is the crisis problem growing more severe? **Economic policy**, n. 32, 2001.

BORIO, C. **Monetary and prudential policies at a crossroads**? New challenges in the new century. Basel: BIS, 2006. (Working Papers, n. 216). Avaliable at: <http://www.bis.org/publ/work216.pdf>.

CHERNAVSKY, E. **No mundo da fantasia:** uma investigação sobre o irrealismo na ciência econômica e suas causas. Tese (Doutorado) – FEA, Universidade de São Paulo, 2011. Avaliable at <http://www.teses.usp.br/teses/disponiveis/12/12138/tde-15082011-200354/pt-br.php>

COLANDER, D. *et al*. **The financial crisis and the systemic failure of academic economics**. 2008. Avaliable at: <http://www.debtdeflation.com/blogs/wp-content/uploads/papers/Dahlem_Report_EconCrisis021809.pdf>.

COOK, L. J. Eastern Europe and Russia. *In*: CASTLES, F. G. *et al*. **The Oxford handbook of the welfare state**. Oxford, England: Oxford University Press, 2010.

DUMÉNIL, G.; LÉVY, D. The Crisis of the Early 21st Century: Marxian Perspectives. *In*: BELLOFIORE, R.; VERTOVA, G. **The great recession and the contradictions of contemporary capitalism, forthcoming**. Aldershot: Edward Elgar, 2012.

FARHI, M.; BORGHI, R. A. Z. Operações com derivativos financeiros das corporações de economias emergentes. **Estudos avançados**, v. 23, n. 66, p. 169-188, 2009.

FOSTER, J.B. **The Financialization of Capital and the Crisis**. Monthly Review, vol. 59, n.11, April, 2008.

FREITAS, M. C. P. Os efeitos da crise global no Brasil: aversão ao risco e preferência pela liquidez no mercado de crédito. **Estudos avançados**, v. 23, n. 66, p. 125-145, 2009.

GREENHILL, S. It's awful – why did nobody see it coming? **Daily mail**, London, 6 Nov. 2008. Avaliable at: <http://www.dailymail.co.uk/news/article-1083290/Its-awful--Why-did-coming--The-Queen-gives-verdict-global-credit-crunch.html>.

GREENSPAN, A. **Testimony to the committee of government oversight and reform**. 23 Oct. 2008.

ILO – INTERNATIONAL LABOUR ORGANIZATION. **Global employment trends**. Geneva: ILO, Jan. 2010. Avaliable at: <http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_elm/---trends/documents/publication/wcms_120471.pdf>.

IMF – INTERNATIONAL MONETARY FUND. **World Economic Outlook Update**: global slowdown and rising inflation. Washington: IMF, July 2008a. Avaliable at: <http://www.imf.org/external/pubs/ft/weo/2008/update/02/>.

_____. Blanchard sees global economy weathering financial storm. **IMF survey magazine**, 2008b. Avaliable at: <http://www.imf.org/external/pubs/ft/survey/so/2008/int090208a.htm>.

JEC – JOINT ECONOMIC COMMITTEE. **The Economic Outlook**. Hearing before the Joint Economic Committee. Congress of The United States. November 2005. Avaliable at: <http://www.gpo.gov/fdsys/pkg/CHRG-109shrg28071/pdf/CHRG-109shrg28071.pdf>

JUHN, G.; LOUNGANI, P. Further cross-country evidence on the accuracy of the private sector's output forecasts. **IMF staff papers**, v. 49, n. 1. 2002.

KRUGMAN, P. How did economics get it so wrong? **The New York times**, 2 Sept. 2009. Avaliable at: <http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html?_r=2>.

LAWSON, T. **Reorienting economics**. New York: Taylor & Francis; Routledge, 2003.

LUCAS JUNIOR, R. E. Macroeconomic priorities. **American economic review**, v. 93, n. 1, Mar. 2003.

MESQUITA, M. M. C.; TORÓS, M. Gestão do Banco Central no pânico de 2008. *In*: GARCIA, M.; GIAMBIAGI, F. (Orgs.) **Risco e regulação**. Rio de Janeiro: Elsevier, 2010.

RAJAN, R. **Has financial development made the world riskier**? 2005. (Working Paper, n. 11.728). Avaliable at: <http://www.gwu.edu/~gefri/PDF/Rajan%20Fi>.

RODRIK, D. Blame the economists, not economics. **The Guatemala times**, 11 Mar. 2009. Avaliable at: <http://www.guatemala-times.com/opinion/syndicated/roads-to-prosperity/887-blame-the-economists-not-economics.html>.

ROSE, A. K.; SPIEGEL, M. M. **Cross-country causes and consequences of the 2008 crisis**: early warning. San Francisco: Federal Reserve Bank of San Francisco, 2009. (Working Paper Series, n. 2009-17).

ROUBINI, N.; SETSER, B. **Will the Bretton Woods 2 regime unravel soon?** The risk of a hard landing in 2005-2006. *In*: SYMPOSIUM ON THE REVIVED BRETTON WOODS SYSTEM: A NEW PARADIGM FOR ASIAN DEVELOPMENT? Berkeley; San Francisco: Federal Reserve Bank, 4 Feb. 2005.

ROUBINI, N. **The rising risk of a systemic financial meltdown**: the twelve steps to financial disaster. Ontario: RGE Monitor, Feb. 2008. Avaliable at: <http://www.quartetfest.ca/documents/30239/12_steps_NR.pdf>.

SCANNELL, K.; REDDY, S. Greenspan admits errors to hostile House panel. **The Wall Street journal**, New York, 24 Oct. 2008. Avaliable at: <http://online.wsj.com/article/SB122476545437862295.html>.

SHILLER, R. J. **Irrational exuberance**. 2nd ed. Princeton: Princeton University Press, 2005.

_____. **Historic turning points in real state**. Yale: Yale University, June 2007. (Cowles Foundation Discussion Paper, n. 1.610).

SOROS, G. **The new paradigm for financial markets**. New York: Public Affairs, 2008.

SPAVENTA, L. Economists and economics: what does the crisis tell us? **Real-world economics review**, n. 50, p. 132-142, Sept. 2009.

TALEB, N. N. **The black swan**: the impact of the highly improbable. New York: Random House, 2007.

THE WORLD BANK. **Global Economic Prospects June 2012**: managing growth in a volatile world. Washington: The World Bank, June 2012. Avaliable at: <http://go.worldbank.org/6H7BNHIVW0>.

_____. **World Bank says most developing countries have recovered from crisis, projects steady global growth**. Washington: The World Bank, 12 Jan. 2011. (Press Release n. 2011/288/DEC). Avaliable at: <http://go.worldbank.org/D92MH6Q550>.

WHAT went wrong with economics. **The economist**, 16 July 2009. Avaliable at: <http://www.economist.com/node/14031376>.

WHITE, W. **Procyclicality in the financial system**: do we need a new macrofinancial stabilsation framework? Basel: BIS, 2006. (BIS Working Paper, n. 193).

WOODFORD, M. Convergence in macroeconomics: elements of the new synthesis. **American economic journal**: macroeconomics, v. 1, n. 1, p. 267-279, 2009.

COMPLEMENTARY BIBLIOGRAPHY

CABALLERO, R. J. **Macroeconomics after the crisis**: time to deal with the pretense-of-knowledge syndrome. Cambridge, Unites States: NBER, 2010. (Working Papers, n. 16.429). Avaliable at: <http://www.nber.org/papers/w16429.pdf?new_window=1>.

CHIANAMEA, D. R.; CALIXTRE, A. B.; CINTRA, M. A. M. O Brasil na crise mundial de 2008 e as possibilidades de um imposto sobre transações financeiras internacionais. *In*: CINTRA, M. A. M.; SCHUTTE, G. R.; VIANA, A. R. (Orgs.). **Globalização para todos**: taxação solidária sobre os fluxos financeiros internacionais. Brasília: Ipea, 2010.

ORMEROD, P. **The death of economics**. Oxford, England: John Wiley & Sons,1994.

JAPANESE INDUSTRIAL POLICY*

Shoji Nishijima**

This article analyzes the rapid growth of Japan started at the end of the Second World War, from the industrial policy implemented. The Japanese industrial policy has been changing over the years, in such a way that it can be summarized in five stages. Firstly, we present the evolution of each of these stages and some consequences for the Japanese economy. Then, we discuss briefly the issue of its symbolic automobile industry. Finally, we present some implications of the Japanese lesson to the economies of Latin America, bringing to light important differences in the context in each case.

Keywords: Japanese industrial policy; Japanese miracle; automobile industry.

POLÍTICAS INDUSTRIAIS JAPONESAS

Este artigo analisa o acelerado crescimento japonês iniciado ao término da Segunda Guerra Mundial, a partir da política industrial implementada. A política industrial japonesa passou por transformações ao longo dos anos, de tal feita que é possível subdividi-la em cinco etapas. Apresentam-se a evolução de cada uma destas etapas e algumas consequências para a economia japonesa. Em seguida, discute-se brevemente a questão emblemática de sua indústria automobilística. Ao fim, são apresentadas algumas implicações da trajetória japonesa para as economias da América Latina, trazendo a lume diferenças importantes de contexto em cada um dos casos.

Palavras-chave: política industrial japonesa; milagre japonês; indústria automobilística.

JEL: O25, O53.

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1 INTRODUCTION

At the end of World War II, the Japanese economy was burned in ruins. It did not take long, however, for Japan to begin the rapid economic growth which is called the "Japanese miracle" and the Japanese economy today has become a superpower in terms of its impacts on the world economy. Once Japanese products were regarded as cheap and of poor quality, but they are now high-technology intensive and exported to every region of the world. At the same time, not only large enterprises but also small and medium-size enterprises have been increasing their FDI (Foreign Direct Investment) to host countries all over the world. In recent years this Japanese experience is becoming a strong interest for many developing nations,

* After this paper was submitted to The Perspective of the World Review and recommended by both blind peer reviewers we were informed of the author´s death. Considering the quality and relevance of the article, the Editorial Board has asked for his family´s permission to publish it. The main comments of the peer reviewers were incorporated into the article as footnotes.

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particularly the ones that are facing difficulties caused by policy reforms based on the "Washington Consensus" and are struggling for obtaining economic growth with dynamism and equity.

Needless to say, since Japanese economic development has been a complicated result of various causes, it is not possible to mention in detail all of these factors in a limited space. Special attention will be paid to the Japanese industrial polices, which have been regarded as one of the most essential factors for the successful economic achievement. Section 2 provides a brief overview of basic factors of Japanese economic development. In Section 3 the evolution and consequences of the Japanese industrial policies are discussed. Section 4 discusses the case of automobile industry. Finally in Section 5 some implications for Latin American economies are given and a conclusion is provided in Section 6.

2 BASIC FACTORS OF JAPANESE ECONOMIC DEVELOPMENT[1]

Since the end of war, Japan has maintained a high economic growth with some oscillations, with an average real growth rates around 7.0% in the past forty years (1950-1990), which achieved dramatic increase in real gross domestic product (GDP) per capita.[2]

There are various explanations for this remarkable economic development in the post-war period. However, since the Japan economy has been progressed through a long historical process, it would be useful to discuss some historical aspects before turning into the specific factors that explain the development process after the war. For instance, regarding the role of education, it will be necessary to trace back to the *Edo Era*. Even in that era, the educational level was thought to be very high owing to *Terakoya* (temple schooling) which was available in towns and villages (according to an estimate, more than 15,000 existed at the end of the era) where children learned reading, writing and calculation by abacus. In 1879, just after the *Meiji Restoration* (1868), a compulsory education system was introduced, and the percentage of children in school increased drastically. In 1905, about 95.6% of children enrolled in primary school (grades 1-6) and 8.8% in secondary school (grades 7-11). Of course, such a disciplined and literate work force was essential as a basic condition for economic development.

Adding to education, it will be necessary to list many other factors. Reforms and policies under the new Meiji government with the slogans of *Syokusan-Kogyo* (industrialization) and *Fukoku-Kyohei* (a wealthy nation and strong army) should be remembered first as an important factor for starting the development process.

1. This paper is greatly owed to Ito (1992).

2. But due to the burst of the bubble economy Japanese economy entered into a stagnated growth period with the real GDP growth rates of 1.3% in average from 1991 to 2005.

Active import of Western technology and high productivity in the agricultural sector played fundamental roles in development. Thus, we should remember that the modernization process of the Japanese economy had started in the *Meiji Era* and the basic conditions for economic development had already been satisfied in this era.

Japan, however, had tremendous devastation during the World War II, and its economic system underwent drastic changes conducted by the Allied Powers, such as *Zaibatsu Dissolution* and *Nouchi-kaikaku* (agrarian reform), etc. Taking into consideration these changes, it would not be misleading if we focus on the development process after the war to answer the question "why did Japan succeed?" In the remaining part of this section, we discuss various elements which can explain the high growth process in Japan after the war.

2.1 High saving rates

Japan achieved real growth rates higher than 10% for more than ten years in so-called *Kodo Seichoki* (high growth period) from the mid-1950s to 1972. It is the high national savings that financed the very high investment demands in this period without resorting to external borrowing. There are various reasons to explain this high savings in Japan: non-inflationary economy, pro-saving mentality, poor social security system, widespread postal saving system, etc. Among all, the postal saving system, which allows people to deposit and withdraw money at numerous post offices all over the country, can be suggested for developing countries as a way to mobilize saving resources at a lower cost. The postal savings account for 20% ~ 30% of the total saving accounts in Japan.

2.2 Japanese style management[3, 4]

Whereas there is a controversy in the academic circle with respect to whether there exist a unique management style in Japan, so-called "Japanese style management", it would not be deniable that there have been prominent defining features in Japanese management. The following are often cited as elements of Japanese style management:

1) Lifetime employment (*Shusin-Koyo*)

It is commonly known that Japanese workers, particularly those of large firms, are hired under a lifetime employment commitment. Firms agree not to layoff or fire workers, and workers pledge an almost unlimited degree of loyalty

3. Ito (1992, p. 210-212).

4. Reviewer Comment: Since the appraisal of a country´s success is ex post, it may be related to a specific economic moment. For example, the management of Japanese firms, often classified as success factors, could now, after years of stagnation, be actually pointed out as the origin of their lack of competitiveness.

to their firms. Workers neither quit nor refuse any job assignment. Thus, a firm-worker relationship continues for the occupational lifetime of the worker. This relationship is generally all implicit and understood, without written contracts.

2) Seniority-based wage and promotion (*Nenko Jyoretsu*)

Basically promotions and wage increases in Japanese firms depend on length of service to the company rather than on individual merits and specialties. It is very unusual for middle-management job openings in large companies to be filled with persons from other firms. This system is closely related to the customs of on-the-job (in-house) training and frequent job rotation in the firm.

3) Enterprise unions (In-house unions)

Japanese labor unions are typically organized within each firm across different job specifications – in particular, across blue-collar and white-collar workers. It is sometimes argued that enterprise unions are more cooperative with management than are trade unions.

It is generally said that these systems have secured the stable employment for workers (low unemployment rates) and thus loyalty to the firms, which has contributed to the long-term investment strategies of the firms. It should be noted, however, that there is a revisionist view which emphasizes that lifetime employment, seniority-based wages, and enterprise unions are not in fact unique to Japan, and these systems are collapsing in recent years under globalization.

2.3 *Keiretsu* (enterprise groups)[5]

Many Japanese firms have been organized into *Keiretsu*. There are two types of *Keiretsu*. First, it denotes a financial grouping that effects horizontal integration among a set of firms in different industries through "cross-holding of stocks" and lending from a "main bank". The largest six groups of this kind were famous: *Mitsui, Mitsubishi, Sumitomo, Fuyo, Sanwa, and Ikkan*.[6] Of course there are many large firms that are independent of these *Keiretsu*, such as *Sony* and *Shin Nippon Steel*, etc. Second, *Keiretsu* means a vertical network for product distribution composed of assembling makers, subcontractors who provide parts and components, and wholesalers and retailers who sell their products. Large manufacturing companies like *Toyota*, *Hitachi*, and *Matsushita* have numerous parts suppliers and sales companies that are closely tied to them by long-term business relationships.

5. Ito (1992, p. 178).

6. Today the relations among Keiretsu or among firms are becoming complicated due to dissolution or reorganization of enterprise groups. For instance, the banking sectors today in Japan have been reorganized into three main groups: Mitsubishi-Tokyo-UFJ, Mizuho, and Mitsui-Sumitomo.

It is widely recognized that the main purpose of forming *Keiretsu* (of the first definition) is to prevent takeover. Since a major part of the shares are held by group-member firms who are "friendly" and will not sell them to "outsiders," this behavior makes it much more difficult for foreign companies to acquire enough shares to gain control over the *Keiretsu* firms. This aspect enables managers to concentrate on long-term investment strategies.

Adding to this, it is expected that a group can take advantages of "externalities" within *Keiretsu* firms (of both definition). By sharing technological information, or by coordinating a project requiring the services of transportation and banking, a *Keiretsu* group might internalize externalities in the project. A *Keiretsu* group might also more easily shift capital and workers from a depressed sector to a booming sector within it. In addition, an interlocked group might provide its members with product diversification and hence with mutual implicit insurance against a downturn in the company. Of course, we should recognize a critical argument against *Keiretsu*, emphasizing that exclusive trading within a group presents a barrier that keeps non-group-affiliated firms from entering the market, and thus the possibility of non-competitive aspects of *Keiretsu*.[7]

2.4 Small and medium-size firms[8]

In Japan, there is a distinct "dual structure" in the industrial organization, that is, the division between "large" and "small and medium-size" enterprises. Many small manufacturing firms are typically "affiliated" with larger companies and work as subcontractors in a vertical *Keiretsu*. For instance, *Toyota* purchases thousands of auto parts from subcontractors, many of which are small firms with fewer than a hundred workers. The traditional view is that small firms hire low-skill temporary and seasonal workers, pay low wages, and offer meager benefits. When an economic downturn comes, the large companies order less from their subcontractors, who then fire some of their temporary workers. According to this view, small subcontractors are a "buffer" for a large company's work force.

However, the negative aspects of small and medium-size firms should not be emphasized too much. For example, whether small firms are less efficient than large firms is a matter of controversy. Some contend that the quality of workers in small firms is very high. A large company, like *Toyota*, checks the quality of the parts which are delivered to its auto plant. *Toyota* engineers then work with small suppliers to improve the quality of their parts. Thus, the long-term relationship between *Toyota* and its subcontractors is more cooperative than dominant, and

7. Reviewer Comment: Another crucial argument on the Keiretsus states that the mentioned gains are non-linear. This means that over a certain size the costs related to the management of this kind of organization are bigger than the benefits.

8. Ito (1992, p. 195-6).

it can be said that this high efficiency of small and medium-size firms is one of the basic foundations for the high competitiveness of large firms. Thus, small and medium-size firms have been playing a key role for large firms as supporting industries. In addition, it is well known that some small firms such as venture business are very vital and aggressive. Furthermore, in a macroeconomic sense, low wage and labor intensive technology of small firms have contributed to absorb the growing labor forces in the Japanese economy during the post-war period that could be one of the bases for social stability.[9]

2.5 General trading companies (*Sogo Shosha*)[10]

A general trading company is a uniquely Japanese kind of company that specializes in exporting and importing. The top ten general trading companies handle more than the half of total Japan's exports and imports. General trading companies trade every kind of commodities – everything from cup noodle to missiles, as a well-known expression. When they serve as intermediaries for foreign trade, they often provide the credit and short-term loans associated with the export-import business. General trading companies have worldwide networks of branches and stations in all over the world through which they gather information relevant to the export-import trade. It would be proper here to stress the crucial role of trading company for promoting export-import trade in the experience of Japanese growth trade.

2.6 Bureaucratic system[11]

In Japan, the bureaucratic system is relatively independent of the political situation, so that policy decision are less politically motivated and more economically oriented. For instance, there are only three political appointees in the Japanese Finance Ministry. The Minister and the two "parliamentary vice-ministers", one of them traditionally comes from the ranks of the career bureaucrats. Furthermore, career bureaucrats generally stay in the same ministry until their retirement. This ensures stability, consistency and continuity in strategic decision making and economic policies. These two aspects together make Japanese bureaucrats able to form and implement strategic planning and legislation related to industrial policy.

However, in recent years the Japanese bureaucratic system has been criticized for its excessive influence on the economy, its factionalism, and vertically-segmented administration. In a sense, at least until the 1980s, it could be said

9. Reviewer Comment: If we associate efficiency with productivity, than the relation presented in this phrase (between small firms and low wages and/or labor intensive technologies) weakens the hypothesis previously adopted in the paragraph, because it represents the recognition that small firms are less efficient than large firms.

10. Ito (1992, p. 190).

11. Ito (1992, p. 203).

that the Japanese economy had developed through a consolidated trinity system, combining "private sector", "bureaucratic sector" and "government." This firm tri-polar system seems, however, to be ineffective under the new economic and political circumstances, which seem to require a change in the role of bureaucratic system. However, due to inflexibility and reluctance of the bureaucratic system, the administrative reforms in Japan seem to be at a standstill.

Next we will discuss the role of "industrial policy" as one of the key factors for the Japanese development process in the post war period.

3 JAPANESE INDUSTRIAL POLICY

The term meaning industrial policy, *Sangyo Seisaku* in Japanese, was not popular until about 1970 even in Japan, but the Japanese government has, in fact, implemented policies of this sort since the end of the Second World War. For these Japanese policies, there are two opposing views in the world. Many Asian countries have some admiration for them as an effective development strategy. By contrast, many developed countries, typically the United States, regard Japanese industrial policy as measures that make the Japanese economy unfair and protectionist. There are images caused by a mix of exaggerations and misunderstandings regarding Japanese industrial policy. In this sense we need to start with a definition of industrial policy.

3.1. Definition and objectives of industrial policy

Industrial policy can be interpreted as intervention by a government in order to change the market's allocation of resources, most often in favor of manufacturing industries. From standard microeconomics, intervention by government is justified in a case of "market failure," which may arise from various factors; scale economies, externalities, public goods, monopolies, uncertainties problems, imperfect information, "infant industries" and the income distribution problems, etc. If an economy has these factors, the market mechanism does not necessarily realize an efficient resource allocation, and thus intervention may be justified. Typical policies by this definition are seen in antitrust law, pollution control, public utilities and construction of infrastructure. Justification of intervention as a market response to failure could be called as a strict definition of appropriate industrial policy.

It is general, however, for government intervention through industrial policy to be justified in a wider sense. A typical definition is:

> When some adverse phenomena affects resource allocation or income distribution due to market failures, industrial policies break in to increase the level of welfare in the economy concerned. In addition, this includes all policy measures implemented

> to achieve these objectives by way of intervening in resource allocation among sectors or in the industrial organization of a specific industry (Itoh *et al.*, 1988, p. 8).

According to this wide definition, the government can intervene in the economy by various policy measures and with various policy objectives.

As to these policy objectives, the Ministry of International Trade and Industry (MITI) has played the major leadership role in executing industrial policies. MITI implemented various policy measures to protect certain targeted industries from foreign competition and promote exports as the essential elements of industrial policy. In this sense, industrial policy in Japan could be defined most practically as "policies which are implemented by MITI" (Kaizuka, 1973). Though the Japanese government has also implemented industrial policies through other Ministries, we focus on the MITI's case as the most influential industrial policy.

Japanese industrial policies conducted by MITI throughout the post-war period can be divided into five major categories (Itoh *et al.*,1988, p. 3-4).

1) Policies that exert an influence on the industrial structure of a country by nurturing and protecting developing industries through interventions and incentives and adjusting and assisting the "exit process" of declining industries.

2) Policies that correct market failures resulting from factors such as imperfect market and asymmetric information. That is, policies that correct market failures and guide resource allocation in desirable directions by providing accurate information, and by using policy methods that utilize subsidies and the tax system.

3) Policies aimed at intervening officially in the individual industrial organizations, and raising economic welfare. Specifically, policies that seek to intervene directly in the competitive structure and resource allocation within industries, through such means as recession cartels and capital-investment cartels.

4) Policies adopted not on economic grounds, but based primarily on political requirements. Examples of these are policies for voluntary export restraints and multilateral agreements aimed at addressing matters such as trade friction.

5) Also falling within the category of industrial policy are macroeconomic policies, policies for standardizing income distribution, policies for controlling pollution, regional policies, policies for promotion of R&D, and policies for small and medium enterprises.

This classification encompasses a very wide range of policies. Item 2 is explicitly for complementing markets in the event of market failures, and corresponds to the strictest definition of industrial policy; 1 and 3, which entail the targeting of, and intervention in, specific industries, correspond with the definition of industrial policy as it is most widely understood in Japan;[12] and 4 and 5 correspond with the broadest definition, including political factors, macroeconomic policy, support for small and medium enterprises, and distribution policies.

Irrespective of the definition, problems relating to industrial policy in reality lie in the fact that it should normally be premised upon the following government capabilities. That is, among other things a government's ability to design industrial policy correctly (e.g. correctly selecting target industries, having knowledge of appropriate investment coordination, and discovering inter-corporate networks etc.), to implement correct policy measures (official financing, subsidies, tariff protection, provision of accurate information etc.), and to prevent rent-seeking that causes policy distortions. It is not necessarily that governments have much more correct and sufficient information than the private sector, and are superior in the ability to conduct economic coordination.[13]

Moreover, to implement successful industrial policy, the some stringent prerequisites for private sector should be satisfied. World Bank (1997, p. 72-73) argues the following points from Japanese experience.

1) A domestic private sector capable of efficiently managing complex, large-scale project.
2) A private sector willing to cooperate with government in pursuit of the shared goal of competitive industrial development.
3) Strong technical capabilities in public agencies for evaluating private investment plan.

Additionally industrial policy requires strong institutional capability, particularly, which can complement the market mechanism and maintain a good public-private partnership: consisting regulatory framework to economic activities, commitment mechanism that credibly restrain arbitrary actions by

12. Theoretically these cases correspond to the cases of information externality or coordination externality called by Rodrik (2004), which leads to such industrial policies as investment coordination or crating information network among firms.

13. According to Rodrik (2004, p. 36), counter-arguments for industrial policy can be listed as follows:
a) governments cannot pick winners;
b) developing countries lack the competent bureaucracies to render it effective;
c) industrial interventions are prone to political capture and corruption;
d) there is little evidence that industrial policies work;
e) what is needed is not industrial policy, but across-the-board support for R&D and intellectual property; and
f) in any case international rules no longer leave scope for industrial policy interventions.

government or private sector, institutions that support entrepreneurs to start new business (e.g. longer term and risk form financial intermediation), an effective scheme for information sharing and consensus building among government and private agents.

3.2 Brief History of Japanese Industrial Policy

The Japanese economy in the postwar period is divided into five stages, and the development of actual industrial policies has changed along with these stages (Komiya, Okuno and Suzumura, 1984):

1) Reconstruction period – 1945 to 1950.
2) Catch-up and set-up period – 1951 to 1960.
3) High growth period – 1961 to 1972.
4) Oil-shock period – 1973 to 1982.
5) Trade imbalance period – 1983 to present.

1) *Reconstruction period (1945 to 1950)*

In this period, Japan tried to recover from the devastation of the war. There were an extreme shortage of goods and foreign reserves. We were almost starving, with high inflation around 100 to 200%. One of the salient policies in this period was *The Preferential Production Plan* (*Keisha Seisan Hoshiki*, 1946-1948), by which the government preferentially allocated raw materials and financial resources to steel and coal industries. The steel industry received more coal and the coal industry received more steel. This priority treatment contributed to resolve the shortage in production capacity and provided a successful preparation for heavy and chemical industrialization in the next stage. Furthermore, the government intervened in the market directly by price controls combined with subsidies, loan rationing, and allocation of restricted imported materials.

In 1948, a stabilization policy, called *Dodge Plan*, was introduced, by which many government controls, new loans and subsidies were abolished and the budget was strictly controlled. Inflation disappeared quickly. In 1949, the uniform exchange rate of $1=¥360 was established. Industrial policy in this stage should be regarded as exceptional. Many direct interventions resembled socialist economic planning. But we should evaluate this stage as a foundation for high growth in the following period.

2) *Catch-up and set-up period (1951 to 1960)*

In the 1950s, "targeting policy" became the center of policy. Some industries were targeted for "rationalization" (*Gorika*) to "catch-up" to international level

(to attain international competitiveness), such as steel, coal, shipbuilding, electric power, synthetic fibers, and chemical fertilizer, and in the late 1950s, petrochemicals, machine tool and parts, and electronics. On the other hand, some industries were targeted to "set-up" (to create new industry) in this period, namely automobile, heavy electric machinery, computer, and petrochemical industries. These industries were considered as "growing industries" that have high growth potential or increasing returns to scale, which were thought to need investment coordination by government.

For these objectives the government adopted various policy measures: special tax provisions, tariffs and import quotas, accelerated depreciation, tariff exemptions for imported machines, etc. To finance these policy measures, the government utilized *the Fiscal Investment and Loans Program* (*Zaisei Touyushi*) to which post-office savings and social insurance accounts were channeled. In fact, these industries were highly protected and given special incentives at this stage, but these policy tools were understood to be temporary among the entrepreneurs. In fact, the policies at this stage were conducted within the framework of temporary measures and abolished according to a firm schedule. In this sense, there is a distinct difference from Latin American countries, where protection was excessive and prolonged for a longer time.

3) *High growth period (1961 to 1972)*

In the 1960s, Japan experienced a dramatic economic growth with an averaged rate more than 12%, led by the virtuous cycle of private investment. Along with these developments, Japan was gradually integrated into the international economic system and understood the need to be a member of GATT and OECD. To do this, Japan was required to liberalize its trade and capital market according to a liberalization schedule. The objective of industrial policy, therefore, shifted from nurturing industry to setting it on its feet within the time frame for trade and capital liberalization. Actually, the restrictions on buses and trucks started to be lifted from 1961, those on color TV in 1964, those on passenger automobiles in 1965, those on color film in 1971, those on cash registers in 1973, those on large-memory integrated circuits in 1974, and those on computers in 1975. Liberalization of the capital market (FDI) started in 1967 and was completed in 1973. It must be emphasized here that this firm commitment to and realization of liberalization gave strong incentives for entrepreneurs to prepare for international competition in the coming stages.

Facing tough foreign competition, however, MITI attempted to organize the mergers of some industries through "Grouping Plan" aiming at achieving scale economy and increasing competitiveness, but had mixed results: the merger of *Fuji Steel* and *Yahata Steel* into *Nippon Steel* was succeeded, but that of automobile

industry was a failure. Another attempt by MITI in this period was the promotion and modernization of small and medium-size firms in order to strengthen these firms against international competition, and large firms as well by promotion of these supporting firms. Anti-monopoly regulation also deserves mention.

One of the salient features in this stage is that *the Council for Industrial Structure* (1964) played a vital role in formulating and conducting industrial policy. This Council consisted of members from government, private business, scholars and journalists to form a consensus on industrial policy and to report the results to the Minister of MITI. The Council was very useful for reflecting the views of the private sector in the industrial policy and controlling the government's power. MITI had 27 councils in 1970. According to the reports submitted by the councils, MITI guided the private sectors through so-called *Guide Line Policy* (*Gyosei Shido*). This means that MITI only showed guide lines and oriented the private sector without legal power. Therefore, we should emphasize here that the main measures of industrial policy were less interventionist and less distortive to market mechanism than those of the previous periods. In this period, we enjoyed a high growth rate, but paying too much attention to growth meant that we neglected social welfare.

4) *Oil-shock period (1973 to 1982)*

In this period, Japan was confronted with various economic problems both inside and outside the country: *i*) oil price hike, yen appreciation, and adoption of the flexible exchange rate system made heavy and energy-intensive industries structurally less competitive. Chemical, aluminum, steel, and ship building industries were called "Structurally Depressed Industries." Adding to this, increasing competition from Asian NIEs made some industries less profitable; *ii*) social problems such as environmental destruction provoked by the rapid industrialization became serious. *The Minamata Mercury Pollution* was a typical case. The government was forced to acknowledge and address such negative externalities; *iii*) the rapid increase in the international activities in term of trade and FDI created such new problems as trade friction and trade imbalances that generated serious conflicts with the U.S., particularly in the areas of textile, iron and steel.

By such changes in circumstances, the role of industrial policy changed to pursue objectives other than growth, from "industrial promotion" to "structural adjustment" mainly through *The Temporary Measures Law for the Stabilization of Specific Depressed Industries* (1978) that allowed special credit lines and depression cartels to promote rationalization (streamlining the business) or to accelerate adjustment process (shift in business line or exit from the business) of these industries. At the same time, "social welfare" was emphasized through the introduction of various measures to prevent pollution and increase social expenditures.

However, turning into the second half of the 1970s, industries with international competition started to complain about too much government intervention, and thus deregulation and stricter application of anti-trust policies were accelerated. Anti-monopoly rulings also limited the MITI's power to conduct "intra-industry" industrial policies, such as the arrangement of depression cartels that were criticized from *The Fair Trade Commission* (*Kousei Torihiki-iinkai*). In sum, we can say basically that Japanese industrial policy began to move toward the use of the market mechanism and deregulation.

5) *Trade imbalance period (1983 to present)*

During this period, the trade imbalance became huge and trade conflicts more frequent and more intense. Thus Japanese industrial policy shifted to international issues, in particular, to deregulation for opening the market. In this sense, the main objective of Japanese industrial policy today is to foster the workings of the market mechanism, not to intervene the market.

4 A CASE STUDY: JAPANESE AUTOMOBILE INDUSTRY

While Japanese cars are overwhelming the world market today, the Japanese automobile industry started from almost zero after the war. The number of automobiles produced in 1946 was merely 15,000. Even in the end of the 1940s, there was a discord in the government about the future of the automobile industry. Although MITI asserted its plan for promotion, the Bank of Japan insisted on liberalization. But after the Korean War, the Japanese government decided to nurture automobile industry. In 1990, the number of the automobile production (passenger car, bus and truck) reached 13,487,000.

In the initial period, MITI provided high (but not prohibitive) protection to the automobile industry, through import quotas, tariffs, and restrictions to FDI. Subsidies were also provided mainly through *Japan Development Bank* loans, not only to assembly makers but also to subcontracting firms. In this period, it is obvious that industrial policy helped the infant automobile industry to grow up, protecting it from foreign competition.

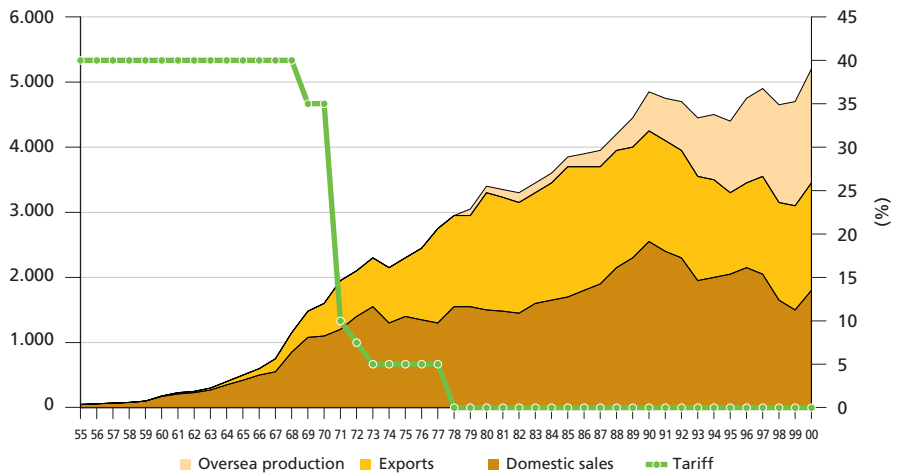
It is also apparent, however, that the Japanese automobile industry has not grown up only through industrial policy. There are many countries where the government gave greater support than Japan, but failed to develop a competitive automobile industry. There are several points that can explain the Japanese case.

1) *Time limited protection*

In 1958, the Japanese government announced a general program for trade liberalization, which caused auto-makers to realize the path of future liberalization in the automobile market. Although many forms of protection to the automobile

industry remained for nearly twenty years, an uncompromising liberalization was carried out almost on schedule. MITI started to lift import quotas in 1960 for buses and trucks, in 1965 for passenger cars, and in 1972 for engines. The tariff was reduced from 40% to 10% in 1971, to 5% in 1973, and 0% in 1978. FDI was liberalized in 1971. It must be noted, however, that the export/production ratio in the case of *Toyota* had already reached at 16% in 1965 and 31% in 1970. When the tariff reduction was completed to zero in 1978, *Toyota*'s export/production ratio had reached to almost 50%. This means that Japanese automobile market was opened after the attainment of international competitiveness of Japanese car. But, it is not clear whether this is an intended result of MITI or not.

GRAPH 1
Toyota's production and tariffs on passenger car



2) *Competition among auto-makers*

The strict process of liberalization significantly affected the corporate strategies of auto-makers. Since quality and other characteristics at the initial stage were quite less competitive than American and European cars, they feared liberalization. Under such circumstances, Japanese automobile companies developed the so-called "investment competition" rather than "price competition." One of the reasons which explains such an investment race is that, in an oligopoly market with "high growth potential" like automobile industries, oligopolistic competition with respect to investment in plant and equipment, and R&D becomes dominant in order to capture the "first mover's advantage" (Spence, 1979). Needless to say, high investment contributed to realizing future competitiveness. In addition, we should mention the important fact that the auto-makers made numerous efforts to increase productivity and quality, like *Toyota*'s *just-in-time system* and robotization, which made Japanese cars the most competitive internationally.

3) *Role of subcontracting firms*

As is well known, a car is composed with more than 20,000 parts and components, thus its quality is exclusively dependent on that of parts and components. If you have trouble with your car, some parts of your car must have a failure. In Japan, the subcontracting system is playing a key role for the automobile industry to produce high quality cars. In general, Japanese automobile companies are assembling parts and materials which are provided by *Keiretsu* subcontractors. Thus, the development of subcontracting system helps in improving parts quality and reducing assembling costs through "Marshallian externalities". It is widely known that the efficiency of Japanese subcontractors is very high. To promote the development of these "supporting" industries, MITI gave a great amount of subsidies to these small and medium-size firms (there is an estimate that subsidies to small and medium-size firms were greater than those to assembly makers).

In sum, the industrial policy for the automobile industry in the initial period had played a significant role as a policy for an "infant industry", but the main driving force in the following periods was the dynamic development process of the automobile industry itself through oligopolistic competition, and the industrial policy played a more limited role, in the sense that it provided support for market competition and promoted supporting industries. Here we should pay special attention on the considerably undervalued exchange rates to stimulate car exports in the 1960s and the early 1970s.

5 SOME IMPLICATIONS FOR DEVELOPING COUNTRIES

5.1 Some reminders

When we discuss the implications for industrial policy in developing economies from the Japanese experience, a careful consideration is needed with respect to the differences in the initial conditions.

1) The international economic environment today is not the same to the forty years ago, when the extent of economic globalization was not profound and international goods and factor movements were limited. Japan was able to enjoy growing and favorable world economic conditions. And today export subsidy is not allowed except for least developed countries under WTO regime.

2) There are considerable differences in social and institutional conditions. Among all, government capabilities play important roles for planning and implementing correct industrial policies. In this regards, it should be emphasized that Japanese bureaucratic system was highly qualified and well disciplined due to severe meritocracy and tough recruit examination.

3) Particular attention should be paid to the difference in political situation. Political instability, caused by class conflict for instance, tends to disrupt the desirable implementation of industrial policy. Japan maintained a long period of political stability under *LDP* (*Liberal Democratic Party*) during the period 1955 to 1993, and has a peculiar strong and independent bureaucratic system insulated from political pressures.

4) In the period following the end of war, Japan completed some indispensable reforms imposed by GHQ (General Headquarters of Allied Power), among which "demilitarization", "*Zaibatsu* Dissolution" and "land reform" were specially important. Military expenditure of less than 1% of GDP helped Japan to use its scarce resources for economic purposes. Although the effect of the *Zaibatsu* dissolution is a controversial issue, it is obvious that the extreme concentration of capital was avoided. Land reform also contributed to income equity and political stability.

5) There are some peculiarities of Japanese economy: Japanese style management, huge economic scale and population, the subcontracting system, and relatively small dependence on multinational corporations and foreign borrowing.

In addition, we should pay attention to the criticisms against industrial policy, as another side of Japanese industrial policy.[14]

1) There are many industries that became successful (that is, grew and began to export) without government assistance: sewing machines, cameras, bicycles, motorcycles, pianos, and radios during 1950s and 1960, and color TV, tape recorders, magnetic tapes, audio components, watches, pocket calculators, machine tools, textile machines, ceramics, and robotics from the late 1960s to the present. It is well understood that those who most strongly criticize the effectiveness of the industrial policy are the entrepreneurs in these industries.

2) Industrial policy was not always implemented as MITI envisioned. One frequently cited example is the so-called *Specialization and Grouping Plan* for the automobile industry. MITI attempted to "group" the automobile industry in 1950s and the early 1960s, on the notion that only one or two auto companies were need for a tiny country like Japan. The automobile industry fought against MITI's pressure. Actually one merger (*Nissan* and *Prince*) resulted, but other attempts failed. Rather, new companies (*Honda*, for instance) entered the market despite the

14. Ito (1992, p. 201).

MITI's grouping plan, and today we find numerous Japanese auto-makers not only surviving but prospering with operations throughout the world. But this does not deny the effectiveness of industrial policy at the initial period of the automobile industry.

Despite the above reservations, some aspects of Japanese industrial policies seem to hold worthy implications for developing countries.

5.2 Basic features of Japanese industrial policy and implications to developing countries

Although the rapid economic growth in the post-war period in Japan was primarily based on the dynamic private sector and the market mechanism, it is indisputable that industrial policy has played an important role to some extent (to a greater extent in certain industries). When we remark on the experiences of the Japanese industrial policy, the following points are derived as possible implications to developing economies.

1) *Picking the winner*

MITI selected targeted industries strategically, based on the criteria of "growth potential (high income elasticity)" and "productivity increase", such industries as steel, machinery, electronics, ship-building, petrochemicals, computers, integrated circuit, etc. The fact that MITI protected and promoted not all the industries implies that the principle of "comparative advantage" or "potential exportable" was respected.[15] In contrast to this, almost all the manufacturing industries were protected in most of developing economies in the import substituting periods (Latin American countries, in particular) and thus misallocation of resources was widespread. Also, in some cases where the targeted industry failed to mature, it also faced a phase-out of protection.

However picking the winner per se may not be practical to developing countries in today's context. From the theoretical point of view, targeting or picking the winner is justified when private incentives to create new industry is limited due to decreasing costs, externalities or imperfect information, where investments coordination by government intervention is needed. However government may not have adequate knowledge and information to pick the winners correctly, and even if the targeted industry is appropriately selected, the industry may face drastic

15. Reviewer Comment: The fact that the MITI strategically selected industries based on their growth potential and productivity does not mean that those industries had static comparative advantages at the moment that choice was made. Possibly such advantages had to be built. In other words, the choice criterion considered their "dynamic comparative advantages".

changes in economic conditions as to demand, technology and competition in the future. Changes in world economic environments are uncertain and much faster today under the globalization than that of the 1960s and the 1970s.[16]

2) *Market friendly approach*

It is true that MITI introduced highly protective policies at the initial stage of industrialization, but generally these measures were not prohibitive and more importantly these protection were firmly lifted according to the time schedule of liberalization. MITI did not have any compromises in completing the liberalization process even when it had political pressures if any. On private sector's side, in response to trade and capital liberalization schedule, they have made enormous efforts to strengthen its competitiveness, instead of lobbying the government to prolong the protection. Along with the trade and capital market liberalization, "anti-trust law" was strengthened as well. Comparing to the case of many developing countries, it must be emphasized that industrialization in Japan was more market friendly than developing countries where industrialization was based on more immense interventions such as deep and prolonged protection and the creation of government (state) enterprises. Thus, the various policy reforms under way in developing countries today should be completed to enhance market mechanism and institutional building (that can complement market) as a prerequisite for an effective and efficient industrial policy.

3) *Promotion of small and medium-size firms*

One of the major purposes of Japanese industrial policy was the promotion of small and medium-size firms. Due to the existence of a distinct dual structure between "large" and "small and medium-size" firms, many small firms have been in a weaker and disadvantageous situation. Small and medium-size firms are often expressed with such words as low wage rates, unstable employment, low technology, difficulty of financing, meager profit rates and vulnerability to economic cycle. MITI's industrial policy for modernizing and strengthen small and medium-size firms helped alleviate these harmful effects and develop regional economies, and most importantly maintain social stability. Adding to this, the promotion of small and medium-size firms contributed to the development of the industrial network between large and small and medium-size firms, through which industrial sectors could reduce "transaction costs" and enjoy "Marshallian externalities." It is obvious that this sort of network is one of the reasons of efficiency in Japanese manufacturing sectors. In contrast to this, most of developing nations have not developed numerous efficient small and medium-size firms and

16. Reviewer Comment: his speculation about the inefficiency of selecting national winners policy does not seem to be corroborated in practice, if we observe the rise of some large Chinese firms elected by the State, many of them of state property.

their relations with large firms are weak. In this context policy measures to promote small and medium size firms should have the highest priority in industrial policy in developing countries, not only for creating supporting industries but also for stabilizing the society.

4) *Consensus-based decision making*

In the 1960s and 1970s, the importance of many "deliberation councils" increased in forming and implementing industrial policies. Based on the discussions of the councils, MITI set "guide lines" (*Gyousei Shido*) on business activities and investment, by which the private sector was guided without legislative power. Council-based policy making had advantages in forming a "consensus" between government and the private sector, checking government's excessive control and mistakes in decision making, and exchanging information regarding technology, markets, and other future prospects. But it must be noted that, since the "guide lines" are not based on legislation, the private sector sometimes rejected it. This means that council-based policy making retained flexibility and some degrees of freedom for the private sector. In many developing countries, disagreements regarding economic policies among "private", "government" and "bureaucrat" sectors are often observed, mainly due to the sector and class conflicts, and it should be noted that these disagreements often induce inconsistent and discontinuous economic policies.

Rodrik (2006, p. 24) says, "industrial policy is not an effort by the government to select particular sectors and subsidize them. It simply requires building the public-private institutional arrangements whereby information on profitable activities and useful instruments of intervention can be elicited."

6 CONCLUSION

Since the mid-1980s many Latin American countries have embarked on economic reforms that envision a drastic change from "interventionist" to "market oriented" economic strategy. Various efforts such as market liberalization, deregulation and privatization have been made to pursue a successful structural adjustment.

It seems, however, that the economic reforms under way in Latin America are quite rapid and drastic. We must not forget the fact that economic reforms and structural adjustments inevitably bring about social adjustment costs, and the costs will be serious in case that there are social conflicts, poverty problems and a concentrated distribution of income. Thus, Latin American economies should seek the optimal three "s" (speed, sequence and scope) for structural adjustment in terms of the effects on social welfare.

Basically there are lots of difference between Japan and Latin America. For instance, although the most popular sport in Japan is "baseball", it is "soccer" or "football" in Latin America. To make a team more powerful and stronger in the field (market), each sport requires a different way of training and tactics. It is obvious, however, that both baseball and football are sports and have a common basis that requires, for instance, high physical ability of players, coordinated team play, and the most importantly a competent coach or manager (a good government). In this context, we may derive some useful hints from the experience of the Japanese industrial policy.

Of course, both "government" and "market" are not omnipotent or perfect. "Government" often makes mistakes and too much dependence on government tends to bring about misallocation of resources. Industrial policy is a double-edged sword. On the other hand, too much dependence on the "market" can not resolve the social equity problem. It is obvious that the same industrial policy as Japan is not the best for most of Latin American economies. A country must have its own optimal industrial policy based on its best combination of "government" and "market" taking account of its peculiar conditions.

REFERENCES

ITO, T. **The Japanese economy**. Cambridge: The MIT Press, 1992.

ITOH, M. *et al*. **Sangyo seisaku no keizai bunseki**. Tokyo: University of Tokyo Press, 1988. (Economic Analysis on Industrial Policy).

KAIZUKA, K. **Keizai seisaku no kadai**. Tokyo: University of Tokyo Press, 1973. (A Task of Economic Policy).

KOMIYA, R.; OKUNO, M.; SUZUMURA, K. **Nihon no Sasngyo Seisaku**. Tokyo: University of Tokyo Press, 1984. (Industrial Policy in Japan).

RODRIK, D. **Industrial policy for the twenty-first century**. Cambridge: Harvard University, Sep. 2004.

_____. Industrial development: stylized facts and polices. Cambridge: Harvard University, Aug. 2006. (Draft).

SPENCE, M. A. Investment strategy and growth in a new market. **Bell journal of economics**, 10, p. 1-19, 1979.

WORLD BANK. **The State in a Changing World**, World Development Report, 1977.

COMPLEMENTARY BIBLIOGRAPHY

NAKAMURA, T. **The postwar japanese economy**: its development and structure. Tokyo: University of Tokyo Press, 1981.

NISHIJIMA, S.; HOSONO, A. **Raten Amerika keizairon**. Kyoto: Minerva, 2004. (Latin American Economies).

RODRIK, D. What produces economic success? *In*: FFRENCH-DAVIS, Ricardo; MACHINEA, Jose Luis (Eds.). **Economic growth with equity**. ECLAC, 2007.

TERANISHI, J.; KOSAI, Y. **The Japanese experience of economic reforms**. New York: St. Martin's Press, 1993.

REGIONAL LIQUIDITY MECHANISMS IN DEVELOPING COUNTRIES*

Gustavo Rojas de Cerqueira César**

The present work aims to evaluate how a mechanism for regional financial cooperation could reduce the external vulnerability of a group of countries, complementing the existing lines of defense in the multilateral sphere and offering resources in time to prevent the worsening of a liquidity crisis. A cooperative strategy could theoretically optimize the maintenance cost of international reserves of member countries, sharing the fiscal costs and economies of scale. This mechanism could also channel resources to promote financial development and expansion of transactions in local currency. We analyze two types of mechanisms: the reserve fund (reserve pooling), represented by the Latin American Reserves Fund (LARF) and the currency swap mechanisms, especially the Chiang Mai Initiative, the main example of a regional agreement swap. Economic stability is a goal increasingly valued in South America. Greater regional economic coordination is a prerequisite to achieve this stability. A cooperation mechanism involving all countries in the region could give voice and political accountability to all.

Keywords: financial regionalism; financial cooperation; international reserves; balance of payments crisis; reserve fund; currency swaps; IMF.

MECANISMOS REGIONAIS DE LIQUIDEZ EM PAÍSES EM DESENVOLVIMENTO

Esse trabalho busca avaliar como um mecanismo de cooperação financeira regional poderia reduzir a vulnerabilidade externa de um grupo de países, complementando as linhas de defesa existentes na esfera multilateral e ofertando recursos a tempo de impedir o agravamento de uma crise de liquidez. Uma estratégia cooperativa poderia, teoricamente, otimizar o custo de manutenção das reservas internacionais dos países membros, compartindo os custos fiscais e os ganhos de escala. Este mecanismo também poderia canalizar recursos para o desenvolvimento financeiro e promover uma ampliação das transações em moeda local. São analisadas duas modalidades de mecanismos: o fundo de reservas (*reserve pooling*), representado pelo Fundo Latino-Americano de Reservas (LARF); e os mecanismos de *swap* de moedas, com destaque para a Iniciativa Chiang Mai, principal exemplo de acordo regional de *swap*. A estabilidade econômica é um objetivo cada vez mais valorizado na América do Sul. Uma maior coordenação econômica regional constitui um requisito fundamental para a obtenção desta estabilidade. Um mecanismo de cooperação que envolva todos os países da região poderia dar voz e responsabilidade política a todos.

Palavras-chave: regionalismo financeiro; cooperação financeira; reservas internacionais; crise de balanço de pagamentos; fundo de reservas; *swaps* de moedas; FMI.

JEL: F33; F50

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1 INTRODUCTION

The Central Bank of Brazil (BCB) announced, in early 2008, that the Brazilian government had become an international creditor for the first time in its history. Since then, Brazilian foreign exchange reserves have duplicated reaching more than US$ 370 billion. Just as Brazil, during the past decade, all other South American countries have recorded expressive growth in their foreign exchange reserves, followed by reduction in external public debt. During this period, countries in the Region sought for paying their debts with international financing organisms, especially the International Monetary Fund (IMF), searching for a higher autonomy level in their economic policies implementation, free of policy covenants associated to loans from these institutions.

After several financial crises faced during 1990s, the majority of countries in the region left the fixed or almost fixed exchange regime, and they started the 21st century with a more flexible exchange regime, of "managed fluctuation". This change allowed for South American monetary authorities to respond quicker and more effectively in face of world instable economy, intervening in the exchange market in order to obtain a more competitive exchange rate. Jointly, the region's substantive enhancement of exchange terms with the world fostered economic activity and investments recovery and expansion, followed by strengthening of the current account balance (Ocampo, 2007). Additionally to these factors, it is added the long permanence of developed countries interest rates in very low levels, fostering capital inflow in developing countries seeking for comparatively higher profitability. Both the enhancement of exchange terms and interest rates differential and offered growth perspectives have increased pressures in maintaining exchange rate competitiveness of South American currencies through withdrawal of market's excessive liquidity, expanding foreign exchange reserves volume.

These factors promoted a reduction in external vulnerability of South America, one of the pillars for promoting a stable economic growth process. In this context, growth of foreign exchange reserves volume has acted as self-insurance against sudden capital outflows and eventual speculative attacks to national currencies. Thus, it is reduced the probabilities of countries to resort to emergency loans, competitive devaluations and economic activity contractions as means to adjust the balance of payment accounts, common events in past decades. However, the high levels of South American countries' reserves could also be consequence of their financial markets underdevelopment, which is evidenced by a significant gap existing between the *per capita* gross domestic product (GDP) and the level of financial development of South America compared to other regions of the world (Fanelli, 2008).

Foreign exchange reserves accrual has a high fiscal cost and, in view of growing magnitude of financial flows, they may be an insufficient mechanism. The possibility of accessing additional funds would allow the strengthening of countries' response capacity to face financial volatility, reducing crises probabilities and expanding available tools to achieve a more stable economic growth.

The search for scale optimization in funds use and diversification of risk would indicate that the multilateral sphere would be the most suitable to build mechanisms to finance balance of payments crises. However, the IMF known deficit of legitimacy, which is expressed in vote distribution that materializes developing countries' sub-representativeness, as well as the memories of hard and mistaken covenants imposed to those countries, fosters strong questionings related to the agency's way of acting. Additionally, experience shows that emergency loans granted by the IMF cause stigmatization by the financial market on the requesting country and the long period between negotiation and funds release significantly reduces its effectiveness. Finally, funds granted by the IMF are extremely concentrated throughout a small number of countries considered as "emerging markets of systemic importance". Also, some works show that multilateral development banks loans are reduced during crisis, and they do not perform their alleged countercyclical role (Perry, 2009). Financing stability is a basic prerequisite for any successful development strategy. These facts set doubts over the functionality of counting only with the supply of multilateral financing to face balance of payments crises.

These limitations led several analysts to explore with greater attention the regional realm as a space to promote financial cooperation. Roles performed by a regional mechanism should not necessarily be limited to emergency loans. The addition of economic policies coordination on common objectives amongst States would be an interesting new feature for regional economic integration. Promotion of local currency bonds issuing and access to more favorable interest rates than those got by each country itself are both almost unexploited alternatives which could perform an important preventive role against eventual liquidity crises. These possibilities may constitute a major additional incentive to build a regional liquidity mechanism.

Recent changes support the need for a greater attention toward regional financial mechanisms. During the last decade, South America presented average annual growth rate of inter-regional exports of 10.6%, practically half of the pace of exports expansion to China (19.1%) (Cepal, 2010). Sales expansion to Asia contributed significantly to the maintenance of positive current account balance and reduction of external vulnerability, but made South America countries' foreign sector more susceptible to commodities prices variations, whose values are

traded in financial markets located outside the region. Exports reprimarization is followed by loss of industrial exports dynamism and its growing concentration within the regional space.[1] In parallel, the setup of the Union of South American Nations (UNASUR), especially from its Economy and Finance Council, seeks to stimulate the establishment and institutional convergence of economic and financial cooperation instruments of the Southern Common Market (Mercosur) and the Andean Community of Nations (CAN). Finally, the participation of Argentina and Brazil in the financial G20, consolidated after the beginning of the international crises as the main forum for negotiation the reform of world financial architecture, has demanded greater protagonism from both countries in financial cooperation initiatives, both regional and multilateral.

This work aims at evaluating how regional financial cooperation can reduce developing countries foreign vulnerability, especially South American countries. A regional cooperation system, for the purpose of this work, consists of an agreement between countries to setup a reserve fund or currency swap mechanism to mitigate the adverse effects caused by liquidity crises. This system would have as core objectives: *i*) complementing available credit lines in multilateral system (IMF); *ii*) reducing regional spreading of crisis by contagion; and *iii*) promoting regional financial integration by means of instruments with countercyclical features. The construction of a regional mechanism with this format would provide conditions for member countries to directly participate in the entities' management, allowing them to take up greater responsibilities than those in multilateral realm.

The article will seek to approach the ways through which regional financial cooperation could mitigate liquidity crises occurrences. Later, it will describe the foreign exchange reserves accrual process, as well as reviewing its main costs and benefits. Main currency swap mechanisms and reserve fund features and requirements will be detailed. Finally, two major cases of regional cooperation cases to help liquidity among developing countries will be analyzed, the Chiang Mai initiative (CMI) in Asia, and the Latin American Reserve Fund (LARF), in South America.

2 DEVELOPING COUNTRIES' NEW ECONOMIC INSERTION

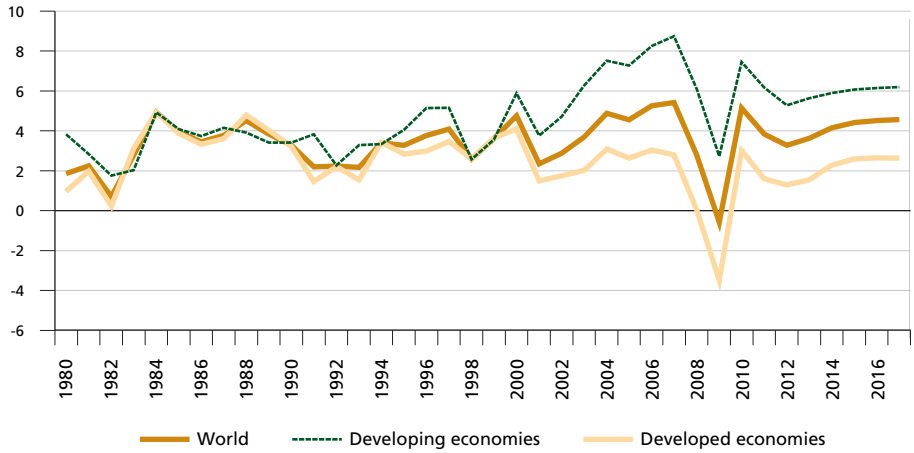
2.1 Change of the exchange regime

Developing countries growth cycles presented a high correlation with the expansion pace of developed economies during 1980s and 1990s. This correlation, once serious and frequent financial crises among developing countries were overcame, has presented a notorious reduction. Since early 2000s, it was noticed that

1. As example, Latin America was, in 2011, the destination of 45% of total Brazilian exports of manufactured goods according to the Ministry of Development, Industry and Foreign Trade (MDIC) data; in 2004, the region accounted for 35% of total Brazilian exports of manufactured goods.

developing economies have presented growth rates above those of developed economies, thus increasingly contributing for the world economy performance.

GRAPH 1
World GDP growth and by group of countries



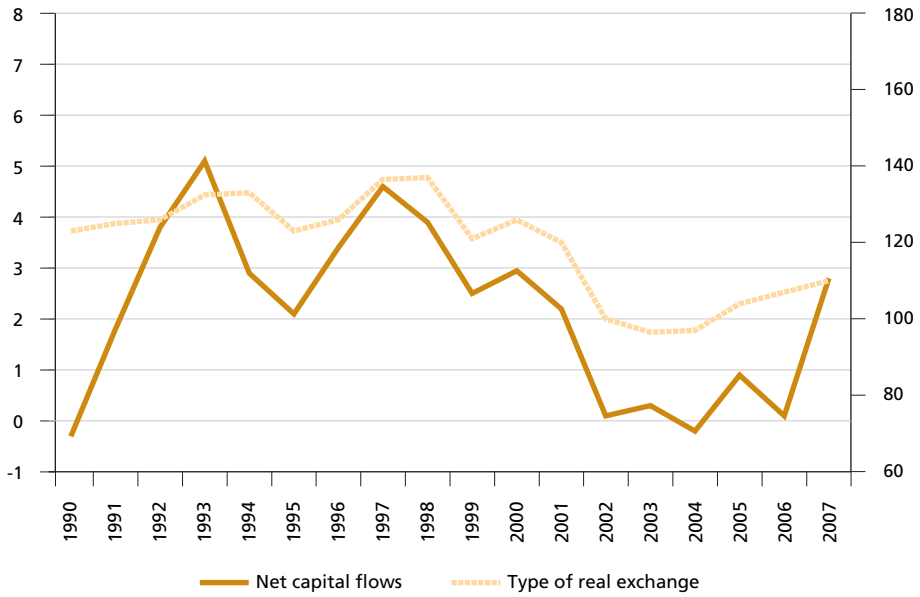
Source: IMF, *World Economic Outlook* (2012).

The improvement of developing economies performance is closely related with the macroeconomic policies changes applied, particularly, from the Asian crisis. The high economic and social costs of crises faced during the 1990s led to abandoning of extremist exchange regimes, either soft or hard pegs, widely used as "anchors" supporting prices stabilization programs implemented in developing countries or maintenance of exchange fluctuation free of monetary authority interventions.

Those countries migrated toward an intermediate exchange regime, usually called "managed fluctuation" or "dirty fluctuation" (Gosh and Ostry, 2009). The lack of commitments related to the exchange rate in the new regime offered these economies a valued flexibility to adjust themselves to foreign shocks without yielding high costs in monetary authorities' loss of reputation. Also, the new regime eliminated incentives for speculators continuing betting in just one way in the exchange market, forcing them to take up the exchange risk. These measures, along with the strengthening of prudential measures and financial markets development in local currency, caused a lower exposition of developing countries' portfolios to exchange variations, reducing their financial systems' vulnerability to foreign shocks and increasing monetary policy effectiveness.

By making compatible exchange flexibility with the buying and selling interventions of currencies from authority in the exchange market, managed exchange regimes fluctuations allowed a major improvement in the actual exchange rate levels, fostering Latin American countries' economic growth. As noticed in graph 2, the increase in growth pace of economies was followed by fall in the relevance of international capital flows regarding regional GDP.

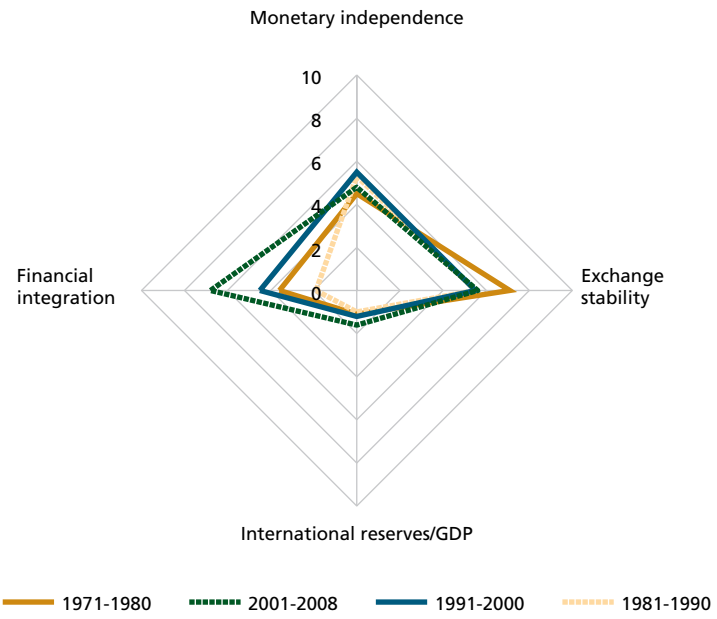
GRAPH 2
Latin America: net capital flows (in % of GDP) and type of real exchange (index 2002=100) (1990- 2007)



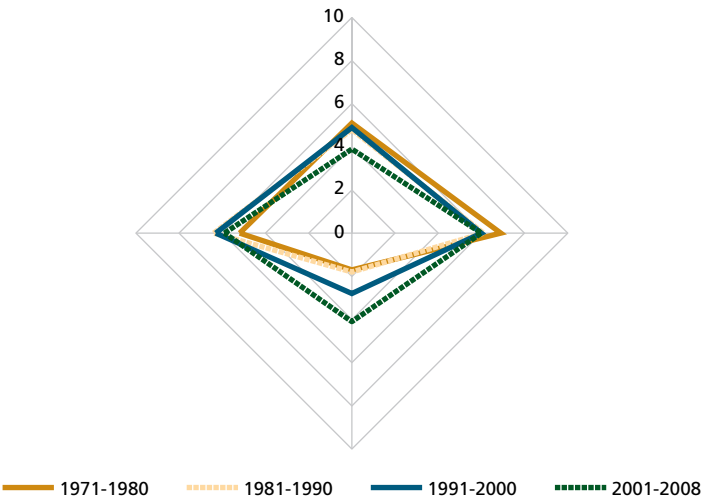
Source: French-Davis (2009).

Thus, many of the developing economies that were characterized as net receptor of foreign savings began to generate surpluses in current account, accruing increased volume of foreign exchange reserves. In South America, this phenomenon was strengthened by the enhancement of the exchanging terms, especially by the uptrend of international prices of commodities (Ocampo, 2007). This caused a major reduction in the region's dependence in foreign financing. This phenomenon has reflected in the significant reduction of perceived risk, diminishing risk grades impact on the cost of public and private debts financing, reducing contagion risk and the occurrence of "herd-type" behaviors among investors (Fernández-Arias and Levy-Yeyati, 2010).

GRAPH 3
Regional patterns of the trilema and foreign exchange reserves level in Latin America and Asia
3A – Latin America



3B – Asia



Source: Aizenman, Chinn and Ito (2008).

As graph 3 illustrates, Latin American and Asian countries are moving toward a greater exchange flexibility and integration with the financial markets, in parallel to expanding their foreign exchange reserves. However, comparison between both regions reveals that Latin American countries have advanced comparatively faster in integrating with international financial market, which Asians have centralized their efforts in setting up a growing stock of reserves. In spite of these differences, greater attention given to exchange management, followed by increased stock of reserves, allowed Asia and Latin America to expand the policy space of the monetary policy, enabling a more balanced insertion in the financial markets (Aizenman *et al.*, 2008). The central Banks began to have greater control over the exchange rate and interest rate within an environment of high capital flow mobility, placing their action on an intermediary point in the "trilemma of open economies". Surely, these variables simultaneous control, impossible under the 'trilemma's" perspective, was enabled only through the expressive increase of those countries' foreign exchange reserves stock.

2.2 The foreign exchange reserves accrual

Literature (Aizenman and Lee, 2005; Frenkel and Rapetti, 2009) suggests two explanatory factors for the foreign exchange reserves accrual phenomenon in developing economies: the precaution approach and the mercantilist objective. Both are related with volatility reduction and/or induction of nominal exchange rate trend. The mercantilist objective would be motivated by the desire of export-driven economies to keep a competitive and stable exchange rate, promoting their foreign sales. On the other hand, the precaution approach suggests that reserves accrual, followed by monetary authority intervention in the exchange market, seeks to reduce volatility and/or sudden and long lasting moves of the nominal interest rates, thus, avoiding entering in financial frailness zones (non-sustainable current account deficits and/or sudden exchange appreciations).

In spite that sudden-stops risks are very relevant, the reserves accrual process is particularly moved by the effort in avoiding nominal exchange rate disarray. Short term capital flows imposed an excessive volatility, and they may generate major and long lasting disarrays in the exchange rate. Buying and selling currencies by the monetary authority seeks to reduce exchange volatility, promoting a more stable relative prices system and enabling funds distribution throughout the economy. Quantitative studies confirm these indications: carrying reserves reduces spreads and exchange rate volatility, issuing a strong predictability signal to markets (Fernández-Arias and Levy-Yeyati, 2010).

The reserves accrual process is also motivated by issues with political feature. Foreign exchange reserves constitute a liquidity instrument free of covenants and available to be used immediately whenever needed. These two features are

extremely valued by liquidity demanding countries, and they do not find similarity with any foreign financing instrument currently offered.

However, carrying and maintaining reserves also present considerable costs. For Rodrik (2006), this cost should be interpreted as the difference between the interest rate of the private sector debt and reserve assets return rate. Based on this interpretation, the author computes that developing countries' annual cost of reserves maintenance is responsible for 1% of these countries' total GDP. In their turn, Baker and Walentin (2001) estimate the cost of reserve maintenance as the difference between the domestic interest rate and reserve assets return rate. For the authors, this cost would correspond to 2% of developing countries' GDP. Seeking to reduce the carrying cost, several countries have channeled part of their reserves to capitalize their national development banks, to cancel foreign debts, and exports financing (Chin, 2010).

Once the understanding of an optimum level of foreign exchange reserves is achieved, the margin of immediate use of reserves would be reduced, which should hue Central Banks preference for high liquidity assets. Roubini and Setser (2005) reinforce this position by stating that, in past years, assets in dollar have totally compensate foreign investor of currency depreciation risk. Also, it is added the fact that the current financial crisis, managed in the American financial marked and transferred to Europe, has undermined the credibility of developed countries financial markets, main investment destination of foreign exchange reserves. Fiscal consolidation challenges faced by these markets do not allow foreseen a fast recovery of trust. This suggests that the composition of developing countries reserves should be more diversified. In fact, this is already taking place between 1995 and 2011; developing countries reserve assets invested in dollars went from 73.8% to 66.2% of the total.[2] In South America, diversification of reserve assets currencies has been boosted from 2008 (annex 1).

Finally, it should be recalled that carrying reserves usually is followed by sterilization inflow funds through bonds issue by the Central Bank. As these bonds have a return rate higher than those of reserves, they imply in fiscal losses for the monetary authority. This process may become unsustainable fiscally in as much as capital inflow is extended for a long period of time (Frenkel, 2007). Since 2008, Latin American countries have promoted a major reduction in their domestic interest rates, which is contributing for maintenance of exchange rate competitiveness and fiscal sustainability of the reserves accrual process.

2. *Currency Composition of Official Foreign Exchange Reserves (COFER)* – IMF. This information is partial, since there are countries that do not reveal the currency composition of their foreign exchange reserves.

3 ON THE REGIONAL COOPERATION SYSTEMS

3.1 Regionalism and financial development

Empirical evidence shows the existence of mutual causality between growth and financial development (Levine, 2004). However, financial volatility affects negatively economic growth. Low financial system development limits the incidence level of countercyclical monetary policies applied by developing countries (Taylor, 2005). When increasing the quality and diversity of risks management instruments, the financial markets deepening reduces the occurrences of financial and exchange crises (Fanelli, 2008). In summary, there are several works showing that a greater domestic financial development is translated into lower volatility of capital flows and reducing the probability of crises, allowing countries to achieve higher economic growth rates.

A higher level of financial opening may boost financial development, but increases volatility risks of flows, sudden stops and financial contagion, phenomena that negatively influence growth perspectives (Kaminsky and Reinhart, 1999). In face of these international financial markets "flaws", what kind of institutional structure developing countries should promote in order to achieve a greater financial development?

Many multilateral agencies – IOSCO (International Organization of Securities Commissions); FSB (Financial Stability Board); BIS (Bank for International Settlements); BCBS (Basel Committee for Banking Supervision) – offer a wide range of codifications and good practices for the world financial system, but their recommendations are not contextualized. Rules governing financial transactions have a significant endogenous portion and they are determined by evolutional factors (Rojas-Suarez, 2007). The political context, legal traditions, informal institutions and the existing level of openness, among others, are determinant conditions of a country's financial development level. These variables imply that the construction of financial institutions constitutes an extremely difficult and complex task, and it should be marked by gradualism. Monterrey Consensus text of the International Conference on Financing for Development, held in 2002, in Mexico, acknowledges these points by stating that:

> *Es indispensable asegurar la participación eficaz y equitativa de los países en desarrollo en la formulación de normas y códigos financieros. También es indispensable asegurar el cumplimiento de esas normas y códigos de manera progresiva y voluntaria a fin de reducir la vulnerabilidad de los países a las crisis financieras y al efecto de contagio* [It is essential to ensure the effective and equitable participation of developing countries in the formulation of financial standards and codes. It is also essential to ensure implementation, on a voluntary and progressive basis, as a contribution to reducing vulnerability to financial crisis and contagion] (ONU, 2002, p. 8).

Many of the "flaws" emerging during the financial liberalization process in the developing countries resulted from difficulties of the constitutional build-up. Bearing in mind teachings derived from past financial crises, many scholars began to propose the regional realm as platform to build up of an architecture fostering a greater financial stability. A lower quotation volatility of currencies from countries participating in a regional economic integration process foster intra-regional trade and investment flows, diversifying their industrial sector (Bresser-Pereira and Holland, 2010). It also reduces risk associated to loans between member countries in an integration process, fostering portfolio diversification in regional currencies (Mongelli, 2002). By expanding markets scale, regional financial integration enables increased liquidity and capitalizations of financial markets, boosting their efficiency and minimizing exposure to risks connected to exchange devaluation (Fernández-Arias *et al.*, 2004). Other considerations restate the importance of regional scope as space for institutional buildup: *i*) financial contagion usually affects several countries within the same region (Calvo and Mendoza, 2000); *ii*) international investors rank different countries in a same group and make decisions based on regional criteria; and *iii*) capital flows tend to be regionally synchronized if countries simultaneously board on the financial liberalization process.

Ocampo (2006) focuses his attention on deficiencies presented by the international financial architecture, aggregating additional arguments favorable to the regional financial cooperation process. The first argument refers to intrinsic demands to the integration process itself. The "open regionalism" requires financial cooperation in several complementary ways: protection in face of balance of payments crises, reduction of information asymmetries at the regional level, gains in learning cost and adaptation to international standards, among others. The second argument emphasizes the necessity of building up a complementarity between regional and multilateral financial institutions, the idea of a "labor division" between two realms. The third point stresses that promotion of a certain level of competitiveness between the regional and multilateral realms would promote an improved attention to the developing countries necessities, especially those with smaller size and/or specific necessities. Finally, the fourth argument is of political nature and it emphasizes the low representativeness and power of influence of less developed economies in the multilateral agencies. In summary, the regional space would be understood as a more favorable scope to harvest the benefits from financial openness and to promote financial development, resulting in greater resistance to financial contagion and volatility.

In spite of acknowledging the importance of the regional scope as space for financial development promotion, the traditional categorization of regionalism (Balassa, 1961; 1987) incorporates aspects related to financial integration only from advanced stages, particularly from the establishment of a Common Market.

This categorization of regionalism, still prevailing, is marked by the relevance of imports tariffs in world trade, by reduced capital mobility, and by existence of foreign exchange controls, domestic or through the Bretton Woods System, no longer existing bases and/or less relevant for understanding the reality imposed by the current world economy stage.

CHART 1
Stages and components of financial regionalism

	Stage 1: regional liquidity fund	Stage 2: regional monetary system	Stage 3: economic and monetary union	Stage 4: political union
Main Component	Creation of a public liquidity fund	Introduction of a regional monetary system with foreign exchange bands	Convergence of domestic exchange rates and single currency	Political union with continuity of existing domestic political systems
Political measures	Creation of a central Banks forum	Regular meeting around a regional monetary committee	Creation of common political institutions; establishment of a Regional Central Bank and Regional Treasury	Creation of supranational institutions in several areas
Additional components (financial crises management)	Creation of a private liquidity fund	Coverage expansion of regional liquidity funds	Regional Central Bank as last instance lender; issuance of regional bonds	
Additional components (financial crises prevention)	Creation of a regional banking supervisory system in parallel to national system		Unification of banking supervision around a regional agency	
	Compulsories for foreign currency credits			
	Macro prudential regulation			
Trade components		Harmonization of trading standards and norms	Customs union	Workers free mobility
Macroeconomic policy	Joint monitoring of monetary and fiscal policy	Coordination and harmonization of monetary policy (interest rates) and fiscal (indebtedness levels)		

Source: Dieter (2000) and own elaboration.

Dieter (2000) establishes, by observing these deficiencies, a new categorization of the regionalism stages, concentrating in its financial and monetary features. Financial regionalism is centralized in the promotion of foreign exchange quotations and financial markets stability. Opposing to Balassa's view, the existence of previous formal trade agreements would not constitute a requirement for the progress of financial regionalism.

Financial regionalism carries implicitly the hypothesis that it is possible to manage, even if partially, the consequences of "imported" volatility and avoiding or reducing financial crises, promoting a greater financial development. Financial cooperation dividends would be charged in dynamic terms and not only in static terms. It is a major point bearing in mind the vital importance of growth acceleration as public policy objective in developing countries.

As seen in section 2, foreign reserves accrual constitutes a costly process and it could be a consequence of these countries' own financial underdevelopment. The increasing costs of maintaining unilateral accrual of foreign reserves strategy has renewed developing countries interest in financial cooperation, more specifically, in building up regional liquidity mechanisms by means of foreign reserves funds and/or currency swap agreements, the first stage of financial regionalism (chart 1). Since the end of 1990s, Southeast Asian countries have developed regional cooperation as means to perfect the maintenance costs of their foreign reserves and promoting financial development. On the other hand, since the 1970s, South America counts with a regional liquidity fund, the Latin American Reserve Fund (LARF), still little explored. South American countries continue adopting individualist foreign reserves accrual strategies, not exploiting a broad set of potential benefits for economic and financial development of the region.

3.2 Self-insurance or cooperation?

Foreign accounts status is crucial for defining the country vulnerability. The search for sound foundations in developing countries finds, however, obstacles in face of international demand oscillations of exported goods, commodities prices, volatility of capital flows, international interest rates, among other variables. On the other hand, in view of imperative need to build consistent foundations or to defend them during crises, developing countries often do not find instruments in the IMF that are suitable to their financial and political capabilities.

In face of doubts regarding access to multilateral protection mechanism against foreign shocks, developing countries are opting for carrying their international reserves. Which, then, would be the ideal reserves level to be accrued in order to a country be considered as safe?

Although undertaking a detailed study about the optimum reserves level for an economy is not object of this paper, it is important to stress that measuring reserves level adequacy of a country by taking as reference only its imports (traditional models) constitutes an extremely limited method. Rajan, Siregar and Bird (2003) state that crises in 1990s were basically capital account crises. Therefore, reserves adequacy calculations began to have capital outflow as reference, in addition to imports volume. Another indicator generally used in search to setting

up the optimum reserves level would be the ratio between reserves and variables such as short term foreign debt, GDP and M2. In several developing countries, including in Latin America, these indicator have showed a continued increase of international reserves weight, expanding criticism regarding liquidity maintenance as strict guiding criterion for reserves investment.

TABLE 1
Adequacy of international reserves

	Position at end of year					(%)							
	In US$ billion				GDP (%)	Short term foreign debt				M2			
	96	07	08	09	09	96	07	08	09	96	07	08	09
ASEAN[1]	477	2907	3318	4028	55	170	449	586	545	22	35	35	35
China	105	1528	1946	2399	49	376	1249	1868	1597	11	28	28	27
India	20	267	247	259	21	260	340	338	302	11	28	27	23
Latin America	142	397	440	466	14	145	238	362	306	71	47	49	40
Argentina	18	44	44	43	14	60	200	279	350	27	51	49	46
Brazil	58	179	193	232	15	111	292	364	300	21	20	24	18
Chile	16	17	23	25	16	201	86	113	130	54	18	28	25
Colombia	9	20	23	23	10	142	201	390	374	23	26	28	24
Mexico	19	86	94	94	11	60	256	240	277	13	15	18	16
Peru	11	27	30	31	24	166	284	248	313	266	165	157	134
Venezuela	11	24	33	18	5	273	347	900	395	91	33	36	20
Russia	11	467	413	417	34	42	493	490	618	22	86	86	80
Turkey	16	73	70	69	11	125	124	119	132	35	23	24	20

Source: IMF and central banks.
Note: [1] Also includes Hong Kong, South Korea and Taiwan.

The benefits for carrying international reserves toward developing countries financial stability and economic growth are really unarguable. However, it is a sub-optimum mechanism, financially costly for developing countries and, as long as it keeps feeding the demand for hard currencies, it is a promoter of global unbalances. At the same time, the depth of these unbalances and expectations of maintaining asymmetries between developed and developing countries interest rates and pace of growth enables supposing that there will not cease reasons for developing countries' monetary authorities to keep on intervening in the foreign exchange market, continuing the foreign reserves accrual process.

Regional cooperation, by means of building up a pool of foreign reserves or currency swaps agreements, could reduce the cost of increased foreign reserves, enabling access to a greater volume of funds during crises. In other words, it would be possible to expand the capability of accessing funds and to reduce their maintenance costs through an insurance shared among countries.

3.3 On currency swap mechanism

According to Henning (2002), a currency swap is an agreement that seeks to exchange one currency for another and to undo this operation in a future date. These swaps involve two simultaneous transactions: *i*) one spot transaction, in which currencies are exchanged at a spot exchange rate; and *ii*) one future transaction, which involves the first operation at a set exchange rate. Generally, the operation is followed by payment of interests on balances opened by the swap agreements. The author emphasizes that swap agreement are different from loans. Swaps are an exchange of assets that are not accounted as foreign currency reserves in the records of whomsoever is receiving the funds, waiving guarantees issue.

Once this point was clarified, it can be stated that a currency swap mechanism is nothing but an agreement, usually temporary, through which currency exchange between countries is enabled. Generally, agreements are made between one country with convertible currency and another non-convertible. Thus, if any liquidity restriction indication in one of the countries signatories of the agreement, this can face liquidity demand in foreign currency by means of temporary exchange of the domestic currency for a convertible currency.

Currency swap agreements between countries arose in the 1960s when the United States began to promote them as a way of preventing the sale of their gold when accessing other currency, providing, in parallel, greater stability to foreign exchange markets. The first agreement of this sort was signed in 1962 between the Federal Reserve and the Central Bank of France. With the breakdown of Bretton Woods and the beginning of foreign exchange quotation fluctuations, central Banks worldwide agreed to boost these mechanisms, formalizing them in 1973, in Basel.

The United States signed, in the financial crises context, in 2009, a swap agreement with developing countries with sound macro-economic foundations (especially, with significant volumes of foreign reserves) with which they maintain strong financial and trading ties (Brazil, Mexico, Singapore, and South Korea). The agreement, of US$ 30 billion each, sought to break the demand for liquidity that predominated in the first phase of the international crisis. Thus, it was possible to stop the "escape for quality".[3] The signing of these agreements caused a considerable reduction of risk perception from these economies by the market, inclusively with an impact significantly higher than those presented by the countries contracting IMF's Flexible Credit Line (FCL) (Arias and Yeyati, 2010).

3. Actually, the Federal Reserve (Fed) made available a total of US$ 900 billion currency swap agreements with fourteen central banks to expand liquidity in dollars in global financial markets. See McGuire and Peter (2009), for discussion on the role of these Fed's swap operations in global crisis management.

The selectivity of agreements supplied by Americans evidenced that only a few countries could count on this instrument. China interpreted the moment, supported by its trading power and its broad liquidity, as an "opportunity window" to extend agreements in Yuans to countries not considered by Americans (Argentina, Belarus, Hong Kong, Indonesia, and Malaysia), promoting a greater international insertion of its currency. Later, in June 2012, Brazil and China established a bilateral swap agreement, in Brazilian Real and Yuans, in the amount of US$ 30 billion equivalent.

The recent Sino-Brazilian agreement constitutes a first step toward building up a network of swaps of the BRICS, currently under negotiation. According to negotiators of the pool, the mechanism would have a dimension near US$ 100 billion in convertible currency. Just as in the Chiang Mai's case (see section 4), ongoing discussions signalize that the countries' voting power would be set according the dimension of offered swap lines and that main decisions would be made through consensus. Concerning supervision, funds release would be conditioned, from a certain percentage, to a previous agreement between the beneficiary country and the IMF. However, each of the five countries has its own seat in the multilateral agency's Executive Board and their added votes reach more than 15% of total, what enables them to make use of vetoing power if the act coordinately.

The pooling aims at announcing guidelines for the swaps network in 2013, even if its full operations will take several years. If successful, the agreement could set an interesting instrument for inter-regional financial cooperation between developing countries, strengthening BRICS' position in the IMF and opening possibilities to establish "bridges" with regional liquidity funds.

Even though the swap agreements may contribute toward a greater global financial stability, supplying countries' national interests are a determinant factor of agreements, restricting their potential stabilizing effects. In this sense, expansion of swaps supply, through China and BRICS emergence, represents a major step toward a broader and diversified supply of this instrument.

3.4 Regional foreign reserves funds and their constitution requirements

Rajan, Siregar and Bird (2003) differentiate two types of regional foreign reserves funds: partial pool and complete pool. In the first, member countries contribute only with a fraction of their foreign reserves to the common fund while, in the second case, countries share the totality of their reserves.

In order to be feasible the establishment of a foreign reserves fund, two variables should be considered: *i*) absolute volume of its reserves; and *ii*) volatility of its reserves. A foreign reserves fund must seek that the volume of funds available

to its members be significantly larger than reserves volume of each country and that volatility of the set of deposits be lower than the one recorded individually.

Rajan, Siregar and Bird (2003) define the following coverage index that, for an *i* country, may be represented by:

$$Ci = \frac{PR}{Var(PR)} \tag{1}$$

Where: *PR* is the *i* country's average volume of foreign reserves during a given period of time; and *Var(PR)* is the reserves volatility during this period, measured by the standard-deviation. The greater the coverage index, the better will be the conditions for a country to participate in the fund.

When one *i* country begins to participate in a pool, it begins to have access to an additional volume of reserves. Likewise, volatility of funds to which a country has access begins to be set by the volatility of its reserves added to the volatility of the fund. Formally, when admitting the behavior of reserves between two given countries, called *i* and *j*, we have:

$$C_i = \frac{\left(R_i + \sum_{j \neq i} \rho R_j\right)}{Var\left(R_i + \sum_{j \neq i} \rho R_j\right)} \tag{2}$$

In this equation, *p* refers to the level of pooling ($0 \leq p \leq 1$), whereas for $p=0$, there is not any reserves pool, for $p=1$ there is complete pool of reserves, while for values between 0 and 1 there would be varying levels of partial pool; R*i* and R*j* are total reserves of countries *i* and *j*.

It is understood that, from equations (1) and (2), the *i* country's coverage will be expanded through a reserve pool system if: *i*) volatility of its reserves added to that of the fund is lower than the volatility of its reserves; or if *ii*) access to a larger volume of funds compensates the volatility increase of combined reserves. Thus, for example, a modest increase of available volume of reserves, followed by a strong increase of total volatility would result, under the reserves pool system, in worsening of conditions of a given country.

Both Rajan, Siderar, and Bird (2003) and Williams, Polius and Hazle (2001) indicate that the benefits of integrating a reserves pool may be best evaluate when compared to the effort of accruing reserves required from a country so it achieves the same coverage index individually. This coverage level would be measured through the *hypothetic reserve* concept, computed as follows:

$$HRi = Ci * Var(Ri) \tag{3}$$

Where: *HRi* is the hypothetic reserves volume, which expresses the reserves level that an *i* country should keep if it did take part in the fund; *Ci* is the coverage index supplied by the fund; and *Var(Ri)* represents the volatility of the *i* country's own reserves.

Gains or losses derived from participating in the fund may be expressed by:

$$G / L = HR - PR \quad (4)$$

Where: *G/L* represents gains (if > zero) or losses (if < zero) in the foreign reserves level; *HR* are the hypothetic reserves; and *PR* are the actual reserves. Therefore, whenever *HR* > *PR*, there will be gains in *i* country's participation in the reserves fund.

One should also consider the possibility that the reserves fund may leverage additional resources in the market, increasing its capacity of supplying funds and reducing synchrony of reserves variations of countries participating in the fund.

In practical terms, the suitable operation of a reserves fund presupposes overcoming some obstacles. Countries participating in the fund should not go through acute liquidity problems during the same period, which would lead to simultaneous use of fund's resources, increasing the risk that its volume to be insufficient to meet all demands. Just as the fly to quality demonstrate during the beginning of current financial crisis, a capital flows reversion may be related to a region's external issues, and simultaneously affecting several members of a fund, harming the regional mechanism's operation.

There are two ways to minimize this risk. Firstly, a reserves fund could be designed as a complementary instrument to the IMF. For Machinea and Titelman (2007, p. 23), "*los acuerdos financieros regionales son un complemento de los acuerdos globales y que, como principio rector de los procesos de integración financiera regionales, debieran ser adicionales a la arquitectura financiera global*" (regional financial agreements are a complement to global agreements and that, as a guiding principle of regional financial integration processes, should be additional to the global financial architecture). This opinion is also shared with Agosin, who states that

> *el objetivo de fortalecer la institucionalidad financiera regional no implica sustituir el FMI. Este último es una institución clave en el sistema monetario internacional. Ningún fondo regional contaría ni con el volumen de recursos del FMI ni con la capacidad política para movilizar rescates financieros de gran envergadura cuando ellos fueran necesarios. Además, muchos problemas financieros internacionales rebasan el ámbito regional y requieren de soluciones globales* (the objective of strengthening regional financial institutionality does not imply in replacing the IMF. This latter is a key institution in the international monetary system. No regional fund would count either with IMF's volume of funds or with the political capability to mobilize large financial rescue when they were necessary. Additionally, many of the international financial problems surpass the regional scope and require global solutions) (Agosin, 2001, p. 38).

Therefore, a regional liquidity mechanism should count on complementarity of resources from multilateral agencies, particularly in case of exogenous crises. Regional funds would work as additional liquidity buffers, increasing agents' trust in States participating in the fund. Secondly, a timely action of the regional fund could play a major role in preventing and containing the contagion effect, minimizing the possibility that the crises extending to neighboring countries and becoming necessary to resort to greater volume of funds through the IMF.

The challenges imposed by the interaction between States aimed at the reduction of foreign vulnerability can be overcome through institutional strengthening of the regional mechanism. Reserves funds or swap agreements should have, by their own nature, a high level of institutionalization and governance structure suitably built to promote cooperation. Concerning the relations between international institutions and cooperation, Keohane (1998, p. 86) indicates:

> Institutions create the capability for states to cooperate in mutually beneficial ways by reducing the costs of making and enforcing arrangements – what economists refer to as "transaction costs". They rarely engage in centralized enforcement of agreements, but they do reinforce practices of reciprocity, which provide incentives for governments to keep their own commitments to ensure that others do so as well. Even powerful states have an interest, most of the time, following the rules of well-established international institutions, since general conformity to rules makes the behavior of other states more predictable.
>
> [The research on international regimes] drew heavily on the twin concepts of uncertainty and credibility. Theorists increasingly recognized that the preferences of states amount to "private information" – that absent full transparency, states are uncertain about what their partners and rivals value at any given time. They naturally respond to uncertainty by being less willing to enter into agreements, since they are unsure how their partners will later interpret the terms of such agreements. International institutions can reduce this uncertainty by promoting negotiations in which transparency is encouraged; by dealing with series of issues over many years and under similar rules, thus encouraging honesty in order to preserve future reputation; and by systematically monitoring the compliance of governments with their commitments (Keohane, 1998, p. 86).

The quote makes explicit the importance to count on measures that minimize two evaluation problems that are typical of loans: adverse selection[4] and

4. In a simplified way, it is a situation in which a protection mechanism (for example, an insurance contract) attracts mainly clients with greater probability of theft, in higher ratio to occurrence of this type of client in a certain market. Concentration of high risk clients in the insurance company's portfolio increases, consequently, occurrences of theft and amounts paid for indemnifications, and it may turn insurance unfeasible. This phenomenon occurs due to information asymmetries, since the seller (the insurance company) does not know all client's data (the insured), not knowing in advance the risk level of each insurance holder.

moral hazard.[5] In this sense, the adopted governance regime plays a fundamental role in maintaining regional mechanism efficiency and sustainability. One should not confound suitability of conditionalities to the realities of countries participating in the mechanism with lack of conditionalities. In spite of IMF's requirements be notoriously standardized and their outcomes arguable for the recovery of economies under crisis, the establishment of a regional fund that works as the ultimate lender without requirement of any type of counterpart simply could foster an irresponsible behavior among members of a common reserves fund. At the same time, forcing a country that had not previously presented problems in its macroeconomic foundations to comply with severe conditionalities in facing crises with exogenous origin seems to be a senseless and counterproductive measure.

It should be considered that, in situation involving a reduced number of actors, belonging to a same region, with strong political and economic ties among them, the counterpart forms offered by borrowing countries may be at the same time more innovative and effective than those applied by the IMF. The Game Theory suggests that, in situations where reputation and long term gains matter, actors may accumulate enough stimuli to cooperate. In these conditions, generation of incentives in order that countries' debts with the fund have high priority in the order of complying with their obligations, for example, would signalize a high commitment level of countries with the institution, discouraging assuming risks and the occurrence of defaults. The lack of defaults throughout LARF history is, in this sense, remarkable evidence.

Concerning governance structure required to setup a fund, it should be highlighted the need to ensure clear and well-delimited management standards. By taking the format of self-regulated entity, the responsibility for fund management would be borne by its member States, which would begin to count on influence level and responsibilities above those recorded in multilateral agencies. The agency's objectives and functions should be equally clear. Functions may include rendering financial services in addition to supply of emergency credit lines, core objective of a regional fund, but should not collide with this latter. Diversification of foreign reserves assets, as objective to improve its profitability, as well as the promotion to deepen domestic financial markets, is an alternative to be analyzed with special attention.

As stated by Eichengreen (2010) and McKay, Volz and Wolfinger (2010), in order to be feasible and efficient, reserves fund should comply with the following requirements: *i*) to have suitable financing capability; *ii*) to have capability to carry out financial and economic supervision over its members; *iii*) to be fast on

5. Another topic studied in the information asymmetry area in economics, the moral hazard is presented when an agent insured from a given risk (for example, someone who buys theft insurance for his car) behaves differently as if he did not have the insurance. In this example, someone who has theft insurance for his car could start going to places considered as dangerous, where he would not go if he was not insured. Taking the example to the case of reserves fund, it would be as if a country began to adopt less responsible economic policies after becoming a member of the fund.

its decision making; *iv*) to be acknowledge as carrier of legitimacy by its members; and *v*) to have the capability to work coordinately with multilateral agencies.

Taking into account these considerations and the need to setup guidelines for greater coordination between the IMF and the European Financial Stability Facility in jointly supply of liquidity to European economies, the G20 Ministers of Finance and Central Banks Chairpersons stipulated in Cannes, in October 2011, the following "Principles for Cooperation between the IMF and the Regional Financial Arrangements" (box 1).

BOX 1
G20 Principles for Cooperation between the IMF and the Regional Financial Mechanisms

- Cooperation strengthening between Regional Mechanisms and the IMF would be a major step toward promoting a better and more efficient crises prevention and resolution, as well as reducing moral hazard. Cooperation between Regional Mechanisms and the IMF should nourish a strict and balance supervision and promote regional and global financial and monetary stability;
- Cooperation should respect the roles, independence and decision making process of each institution, taking into account regional specificities in a flexible way;
- Although cooperation between Regional Mechanisms and the IMF may be unleashed by crises, continued collaboration should be promoted as means to strengthen regional capacities;
- Cooperation should start as soon as possible and should include information sharing and joint missions whenever needed. Each institution has comparative advantages and should benefit from the experience of the other. Specifically, Regional Mechanisms have a better understanding of regional circumstances and the IMF a greater global supervision capacity;
- The consistence of loan conditions should be pursued in as much as possible, preventing arbitration, especially of conditionalities and financing cost. Nevertheless, some flexibility should be preserved, such as adjustments in conditionalities, whenever necessary and defined at the time of program review. Additionally, definitive decisions on financial assistance within a joint program should be made by respective institutions;
- Regional Mechanisms should respect the IMF's preferential creditor status.

Source: Author's elaboration based on the G20 (2011).

The establishment of these principles highlights the need of innovative institutional reforms that makes closer action coordination between the two feasible spheres. Regional Mechanisms should establish modes of external institutional representation beyond their own member countries. Integration of regional arrangement to IMF's Executive Board and granting of loans by the IMF directly to these mechanisms would be some of the alternatives toward that direction. Notwithstanding the difficulty of internal consensus previous construction makes up for one of the major obstacles for regional mechanisms' greater external projection. The difficult negotiations among Europeans countries in defining coordinated action to struggle against the financial crisis and the persistent resistance against the unification of Euro countries' chairs in the IMF's Executive Board are evidences of this issue.

In view of this context, we will evaluate the Chiang Mai Initiative and the Latin American Reserves Fund experiences.

4 THE CHIANG MAI INITIATIVE

4.1 From bilateral to multilateral

In 1997, a speculative crisis against the baht, the Thai currency, unleashed a run on the Banks that rapidly spread out in the Southeast Asian countries. One year before the crisis, in 1996, Indonesia, South Korea and Thailand, three countries that later resort to IMF loans, presented foreign reserves that covered a large portion of their respective foreign short term debts (between 110% and 195% of total). However, maintaining the appreciation of their currencies for a relatively long period started to generate increased current accounts deficits, making foreign financing maintenance unsustainable. Japanese banks, which maintained a high exposition in the region, were one of the parties most affected by the crisis.

Besides the existing high economic interdependence among its countries, the region counted on a very high underdevelopment level of financial institutions and cooperation mechanisms. Regional inter-government institutions, as the Association of Southeast Asian Nations (ASEAN) and the Asia-Pacific Economic Cooperation Forum (APEC), were highly concentrated on trading topic and/or counted on the participation of out of region powers. It was then that, as reported by Henning (2002), during the crisis pinnacle, Japan proposed the establishment of the Asian Monetary Fund (AMF) (Miyazawa Initiative), unilaterally supplying US$ 100 billion for its operation. Japan's Ministry of Finance, during proposal presentation, highlighted three major points: *i*) that Mexico's financial rescue undertaken by the United States and the IMF in 1995 had been crucial for the North America economic stability; *ii*) that the United States did not have the same incentives to rescue Southeast Asian economies, to which the Japanese economy was closely interdependent; and *iii*) while the United States had the vetoing power over IMF main decisions, Asian countries were suffering the consequences of their insufficient political influence in the institution. The United States, the G7, and the IMF used diverse ways to prevent the progress of the Japanese initiative since it would result in loss of influence in the region for these actors. In the other hand, China observed the initiative with mistrust during a period in which Japan was very active in its Yen internationalization strategy. Consequently, by not counting on sufficient support, the AMF Project was aborted.

Japan launched, in spite of the initial failure, the New Miyazawa Initiative centered in a US$ 30 billion fund in the next year. Half of these resources would be used to grant short term credits, while the other half would be targeted to medium and long term loans among the countries of the region. In this context, South Korea and Malaysia signed bilateral agreements with Japan. As outcome of the Japanese initiative, ASEAN, China, Japan and South Korea (ASEAN+3),

gathered in the Thai city of Chiang Mai, signed a treaty in May 2000 that foresaw the establishment of a permanent mutual assistance mechanism in case of lack of liquidity. Among the reasons that boosted regional cooperation there was the perception that actions executed under IMF guidance as responses to the serious 1997-1998 crisis, in addition to be considered and unsuitable, had worsened some countries' economic and political situation.[6] Additionally, there was strong belief that the reform demands of the international financial structure, claimed by Asian countries would not be set in practice at the required speed and format.

The Chiang Mai initiative consists in a set of unilateral and bilateral currency swap agreements among ASEAN countries, China, Japan and South Korea (ASEAN+3). Agreements seek to provide short term liquidity, preventing contagion among their member countries. During its first phase, sixteen bilateral agreement among ASEAN+3 countries were negotiated and finalized. Each agreement had set period of validity, which implied in periodic renegotiations. In addition to constant renegotiations, effectiveness of agreements required, in certain cases, previous approval of the creditor country. The bilateral agreements amounts varied between US$ 1 billion and US$ 3 billion, adding to total of US$ 36.5 billion. Agreements amounts were very small compared, for example, with US$ 17.2 billion that had been requested by Thailand during the 1997 crisis, as well as compared with the foreign reserves accrued by the countries of the region.

In addition to count on insufficient funds, the release of volumes higher than 10% of the maximum predicted in each agreement was conditioned to the approval of a macro-economic and structural adjustment program between the IMF and the requesting country. As the main creditors and promoters of the initiative, China and Japan highlighted the importance of counting with the IMF to supply, at least in this first phase, greater credibility to the initiative. Countries agreed with the temporary maintenance of the link with the IMF until a supervision mechanism for the agreement would become operational. As highlighted by Amyx (2008), the rationale of interstate power structure in Southeast Asia led countries to adopt a comfortable and prudent solution for the problem presented by the need of supervision of credits granted by the regional mechanism.

6. Furman and Stiglitz *apud* Park (2006) highlighted that statements by IMF officers who stated that affected countries had severe structural problems in their public, financial, and business sectors, certainly did not provided trust in those economies. It is probable that the IMF was dealing with third generation crises, in which even healthy economies are susceptible to contagion, with first generation tools (concentrated on the frailness of macro-economic foundations). Among other criticism related to conditionalities, the recorded: *i)* strong fiscal adjustment with insufficient attention to their social consequences; *ii)* High standardization, with insufficient evaluation of the political and social context particularities; *iii)* ban in applying capital controls; *iv)* imposition of wide guarantees to borrowers, particularly foreigners; *v)* imposition of a fast set of structural reforms (privatization of state enterprises) and sale of several financial assets from the domestic capital.

ASEAN+3 embarked on a second stage of the regional financial cooperation process, acknowledging the insufficiency of agreements amounts and in face of the acceleration of individual accrual of their reserves, and they established the following objective: *i*) strengthening of the supervision mechanism; *ii*) instrumentalization of swap agreements effectiveness; *iii*) adoption of a common decision making process; *iv*) expansion of agreements; and *v*) reduction of the link with the IMF. In May 2005, ASEAN+3 decided to increase the total amount foreseen in the bilateral agreement to US$ 70 billion. The Ministers of Finance from the group of member countries also increased the level of free access resources, from 10% to 20% of maximum amount predicted in each bilateral agreement. Finally, the main financial swap conditions were defined: *i*) yearly interest rates between Libor[7] + 1.5% and Libor + 3.0%; and *ii*) loans with amounts lower than 20% of each agreement total would have a ninety days term, renewable twice for equal period (total up to 270 days), while those with amount higher than 20% of total (requiring previous agreement with the IMF) would have a two years term. These reforms allowed the Chiang Mai Initiative to become more inclusive, easing, at the same time, Western power's criticism and suspicions. It intended to reduce the IMF supervision dependence and, in parallel, maintaining collaboration attitude with the multilateral agency and the G7.

The Asian countries have deepened, since then, their model of international economic insertion, based in maintaining a stable and relatively devalued currency, and in exports promotion toward out of the region markets as final destination. During this period, the world economic cycle was marked by strong international liquidity expansion and fast growth of foreign reserves. In view of the positive international context, ASEAN+3 countries concentrated in keeping a competitive exchange rate. The resulting cost increase in carrying foreign reserves fostered countries to create, in May 2006, a Group of Authorities, comprised by academicians and technical staff from the Ministries of Finance, aiming at exploring ways to strengthen the supervision capacity of the mechanism and, thus, progressing toward expansion and multilateralization of the Chiang Mai Initiative. Swap bilateral agreements signed between members would be supplied permanently and simultaneously among all members.

The block has been gradually progressing around these objectives. Ministers agreed, in 2008, to increase the total amount of funds to US$ 80 billion and they set the fund's general governance principles and criteria for loans granting. Later, in May 2009, the Ministers of Finance, gathered in Bali, defined increasing total

7. *London Interbank Offered Rate* – a liquidity indicator of the London inter-banking market.

supplied funds to US$ 120 billion[8] (Lombardi, 2010). At the event, it was also achieved the decision related to criteria that will guide the path setting up the Chiang Mai Initiative Multilateralization (CMIM).

Indebtedness capacity with the fund is based in each country's contribution amount, multiplied by a pondering index that favor smaller economies. In accordance with set formula, Japan and China contribute with the same amount, counting with the same voting power, while South Korea's contribution corresponds to half of that of the two main Asian economies, equal proportion of its voting power. Decisions on topics considered as fundamental (fund size, contributions, loan multipliers, members adhesion, loan terms and conditions) are subject to consensus approval and issues related to granting loans (approval, renewal, default) require approval by simple majority vote. As it can be noticed, the governance system design of the mechanism supposes that none of the three major promoters of the initiative can isolatedly veto any measure, inducing to a concertation among the three countries and collaboration from the others for fundamental changes. Thus, pondering votes strengthens the regional cooperation process legitimacy.

In spite of regional mechanism's significant progress, until now, no swap agreement could be instrumentalized. The lack of an effective supervision mechanism, doubtlessly, is one of the main shortages of the Chiang Mai Initiative. Its members, seeking to solve this deficiency, began in mid-2011 the operation of an independent regional economic supervision unit, the *ASEAN+3 Macroeconomic Research Office* – AMRO. AMRO's objective is to promote Chiang Mai Initiative Multilateralized operations, as well as to offer own responses for the macro-economic supervision and loan granting and follow up. The office counts on a reduced number of technicians (between ten and twenty), enabling concentration only in information exchange (Cohen, 2010).

Since AMRO started to work, new progresses have been recorded. In mid-2012, ASEAN+3 Ministers of Finance determine duplicating the volume of available funds, expanding it to US$ 240 billion, and they plan to rise to 40% the portion of loans without link to the IMF by 2014 (Rana, 2012). In the long run, the initiative goes toward promoting disentail of Chiang Mai Initiative loans from the IMF, expanding, in parallel, its financial capability. In spite of the last progresses, it is not clear until where mechanism member are willing to grant autonomy to the evaluating unit.

8. Due to standard and institutional asymmetries among its members, countries contributions come from budgetary resources. Chalongphob Sussangkarn, AMRO Advisor. Interview held by author in September 2012.

TABLE 2
Chiang Mai Initiative Multilateralization

Country	Contribution		Loans multiplier	Basic vote	Votes based in contributions	Total voting power	
	US$ billion	(%)		number of votes	Number of votes	number of votes	(%)
China	38.40 China (excluding Hong Kong) 34.2	32.0 28.50	0.5	1.60	34.20	35.8	25.43
	Hong Kong 4.2	3.50	2.5	0	4.20	4.2	2.98
Japan	38.40	32.00	0.5	1.60	38.40	40.00	28.41
Korea	19.20	16.00	1	1.60	19.20	20.80	14.77
+3	96.00	80.00		4.80	96.00	100.80	71.59
Indonesia	4.552	3.793	2.5	1.60	4.552	6.152	4.369
Thailand	4.552	3.793	2.5	1.60	4.552	6.152	4.369
Malaysia	4.552	3.793	2.5	1.60	4.552	6.152	4.369
Singapore	4.552	3.793	2.5	1.60	4.552	6.152	4.369
Philippines	4.552	3.793	2.5	1.60	4.552	6.152	4.369
Vietnam	1.00	0.833	5	1.60	1.00	2.60	1.847
Cambodia	0.12	0.100	5	1.60	0.12	1.72	1.222
Myanmar	0.06	0.050	5	1.60	0.06	1.66	1.179
Brunei	0.03	0.025	5	1.60	0.03	1.63	1.158
Laos	0.03	0.025	5	1.60	0.03	1.63	1.158
ASEAN	24.00	20.00		16.00	24.00	40.00	28.41
Total	**120.00**	**100.00**		**20.80**	**120.00**	**140.80**	**100.0**

Source: ASEAN Secretariat.

4.2 Regional financial market development

Before the Asian crisis, many companies in the region contracted loans in foreign currency with Western and Japanese financial institutions. The relatively low development level of the Asian financial market left few financing options to companies. After the crisis, ASEAN+3 countries evidenced the need to develop their financial markets, particularly through local currency operations, reducing equity unbalance deriving from assets and liabilities structures denominated in currency mismatch, and preventing future liquidity crises. The low development of local financial markets, in relation to the size of economies and the growing opportunity costs for "recycling" foreign reserves in Western markets, evidenced a wide space to be exploited by scale expansion of Asian financial markets through building up a regional financial market. The low transactions volume in local financial markets resulted in a low presence of risk agencies, both global and regional, what meant insufficient supply of infrastructure supporting markets development.

Sharing these concerns, ASEAN+3 Ministers of Finance launched, in 2003, the Asian Bond Market Initiative (ABMI). The setting up of the Asian Bound Fund (ABF 1), amounting to US$ 1 billion was ABMI first initiative, leveraged by voluntary contributions from foreign reserves of the countries' group. ABF 1 management was delegated to the Bank for International Settlement (BIS) and its funds targeted to sovereign and state owned enterprises bonds issued in dollars in eight countries of the region. In parallel, voluntary work groups were created to study and propose actions in the following areas: *i*) debt securitization; *ii*) credit guarantees; *iii*) local currency bonds; *iv*) risk agencies; and *v*) currency exchange transactions.

A new step was taken in 2004, when ABF 2 was created. Counting on a larger volume of resources (US$ 2 billion derived from foreign reserves), its management was delegated to State Street Global Advisors, a firm located in Singapore and Hong Kong and custody of China's Shanghai Banking Corporation (Dieter, 2007). Its funds were targeted to select public and semi-sovereign bonds in local currency from eight countries. Specifically, the ABF 2 has two components (each with US$ 1 billion): *i*) Pan-Asian Bond Index Fund; and *ii*) Fund of Bond Funds. iBoxx ABF was also created, a joint-venture established with Western financial institutions (ABN AMRO Group, JP Morgan and Morgan Stanley) to provide benchmark of financial indexes for the regional markets (Rajan, 2009).

The significant discrepancy between evaluation made by international agencies and their local counterparts was identified as a discouraging factor to attract big international investors. The Asian Development Bank (ADB) and the Association of Credit Rating Agencies in Asia (ACRAA) were added to the initiative, beginning to work for harmonizing risk evaluation criteria and the establishment of "good practices" (Spiegel, 2009).

After the current financial crisis restates the importance to count on local currency financial markets, ASEAN+3 Ministers of Finance launched a set of measures seeking to strengthen the initiative. The Credit Guarantee and Investment Facility (CGIF), a guarantee fund created by the ADB in the amount of US$ 500 million to support private bonds issuing in local currency (Spiegel, 2009). ABMI began, in parallel, promoting periodic self-evaluations, but voluntary, among national regulators. Members of the private sector were added to discussions seeking to incorporate the topic of facilitation and liquidation of financial transactions between countries. Several ABMI participating countries keep a considerable level of control over the capital account. Given the voluntary participation feature, progress in setting facilitations for the undertaking of intra-regional transactions are concentrated in the region's more developed financial markets: Japan, South Korea, Singapore and Hong Kong.

Several challenges for the progress of the initiative remain. Firstly, the reduced volume of funds targeted sets a clear limitation. Secondly, the fact that investments are targeted to support only good quality public or quasi-public bonds could be causing a *crowd out* of private bonds. In this sense, the CGIF is a good response by the region to previous measures limitations. Thirdly, the absence of Australia, New Zealand and India, neighboring countries that count on financial markets with expressive size and appreciated expertise, decreases the initiative's externalities potential.[9] Finally, but not the least, the strong capital account control exercised by several countries reduces significantly the possibility of expanding liquidity and market capitalization.

ABMI aggregated value seems to be concentrated, in nothing less, in supplying a common basic infrastructure to support the development of Asian financial markets. In spite of Japan's constant efforts, which is the largest financial market in the region, to keep alive the initiative, steps taken for the establishment of a regional financial market are unequal, paced by sensitive national interests that are behind the discussion on capital account opening.

5 THE LATIN AMERICAN RESERVE FUND

5.1 Overview

There is in South America a regional cooperation mechanism that seeks to assist countries with balance of payments difficulties: the Latin American Reserve Fund (LARF). LARF was setup in 1978 under the name of Andean Reserve Fund and with the purpose of rendering services to the Andean Community of Nations' (CAN) members. It is the world's oldest regional reserve fund, with headquarter in Bogota, Colombia. LARF comprises the Andean Integration System, in which the Latin American Development Bank (LADB) also participates. In 1991, its founding members (Bolivia, Colombia, Ecuador, Peru, and Venezuela) decided to open the institution for all Latin American countries participation. In 2000, Costa Rica adhered to LARF, and it was followed, in 2009, by Uruguay.

The Fund works as a credit cooperative that grants short term loans to member countries in proportion to their capital contributions. Entity's corporate capital is US$ 2.34 billion and its paid in capital is US$ 2.03 billion. Its main source of funds is the subscribed capital by member countries. Leverages undertaken in capital markets and demand and time deposits made

9. It is worth highlighting that, in April 2011, the Treasurer of Australia, Wayne Swan, rejected the sale of Australia Stock Exchange to Singapore Stock Exchange allegedly in defense of "national interest". See <http://www.thehindu businessline.com/markets/stock-markets/article1611578.ece>.

by central banks are added as well. From 2006, LARF also began to receive short term deposits. It is worth highlighting that, since the establishment of the fund, capitalizations of utilities yielded by the corporate capital is done individually by member countries.

TABLE 3
LARF capital composition by member country (March, 2012)
(In US$ million)

Country	Subscribed capital	(%)	Paid in capital	(%)	Reserves	Paid in capital / reserves (%)
Bolivia	234.4	10.0	195.7	10.5	12,440	1.6
Colombia	468.8	20.0	391.3	21.0	33,130	1.2
Costa Rica	234.4	10.0	234.4	10.5	4,627	5.0
Ecuador	234.4	10.0	195.7	10.5	3,931	5.0
Peru	468.8	20.0	391.3	21.0	55,843	0.7
Uruguay	234.4	10.0	234.4	7.0	12,810	1.8
Venezuela	468.8	20.0	391.3	21.0	27,587	1.4
Total	**2,344.0**	**100,0**	**2,034.1**	**100.0**	**150,368**	**1.3**

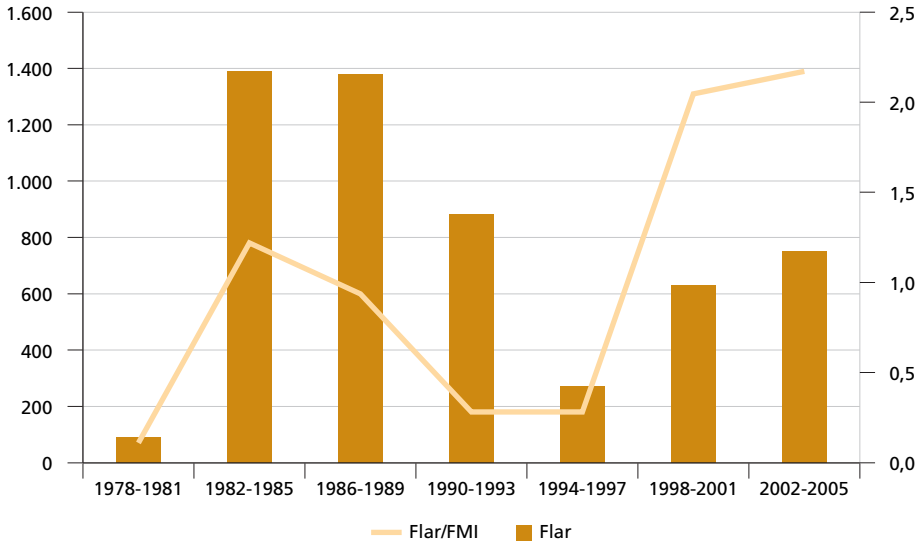
Source: Own elaboration based on LARF and central banks.

LARF Constitutive Agreement (Chapter 1, Article 3) sets forth the following objectives for the institution:

- supporting member countries' balance of payments or debts restructuring granting credits or guaranteeing third parties loans;
- improving investment conditions of member countries' foreign reserves; and
- contributing to harmonize member countries' currency exchange, monetary, and financial policies.

The Fund has been performing a very active role in granting short term loans to member countries, inclusively in amounts higher than the IMF. Between 1978 and 2012, LARF disbursed US$ 10.2 billions. According to Ocampo and Titelman (2010), between 1978 and 2005, granted loans responded to the equivalent of 60% of the IMF total financing to countries participating in the regional mechanism. These funds were comprised by, in large measure, loans supporting balance of payments and liquidity credits. It is also observed that, after the Asian crisis, LARF activity increased in compared to the IMF.

GRAPH 4
LARF: total granted loans (1978-2005)
(in US$ billion and proportion of the IMF loans)



Source: Ocampo and Titelman (2010).

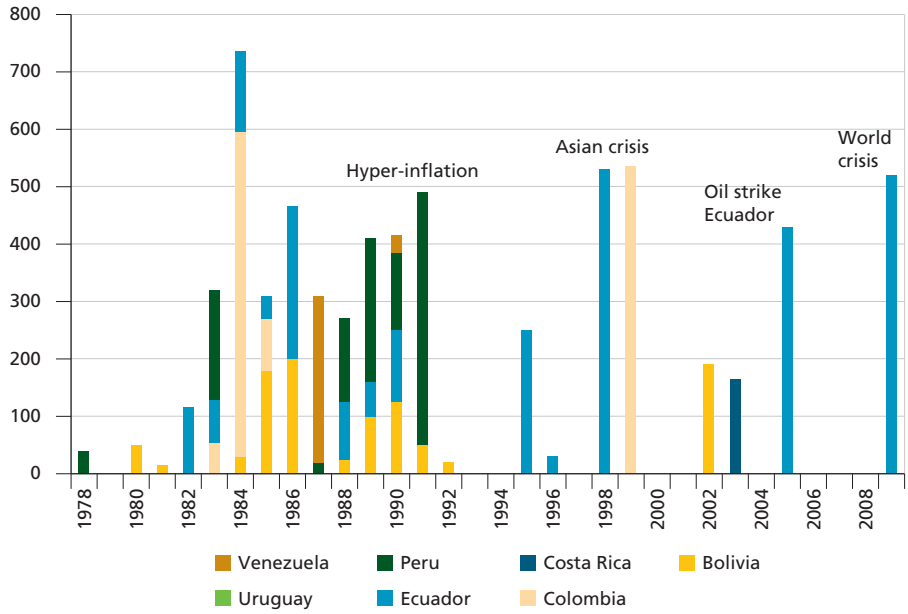
TABLE 4
Loan Modalities (1978-2012)

Modality	Amount (US$ million)
Balance of Payments	4,906
Liquidity	4,397
Contingency	470
Debt Restructuring	453
Total	**10,226**

Source: LARF.

In accordance with LARF financial statements, Ecuador was, in 2012, the only indebted country in the Fund that was honoring a US$ 500 million loan, with three years term, contracted in that very same year.

GRAPH 5
Credits approved during crisis episodes



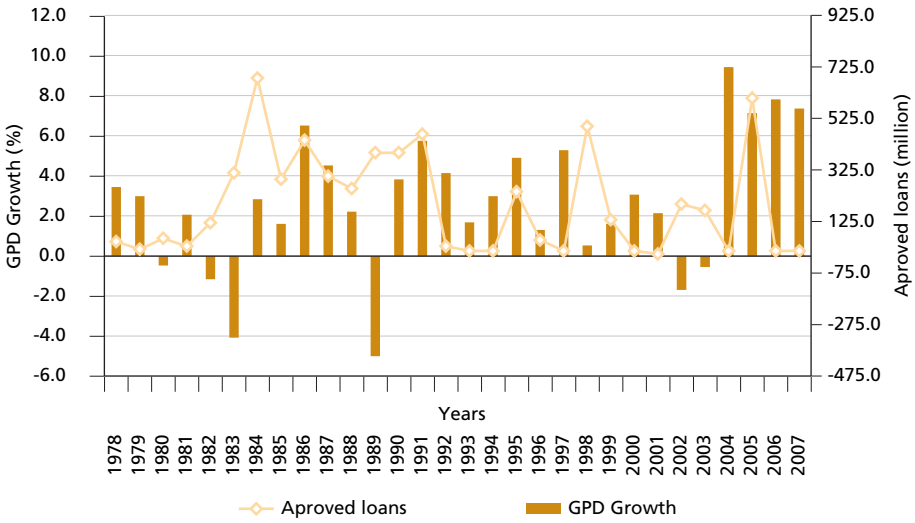
Source: LARF.

Funds obtained from the LARF were very important to ease liquidity restrictions for beneficiary countries. As examples, the Bolivian case, between 1985 and 1986, loans were equivalent to 30% of its exports and 35% of its foreign reserves; in 1998, in Ecuador, the equivalent to 28% of its foreign reserves, and in Colombia, in 1984, the equivalent to 30% of its foreign reserves.

Besides the fact that LARF financial capability is notoriously lower than that of the IMF, fast and timely granting of loans are major features and comparative advantages of the regional mechanism.[10] Usually, the IMF requires relatively long negotiating processes, which tends to aggravate crises and, consequently, expanding demand for new funds. In some instances, as stressed by Titelman (2006), LARF was the sole institution to contribute with countries in crisis situation. In 1988, when Peru recorded a drop in its GDP of 8.4%, LARF supplied US$ 130 million, while the IMF did not make funds available. It is possible to confirm that, in addition to timely releases, LARF loans perform a clear countercyclical profile.

10. Time for approving credits for balance of payments and balance of payments restructuring has been, in average, 32 days. See <www.flar.net>.

GRAPH 6
Member countries' GDP variation and loans approved by the LARF



Source: Ocampo and Titelman (2010).

Funds disbursed by the LARF are recorded by the central Banks as debts in their foreign reserves account, offering a high level of guarantees for loans pay back. The status of preferred creditor granted to LARF reflects a high pertaining feeling of member countries, which makes loss of reputation cost extremely high in comparison to eventual temporary advantages gotten with loans default. This feeling is also reflected in the timely manner in which disbursement requests by members are approved. The semi-automatic granting of LARF Liquidity and Contingence Credits have led the LARF to negotiate with the IMF the accounting of paid in capital by its members as foreign reserves assets.[11]

Historically, Fund members always pay their debts with the institution, even if under foreign debt moratorium situation. These facts have resulted in comments and in rating received by the LARF. In February 2009, during the most critical instance of the international crisis, Moody's agency rated LARF as "Aa2" and the Standard and Poor's as "AA" (investment grade in both cases), rating it as the institution with the best evaluation in all Latin America: "LARF reportedly has never had a default by any of its central bank borrowers nor been forced to restructure a loan to a central bank borrower (...) all of which reflect LARF's historical treatment as a preferred creditor" (Standard & Poor's, 2008).

11. Carlos Andrés Giraldo (DEE Deputy Director of the FLAR). Interview held by author. Buenos Aires, May 2010.

LARF excellent risk management allows it to make funds leverage in capital markets at competitive costs. Its investment policy foresees possibility of yearly losses of up to 5%, requiring, minimally, the following credit rating (Standard and Poor's/Moody's/Fitch): 1) long term: A-/A3/A-; 2) short term: A2/P2/F2; 3) mandatorily in dollars. LARF presents only two issuing: *i*) 2003: US$ 150 million, with fixed remuneration of 3% and 3 years term (certified as Latin America's best multilateral bond in 2003); *ii*) 2006: US$ 250 million, with five years term and quarterly remuneration of three months Libor + 20 basis points, issued at 100% of its face value. Bearing in mind the LARF leverage capability (2.5 fold its capital – US$ 5.85 billion), the reduced volume and number of issuing undertaken would target only the market's rating demarcation.

LARF has been showing active in supplying instrument in concerted way with other regional financial agencies. In the international crisis context, in October 2008, LARF launched, jointly with the Latin American Development Bank (LADB) and the Inter-American Development Bank (IDB), joint credit lines with total amount of US$ 11 billion, of which US$ 1.8 billion were LARF contributions channeled through Liquidity Credit Lines to the central banks. The agreement stipulated also that LARF could have available more US$ 2.7 billion through its Contingence Lines, according to market conditions evolution.[12]

5.2 Governance

LARF Constitutive Agreement sets forth the following decision-making bodies: the Assembly of Representatives, the Board, and the Executive Presidency. The Assembly is LARF maximum decision-making instance and it is comprised by member countries' Ministers of Finance. The Board is comprised by governor or member countries' central banks presidents. The Executive Presidency is the Fund's permanent technical body. The Executive President is LARF's legal representative, elected by the Board for a three years term, renewable for other three years.

Besides the distinction between required minimum paid in capital at countries' admission, each country has one seat and one vote, both in the Assembly and in the Board.[13] The Agreements of the Assembly are approved with ¾ of votes (six of the seven current members). Additionally, decisions considered as important (capital increase, establishment of special funds, changes of the Agreement and credit limits and terms) require that, in addition to approval by ¾ of votes, opposing votes do not surpass 20% of total issued votes. Until now, consensus is the tone in all decisions of the institution.

12. FLAR, Press Release, October 13th, 2008, <available at www.flar.net>.

13. Countries with "large economic dimension" (Colombia, Peru, and Venezuela) must present a minimum paid in capital of US$ 250 million, while those considered as "small economic dimension" (Bolivia, Costa Rica, Uruguay, and Ecuador) of only US$ 125 million. In case of contribution lower than set for its "economic dimension" the country may have a seat with other participants.

As it is noted, loan approval instances vary in accordance with the type of requested credit. If simultaneous demand for credits limits LARF loan capability, loans should be divided in the limit of available capability in amounts proportional do each country's paid in capital, reducing countries' indebtedness.

TABLE 5
Types of credit, conditions, and approval instances

Type of credit	Term	Interest rates	Limit of access[1]	Approval instance
Balance of payments	3 years with1 year of grace	3 months Libor + 400 points	2.5 times paid in capital	Board
Foreign debt restructuring	3 years with1 year of grace	3 months Libor + 400 points	1.5 times paid in capital	Board
Liquidity	Up to 1 year	3 months Libor + 150 points	paid in capital	Executive president
Contingency	6 months renewable	3 months Libor + 150 points	2 times paid in capital	Executive president
Treasury	1-30 days	_	2 times paid in capital	Executive president

Source: LARF.
Note: [1] The Central Banks of Bolivia and Ecuador count on access of additional 0.1 in relation to the other members (except for Treasury Credit).

LARF's Economic Studies Directorate (DEE) plays the role of Technical Secretariat for the Board and Executive Presidency. DEE carries out monitoring of each member country's macro-economic and financial systems performance, by regularly publishing a broad set of monthly and quarterly indicators and a semi-annual bulletin with macro-economic and financial information about each of its members. The strong closeness with the economic reality of countries and constant contact with central banks provided a remarkable comparative advantage regarding the IMF.

As we can observe, the majority of historically granted loans by the agency was centralized in Liquidity Credit and Balance of Payments Credit, despite the fact that Liquidity and Contingency Credits were the lines with most competitive interest rates. Additionally, the release of these last two lines is immediate, requiring only the approval by the Executive President. Finally, the lack of records of Treasury Credit requests would indicate the need of reevaluating its conditions, mainly its term.

The Balance of Payments Credit is the line that presents LARF's longest term and the broadest access limit, requiring a less agile evaluation process and demanding greater number of requirements. Due to its profile, this line is used as an interesting instrument to improve supporting conditions negotiated with the IMF. It is required that the country interested on it submit a report informing

planned measures that will be taken in order to reestablish the equilibrium of its balance of payments, which shall not have imports restrictions related to products coming from the other members. The Executive Presidency, with DEE support, presents its evaluation on the request within thirty days for Assembly's final deliberation, which shall declare if the country really is in situation of insufficient foreign reserves. Analysis undertaken by DEE to determine if the type of macro-economic unbalance is due to structure or conjuncture nature and, then, establish the eventual need of adopting any adjustment measure. In that sense, the Executive Presidency requires a set of information from the requesting country (box 2).

BOX 2
LARF Credit Negotiation for Balance of Payments

- Amount of credit;
- Proposed amortization term;
- Proposed Schedule and scheme for disbursements;
- Explanation on nature and duration of imbalanced balance of payments motivating the request (must be supported by statistic information of foreign reserves, foreign trade perspectives and capital movement of the two years prior to request);
- Information of other financing already obtained or that is sought from other foreign sources to complete the requested assistance;
- Information about the ongoing economic policy measures or that are proposed in order to correct or ease foreign imbalance. The report should have quantitative targets and limits;
- Credit portfolio of the banking system, disaggregated by domestic and foreign currencies and terms;
- Disaggregated foreign debt of both public and private sectors;
- Disaggregated imports and exports amount by origin/destination and product;
- Central Bank balance;
- Projections for the coming three years of the main macro-economic variables (growth, GDP amount – in dollar and local currency; public sector balance; inflation; foreign sector; public debt, and currency exchange).

Author's own elaboration.

5.3 Feasibility of the LARF expansion

LARF positive experience and significant increase of foreign reserves accrued by the South American countries during the past years lead to analysis on the possibility of the regional mechanism expansion, both in its resources and its members. As seen, two of the most relevant variables for a country to have incentives to adhere to reserves fund are the volume of resource that the country will begin to have access and its volatility, both reflected in the *coverage index*. Considering these and other advantages, Machinea and Titelman (2007) evaluate

the feasibility of LARF expansion toward a total of ten countries, including the existing members (except Uruguay) and the others four main financial markets in Latin America (Brazil, Argentina, Chile, and Mexico).

Firstly, authors sought to correlate the shocks between the mentioned countries during the period of 1990 and 2005, by using the following variables: *i*) dynamics of foreign reserves; *ii*) private capital inflows; and *iii*) variation in each country's exchange terms. The obtained results show that the correlation in foreign reserves variation, in some cases, was significant (temporal coincidence of emergencies, which plays unfavorably to countries association), but also indicate that the swings affected countries in different levels of intensity during the period. As there is a common behavior in foreign reserves accrual among several countries in the sample, some techniques were applied to reduce the trend effect.[14] Concerning the exchange terms, defined patterns were not observed, while private capital inflows presented a positive correlation, but not to unit. Other considerations add to favorable arguments for LARF expansion: *i*) loans granting at the beginning of a liquidity restriction period could prevent or ease the impact of crisis in a given country, reducing regional contagion, including the effects of the financial crises over the regional trade, intensive in aggregate amount; *ii*) capital expansion would also increase its capability of fundraising in the international markets, reducing its vulnerability to foreign reserves swings; *iii*) even if in face of positive correlations and contagion effect, the sequential demand for resources or differences of intensity would make feasible its expansion.

In a second instance, Machinea and Titelman (2007) computed the coverage index supplied by the ten countries' foreign reserves, as function of their size and volatility, for different levels of p sharing ($0 \leq p \leq 1$). As it is noticed, the results show that Chile and Colombia would tend toward a reduction in the coverage index, aggregating greater volatility to their reserves. Probably, the currency exchange policy of these countries absorbs, in large measure, the foreign shocks, and the collateral benefits should be explored associated to higher exchange stability. In the other hand, Mexico, Ecuador, Peru and Bolivia would present a strong increase in coverage index, been potentially the most beneficiary countries. For Brazil, in terms of coverage, participation in the fund would represent a modest gain, while Argentina would present a slightly higher result.

14. It was used the Hodrick-Prescott filter (a tool that ease short term cycles) and annual foreign reserves variations were computed.

TABLE 6
Foreign reserves coverage index (1990-2005)

Country	p=0	p=0.1	p=0.2	p=0.3	p=0.4	p=0.5	p=0.6	p=0.7	p=0.8	p=0.9	p=1
Bolivia	2.74	3.38	3.41	3.41	3.42	3.42	3.42	3.42	3.42	3.42	3.42
Colombia	4.06	3.69	3.57	3.52	3.49	3.47	3.45	3.44	3.44	3.43	3.42
Costa Rica	3.09	3.44	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.42
Ecuador	2.49	3.38	3.41	3.41	3.42	3.42	3.42	3.42	3.42	3.42	3.42
Peru	2.62	3.12	3.25	3.32	3.35	3.37	3.39	3.40	3.41	3.42	3.42
Venezuela	3.04	3.38	3.44	3.45	3.45	3.44	3.44	3.44	3.43	3.43	3.42
Argentina	2.89	3.47	3.56	3.56	3.54	3.51	3.49	3.47	3.45	3.44	3.42
Brazil	3.01	3.29	4.43	3.49	3.51	3.50	3.49	3.48	3.46	3.44	3.42
Chile	5.24	4.28	3.92	3.74	3.64	3.57	3.53	3.49	3.46	3.44	3.42
Mexico	1.79	2.18	2.48	2.71	2.9	3.04	3.15	3.24	3.31	3.37	3.42

Source: Machinea and Titelman (2007)

These outcomes show that the LARF expansion is possible, but should be hued. From coverage index point of view, there would not be any incentives for those countries presenting greater volatility in their reserves (Chile and Colombia). In their turn, Brazil and Argentina would have modest coverage gains. In the next section, potential course of action will be explored aiming at strengthening LARF operation.

5.4 LARF potentiality

In spite of its excellent background, it seems evident that LARF potential is been under used by the region. The significant increase of accrued foreign reserves by South American countries shows that the institution presents a great potential to be explored, with broad benefits for the entire continent.

Traditionally, the LARF has been an institution integrated by small and medium size countries. Among the Latin American countries, Argentina, Brazil, Mexico, Paraguay and Chile are the most evident cases of non-member countries. In the cases of Paraguay and Chile, it would not seem to have greater difficulties for their incorporations. Paraguay is a country not much integrated to the international financial markets (Paraguayan government made, in January 2013, its first issuing of sovereign bond in the international market) and it accrues one of the largest foreign reserves volumes related to the region's GDP (25%). Actually, Paraguay formally presented its adhesion request during the LARF 68th Extraordinary Board Meeting, held in July 2012.[15]

15. See <www.flar.net>. Accessed in December 19th, 2012.

Although Chile presents an expectation, at least initially, of greater volatility for its reserves, the country is the one that has more stakes in the region's financial integration. CAN countries, particularly Peru, and Argentina have a high stock of Chilean investments. Two events of particular importance are aggregated: the Trade Exchanges of Santiago (Chile), Lima (Peru) and Bogota (Colombia) signed, in 2010, agreement foreseen connectivity of their operations in a project called Integrated Latin American Market (MILA)[16] (BID-INTAL, 2010). With these agreements, stocks from the three Andean Exchanges began, from May 2011, to be jointly listed, opening to broker houses the possibility of reciprocal buy and sell orders. In clear support demonstration, Standard & Poor´s launched the S&P MILA 40 Index, aiming at monitoring the forty most liquid stocks in the three countries. Still in 2010, the Santiago Exchanged signed a bilateral agreement with Brazil's BOVESPA for routing orders.[17] Throughout the coming years, without any doubts, correlation between the financial cycles of Chile, Colombia and Peru, LARF member countries, and Brazil, major destination of Chilean investments abroad since 2010 will increase.[18]

Concerning Mexico incorporation, it should be highlighted that the country is the main beneficiary of NAFA (North American Framework Agreement) swaps network (Mckay, Volz, and Wolfinger, 2010). Additionally, the strong correlation between Mexico's economic and financial cycles with the United States and the high concentration and "denationalization" level of its banking system constitute not too favorable features,[19] reflected in the dashing variations of the foreign reserves coverage index (table 6). The convergence between Mexico and the United States in G20 is added to these points, with remarkable divergences related to positions advocated by Brazil and Argentina (La razón, 2010; Salazar, 2012). In principle, these considerations suggest that it would be more favorable that Mexico's integration begins bilaterally through the establishment of swap agreements with South American countries.

16. For more information, see <www.mercadointegrado.com>.

17. See <http://ri.bmfbovespa.com.br/upload/portal_investidores/pt/comunicados_noticias/comunicados_mercado/CM%20-%20Acordo%20com%20o%20Chile_13122010.pdf>. Accessed in December 15th, 2010.

18. See <http://www.ccs.cl/>. Accessed in December 16th, 2010.

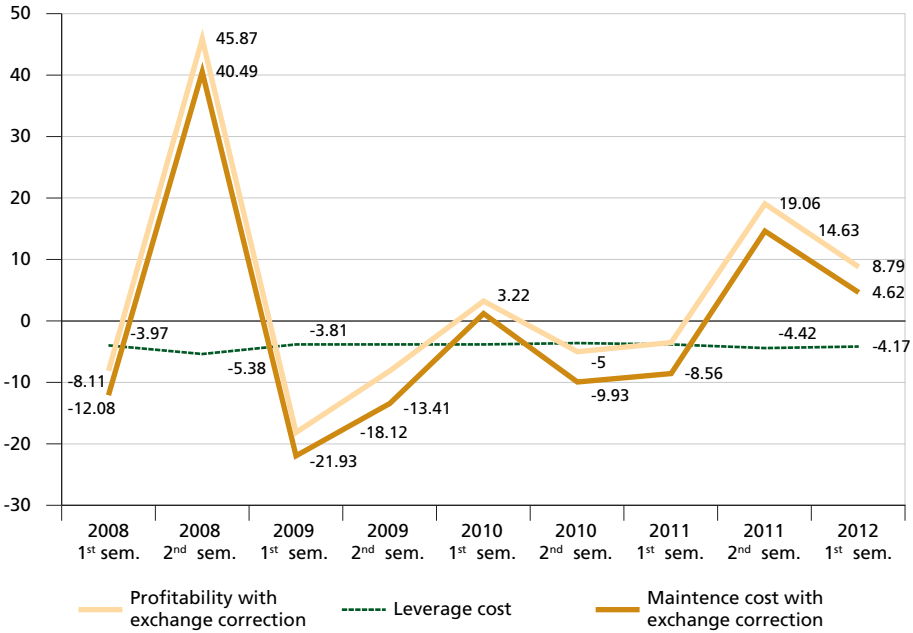
19. As pointed out by Brazil's Executive Director in the IMF, Paulo Nogueira Batista Junior (2008, p. 226): "As political concept, Latin America lost much of its relevance. Mexico and Central America seem to have irremediably fallen into the United States orbit. One cannot count on Mexican and Central Americans to build up an integration Project that intends to be autonomous and sovereign". It should be aggregated to these considerations that, according to Ipea (2010), in December 2009, 82.1% of the Mexican banking system assets were in the hands of foreign private capital institutions; 36.0% of Mexican total banking assets belong to only two Spanish institutions (BBVA and Santander) while the American Citibank had other 23.6%.

The situation would be different for the cases of Brazil and Argentina. Both countries were the major promoters in creating the UNASUR Finance and Economy Council in May 2010. Article of the Council Statutes foresees, among its objectives, "promoting pertinent strategies and studies to deepen Central Banks coordination measures concerning foreign reserves management". Brazil and Argentina could promote strengthening of the Council by getting gradually closer to the LARF. This approximation could be instrumentalized through the indication of permanent observers and putting part of their reserves under LARF management. In parallel, a technical cooperation agreement between LARF's DEE and UNASUR's Financial Integration Technical Group (GTIF) deserves to be evaluated, aiming at information exchanges and designing of joint technical works. This vote of trust from Brazil and Argentina, the only two South American countries to have Executive Director in the IMF and participating in G20, in the LARF and in UNASUR, would strengthen institutionalizing the regional financial cooperation process and coordinating positions between representatives and represented, increasing the legitimacy of both countries in the multilateral realm.

However, the participation of Brazil and Argentina would also require them to make adjustments to the LARF. Due to the weight of their economies, an eventual participation of Argentina and, particularly of Brazil, should result in the establishment of macro-economic conditionalities to be complied by the regional fund members. Economic activity and currency exchange evolution in Brazil has presented significant spillover effect on the other South American economies (Adler and Sosa, 2012). On the other hand, Brazilian foreign reserves carrying over cost is presenting important reduction since the beginning of the international crisis, caused by cuts in the domestic interest rates (Selic) and devaluation of the Brazilian Real (Chart 7 and SAFATLE, 2012). In parallel, the Central Bank of Brazil has been promoting, since 2008, a gradual diversification process of reserves (Annex 1).

Besides Brazilian foreign reserves had reached US$ 400 billion in end of 2012, they still respond only for 15% of the GDP, a ratio lower than those recorded by remnant BRICS and other Latin American countries (table 1). Reduction of carrying over cost and the existing expressive expansion margin of the Brazilian foreign reserves; South America greater economic stability and its interdependence with Brazil, the need to strengthen the regional integration process and the country's performance in multilateral financial realms, show a down turn in the cost of Brazil to integrate these initiatives. Without any doubt, negotiation of Brazil's participation in the LARF would provide an original macro-economic coordination exercise for the entire region.

GRAPH 7
Brazilian Foreign Reserves Carrying Over Cost
(Semi-annual rates – in %)



Source: Central Bank of Brazil

Another discussion related to the incorporation of new member is related to the increase of LARF funds. The possibilities of providing support to country members depend on the institution financial capability. The volume of its funds determines its possibility of indebtedness in the international markets. This raises several possibilities. The first, and most evident, would be that the LARF would begin to capitalize the utilities yearly yielded by its reserves. This decision would evidence countries' confidence in the institution, allowing for the LARF the capitalization without the need of new contributions. A second option would be to raise minimum capital paid in by countries, adjusting it both for future and current members. Part of this capital increase could be carried out through some contribution as collateral that would not affect the institution's credit rating.

A comparative analysis of South American countries' foreign reserves volume and their quotas at the IMF and in LARF evidences the existing potential for expansion and the need for governance reforms toward its effectiveness (table 7).

TABLE 7
Quotas and Reserves (December, 2010)
(US$ Million)

	BOL	COL	ECU	PER	VEN	CR	URU	BRA[1]	ARG	PAR	CHI[1]
LARF	234	469	234	469	469	234	234	-	-	-	-
FMI	261	1,176	459	970	4,042	249	466	4,645	3,239	153	1,309
%	1.5	6.9	2.7	5.7	23.8	1.5	2.7	27.4	19.0	0.9	7.9
Reserves	9,655	27,818	2,701	43,187	29,543	4,587	7,584	285,906	51,745	4,220	27,569
%	1.9	5.6	0.5	8.7	6.0	0.9	1.5	57.8	10.5	0.8	5.8
GDP[2]	19,640	288,782	57,978	157,324	239,620	35,831	40,265	2,143,031	370,263	18,298	203,443
%	0.6	8.0	1.6	4.4	6.7	1.0	1.1	60.0	10.3	0.5	5.7

Source: IMF, LARF and central banks.
Notes: [1] Both Brazil and Chile made additional contributions to the IMF through the New Arrangements to Borrow – NAB. Brazil contributed with 8.740 billion of Special Drawing Rights – SDR – equivalent to US$ 13.616 billion – while Chile contributed with 1.700 billion of SDR (corresponding to US$ 2.648 billion). See <http://www.imf.org/external/np/exr/facts/spa/gabnabs.htm>. Accessed in December 21st, 2010.
[2] Values referring to 2010 at current prices.

Increasing the number of LARF members and quotas would require the strengthening of its capacity of supervision and monitoring of members. To that end, it would be crucial to increase DEE work capability, granting it with greater autonomy, expanding the number of analysts (currently, they are only five), and establishing supervision missions to countries similar to those of Article 4 of IMF Constitutive Agreement. A major step toward this direction was taken in 2011, when LARF started its "Macro-economic Supervision Program", which includes carrying out supervision missions semestrally to each country, dialogue with the public and private sectors and preparation of classified analysis and recommendations to the LARF Board.[20] The possibility of carrying out joint missions with the IMF could also be studied. These measures would target establishing a prequalification mechanism, offering a precatory credit line to requesting countries and defining, according to their qualification, credit programs with waived conditionalities or not. Concerning the latter, it does not seem wise to apply strict conditionalities (or simply, applying conditionalities) to credits with amounts lower than the contribution made to the common fund by the requesting country.

The progress of these measures would allow formalizing an information exchange system, the dialogue among authorities and warning, foreseen eventual conjuncture problems in domestic economies and evolution of international environment. Also, the supervision mechanism would act as basis to foster an eventual coordination of policies, encompassing fiscal, monetary, credit, and macro-prudential regulation variables. Bearing in mind the Maastricht Treaty

20. Eduardo Morón, Director of FLAR Economic Studies. Interview held by the author. Buenos Aires, September 2012.

experience, it would not be wise to adopt explicit goals as the European case. Coordination of currency exchange, monetary and financial policies, one of the LARF objectives, should start from capital flows and macro-prudential regulation monitoring. The outset, in 2013, of Basel III requirements implementation could induce a greater coordination of macro-prudential regulation of the region's countries.[21] These measures would reduce the moral hazard associated to loans, enabling the access to greater number of reliable information to prepare diagnosis more adjusted to particular national realities. A greater supervision capacity of the LARF could allow, likewise, the release of greater volume of resource and at a faster pace.

A greater coordination of activities with the IMF would be also important to expand the regional mechanism's financial and supervisory capacity. Recently, technical staff from the multilateral agency (IMF, 2010) proposed that regional financial funds could be expanded through contracting of IMF's Flexible Credit Line (FCL). The measure aims at reducing stigma associated to the Fund's loans. Additionally, the proposal implies a reform in the IMF Statutes, which allows financing only to member countries, would result in a challenge of sharing loan risk among all participating countries of the regional mechanism. The technical cooperation supplied by the IMF could be especially interesting to strengthen fiscal monitoring of economies and identification of volatilities transmitted to global financial markets, topics where the IMF presents greater capabilities. These measures would increase the aggregated value by both institutions. On the one hand, they would integrate better the IMF supervision between the multilateral and bilateral levels[22] and, on the other hand, would open space for the regional supervision unit to concentrate in identifying specific regional vulnerabilities, proposing initiatives that promote collective action and regional spillovers.

The aforementioned measures would enable expanding LARF actions. The Asian experience calls attention for the possibility to make compatible the regional fund expansion with the establishment of swap agreements networks among their members. The LARF could make feasible the expansion of these agreements in two ways. In the first scenario, it would directly participate of agreements through short term operations of buying and selling local currencies. The country that would participate in the currency exchange would be obliged to buyback, within a previously preset term, its own currency supplied to LARF. A second alternative would consist in, as in the ASEAN+3, countries signing swap agreements in local currency among themselves, with a mandatory buyback clause. In this case, LARF could supply part of guarantees required in agreements

21. For an evaluation of Andean countries adequacy to the Basel III new capital requirements, consult Galindo, Rojas-Suarez and Valle (2012). For an evaluation of Latin American countries to Basel II and other macro-prudential issues, see BIS (2007).

22. For detailed information on integration deficiencies between multilateral and bilateral supervisions undertaken by the IMF, see IMF (2008) and Crow; Arriazu; Thygesen (1999).

and assist countries in promoting and organizing a bilateral swaps network, aiming at its multilateralization. The swap agreements could be conjugated with regional payment systems (Payments Agreement and Reciprocal Credit of the Latin American Integration Association – CCR-ALADI,[23] Local Currency Payments Systems – SML[24] and the Regional Payments Single Settlement System – SUCRE),[25] supplying financing lines to regional trade. It is worth recalling that, in 2009, Brazil offered the possibility of signing bilateral agreements in Brazilian Real to member countries participating in the Bank of the South[26] up to a total of R$ 10 billion. Until now, only Argentina showed some interest for the Brazilian offer. However, divergences related to charging *Impuesto de Bienes Personales* (Personal Goods Tax) to Brazilian capital firms settled in Argentina, reaching annual amount of US$ 150 million, and the guarantees presentation requirement would have frustrated signing a bilateral swap agreement of R$ 3.5 billion, leading both countries into signing only a understanding of future intentions.[27]

Concerning the "inward border" working agenda, the creation of a technical group gathering the GTIF and the DEE, in addition of helping the coordination of foreign reserves management, it should be involved, in coordination with stock exchanges and regulating agencies, in elaborating recommendations for developing regional financial markets through local currency issuing. A coordinated action between LARF and LADB toward supporting, by means of setting up a guarantee fund, bonds issuing in local currency of productive companies that seek fundraising to finance innovative projects could induce major synergies and complementarities between trade and financial integration.

Finally, in order to advance in these directions, it is required that the LARF builds up credibility. Without it, there is no possibility for an international, regional or multilateral agency to grow. Credibility depends on three factors. Firstly, transparency of LARF and member countries operations should be fostered. Without this, it is difficult to become trustworthy. Secondly, the adoption of international good practices is indispensable in asset management and condi-

23. For an overview of Payments Agreements and Reciprocal Credits operations of the Latin American Integration Association, see: <http://www.bcb.gov.br/rex/ccr/folheto_da%20aladi_sobre_ccr.asp?idpai=infoccr>. See also, Biancareli (2010).

24. For an overview of Local Currency Payments System between Brazil and Argentina, see: <http://www.bcb.gov.br/?SML>.

25. Created in 2010, Sucre (Regional Payments Single Settlement System) constitutes a virtual currency for trade among the Alba countries (Bolivarian Alternative for the People of Our America), aims at strengthening the economies of the block and to foster regional integration.

26. Until now, members of Bank of the South are the following countries: Brazil, Argentina, Uruguay, Paraguay, Bolivia, Equator, and Venezuela. Nevertheless, its Constitutive Treaty includes the incorporation of all South American countries. For discussion on the Bank of the South, see Carcanholo (2011) and Calixtre; Barros (2010).

27. See <http://www2.camara.gov.br/atividade-legislativa/comissoes/comissoes-mistas/cpcms/bdclipingespeciais.html/2010-ce/comercio-bilateral-brasil-argentina>. Acessed on December 12th, 2010.

tionality required from member countries. Lastly, management capacity of their liabilities, their indebtedness policy: to continue betting only in investments in dollars does not seem to be a wise asset and risk management policy in face of a global foreign reserves system that marches toward a greater diversification.

In summary, the LARF has broad perspective of development, whose materialization will depend much on the will and capability to advance of its own members.

6 FINAL COMMENTS

As mentioned, the objective of this article is assessing how a regional mechanism could complement existing credit lines and timely supply funds to prevent worsening of a liquidity crisis in one country and contagion of its neighbors. As regional liquidity mechanisms, foreign reserves funds and currency swap systems were selected.

Concerning the establishment of a foreign reserves fund in the pattern of LARF, the research showed that it is possible to reduce foreign vulnerability of a group of countries, but under certain conditions. The dimension of countries reserves that are willing to become members of a fund, as well as the volatility of these reserves, when compared to total reserves volume of the pool (intermediated by the resources sharing level) and to total volatility constitute determinant criteria for benefits deriving from association.

However, the benefits are not uniformly distributed among all member countries. Some, inclusively, may experience losses in their coverage indexes. Attention must be delivered also to the difference in absolute gains among participants. The creation of a regional reserves fund generates externalities that contribute to reduce foreign vulnerability, mainly by working in contagion mitigation of neighboring countries and generating scale saving in foreign reserves management. But the mechanism may also yield negative effects, such as the incidence of moral hazard or adverse selection.

Regarding currency swap mechanisms, it is probable that they reduce foreign vulnerability of countries. The Chiang Mai Initiative, case study of this work, was constituted from crises faced by Asian countries during the end of 1990s. During the current international crisis, the agreement was not presented as a financing alternative for member countries due to resistance coming from its linkage with the IMF, something politically stigmatized in Asia, and lack of an effective supervision mechanism. In spite of progresses seen in the design of the mechanism's future steps, the political resistance of countries of the region in granting a higher level of autonomy to the initiative represents the greatest challenge for its full operations.

As long term indirect effects of the regional liquidity mechanisms operation, growth of regional trading flows profiting from a greater currency exchange stability and economic activity may be considered. The reduction of crises occurrence throughout time would allow for expanding investments and trade targeted to member countries of the regional mechanism, with positive reflects in the regional financial and economic development.

Consulted literature suggests that gains, in the South American case, would not be uniformly distributed among the countries of the region, eventually leading larger and more stable economies, such as the Brazilian, to asymmetric contributions. This attitude would only make sense in a broader range of objectives (as listed in the last sections), in which regional stability was to be seen as a collective good that would also yield positive externalities for the larger economies.

Regarding the LARF specifically, this mechanism constitutes an excellent starting point for strengthening regional institutionality, since it has good reputation, significant operations, and functions expected from a regional liquidity fund. Its expansion, even if under differentiated incentives for each country, may be a fostering instrument of South America economic stability, allowing for sharing the costs of emergency liquidity assistance – with savings related to individual strategies –, the expansion of possibilities of regional economic policies coordination and the strengthening of South American countries negotiation power in multilateral arenas of financial negotiations, especially the G20 and the IMF.

In spite of its many advantages, risks should not be neglected. The execution of regional financial cooperation policy should consider that each country's fundaments become even more important, since they consolidate an institutional relationship among members. Participation in a regional entity should be followed by valuation of consistent macro-economic policies. Reinforcing supervision units of studied regional mechanisms is crucial for achieving this objective. Only then, a complementary competition exercise, of practices and ideas could be promoted with the IMF, which is something extremely valuable, both for regional and global financial stability.

REFERENCES

ADLER, G.; SOSA, S. **Intraregional spillovers in South America**: is Brazil systemic after all? Washington: IMF, 2012. (Working Paper). Available at: <http://www.imf.org/external/pubs/ft/wp/2012/wp12145.pdf>.

AGOSIN, M. R. Fortalecimiento de la cooperación financiera regional. **Revista de la Cepal**, n. 73, p. 33-53, 2001. Available at: <http://goo.gl/jS1EP>.

AIZENMAN, J.; LEE, J. **International reserves**: precautionary vs. mercantilist views, theory and evidence. Washington: IMF, 2005. (IMF Working Paper, 05/198). Available at: <http://www.imf.org/external/pubs/ft/wp/2005/wp05198.pdf>.

AIZENMAN, J.; CHINN, M.; ITO, H. **The emerging global financial architecture**: tracing and evaluating the new patterns of the trilemma's configurations. Cambridge, United States: NBER, 2008. (Working Papers, n. 14.533).

AMRO – ASEAN+3 MACROECONOMIC RESEARCH OFFICE. **Key Points of CMI Multilateralization Agreement**. Singapura: AMRO, 2011. Available at: <http://www.amro-asia.org/wp-content/uploads/2011/12/Key-Points-of-CMIM.pdf>.

AMYX, J. Regional financial cooperation in East Asia since the Asian financial crisis. *In*: PEMPEL, T. J.; MACINTYRE, A.; RAVENHIL, J. (Coords.). **Crisis as catalyst**: Asia's dynamic political economy. Ithaca: Cornell University Press, 2008.

BAKER, D.; WALENTIN, K. **Money for nothing**: the increasing cost of foreign reserve holdings for developing nations. London: CEPR, Nov. 2001. (Breafing Paper).

BALASSA, B. **The theory of economic integration**. Illinois: Richard Irwin, 1961.

_____. Economic integration. *In*: EATWELL, J.; MILGATE, M.; NEWMAN, P. **New palgrave**: a dictionary of economics. London: Macmillan, 1987. v. 2.

BATISTA JÚNIOR, P. N. A América do Sul em movimento. **Revista de economia política**, v. 28, n. 2, p. 226-238, abr./jun. 2008.

BCB – BANCO CENTRAL DO BRASIL. **Convênio de Pagamentos e Créditos Recíprocos (CCR)** – Folheto da Aladi para divulgação do CCR. Brasília: BCB, [s.d.]a. (Seção de página eletrônica). Available at: <http://www.bcb.gov.br/rex/ccr/folheto_da%20aladi_sobre_ccr.asp?idpai=infoccr>.

_____. **Sistema de Pagamentos em Moeda Local (SML)**. Brasília: BCB, [s.d.]b. (Seção de página eletrônica). Available at: <http://www.bcb.gov.br/?SML>.

BIANCARELI, A. M. O Brasil e a integração na América do Sul: iniciativas para o financiamento externo de curto prazo. *In*: ACIOLY, L.; CINTRA, M. A. M. (Orgs.). **Inserção internacional brasileira**: temas de política externa. Brasília: Ipea, 2010. v. 2, Cap. 5. p.165-202. (Projeto Perspectiva do Desenvolvimento Brasileiro, Livro 3). Available at: <http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/livro03_insercaointernacional_vol2.pdf>.

BID – BANCO INTERAMERICANO DE DESARROLLO. **BID y otras Multilaterales lanzan facilidades de liquidez para apoyar América Latina y el Caribe**. Washington: BID, 13 oct. 2008. (Comunicados de prensa). Available at: <http://tinyurl.com/bid-caf-flar>.

_____. **Chile, Colombia y Perú en la ruta de la integración bursátil**. Buenos Aires: BID-Intal, 2010. p. 1-4. (Carta Mensual, n. 163). Available at: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=36186202>.

BIS – BANK FOR INTERNATIONAL SETTLEMENTS. **Evolución de los sistemas bancarios en América Latina y el Caribe**: retos e implicaciones para la política monetaria y la estabilidad financiera. Basilea: BIS, 2007. (BIS Papers, n. 33).

BM&FBOVESPA – BOLSA DE VALORES, MERCADORIAS E FUTUROS. **Comunicado ao mercado**: acordo estratégico com a bolsa de comércio de Santiago. São Paulo, 13 dez. 2010. Available at: <http://ri.bmfbovespa.com.br/ptb/802/CMAcordocomoChile_13122010.pdf>.

BRASIL. Câmara dos Deputados. **Comércio Brasil-Argentina**. Brasília: Câmara dos Deputados, 2010. (Clipping Especial Mercosul). Available at: <http://tinyurl.com/nqno7pw>.

BRESSER-PEREIRA, L. C.; HOLLAND, M. Commom-currency and economic integration in Mercosul. **Journal of post Keynesian economics**, v. 32, n. 2, p. 213-234, 2010.

CALIXTRE, A. B.; BARROS, P. S. O Banco do Sul e o Brasil na agenda da nova arquitetura financeira regional. **Boletim de economia e política internacional**, Brasília, n. 3, p. 19-25, jul./set. 2010. Available at: <http://www.ipea.gov.br/portal/images/stories/PDFs/100709_boletim_internacional03.pdf>.

CALVO, G.; MENDOZA, E. Rational contagion and the globalization of securitized markets. **Journal of international economics**, v. 51, p. 79-113, 2000.

CARCANHOLO, M. D. O Banco do Sul – arquitetura institucional e processo de negociação dentro de uma estratégia alternativa de desenvolvimento na América do Sul. *In*: VIANA, A. R.; BARROS, P. S.; CALIXTRE, A. B. (Orgs.). **Governança global e integração da América do Sul**. Brasília: Ipea, 2011. p. 247-281. Available at: <http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/livro_governancaglobal.pdf>.

CEPAL – COMISIÓN ECONÓMICA PARA AMÉRICA LATINA Y EL CARIBE. **Panorama de la inserción internacional de América Latina y el Caribe**. Santiago de Chile: Cepal, 2010.

CÉSAR, G. R. C. **Entrevista**: Carlos Andrés Giraldo (diretor adjunto da DEE do Flar). Buenos Aires, maio 2010.

_____. **Entrevista**: Chalongphob Sussangkarn, assessor do Escritório de Supervisão Macroeconômica da ASEAN+3 (AMRO). set. 2012a.

_____. **Entrevista**: Eduardo Morón (diretor de estudos econômicos do Flar). Buenos Aires, set. 2012b.

CHIN, G. T. Remaking the architecture: the emerging powers, self-insuring and regional insulation. **International affairs**, v. 86, n. 3, p. 693-715, 2010.

COHEN, B. **Finance and security in East Asia**. *In*: CONFERENCE ON THE POLITICAL ECONOMY OF NATIONAL SECURITY IN EAST ASIA. Beijing, July 2010.

CROW, J.; ARRIAZU, R.; THYGESEN, N. **External Evaluation of IMF Surveillance**. Washington: IMF, 1999.

DIETER, H. **Monetary regionalism**: regional integration without financial crisis. Warwick: CSGR, 2000. (Working Paper, n. 52).

_____. **Monetary and financial cooperation in Asia**. Motives, sequencing and political obstacles. German: IISA, 2007. (Garnet Working Paper, n. 16/07).

EICHENGREEN, B. **The international architecture and the role of regional funds**. *In*: ENCUENTRO ANUAL DE ESTUDIOS ECONÓMICOS DEL FLAR, 5., 2010. Cartagena, Colombia, Ago. 2010.

EU se quedó solo frente a China en la reunión del G-20. **La razón**, 15 nov. 2010.

FANELLI, J. M. (Comp.). **Mercosur**: integración y profundización de los mercados financieros. Montevideo: Zonalibro, 2008.

FERNÁNDEZ-ARIAS, E.; PANIZZA, U.; STEIN, E. Trade agreements, exchange rate disagreements. *In*: ALEXANDER, V.; MELITZ, J.; FURSTENBERG, G. M. **Monetary unions and hard pegs**: effects on trade, financial development, and stability. Oxford, England: Oxford University Press, 2004.

FERNÁNDEZ-ARIAS, E.; LEVY-YEYATI, E. **Global financial safety nets**: where do we go from here? Washington: RES, 2010. (Working Paper, n. 231).

FFRENCH-DAVIS, R. El impacto de la crisis global en América Latina. **Nueva sociedad**, n. 224, p. 67-85, 2009.

FLAR – FONDO LATINOAMERICANO DE RESERVAS. **Convenio constitutivo**. Flar: Bogotá, sept. 2012. Available at: <http://tinyurl.com/convenio-flarpdf>.

FREITAS, M. C. P. A internacionalização dos bancos brasileiros. *In*: ACIOLY, L.; CINTRA, M. A. M. (Orgs.). **Inserção internacional brasileira**: temas de política externa. Brasília: Ipea, 2010. v. 2, Cap. 5. p. 301-368. (Projeto Perspectiva do Desenvolvimento Brasileiro, Livro 3). Available at: <http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/livro03_insercaointernacional_vol2.pdf>.

FRENKEL, R. **Current Problems with the IMF**. Berlin: FES, 2007a. (Briefing Paper, n. 16).

_____. La sostenibilidad de la política de esterilización monetaria. **Revista de la Cepal**, n. 93, p. 31-38, 2007b.

FRENKEL, R.; RAPETTI, M. **Flexibilidad cambiaria y acumulación de reservas en América Latina**. Buenos Aires: Iniciativa para la Transparencia Financiera, 2009. (Texto para Lectura, n. 50).

G20. **G20 Principles for cooperation between the IMF and regional financing arrangements**. 3-4 Nov. 2011. Available at: <http://www.g20.utoronto.ca/2011/2011-finance-principles-111015-en.pdf>.

GALINDO, A.; ROJAS-SUAREZ, L.; VALLE, M. **Capital requirements under Basel III in Latin America**: the cases of Bolivia, Colombia, Ecuador and Peru. Washington: Center for Global Development, 2012. (Working Paper, n. 296). Available at: <http://www.cgdev.org/files/1426190_file_Rojas_Suarez_Basel_III_FINAL.pdf>.

GHOSH, A.; OSTRY, J. Choosing an exchange rate regime. **Finance and development**, v. 46, n. 4, p. 38-40, 2009.

HENNING, R. East Asian Financial Cooperation. **Policy analyses in international economics**, Washington, n. 68, 2002.

IMF – INTERNATIONAL MONETARY FUND. **2008 Triennial surveillance review** – overview paper of the strategy, policy and review department. Washington: IMF, 2008.

_____. **The fund's mandate**: the future finance role: revised reforms proposals. Washington: IMF, 2010.

_____. **World Economic Outlook**: coping with high debt and sluggish growth. Washington: IMF, Oct. 2012. Available at: <http://www.imf.org/external/pubs/ft/weo/2012/02/>.

KAMINSKY, G. L.; REINHART, C. M. The twin crises: the causes of banking and balance-of-payments problems. **American economic review**, v. 89, n. 3, p. 473-500, 1999.

KEOHANE, R. O. International institutions: can interdependence work? **Foreign policy**, n. 110, p. 82-96, 1998.

LEVINE, R. **Finance and growth**: theory and evidence. Cambridge, United States: NBER, 2004. (Working Papers, n. 10.766).

LOMBARDI, D. **Financial regionalism**: a review of the issues. Washington: The Brookings Institution, 2010.

MACHINEA, J. L.; TITELMAN, D. Un crecimiento menos volátil? El papel de las instituciones financieras regionales. **Revista de la Cepal**, n. 91, p. 7-27, 2007. Available at: <http://goo.gl/BBMFm>.

MCGUIRE, P.; PETER, G. V. **The US dollar shortage in global banking and the international policy response**. Basel: BIS, Oct. 2009. (Working Paper, n. 291).

MCKAY, J.; VOLZ, U.; WOLFINGER, R. **Regional financing arrangements and the stability of the international monetary system**. Bonn: German Development Institute, 2010.

MONGELLI, F. **New views on the optimum currency area theory**: what is EMU telling us? Frankfurt: European Central Bank, Apr. 2002. (Working Paper, n. 138).

NACIONES UNIDAS. **Informe de la Conferencia internacional sobre la financiación para el desarrollo**. *In*: CONFERENCIA INTERNACIONAL SOBRE LA FINANCIACIÓN PARA EL DESARROLLO, 2002, Monterrey: Cepal, 18-22 marzo, 2002. Available at: <http://tinyurl.com/informe-monterrey>.

OCAMPO, J. A. (Coord.). **Cooperación financiera regional**. Santiago de Chile: Cepal, 2006.

_____. La macroeconomía de la bonanza económica latinoamericana. **Revista de la Cepal**, n. 93, p. 7-29, 2007.

OCAMPO, J. A.; TITELMAN, D. Subregional financial cooperation: the South American experience. **Journal of Post Keynesian economics**, v. 32, n. 2, p. 249-268, 2010.

PARK, Y. C. Integración financiera regional en Asia Oriental: desafíos y perspectivas. *In*: OCAMPO, J. A. (Coord.). **Cooperación financiera regional**. Santiago de Chile: Cepal, 2006.

PERRY, G. **Beyond lending**: how multilateral banks can help development countries management. Washington: Brookings Institution Press, 2009.

RAJAN, R. S. **Monetary and financial cooperation in Asia**: making sense out of the CMI, CMIM, ABF, Abmi and ACU alphabet soup. Singapore: Isas, June 2009. (Working Paper, n. 69).

RAJAN, R.; SIREGAR, R.; BIRD, G. **Examining the case for reserve pooling in East Asia**: empirical analysis. Adelaide: Cies, 2003. (Discussion Paper, n. 323). Available at: <http://www.adelaide.edu.au/cies/papers/0323.pdf>.

RANA, P. **The next steps in Asean +3 monetary integration**. 2012. Available at: <http://www.voxeu.org/article/next-steps-asean3-monetary-integration>. Acesso em: 15 nov. 2012.

RODRIK, D. **The social cost of foreign exchange reserves**. Cambridge, United States: NBER, 2006. (Working Paper, n. 11.952).

ROJAS-SUAREZ, L. Volatility: prudential regulations, standards, and codes. *In*: FANELLI, J. M. (Ed.). **Macroeconomic volatility, institutions, and financial architectures**: the developing world experience. New York: Palgrave Macmillan, 2008.

ROUBINI, N.; SETSER, B. **Will the Bretton Woods 2 regime unravel soon**? The risk of a hard landing in 2005-2006. Washington: NBER, 2005. Mimeografado.

SAFATLE, C. Câmbio derruba custo do BC para carregar reservas. **Valor econômico**, São Paulo, p. C1. 27 nov. 2012.

SALAZAR, R. **México y Brasil**: ¿Modelos de desarrollo e integración a la economía mundial? Washington: Heinrich Böll Stiftung México, 2012. Available at: <http://mx.boell.org/downloads/mexico_und_brasil.pdf>.

SINGAPORE Exchange terminates merger pact with Australian Stock Exchange. **The Hindu business line**, 8 Apr. 2011. Available at: <http://www.thehindubusinessline.com/markets/stock-markets/article1611578.ece>.

SPIEGEL, M. **Developing Asian local currency bond markets**: why and how? Tokyo: Asian Development Bank Institute, 2009.

TAYLOR, J. B. **Lessons learned from the implementation of inflation targeting**. *In*: TRABAJO PREPARADO PARA EL ANIVERSARIO DEL BANCO DE MEXICO, 80., 2005. Ciudad deMéxico, 14 nov. 2005.

TITELMAN, D. Subregional financial cooperation: the experiences in Latin America and the Caribbean. *In*: OCAMPO, J. A. (Coord.). **Regional financial cooperation**. Washington: Bookings Institution Press, 2006.

UNASUR – UNIÓN DE NACIONES SURAMERICANAS. **Estatuto del Consejo Suramericano de Economía y Finanzas**. Quito: Unasur, 2010. Available at: <http://tinyurl.com/economiayfianzaspdf>.

WILLIAMS, O.; POLIUS T.; HAZEL S. **Reserve pooling in the Eastern Caribbean currency union and the CFA Franc Zone**: a Comparative Analysis. Washington: IMF, 2001. (Working Paper, n. 01/104).

COMPLEMENTARY BIBLIOGRAPHY

BLANCHARD, O.; DELL'ARICCIA, G.; MAURO, P. **Rethinking macroeconomic policy**. Washington: IMF, 2010. (Staff Position Note SPN/10/03).

DESAI, R.; VREELAND, J. R. A suggestion for the IMF: embrace regionalism. *In*: VOLZ, U.; CALIARI, A. **Regional and global liquidity arrangements**. Bonn: German Development Institute, 2010.

FERNÁNDEZ-ARIAS, E. **Prestamista internacional de última instancia**: lecciones de la reciente crisis global. *In*: ENCUENTRO ANUAL DE ESTUDIOS ECONÓMICOS DEL FLAR, 5., Cartagena, Colombia, agosto 2010.

FFRENCH-DAVIS, R. **Reformas para América Latina después del fundamentalismo neoliberal**. Buenos Aires: Siglo 21, 2005.

FREITAS, M. C. P. A internacionalização dos bancos brasileiros. *In*: ACIOLY, L.; CINTRA, M. A. M. (Comps.). **Inserção internacional brasileira**: temas de economia internacional. Brasília: Ipea, 2010. v. 2.

FRENKEL, R. **Los nuevos fundamentals de la política macroeconómica en los países en desarrollo**. *In*: CONFERENCIA UNU-WIDER THE TRIPLE CRISIS. 2010. Helsinki, Finlandia, 13-15 mayo 2010.

IEO – INDEPENDENT EVALUATION OFFICE. **Governance of the IMF**: an evaluation. Washington: IMF, 2008. Available at: <http://www.ieo-imf.org/ieo/files/completedevaluations/05212008CG_main.pdf>.

IMF – INTERNATIONAL MONETARY FUND. **Review of the adequacy of and options for supplementing fund resources**. Washington: IMF, 2009.

MONTOYA, M. U. **Perspectivas del Fondo Latinoamericano de Reservas**. Santiago de Chile: Cepal, 2007. (Serie Financiamiento del Desarrollo, n. 191).

OBSTFELD, M.; TAYLOR, A. M. **Global capital markets**: integration, crisis and growth. Cambridge, United States: The MIT Press, 2004.

OCAMPO, J. A. The instability and inequities of the global reserve system. **International journal of political economy**, v. 36, n. 4, p. 71-86, 2008.

APPENDIX

APPENDIX A

TABLE A.1
Composition by currency of the international reserve assets of South America
(by currency– in USD million)

	Reserve currency	2006	%2006	2007	2008	%2008	2009	%2009	2011	%2011
Bolivia	Dollar	2,561.2	80.5	4,499.1	6,870.6	89.0	5,868.3	68.5	7,475	62.2
	CAN dollar	-	-	-	-	-	-	-	336	2.8
	Euro	-	-	-	-	-	1,439.7	16.8	1,478	12.3
	AUS Dollar	-	-	-	-	-	-	-	349	2,9
	Gold	579.8	18.2	759.9	802.6	10.4	1,000.8	11.7	2,127	17.7
	DEG	40.2	1.3	42.3	42.3	0.6	258.5	3.0	253	2.1
	Total	**3,181**	**100**	**5,301**	**7,715**	**100**	**8,567**	**100**	**12,018**	**100**
Brazil	Dollar				184,264.1	89.1	195,731.2	81.9	280,200	79.6
	Euro				19,439.8	9.4	16,729.2	7.0	17,248	4.9
	Pound				-	-	8,842.5	3.7	10,560	3.0
	CAN dollar				-	-	8,364.6	3.5	21,121	6.0
	AUS dollar				-	-	4,540.8	1.9	10,912	3.1
	Yen								3,520	1.0
	Swedish and Danish crown				3,102.1	1.5	4,779.7	2.0	8,448	2.4
	Total	**85,839**	**100**	**180,334**	**206,806**	**100**	**238,988**	**100**	**352,010**	**100**
Colombia	Dollar				20,434.8	85.0			27,458	85.0
	Euro				2,884.9	12.0			3,876	12.0
	Yen				721.3	3.0			969	3.0
	Total	**15,440**	**100**	**20,955**	**24,041**	**100**	**25,365**	**100**	**32,303**	**100**
Chile	Dollar	13,682.5	70.4	10,538.2	14,088.9	60.8	14,969.2	59.00	20,947	49.9
	Euro	4,789.7	24.6	6,212.4	8,767.4	37.8	8,735.1	34.42	14,693	35.0
	Yen	782.8	4.0	-	23.5	0.10	-	-	-	-
	Sterling pound	1.8		8.1	14.7	0.06	5.4	0.02	-	-
	Gold	4.3		5.4	5.7	0.01	8.8	0.05	-	-
	DEGs	167.8		141.8	225.1	0.97	1,429.5	5.63	-	-
	Other currencies	-		4.2	37.0	0.16	224.4	0.88	6,339	15.1
	Total	**19,428.9**	**100**	**16,910.1**	**23,162.3**	**100**	**25,372.5**	**100**	**41,979**	**100**

(Continues)

(Continued)

	Reserve currency	2006	%2006	2007	2008	%2008	2009	%2009	2011	%2011
Peru	Dollar	13,291.8	80.1	23,001.6	25,234.5	83.2	25,551.2	79.9	27,751	56.8
	Other currencies	2,953.7	17.8	3,412.6	4,610.2	15.2	5,755.2	18.1	18,566	38.0
	Gold	348.5	2.1	456.8	485.3	1.2	490.6	2.0	2,541	5.2
	Total	**16,594**	**100**	**26,871**	**30,330**	**100**	**31,979**	**100**	**48,858**	**100**
Paraguay	Dollar			1,300	1,800	75.0				
	Euro			100	400	16.6				
	Sterling pound and AUS dollar			-	200	8.4				
	Total			**1,400**	**2,400**	**100%**				

Source: Central Bank of each country
Elaborated by the author

POLITICAL ECONOMY OF THE CHINESE TRANSITION IN THE LAST QUARTER OF THE 20TH CENTURY

Rodrigo Pimentel Ferreira Leão*

From the late 1970s, China started the implementation of a broad set of economic reforms that enabled it to leave the position of an underdeveloped country to reach the status of a global power. Throughout this period, the transition that was executed in China had as its main characteristic the autonomy and the sovereignty of the Nation State to drive such reforms. The political and economic conditions, both internal and external, played a decisive role in the way of driving the reforms. However, none of these factors overlapped the national interests. The economic modernization and the maintenance of a centralized political regime in the hands of the CPC remained as the main objectives of the reform strategy – which was being rearticulated and/or rethought from cyclical and structural changes in the economy and national and international politics. And these are goals that still serve as parameters for the major share of the Chinese Communist Party today.

Keywords: China; reforms; political economy; national State.

A ECONOMIA POLÍTICA DA TRANSIÇÃO CHINESA NO ÚLTIMO QUARTEL DO SÉCULO XX

A partir da década 1970, a China iniciou a execução de um amplo conjunto de reformas econômicas que permitiu sair da posição de um país subdesenvolvido para chegar ao status de potência global. Ao longo desse período, a transição executada na China teve como principal característica a autonomia e soberania do Estado Nacional para a condução daquelas reformas. As condições políticas e econômicas, tanto internas como externas, tiveram papel decisivo no modo de condução das reformas. No entanto, nenhum desses fatores se sobrepôs aos interesses nacionais. A modernização econômica e a manutenção do regime político centralizado no PCC permaneceram como objetivos centrais da estratégia reformista – que foi sendo rearticulada e/ou repensada a partir das mudanças conjunturais e estruturais da economia e política nacional e internacional. E são esses objetivos que ainda servem de parâmetro para as principais ações do Partido Comunista Chinês nos dias atuais.

Palavras-chave: China; reformas; economia política; Estado Nacional.

JEL: F50; N45; P26.

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1 INTRODUCTION

The last quarter of the 20th century saw the end of the most important global conflict since the end of the Second World War, the Cold War. The end of this episode, in favor of the capitalist bloc, headed by the United States, put in danger the continuity of the socialist bloc, with China being a clear exception of this process.

During the 1980s, economic changes stimulated and controlled by the Chinese Communist Party (CCP) helped China to ascend in an international scale. Such changes were not marked by a simple opening of the market, as suggested by part of the literature on the theme, but by a set of reforms that changes the actuation of the National State. There was clearly permission for the action of private and/or foreign agents; however, the most important guidelines of these reforms were the new directions of the state role. On a political point of view, the Chinese government did not perform an opening process and kept the CCP-controlled regime. These two aspects were considered by the government as the main pillars to, simultaneously, avoid the occurrence of great conflicts and keep social cohesion.

This set of transformations in China not only answered the formation of a coalition of internal powers, but also had a great influence on the new geopolitical and geo-economic scenario that started at the end of the 1970s. The reaffirmation of the North-American hegemony, the increase of the concurrence between the main capitalist nations, the dissolution of the Union of Soviet Socialist Republics (USSR), the conflicts in Eastern Europe and Asia were some of the events that, in a way, gave a new shape to Chinese reforms.

From these considerations, the purpose of this paper is to detail the historical trajectory of the Chinese transition, pointing out how political and social events, so as economic transformations – both internal and external –impacted on the process. For that, the text is divided into three sections, apart from this introduction (first section). In the second one, the historical elements of the Chinese transition process and a brief discussion on the options adopted by the Chinese government in the beginning of this process are pointed out. In the third one, the Chinese transition political economy is discussed, analyzing the measures taken by the National State to advance the modernization and development of the country, ensuring political control and social stability headed by the CCP regime. In the last section there are the final remarks.

2 MAIN HISTORICAL ANTECEDENTS OF THE TRANSITION: CONSTRUCTION OF THE "GRADUAL" PATH OF THE REFORMS

China's transition process by the end of the 1970s was immersed in a very specific political and economic historical scenario, and CCP's dynamism was a central point for articulating the reform programs. Since the 1960s, mainly

during the Cultural Revolution (1966-1976), the government of Mao Tse-Tung (1949-1976) tried to fight the crystalizing tendencies inside the party's bureaucracy and the accommodation of civil and military elites created during the construction of CCP itself. That is, the then Chinese leader instituted a logic that did not allow the perpetuation of certain figures in the main CCP boards.

This feature allowed great alterations in the political board of high-level CCP in the 1970s. The disastrous social and economic results resulting from the heyday of the Cultural Revolution[1] (1966-1969) opened up a space for the formation of a new coalition of powers from the party elite that was favorable to a political and economic renewal. The members of this elite that were contrary to the Cultural Revolution were rehabilitated and assumed a predominant position inside the Party, although Mao still kept the position of great leader of the regime.[2] This new CCP board showed itself to be partial to the performance of a transition and modernization of the economy program, which would be politically and ideologically delimitated by CCP guidelines (Leão, 2010).

Leaving the political sphere, China started a process of fast economic recovery stimulated by a set of changes promoted in 1976, as emphasized by Nolan and Ash (1995, p. 984-85):

> The urgency with which the immediate post-Mao economic situation was viewed is evident from measures which Hua Guofeng's government introduced as early as the last quarter of 1976. They included a cutback in basic construction investment, the freezing of institutional bank deposits and the readjustment of economic plans for 1977. They were supplemented by efforts to bring inflation under tighter control and the granting of wage increases to some 60 per cent of industrial employees. Further initiatives were introduced in 1977 and 1978, the most important of which was explicit official encouragement of foreign capital inflows and imports of advanced technology. Such measures undoubtedly helped facilitate rapid recovery during 1976-78.

Together with economic and political transformations, China's transition process benefited from the new geopolitical and geo-economic board, mainly

1. In addition to the economic recession and the low agriculture productivity, Fairbank and Goldaman (2006) pointed out that, as of this Revolution, a brutal suffering regime was established with, for instance, the destruction of schools and universities, the humiliation of intellectuals and professors.

2. Two events signalized the definite reversion of the balance of power inside CCP: the Tangshan earthquake, which killed half million people, and Mao's death by the end of 1976. As Fairbank and Goldman (2006, p. 371) remember, "all country men believed in the umbilical relation between men and nature and, therefore, in the relation between natural disasters and human calamities. After such terrifying presage [the Tangshan earthquake], only another calamity could take place: Mao's death". And it occurred in September of the same year. Soon after his passing, the Gang of Four, without Mao's support, was arrested by the order of the new leader of the Party, Hua Guofeng. In the two following months, the accusations against the Gang members increased in the same manner as the criticism on the methods used in the Cultural Revolution. Since the basis for Hua's political and economic project recovered some principles of the Cultural Revolution, the CCP leadership was transferred to a group headed by Zhou Enlai and Deng Xiaoping.

after the approximation between the Richard Nixon administration (1969-1974) in the United States and Mao Tse-Tung in the beginning of the 1970s.[3]

During this time, foreign relations with the main nation of North America became more strained both with soviet nations and with main capitalist powers. Among the events that caused these tensions, disastrous military and diplomatic incursions from the United States in Asia, Latin America and Africa can be highlighted, as well as the economic crisis of the 1970s and the increasing competition with Japan and Germany. In this scenario, the Richard Nixon administration sought to Chinese support with the concession of economic incentives and the performance of diplomatic initiatives (Leão, 2010). Thus, China got the financing of official North-American institution to import primary and capital assets, receives from the same country the treatment of Most Favorable Nation (MFN) and was authorized to join the United Nations. Furthermore, when there was an increase of tensions between India (military ally of USSR) and Pakistan got deeper, the United States, which was militarily united to the last country, signed an alliance with the Chinese government (intermediated by Pakistan) to contain eventual Indian-Soviet attacks (Nozaki, Leão and Martins, 2012).

However, China not only benefitted from this support, but also from some changes on its geo-economic surroundings. Apart from the growing Japanese initiatives of economic articulation in the region – in the case of China, there was a strong increase of loans from Japanese banks – another aspect had great importance: "the fast growth and reach of capital from the Chinese diaspora and its business networks in 'great' China" (Arrighi, Hamashita and Selden, 1996).

Therefore, the initial conditions of China's transition process, which began in 1978 with the disclosure of the 'Four Modernizations"[4] reforms, allowed a much more cohesive internal conduction of set of country transformations. The existence of a political group that was favorable to the change of one part of the socialist economic program, the strong unity of the party elite, the State control over economic institutions and power instances, the incipient economy recovery, as well as the favorable external scenario, gave an opportunity to perform a new development project based on economic and political reforms (Leão, 2010).

On the one side, Chinese transition was characterized by a strong political control and, on the other, by a very gradual economic liberalization. From this perspective, Santayana (2008, p. 55) reminded that the "Four Modernizations"

3. For a more detailed analysis of this scenario from an economic point of view, see Medeiros (1999), and from a political point of view, see Nabuco (2009).

4 This program, created on 1975 and put into practice by the end of 1978, aimed, from the gradual introduction of market regulation and incorporation of capitalism elements, to modernize four pillars of the economy: agriculture, industry, armed forces, and science and technology (S&T).

strategy of the Chinese leader Deng Xiaoping[5] was a liberalization to unify the Chinese nationalism and to make the socialist government legitimate with the insertion of capitalist elements that are strongly controlled by the State. According to him, "it was not an improvised opening. With Deng Xiaoping (…) [it was created] an original economic system, a State capitalism with private participation, under strict State control". Furthermore, the direction and the goals intended by the Chinese leader reinforced "the conclusion that the defense of the national state [depended] directly of community cohesion, which only an independent State could ensure."

In this sense, according to Deng Xiaoping himself, the "Four Modernizations" program did not have the purpose of performing a complete opening of the economy and much less to eliminate the socialist system. Reinforcing Santayana's argument (2008), it was observed in his speeches that the Chinese leader perpetuated the idea that the attraction of capitalist elements, controlled by the State, would be the start point for the modernization of Chinese economy and not for the introduction of a completely liberal market economy:

> socialist economy is based on public propriety, and socialist production is performed in order to articulate material and cultural needs of the population in the best way possible – trying not to explore it. These features of the socialist system make it possible for the Chinese population to share a common political and economic system and to approach the moral and social life standard. All of this cannot happen in the capitalist system. There is no path through which capitalism can eliminate the extraction of profit by capitalist or pulverize exploration and economic crisis. (...) Despite that, capitalism has a secular history and our population must learn with the people from capitalist countries. In that sense, we need to make use of the science and technology developed by them and assimilate its accumulation of knowledge and experience that can be used in the development of our country. Besides, if we are going to explore advances in technology and other assets from capitalist countries, we will not import its individualistic system nor anything that is negative to our Chinese society (Deng, 1993, freely translated).

Therefore, the transition performed by China established a pragmatic strategy to restructure the power system (still exclusively controlled by CCP and PLA) and of economic opening, whose transformations took place in an incremental manner after the positive evaluation of previous reforms (Leão, 2010). As discussed in the literature that studies the transition processes of socialist countries, China reforms clearly followed a "gradualist" approach, whose advances of proposed changes – which took place in long stages – occurred due to previous results, instead of a "rupture" approach (known as the big bang approach), as it was the choice, for instance, of USSR. For Roland (2001, p. 2-3):

5. Deng Xiaoping was, among other things, the president of the Central Military Commission of China (1983-1990) and vice-president of CCP (1975-1982). Deng was considered by a large part of the literature as the main political responsible for the implementation of economic reforms (Pinto, 2011, for example).

> those who opposed the big bang approach often advocated a gradualist strategy, which emphasized the need for a precise sequencing of reforms. The political economy argument in favor of gradualism was that an appropriate sequencing of reforms would provide demonstrated successes to build upon, thus creating constituencies for further reforms. (…) Political economy arguments, along with being used in the context of pace and sequencing of reforms, have also been used extensively to explain or justify many aspects of the transition process. For example, China implemented "dual-track liberalization," under which plan contracts between enterprises are maintained but frozen at a preexisting level and price liberalization is implemented "at the margin" for any production beyond the planned contract. The political economy argument for dual-track liberalization is that it was a way to liberalize prices without eliminating preexisting rents of economic agents.

In general terms, the attainment of a gradualist reform project in China answered to a great social rejection of any radical change and the need for State control to ensure a certain political unit and, simultaneously, to make reforms to promote the modernization of the economy, without generating great social instabilities and/or economic crisis (Fairbank and Goldman, 2006; Leão, 2010). However, the capacity of the Chinese government of putting in place this set of reforms depended not only of internal conditions that took place in that period, as well as international geo-economic and political changes, mainly regarding the increase of Cold War conflicts.

Obviously, due to these factors – whose specificities are not the purpose of this text – the transition process of China was not uniform and deprived of political and economic tensions. That is, the modifications, both in internal and external environments, imposed, many times, different paths to the reforms occurring in the country. A key moment for these paths took place during 1992. As highlighted by Pinto (2011, p. 29), in March of that year the Chinese government established what became known as the Great Commitment, in which "according to the Main Document no. 2 of Politburo, it ensured the process of reforms and liberalization for a period of one hundred years." Due to this historical landmark, Chinese transition is evaluated in two moments: first between 1978 and 1991; and second between 1991 and the current days.

3 CHINESE TRANSITION SINCE 1978

3.1 The transition until 1992: economic reforms, political tensions, and the creation of the "Great Commitment"

The transition process of China was based on an economic and military modernization process controlled by the CCP and by its power instances. The economy and PLA development reforms were characterized in two important aspects of the Chinese strategy to keep its political regime. Such sustentation, on its turn,

was essential to the performance of those reforms and its long term goals (Medeiros, 2008). In this sense, the military sector worked as a thermometer of the economic and social development immediately after the Mao period. While the internal environment was changing, CCP determined new tasks and purposes to PLA that, in the last case scenario, should sustain the final target: the political monopoly of CCP with economic modernization and social stability (Medeiros, 2008; Santayana, 2008). That caused the guidelines of economic reforms to be subordinated to the coalitions of organized forces in the power sphered of CCP.

Therefore, the modernization and opening performed in China were supported not only by the new coalition of political forces (originated after Mao-Tse Tung), as well as the conception of a new economic, political, and military plan in the international level, set based on the increase of relations between the capitalist and socialist blocs during the "Second Cold War."

In the beginning of the 1980s, the Ronald Reagan's government policy (1981-1989) tried to isolate USSR in two fields: *i)* the attainment of direct measures for economic and military restrictions to the soviet bloc;[6] and *ii)* the performance of a set of indirect actions in countries that belonged and/or were from the soviet influences sphere, such as the economic incentives given to China. This last factor strengthened the economic relations between both countries. Furthermore, the reorganization of the Asian economy during the 1980s showed itself to be a key point for the implementation of the economic transformations of China. That was caused by the observation of a strong integration of Asia's productive structure, mainly after the increase of conflicts between the United States and less developed countries of the region, specially Japan. Due to the high commercial and productive pressure, the United States tried to limit the power of industries and foreign trade in those nations. For that, they exerted mercantile pressure over Japan, South Korea, and Taiwan through the imposition of export quotas, exchange appreciation agreements,[7] and extrapolation of the productive concurrence in a global level. These pressures gave impulse to the migration of Japanese, South Korean, and Taiwanese industries, mainly, and even of other Asian nations, such as China, where production costs and macroeconomic incentives (exchange and tax subsidy, for example) are more attractive, strengthening the Chinese exportation industry (Leão, 2011).

6. The strategy was to choke the continuity of soviet socialism, using five fronts, three of them directly hitting USSR: the Strategic Defense Initiative (SDI) military and technological project; the installation of a MX missile network in the country, intensifying the arms race against USSR; and the campaign to reduce USSR access to international borders (Fiori, 1997; Medeiros, 2008). In the geo-economic sphere, the North-American government imposed a ban on the purchase of cutting edge technology and access to external borders to USSR.

7. In the case of Japan, the appreciation of the Yen and the establishment of quotas to exportations are materialized on the Plaza (1985) and Louvre (1987) agreements. For South Korea and Taiwan, the appreciation of their currencies took place by the end of the 1980's, together with the decrease of commercial concessions given by the United States (Leão, 2011).

This economically favorable image took place in a time of great conflicts in the socialist bloc, whose events also influence the course of the Chinese reforms. Among them, the Chinese invasion of Vietnam in 1979 and the creation of the Solidarity Syndicate in Poland in 1981 should be highlighted. While the first event showed the delay and low military capacity of China, the second one pointed out, for the first time, the existence of an anti-socialist organized movement, structures inside a socialist republic. Therefore, the first initiatives of the Chinese government were to establish a PLA restructure program (Leão, 2010), in order to modernize military equipment, minimize risks of external threats, as well as strengthening control institutions of the Party.

The military reform was created based on five key elements: administrative reorganization, establishment of a new power composition, creation of a new military doctrine, material modernization, and redefinition of the social role of the Army. The first element of the PLA modernization program had the goal of restructuring the manner of the organization, training, and education of the system and making the means of control, communication, and command inside PLA more sophisticated in the sense of supporting the economic decentralization process and, at the same time, making the defense system more sophisticated. Regarding this last aspect, there was an interest of the new summit of the Party to eliminate the inheritance from the military administration of the Cultural Revolution period. The second element had, on the one side, the function of rethinking the composition, size, and geographical dispersion of the Army, and on the other, the purpose of renovating a large part of the military leadership and combat personnel. The third element was related to the doctrine modernization of the army, both in the strategic and the tactical fields, which goal was to redefine the manner the Army behaves in the battle field, as well as facing and defeating the enemy. The last two elements referred to the material and social base necessary for the implementation of other elements. In summary, it was an intent to increase the physical capacity of the Army based, for instance, in the increase of the number of well-trained recruits and equipment supply, on the one side, and to redefine the relation between military members and civil society in times of peace, on the other (Robinson, 1982).

In addition to the PLA reforms, the Chinese economic structure organization also presented a great capacity of attending the consumption needs of the population and development of productive forces – both in the cities and in the field. From this conjuncture and from previously explained opportunities arising from the foreign market, which could be enjoyed due to the opening for foreign capital, China promoted a set of transformations in its economy.

In the countryside, the government reforms changed the production dynamics through the elimination of agriculture communes, giving greater freedom to rural families to produce and sell their products. Furthermore, Chinese authorities gradually increased and liberalized the prices of primary products, as well as performed an intense modernization program for agriculture products, counting with foreign financing (Lin, 1992). From the strengthening of rural cooperatives (known as Township and Village Enterprises) – which, in addition to primary products, also produced industrial merchandise, such as processed food and light manufactures – production plants of many segments were installed in the countryside, including in partnership with foreign enterprises. This movement gained strength around the 1980s, being one of the main appendixes for the attraction of foreign industries (Leão, 2010).

Similar to what happened in the country, in the industry, the first measure was to authorize State companies to sell their exceeding production in the market, after giving to the State part of it. As said by Claro (2003), this happened at the same time as the gradual liberalization of prices, increase of public credit,[8] and stricter control of production during the 1980s. Also, during that time, the restructure of State companies went, on the one side, through the separation between propriety rights and company management and on the other, through autonomy given to certain industries for its conduction,[9] keeping only strategic sectors (high technology and infrastructure, for example) under the responsibility of the central planning. In the case of exportation of capital intensive companies, they were still favored by the opening of the consuming market and North-American credit for, respectively, absorbing and financing Chinese products. Added to this fact, the government – using the formation of that regional productive network, i.e., the transference of companies from the most developed countries in Asia to nations like China – started the creation of diverse special economic zones, special for attracting foreign capital in sectors considered as crucial to the main planning through the offer of subsidies and advantageous macroeconomic conditions.[10] Foreign companies had their actions limited regionally and sectorially, in addition to being forced to join local business to transfer technology, management techniques, etc. in multiple times. Effectively, these zones have the purpose of elevating the production and exportation of certain segments, as well

8. During the first decade of reform in the financial system (1980), the Chinese government kept the propriety of State banks unaltered, and did not allow the entrance of private banks. Meanwhile, China created new State banks – which assumed the function of commercial and development banks – leaving the People's Bank of China – responsible for all of these functions during the Maoist age – to act only as Central Bank. Through these banks and the replacement of the main floatation mechanism of the economy (budget funds gave place to bank loans), the country was able to rapidly increase the volume and sectorial coverage of credit (Leão, 2010).

9. So, instead of being submitted to the rules of production and distribution imposed by the government, the companies of this sector were able to determine its level of production and how to replace its profits.

10. For a detailed discussion, see Leão (2010).

as supplying cutting-edge technology and business opportunities for domestic Chinese companies (Zonenschain, 2006).

In the science and technology (S&T) sector, the strategy of the Chinese government was to create programs – which were subordinated to the Science and Technology Leading Group (STLG) State agency – to accelerate and disseminate innovations. That was posible, specially, due to the decentralization of the decision-making process – giving greater management freedom to companies – and the generation of new research and development (R&D) centers in a local sphere. The S&T system was gradually liberalized for the private sector, at the same time that it authorized the association of research institutions with organizations and/or producers in the country and in the city. In addition to giving new incentives to R&D investments, this movement encouraged the articulation between R&D specialized companies and agencies (Saich, 1989). While market regulation was liberalized, the government did not eliminate, but only redefined its control parameters for the S&T sector, mainly, in the sense of giving incentive to this approximation between research and production structure. In this perspective, for example, the Chinese government stipulated some technology programs that had two goals: *i*) to absorb foreign production and administrative techniques, disseminating them to the industrial sector and research institutions; and *ii*) to improve the action environment of high technology industries (Saich, 1989; Zonenschain, 2006).

The positive results from the reforms made it possible, by the middle of the 1980s, to reach a consensus concerning the strategy adopted for the Army and the economy. However, the internal and external situations in which these reforms were promoted motivated a political division inside the CCP. For line of the Party – in which Marxists-Leninists can be emphasized – the Solidarity Syndicate showed that the legitimacy of the socialist regime could be questioned, which would affect the internal stability and the actual path of the reforms. For another line of thought, favorable to a higher political opening, the success of economic programs and military modernization – which was connected to a higher autonomy of the actuation of local governments – would only continue if the country also broke with the current political structure. Thus, on the one side, there were those favorable to the maintenance of CCP dictatorship as a way of avoiding conflicts and social movements that would prevent the development of the country (like the Solidarity Syndicate), and on the other, there were the supporters of a political opening for the consolidation of China's new development project.[11]

11. "(...) in the political plane, the second half of the 1980s was marked by the growing internal division of CCP, when Hu Yaobang and his disciples pressured the party's direction for a greater political liberalization. Under the influence of CCP liberals, there was an increase of manifestations in universities and coastal cities" (Medeiros, 2008, p. 229).

However, the social and political scenarios in China by the end of the 1980s motivated a slowdown of economic reforms and the weakening of the defending group for a fast opening. In 1989, the increase of inflation, the high increase of expenses with provincial governments, the reduction of the real salary, and news on public power corruption ended up motivating the increase of social tensions (which exploded in the Tiananmen Square protests)[12] (Pinto, 2011). The repression to these protests made the debate on political opening to lose force and created difficulties on the maintenance of the "Four Modernizations" reforms. That is, the resulting repression of this movement, and the economic crisis itself, made the discussion on a change of the political system in China to be abandoned. Chen (1997), for example, found that the opinions in the direction to the establishment of a democracy did not make more sense after the results of the events of 1989, providing a kind of emptiness of the political debate in China until 1992.[13]

Immediately after this moment, the disputes inside the Party increased regarding the ways of economic reforms. Deng Xiaoping worked for winning the existing resistance inside the Party and fixed an arrangement, known as the Great Commitment – effective on 1992 – that "ensured" a pragmatic policy of economic reforms between two large competitors (as previously observed) – which were divided in the 1980s and bared the main segments of CCP (elders, Marxists-Leninists, pro-opening, local leaders, technocrats, and PLA) (Pinto, 2011; Leão, 2010). Only then it was possible to advance in the economic and military transformation policies. Despite the advances of economic liberalization and PLA reorganization, the alterations up to that moment were guided inside the Party. That is, both the Army and the main State companies (and also banks) remained subordinated to CCP, including those controlled in many cases by figures connected to the Party.

During the 1990s, due to new and connected foreign events, among other aspects, by the end of the Cold War, the need to follow the advances of the opening and modernization reform without losing the political centralization of CCP was explicit, as shown in the next subsection.

12. "Manifestation of Chinese students at the Celestial Peace Square against the government and CCP" (Pinto, 2011, p. 29).

13. "The 1980s saw a drawback of radical movements that were favorable to democracy. One of the reasons was theTiananmen incident, which eliminated the most radical defenders of democracy from the political debate. The exit of this group from the political scenario, together with the intolerance from official authorities, effectively ended the debate on democracy [during that time]. Also as a result of military repression, a great number of intellectuals chose to be silent, abstaining from writing and publishing. For that reason, the period between the summer of 1989 and the beginning of 1992 was the time when intellectual debates were more depressing since the beginning of the reforms" (Chen, 1997, p. 595, freely translated).

3.2 The transition from 1992: the continuity of the reforms, the sustainment of the political regime, and global ascension

Similar to the previous period, the new phase of the Chinese transition – started in 1992 with the Great Commitment – kept the strategic goals for ensuring the modernization of the economy and military structure, as well as the political unit without creating social tensions. Similar to the previous period, the political and economic internal and external conditions had a relevant influence in the policies profile adopted after the Great Commitment.

From a domestic point of view, in the first place, the Chinese government certified itself of the delay in its military and technological sectors regarding great potencies due to the results observed in the Persian Gulf War in 1991, which showed the existence of a new generation of arms and technologies in the United States (Medeiros, 2008). In second place, some lines of thought from CCP still kept a skeptic posture on the continuity of reforms due to the episodes that took place by the end of the 1980s (Pinto, 2011).

From an external point of view, the first event that caused significant impacts for Chinese reforms was the USSR collapse and the political-economic options followed later by the government of former soviet republics (mainly the Russian one). As pointed by Andrew Walder, a set of authors and scholars on the transition of socialist economies pointed out that the Chinese government learned important lessons for changes that took place in USSR and also in the new transition economies:

> that despite its historical and institutional distinctiveness, *China nevertheless holds important lessons for all transitional economies* (…). Nolan and Ash find that China's refusal to heed the advice of Western economists, and Russia's effort to implement it, assisted China's rise and Russia's fall. (…) Putterman questions the categorical conception of property rights that underlies the macroeconomist's faith in privatization; Oi questions the commonplace assumption that public bureaucrats cannot behave as if they were private entrepreneurs. While all these authors share the view that there are no authoritative answers, and that *persistent pragmatic experimentation through time can work*, they also share a deeper assumption: successful reform involves the relentless introduction of choice, alternatives and competition into the environment of all actors in the economy, regardless of who they are (Walder, 1995, p. 978, our italic).

The last point in italic, i.e., the maintenance of a persistent and pragmatic experiment of reforms throughout time – necessary for ensuring its success – gained even more importance after 1992. Also stimulated by domestic issues, the hypothesis acquired more strength from the results observed in the soviet, and then Russian, experience. Taking these results into consideration, Chinese politics and scholars saw the end of USSR and the Russian crises as products of

"radical" transformations implemented in a short space of time in the USSR[14] of Makhail Gorbachev (1985-1991) and the fast economic opening that occurred in the Russia of Boris Yeltsin (1991-1999). According to Chen (1997), for example, for a large part of the Chinese political system (including the most liberal ones), the dissolution of USSR had a direct relationship with the attempt of democratization that occurred in Makhail Gorbachev administration.

Additionally, the Sino-American relation remained having an important function for China's reforms. Although the conditions that supported Chinese economic transformations since the 1970s gave place to stronger political and economic tensions,[15] the Chinese government was able to use the strengthening of the bonds previously established with the United States. Whether it is for the high investments and commerce performed by North-American companies in the Chinese market, whether for the broad acquisition of debt titles from the United States by the government of China, the fact is that the Asian country acquired a higher power of bargain with the Anglo-Saxon country. The creation of an investment, financial, and international trade network among both countries gave China the chance of occupying new geo-economic spaces, as well as limited the possibility of the United States to create restrictive policies, as it happened with other countries in the 1980s (Leão, 2010; Pinto, 2011).

Together with the changes in Sino-American relations, another aspect that influenced the direction of the reforms was the strong opening process on the production chain and the commercial liberalization in the 1990s, which hit almost all global economies. This process had as one of its effects the increase of industrial competition, involving almost all great multinational companies of the world. That made it obvious the incapacity of the Chinese productive system of competing with these nations in the most diverse industrial sectors, both those focused on technology and those focused on natural resources and infrastructure.

China also found some regional economic conditions that helped the continuity of its reformist strategy during the 1990s. The recession and then the crisis of Asian economies made the country the manufacture center of the region.

14. Among these transformations, it should be highlighted: the democratic opening; the economic reconstruction from the fast introduction of market mechanisms and the autonomy of companies; the end of media monopoly and the inexistence of a reorganization strategy of communication means; and the break with the power structure responsible for the coalition and USSR unity (Medeiros, 2008; Odom, 1992; Ellman and Kontorovitch, 1992).

15. In the political sphere, "[some] episodes were important for the rise of [this] political conflict, such as the non-signature from president Bill Clinton of the agreement that would give the support from the USA to China's entrance to WTO (World Trade Organization), the increase in the sales of arms to Taiwan – rebellious province in the conception of the Chinese government –, the wrongful bombing of the Chine Embassy in Belgrade/Serbia in May 07, 1999 during air attacks from the North Atlantic Treaty Organization (NATO), and the collision of a USA spy airplane with a Chinese fighter aircraft over the south sea of China in April, 2001" (Pinto, 2011, p. 32). In the economic sphere, Medeiros (1999, p. 395) reminded that "using its dominant right of veto in the World Bank and in the Asian Development Bank, the [United States], claiming disrespect to human rights, blocked loan requests for many years."

After 1995, the currency appreciation in countries such as Malaysia, Indonesia, and Thailand and the increase of its coefficients of importation and deficits in its accounts of factor services, in a set of strong financial liberalization, braked the participation of these countries in that productive regional integration (explained in the previous sub-section). Indeed, a chance arose for China to absorb an even higher volume of investments and industries of the most developed region of Asia. Thus, the Chinese giant quickly became the "great Asian industry", absorbing investments and the production of neighboring countries and, simultaneously, establishing itself as a great market for the exportations (food, agriculture and industrial products, and manufactured final goods) of the same countries (Leão, 2011).

In short, if the geopolitical and geo-economic scene at the beginning of the 1990s had placed some barriers to Chinese development, the Asian country was able to fortify already established economic, commercial and financial flows with Asia and the United States, in addition to the advances already reached in the previous period. These aspects were added to the lessons learnt from the processes of transition of the USSR and the changes observed in Russia – a fact that also occurred in other former Soviet republics – had great importance to determine not only the nature of the reforms, but also the rhythm and the intensity of its execution.

Based on this context, the options traced for the Chinese government, after establishing the *Great Commitment*, obeyed the following guidelines: *i)* sustentation and reinforcement of the linking between CCP and PLA; *ii)* maintenance of the pragmatic character of the reforms, mainly in the political and socioeconomic fields, with prominence for the aspects related to foreign capital; *iii)* bigger control of the apparatuses and social sectors (the press, culture, etc.); *iv)* leadership and intervention of the National State in the conduction of the economic changes; *v)* magnifying of the field of diplomatic relations with some regions of the world in order to legitimize the Chinese political regime; *vi)* continuity of the economic modernization with bigger support of the external sector and the formation of great national conglomerates capable of competing internationally; and *vii)* technological development of the military device.

In order to reach these guidelines, the first initiative was *to advance in the external insertion of the country by means of the biggest joint between investments and production of the foreign companies – with emphasis on the Asians and the United States –, since "the attraction of foreign capital was inserted in a strategy to encourage domestic companies and qualifications*" (Zonenschain, 2006, p. 84). Moreover, *it had the strengthening and the conglomeration of the state-owned companies in key sectors, seen as essential to command the structural changes of the economy and that demanded long term investments, and the acceleration of the reforms of the financial*

system aiming to sped up the demand of credit – mainly for the great state-owned companies – and to bring improvements for its banking institutions. The second initiative *was to fortify the investments for the sophistication of the Army and to extend the bilateral political relations both in Asia, as in other continents, in addition to supporting the state control on some sectors of the society.* Since the end of the Soviet bloc, some changes in the regional political system signaled the necessity of the Chinese State to coordinate its military and diplomatic actions in the sense of externally and internally legitimizing the form of management of CCP.

Regarding the first initiative, with the *Great Commitment*, China carried through a bigger opening, creating new areas to receive foreign investments – special economic zones –, that until that moment were sufficiently limited geographically, and used tax, industrial and cambial policies to favor the entrance of foreign companies with exporting bias. The performance of the Chinese State was crucial in directing these investments for the productive sphere and the promotion of the exportations. In other words, the National State fortified the strategy of differentiated external insertion, whose main line of direction was the permission for entrance of the foreign capital in the productive structure. However, this opening did not occur in an indiscriminate form, but in more dynamic industrial chains of the international economy (microelectronics, for example). Even after 2001, when it signed its commitment of adhesion in the World Trade Organization (WTO) being obliged to gradually relax the protectionist politics, the Chinese government constructed a strong regulation apparatus to manage and control multinational companies, since it negotiated an extensive transition schedule for its entrance in WTO, attending to its strategic interests to the maximum (Lardy, 2003).

In the meantime, the government used its larger economic approach with the Occident and the most advanced countries of Asia and submitted the reorganization of the structure of production for the development of the great state-owned companies in an environment of great articulation with the private sector (country cooperatives, foreign companies, etc).[16] This occurred, in the first place, by means of strong regulation that forced the internal transference of technology from transnational corporations, in a similar way that offered to state-owned companies the chance to create and/or explore new processes and products without having to face the wild competition of private and foreign capital. In second place, it also happened through the intermediary of a policy

16. From this articulation, Chinese companies could be inserted in the global production chain, reducing the distance of national and international technological frontier. According to the author, "the most productive Chinese domestic companies [were] those that had foreign partners, part of international markets, or up against international competition". They took advantage of this process, since they absorbed many foreign technologies that, on its turn, "enabled efficiency gains in the product cycle (more competition among suppliers) and flexibility for adaptation to new assembly lines, making it easier to migrate to new products" (Zonenschain, 2006, p. 109).

in which the allocation of resources and the goals of production dislocated the role of national companies for the accomplishment of long term investments in some strategic branches that, in general, were connected. This change in the role played by state-owned companies demanded an ample conglomeration process of these companies aiming to increase its level of international competitiveness and the power of leverage, as well as modernizing the organizational and productive system of these companies (Leão, 2010).

The state-owned companies also assumed the center of the technological development, subordinating the actions of other agencies to S&T complexes. As suggested Zhang *et al.* (2009), in recent years, Chinese companies still have commanded the generation of innovations in the country by means of absorption and adaptation of foreign technology, but also from the creation of new technologies. For that reason and also because of the reforms of the S&T system,[17] as well as the expansion of public investments, state corporations, in addition to extending its capacity to generate innovations, it inaugurated a new standard of technological development. The differential of this development is based on the capacity to not only use cutting edge technology available in its sector, but the accomplishment of reverse engineering processes, using more primitive technologies. This movement has been unknown, since not even the occidental experiences had combined as many different technologies.

To support the performance of these state-owned companies, the Chinese government deepened the transformations in the financing system. After the 1990s, the reforms during this moment progressed in order to extend the regulation and to make the institutions more efficient, i.e., apt to compete with foreign banks (Dias, 2004).[18] Furthermore, the government increased the strategy of using the public banking loan as the main source of financing mainly for great infrastructure and capital and technology enterprises of the biggest state-owned companies (Leão, 2010).[19] Mainly in the 2000s, the existing link between the biggest Chinese banks and the great state-owned companies was strengthened,

17. Two S&T development programs call attention. The first one, named National Key Basic Research and created in 1997, had two main targets: basic research and the performance of original innovations by Chinese institutions. For that, apart from the increase of financing of universities and other basic research departments, interdisciplinary research centers were created, being responsible for developing projects to advance the technological barriers. The second one, Science and Technology Plan, of 2005, was created to increase the integration of the Chinese production and technological structure to the Global System of Innovations, mainly from the action of large State conglomerates.

18. As listed by Dias (2004), there were four basic pillars of these changes proposed in the beginning of the 1990s: to define a specific legislation to the financial sector, to clarify the rights of propriety; to improve the infrastructure and introduce innovations capable of supporting a larger opening of the market; and to allow the beginning of fusions between national and foreign institutions – even so the participation of the private sector in the financial system was not significantly increased, even nowadays. The last two pillars had to higher relevance in the 2000s. That is, although they were announced since the 1990s, the entrance of foreign institutions and the transference of propriety rights were only recently prioritized.

19. While in 1992, bank credit represented 91% of the gross domestic product (GDP); in 2005 this amount was 135%. And, in this past year, over 70% of credit was given by State banks (Leão, 2010).

allowing the fast dissemination of the banking capital for the productive sector. As Burlamaqui (2012) emphasized, the strengthening of these two spheres (banking and productive) in a state scope, served as an instrument of territorial expansion and scale of production of the Chinese companies (also out of the country). The great infrastructure enterprises and the process of internationalization of great corporations have been financed by great state banks. In this sense, for example, "the Bank of Development of China (...) is a state institution of financial support that created [recently] a fund of initially 5.1 billion dollars for the acquisition of foreign companies for Chinese companies" (Costa and Souza-Santos, 2010, p. 168).

On the second initiative, the collapse of USSR opened an important space for the Chinese in the international economy, extending its area of influence to Asia and Eastern Europe. Through the strict control of the State, the Chinese government saw a chance for the country to extend its geopolitical and geo-economical role, aiming to reach a *status* of world power in the international system.

The elimination of the Soviet bloc promoted a climate of instability and doubts regarding the territorial redefinitions in Asia. As reminded by Shambaugh (1994), in the immediate post-Cold War period, the vision of the Chinese defense policy was surrounded by a high degree of uncertainty resulting from the political changes that took place in 1991, whose definitions could generate territorial and border disputes involving China and its closest neighbors.

Using this logic, the Chinese authorities understood that the modernization of the Army, in special of the navy and aeronautics, was essential to answer these potential territorial conflicts with other Asian countries. In this same line, Whiting (1995) emphasized that a tension between China and the East Asian existed involving territorial disputes, in special with the Philippines, Malaysia, Brunei, and India, which motivated the acceleration of the investments in the PLA in maritime and aerial equipment. This issue, together with the Gulf War, made China, in the first half of the decade of 1990, to greatly extend its military budget and to start investing in the strengthening of the commercial and political relations with Russia, as a manner of attracting technology and to modernize the Army.

Together with strong investments in the military sector, regarding foreign relations, "there was a search for reduction of the conflicts with the neighbors, which determined (...) the restoration or establishment of diplomatic relations with Singapore (1990), Indonesia (1990), Brunei (1991), and South Korea (1992)" (Cunha and Acioly, 2009, p. 348-349). The approximation initiatives, besides being part of the so-called "pacific ascension" of China, created strategy of international legitimation of the Chinese political system.

The guidelines of the Chinese government to fortify the political regimen and to modernize the Army quickly became a higher priority between the end of the 1990s and the first half of the 2000s. A first reason for that was the growing stress in the relations with Taiwan. In 1999, the Taiwanese president, Lee Teng-hui (Kuomitang Party), declared the strategy to invest in a relation between a "special State" (Taiwan) and China, making evident his objective to support the national of Taiwan, that is, to keep the independent position from China. The conflict was aggravated after the victory of Progressive Democratic Party (PDP) in the 2000 elections, whose political beliefs were always clearly favorable to independence and sovereignty, and Chinese initiatives to narrow the alliances to the Occident in order to fortify its strategy to reintegrate the island to its domestic territory (Zhang *et al.*, 2003). As a consequence, the new government of Taiwan "initiated an armament race, increasing military expenses and the purchase of sophisticated armament, as well as implanting new systems of defense" (Zhang *et al.*, 2003, p. 376, freely translated).

Second, because there was a succession of events led by the United States with the objective of extending its action spaces - in the diplomatic and military fields – in Central Asia and the Eastern Europe.[20] The first of them were the entrance of the United States, thought the North Atlantic Treaty Organization (NATO), in Kosovo in 1999, a fact that strengthened the North-American unilateralism. After the terrorist attack of September 11, 2001 in New York, the United States exerted pressures on Russia and conquered its support in order to perform other two important actions in the region, namely: the Russian government accepted the entrance of NATO in the Baltic States (Lithuania, Latvia and Estonia) and the entrance of the North American military forces in Georgia (Norling, 2007).

As a response to these movements, the Chinese government acted in order to limit the innovations of the political system in the region. Moreover, the Asian giant tried to narrow its relations to the Russian government, since Russia had a great relevance to contain the increase of interference of the United States in those regions. Taking advantage of the distancing between North-Americans and Russians in the second half of the decade of 2000, because of the interference of the first country in political systems of former Soviet republics[21] and its direct support of movements

20. This two regions started to have great geo-economical and geopolitical importance to China due to many reasons, among them the increase of Chinese demand will be energy drinks and military interests.

21. The political intervention of the United States and the establishment of economic and military cooperations with nations such as Iraq, India, and Turkmenistan was seen by the Russian government – and also by the Chinese – as two instruments of the expansion of the political, military, and economic presence of the United States in Asia. Due to that, both countries established a non-intervention external policy for matters of other countries and invested in a military cooperation, which culminated in the consolidation of the Shanghai Cooperation Organization – SCO, a regional security institution – and the expansion of commerce and bilateral military agreements.

that had become known as "Color Revolutions,"[22] China obtained a space to reapproximate itself to Russia as a form of strengthening the importance of CCP and to attract resources to develop its Army.[23] Finally, the government organized a reform of the defense industry establishing a program of acceleration of military expenses, as well as the creation of great corporations to manage the program:

> The (…) major reform began with the shakeup of the [military] industry in 1998-99 and is characterized by fiscal, policy, organizational, and enterprise restructuring. Critically, defense funding was dramatically raised. (...) Spending on equipment and weapons procurement has increased the most. This portion of the budget was readjusted from a low of 16 percent early in the 1990s to roughly one-third, where it stands today. More funding has also been made available to basic R&D. Defense R&D likely reflects national figures, which have nearly quadrupled since 2000 and currently amount to 1.5 percent of GDP. Greater funding within the defense sector has also been directed toward weapon development management, innovation, and application of basic technologies and the talent needed to implement it. Improved finances are also manifest in the salary increases of key personnel in the defense sector during the past decade. (…) The reorganizing of the Commission on Science, Technology, and Industry for National Defense (COSTIND) was key as well. (…) With the creation of the defense production industries into major group corporations, these reforms separated the buyers from the builders, with COSTIND a regulatory and administrative role. This allowed for a more contract-based procurement system that in-stilled a degree of competition, helping forge a system better equipped to fulfill the demands of the military (Hagt, 2010, p. 485-486).

In this context, the internal legitimation of the CCP also assumed great meaning, in view of the necessity to support the political and social stability of the country. For Chinese leaders, the pressures against the democratic configuration – as it was occurring in the old Soviet republics – would stimulate its own regional systems, contrary to the maintenance of internal control and favorable to social instability. This, in turn, would eliminate the validity of the regime, which was based on the partisan ideology, and could again cause a crisis or a magnifying of social tensions, similar to what happened in 1989.

In addition to the maintenance of the political regime, the control of certain social instruments also was seen as basic to prevent the increase of conflicts between diverse sectors of the society. In the case of the Medias, until today the Chinese

22. "[The expression] 'Color Revolutions' was a name given to mass movements that took place in the region of the former Soviet Union that resulted in the replacement of established governments. The Rose Revolution, in Georgia, the Orange Revolution, in Ukraine, and the Tulip Revolution, in Kirgizstan, are movements frequently labeled as such. As a whole, the color revolutions (…) were caused by elections considered as fraudulent" and tried to effect a new democratization of political regimes (Ortega, 2007, p. 2).

23. In addition to these matters, Islamic separatist movements that are present in Chechnya and Xinjiang motivated the strengthening of the relationship between China and Russia in order to build an integrated posture against the intervention of multilateral nations and organizations in Chinese and Russian internal matters, as well as those of countries located in Eastern Europe and Central Asia.

State keeps restrictions, for example, to the foreign and/or private TV channels. For the Chinese government, there has been an increasing attempt of the international media to influence the Chinese population, which could bring great riots to its harmony and social stability and politics. Based on this conception, the maximum leader of the country, Hu Jintao, has made speeches saying that the Occident has tried to influence Chinese society mainly through the available tools for new Medias. For him, there has been an attempt "to divide China, and the ideological and cultural fields are the focal areas of its infiltration in a long term period" (Maisonnave, 2011). Obviously, this speech was part of a Chinese political strategy to strengthen its concern with its process of opening to the exterior – which has obviously extended the access of the occidental countries to the Chinese society –, as well as showing that this subject has been a priority for the government of the Asian country. Examples of this were the maintenance of the centralization of political decisions in the CCP and the state control of other spheres of society.

All these considerations corroborated to the affirmation of Medeiros (2008) that, after 1991, China consecrated the strategy known as "a center and two basic points". The center was the fast economic development and the modernization of the PLA, while the two basic points were the increasing opening of the economy and the maintenance of the internal deciding power in CCP (which was based on Maoism). In this sense, it became possible to observe two opposing movements, but that go in the same direction: in the first place, the maintenance of the political line – with military support – which was a feature of China since the times of Mao Tse-Tung and, in second place, the transition of a closed and centered economy to a still extremely controlled economy, however with greater participation of the market. Both movements converged to the modernization of the country, without losing the capacity of the State to control the economic and political changes.

Thus, it was evidenced that the economic and political reforms were articulated in the interior of institutions connected to the National State. The restrictions and controls imposed to foreign companies, the leadership of state-owned companies in the reorganization of the productive structure, the expansion and sophistication of PLA, as well as the coordination of the changes carried out by CCP – in the objectives and goals defined in the Five Year Plans, for example – had some of the elements that proved the strengthening of the National State as the main agent of the project of transition in China.

4 FINAL CONSIDERATIONS

Since the end of the 1970s, the transition option of the Chinese government followed "a gradualist" view, through which reforms tried in the long term to modernize the economy and the military sector, without losing the CCP's centrality in the political system. The obstacles and crises that took place throughout this

period did not modify the structural objectives placed by the CCP in its process of transition. However, by the end of the 1980s, embrittlement of the economy and the increase of the dissatisfaction of some sectors of the society had blown up the protests of the Tiananmem Square and, as a consequence, installed a "crisis" inside CCP.

This "crisis" was solved by the strengthening of the political power of the CCP and trying to create new foundations – always with the leadership of the National State – to advance the reforms of the economy. In the 1990s, the new geopolitical and geo-economic drawing and the increasing opening to private and/or foreign capital did not mean a "relaxation" of the political order or a lesser state intervention in the economy. On the contrary, there was not a significant change of the Chinese political system and the State fortified its performance by means of, for example, the strengthening of large state-owned companies in many economic sectors.

Due to all the economic, social and political transformations observed since the last quarter of the 20th century, China reached the *status* of potency and emerged as counterpoint to the United States in the international system. This new Chinese position followed strong questionings and pressures of government actors, multilateral institutions, as well as of the international media around two subjects: first, the implementation of a democratic system in the country and, second, a bigger liberalization of the economy.

The views and interpretations on these two subjects were the most varied on the meaning of Chinese reforms. However, the facts remain showing that there are no perspectives, at least currently, of more radical changes both in the political sphere and in the economic one. A clear and explicit intention of the Chinese government to modify the political regimen and the state participation in the economy does not exist, much less to give up national sovereignty and the thoughts that originated CCP.

In 18th CCP Congress, carried out on November 8, the speech of Hu Jintao – that ended his administration of the country that began in – indicated the interest of the Party to continue executing reforms, but with the same political and economic structures. As Minxin Pei (2012) pointed out,

> instead of ideological concessions, even if only symbolic, Hu emphatically declared that CCP will keep its ideological principles and will include among them "the thought of Mao Tse-tung". The term, which causes fear and repulse among Chinese progressives, is not the only thing that helps to deny any illusions that the people can have on the reformist intention of the leaders. After alerting on the risk that the endemic corruption represents for the survival of the party, Hu declared that the CCP will never take the "malignant road" to change the color of its flag.

Still on this discussion, a news article of the Carta Capital magazine emphasized the importance attributed by Hu Jintao, in the same speech, to the national security of China:

> Hu said that China must build 'a national defense and powerful Armed Forces that correspond to the international level of China'. He also said that Beijing must advance with the general military preparation and in the technological area of the Armed Forces in particular. According to him, the most important task of China is to be capable of 'winning a local war in the age of the information' (PRESIDENT…, 2012).

Despite interests contrary to the current standard of Chinese development and emphasizing the problems that effectively exist in the country (corruption, disrespect to human rights, among others), the CCP does not seem to believe that external formulas are capable of answering the country's challenges. These challenges, in the perspective of the Party, can only be faced with the guarantee of the national sovereignty and from an internal understanding of the social, economic, and political problems that does not include an economic liberal view and complete political opening.

REFERENCES

ARRIGHI, G.; HAMASHITA, T.; SELDEN, M. The rise of East Asia in world historical perspective. *In*: PLANNING WORKSHOP, Binghamton, 1996. **Anais**... Binghamton: Fernand Braudel Center; State University of New York, Dec. 1996.

BURLAMAQUI, L. **Global finance and Chinese financial development**: the emergence of a State led financial model of globally oriented financial governance. Brasília: Ipea, 2012 (mimeo).

CHEN, F. Order and stability in social transition: neoconservative political thought in post-1989 China. **The China quarterly**, London, n. 151, p. 593-613, Sep. 1997.

CLARO, S. 25 años de reformas económicas en China: 1978-2003. **Estudios Públicos**, Santiago, n. 91, winter, 2003.

COSTA, A. D.; SANTOS-SOUZA, E. R. Internacionalização de empresas brasileiras: restrições de financiamento e papel do BNDES. **Revista economia & tecnologia**, ano 6, vol. 23, p. 167-174, Oct./Dec. 2010.

CUNHA, A.; ACIOLY, L. China: ascensão à condição de potência global – características e implicações. *In*: CARDOSO JUNIOR, J. C.; MATIJASCIC, M.; ACIOLY, L. (Orgs.). **Trajetórias recentes de desenvolvimento***:* estudos de experiências internacionais selecionadas. Brasília: Ipea, 2009.

DENG, X. **Selected Works.** Beijing: People's Press, vol. II, [1975-1982], 1993.

DIAS, M. M. P. G. **A China no séc. XXI**: a evolução do sistema bancário e o futuro das reformas econômicas. (Dissertação de Mestrado) Lisboa: Universidade Técnica de Lisboa, Instituto Superior de Economia e Gestão, 2004.

FAIRBANK, J. K.; GOLDMAN, M. **China**: uma nova história. Porto Alegre: LP&M, 2006.

HAGT, E. Emerging grand strategy for China's defense industry reform. *In*: KAMPHAUSEN, R.; LAI, D.; SCOBELL, A. (Eds.). **The PLA at home and abroad: assessing the operational capabilities of China's Military**. Carlisle: U.S. Army War College, 2010.

LARDY, N. R. Trade liberalization and its role in Chinese economic growth. *In*: IMF/NCAER CONFERENCE. **A tale of two giants**: India's and China's experience with reform and growth. New Delhi, Nov. 2003.

LEÃO, R. P. F. **O padrão de acumulação e o desenvolvimento econômico da China nas últimas três décadas**: uma interpretação. (Dissertação de Mestrado) Campinas: Instituto de Economia/Unicamp, 2010.

LEÃO, R. P. F. A articulação produtiva asiática e os efeitos da emergência chinesa. *In*: LEÃO, R. P. F.; PINTO, E. C.; ACIOLY, L. (Orgs.). **A China na nova configuração global**: impactos políticos e econômicos. Brasília: Ipea, 2011, p. 115-164.

LIN, J. Y. Rural reforms and agricultural growth in China. **The American economic review**, vol. 82, n. 1, p. 34-51, Mar. 1992.

MAISONNAVE, F. China restringe produções estrangeiras na TV. **Folha de S. Paulo**, São Paulo, 15 Feb. 2012.

MEDEIROS, C. A Desenvolvimento econômico e ascensão nacional: rupturas e transições na Rússia e na China. *In*: FIORI, J. L.; MEDEIROS, C. A.; SERRANO, F. (Orgs.). **O mito do colapso do poder americano**. Rio de Janeiro: Record, 2008.

MINXIN, P. Análise: Discurso de Hu Jintao extinguiu ilusões sobre a intenção reformista. **Folha de S. Paulo**, São Paulo, 10 Nov. 2012.

NOLAN, P.; ASH, R. China's economy on the eve of reform. **The China quarterly**, London, n. 144, p. 980-998, Dec. 1995.

NORLING, N. China and Russia: partners with tensions. **Policy perspectives**, vol. 4, n. 1, p. 33-48, 2007.

NOZAKI, W. V.; LEÃO, R. P. F; MARTINS, A. R. A. A ascensão chinesa e a nova geopolítica e geoeconomia das relações sino-russas. *In*: LEÃO, R. P. F.; PINTO, E. C.; ACIOLY, L. (Orgs.). **A China na nova configuração global**: impactos políticos e econômicos. Brasília: Ipea, 2011, p. 195-234.

PINTO, E. C. O eixo sino-americano e as transformações do sistema mundial: tensões e complementaridades comerciais, produtivas e financeiras. *In*: LEÃO, R. P. F.; PINTO, E. C.; ACIOLY, L. (Orgs.). **A China na nova configuração global**: impactos políticos e econômicos. Brasília: Ipea, 2011, p. 19-78.

PRESIDENTE da China alerta sobre a corrupção e pede mais democracia. **Carta capital**, São Paulo, 08 Nov. 2012.

ROBINSON, T. W. Chinese military modernization in the 1980s. **The China quarterly,** London, n. 90, p. 231-252, Jun. 1982.

ROLAND, G. **The political economy of transition**. Ann Arbor, MI: William Davidson Institute, Dec. 2001 (Working Paper n. 413).

SAICH, T. Reform of China's science and technology organizational system. *In*: SIMON, D.; GOLDMAN, M. (Eds.). **Science and technology in Post-Mao China**. Cambridge, MA: Harvard University Press, 1989.

SANTAYANA, M. No centro do mundo. *In*: III Conferência Nacional de Política Externa e Política Internacional. **China**. Brasília: Fundação Alexandre Gusmão, 2008.

SHAMBAUGH, D. Growing strong: China's challenge to Asian security. **Survival**, vol. 36, n. 2, p. 43-59, Summer, 1994.

WALDER, A. G. China's transitional economy: interpreting its significance. **The China quarterly**, London, n. 144, p. 963-979, Dec. 1995.

WHITING, A. S. Chinese nationalism and foreign policy after Deng. **The China quarterly**, London, n. 142, p. 295-316, Jun. 1995.

ZHANG, C. *et al.* **Promoting enterprise-led innovation in China**. Washington, D.C.: The World Bank, 2009.

ZHANG, Z. *et al*. The dynamics of political and economic interactions between Mainland China and Taiwan. **Papers Regional Science**, n. 82, p. 373-388, Feb. 2003.

ZONENSCHAIN, C. N. **O caso chinês na perspectiva do *catch-up* e das instituições substitutas**. Tese de Doutoramento. Rio de Janeiro: Instituto de Ciências Humanas e Sociais/UFRRJ, 2006.

COMPLEMENTARY BIBLIOGRAPHY

ELLMAN, M.; KONTOROVICH, V. (Eds.). **The disintegration of the Soviet economic system**. London: Routledge, 1992.

FIORI, J. L. Globalização, hegemonia e império. *In*: TAVARES, M. C.; FIORI, J. L. (Orgs.). **Poder e dinheiro**: uma economia política da globalização. Petrópolis: Editora Vozes, 1997.

MEDEIROS, C. A. China: entre os séculos XX e XXI. *In*: FIORI, J. L. (Org.). **Estados e moedas no desenvolvimento das nações**. Petrópolis: Editora Vozes, 1999.

NABUCO, P. **Do grande salto à desmaoização**: 20 anos de história chinesa. *In*: XIV Encontro Nacional de Economia Política. São Paulo: June 2009.

ODOM, W. E. Soviet politics and after: old and new concepts. **World Politics**, Baltimore, vol. 45, n. 1, p. 66-98, Oct. 1992.

ORTEGA, F. A. **As revoluções coloridas**: a antiga União Soviética a caminho da democracia? *In*: I SIMPÓSIO EM RELAÇÕES INTERNACIONAIS do PROGRAMA DE PÓS-GRADUAÇÃO EM RELAÇÕES INTERNACIONAIS SAN TIAGO DANTAS, São Paulo, 12 a 14 de novembro de 2007.

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