RECENT CHINA-LAC TRADE RELATIONS: IMPLICATIONS FOR INEQUALITY?

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ABSTRACT. In the last decade, the socioeconomic relationship between Latin America and the Caribbean (LAC) and the People's Republic of China has increased massively. How has this new qualitative relationship between LAC and China affected inequality in LAC? This paper highlights the degrees of concentration of trade since the 1990s until 2011 and its technological content. Future research will have to deepen this relationship at the national, regional and even firm-level. Based on a brief critical review of the relationship between trade and equality/inequality, the document analyzes several of the outstanding features of the booming trade relationship between LAC and China. It concludes, among other issues, that both academics and policy makers have to overcome the bias against the agricultural sector and natural resources based on the concepts of global commodity chains, systemic competitiveness and territorial endogeneity. In addition, one of the most striking features of the new LAC-China trade is its increasing concentration, both compared with historical levels of LAC-China trade, as well as with the rest of the world, a development that will affect inequality in LAC substantially. It is not "old wine in new bottles," but rather a new socioeconomic relationship with dynamic and profound impacts in LAC that will have to be considered in more detail by scholars and policy makers in the future.

Keywords: Latin America, China, trade, concentration, inequality

1. Introduction

In the last decade, the socioeconomic relationship between Latin America and the Caribbean (LAC) and the People's Republic of China (referred to hereafter as China) has increased massively. As we will see in what follows, this new relationship has grown far beyond economics (and specifically trade), but also into such areas as investments, policies (bilateral and multilateral),

culture, education and language, among others. So far, however, the most significant part of this new relationship has occurred in a first stage: the booming trade since the mid-1990s in all of LAC without any exception. As we shall see, this new relationship with China has generated new opportunities and challenges at different levels that will require responses from the public, private and academic sectors. This relationship also has tremendous implications for equality.

In the prior context, this document will focus on the characteristics of the new trade relationship between LAC and China and its technology and concentration features. Behind this analysis there is the explicit understanding that trade affects equality (or inequality) of a range of issues – from wages and employment to GDP, income and consumption forms at the individual, household and regional and national level, among others – depending on the specific characteristics of trade. While there is an increasing literature in LAC and other parts of the world on the importance of LAC-China trade, there is little research on the specificities of this trade and its potential effects on equality/inequality. For understanding these effects, the paper's contribution will highlight the degrees of concentration of trade – both imports and exports – since the 1990s and until 2011 and its technological content. Future research will have to deepen the effects on equality of this trade relationship at the national, regional and even firm-level. Nevertheless, as we shall see, there are significant results based on this type of analysis.

As a result, the document will be divided in four sections. After this introduction, the second section will briefly examine, first, the discussion of equality, inequality and polarization in LAC in the literature, and, second, on the new qualitative challenges based on the LAC-China relationship. The third part will examine in detail the trade relationship between LAC and China and analyze the concentration and technology characteristics between LAC and China during 1990–2011. The fourth section will highlight the main conclusions of this analysis including effects on inequality.

2. Equality, Heterogeneity and Polarization:
   ## Structural Challenges Posed to LAC by China

There has been a long and on-going discussion in LAC on the concepts of equality/inequality, heterogeneity and polarization. In the late 1960s a group of authors discussed the issue of unequal trade and dependency (Cardoso and Falleto 1969) *vis-à-vis* Marxian arguments stressing that trade and any kind of exchange in capitalism *ex ante* includes exploitation and thus inequality – including authors such as André Gunder Frank, Samir Amin, Arghiri Emmanuel and Teotonio dos Santos, among others (Amin et al. 1971; Santos 1970). Much of this debate was rooted in the initial findings and

discussion of Raúl Prebisch since the 1950s and his later work at CEPAL that highlighted the limitations of development under a core-periphery model in which the latter specialized in primary goods with a low income elasticity of demand *vis-à-vis* manufactured goods, with higher income elasticities of demand (Prebisch 1964),[2] i.e. trade specialization for LAC in primary goods resulted in a continuous loss of terms of trade. Structural heterogeneity within the periphery, from this perspective, resulted in differences in productivity, high levels of inequality and, thus, in underdevelopment (Ocampo 2001). Intra-Latin American trade and intraregional integration, from this perspective, was one option for a different kind of development going beyond the core-periphery model.

In the light of debt crisis of the 1980s and the globalization process since then, however, much of this debate was lost (or at least not continued). Two interesting publications can be highlighted. On the one hand, there is the document of CEPAL "Productive Transformation with Equality" from 1990 (CEPAL 1990). The first document after the "lost decade" of the 1980s emphasizes the economic conditions of LAC at the beginning of the 1990s – particularly of trade, exchange rate, technology, firms and the backward and forward linkages, as well as other macroeconomic variables – to allow for a productive transformation with equality. Productive and trade regional integration, from this perspective, emphasized in the 1990s the innovation and learning processes for industrial latecomers such as LAC (CEPAL 1990: 163–166). The integral character of productive transformation, thus, explicitly required overcoming the structural heterogeneity in LAC to allow for long-term growth and the reduction of inequality and poverty. Thus, and parallel to the allocation of resources in innovative and competitive sectors, substantial support would be required in sectors and regions that will be affected by the former policies (CEPAL 1990: 82).

The second publication of CEPAL (2012) is much more recent and has to be situated in "time," i.e. after a long period of little growth in LAC in which the Washington-Consensus policies prevailed,[3] in addition to very low growth rates, both compared to the region itself and particularly with Asia. The starting point on equality[4] seeks an "integrated vision of development" from a social, fiscal, macro and productive perspective, and learning from the prior decades where specific policies where prioritized and placed above the rest of available instruments. The concept of "structural heterogeneity" – characterized "by the existence in a single economy of production sectors that would be characteristic of economies at different stages of development, with low-productivity segments figuring heavily" (CEPAL 2012: 199) – is still critical for understanding inequality at all levels, including social inequality in Latin America (CEPAL 2012: 56). Trade specialization in commodities and low value-added exports is one of the reasons for understanding this process of "structural heterogeneity" in the region, since it results in low

productivity, low job creation and slow growth in the long term (CEPAL 2012: 27).[5] Trade also plays a major role in the balance of payment through net exports and thus on external shocks that have affected periodically the region throughout the 20th century.

At least three concepts and methodological issues are relevant, from this perspective, to enrich the understanding of current massive "glocal" inequalities in Latin America, and beyond the discussion of the 1960s and 1970s: (1) debates on global commodity chains, (2) systemic competitiveness and (3) territorial endogeneity. The three issues, as we shall see, will prove very useful to understand the concept of "equality/inequality" under the current process of globalization.

Global Commodity Chains (GCC) and Their Segments

The contributions of Gary Gereffi, Jennifer Bair and Miguel Korzeniewicz, among others, have highlighted the importance of firms participating in GCC and specific segments (Gereffi and Korzeniewicz 1994; Bair and Dussel Peters 2006). From this perspective, GCC are constituted by different segments with specific characteristics: the yarn-textile-garments (YTG) GCC, for example, are constituted by dozens of different segments, from research and development (R&D) in new fabrics and nanotechnology to the assembly of specific parts and components in the garment industry. Although they are part of the same YTG-chain, they are extremely different in terms of technology required, employment, wages, training, financing, required equipment, participation of small and medium firms, type of investment, possibilities for trade and competition with local and global producers, etc. Clearly the higher value-added segments, such as R&D, have the possibility of appropriating a higher value-added. While authors such as Albert O. Hirschman (Hirschman 1958) had already examined commodity chains and their backward and forward linkages, GCC as a methodology (Bair and Dussel Peters 2006) highlight the global context of these chains. It is thus crucial to understand the rationality and form of the current industrial organization of each of the segments of the GCC.

Exclusive reliance on a macroeconomic understanding, based on structural change of the factors of production, for example, is thus not sufficient for understanding the conditions and challenges of the respective chain, much less of the upgrading possibilities in specific segments and territories (Rodrik 2006). The topic is of crucial importance for the analysis and the detailed policy proposals and stands in contrast to one-size-fits-all "recipes" based on macroeconomic "fundamentals" and a group of general laws, for example a "necessary industrialization" based on income elasticities of exports prevalent in most of development thinking in Latin America since Raúl Prebisch. In practice, the dominant perspective requires more justification and further empirical and theoretical development, and should not be taken for

granted even in the best of cases. The option of detailed analysis and respective proposals are also crucial, given the critique of scholars and research in general that they lack the capability of generating concrete proposals. For example, the Harmonized Tariff System (HTS) registers more than 16,000 products at the 10 digit level of foreign trade – from pineapples to harnesses, PCBs, semiconductors and electric batteries – with extremely different characteristics in the terms discussed above. If the analysis is not able to discuss specific products and processes and to include respective proposals, the latter can be simply primitive, trivial and/or irrelevant.

Systemic Competitiveness and Collective Efficiency
Understood both as a critique to Michael Porter's view of competitiveness, as well as of the Organisation for Economic Co-operation and Development (OECD), a group of authors at least since the 1990s have noted the importance of integrating the micro, meso and macro levels of analysis (Esser, Hillebrand, Meyer-Stamer and Messner 1994). Thus, and contrary to a view that prioritizes micro or macro aspects, this school of thought emphasizes that competitiveness has to be understood at the micro, meso and macro levels; the exclusive prioritization of one of the levels is insufficient and leads to simplistic, insufficient and limited policy proposals that do not understand the complexity of socioeconomic processes in space and time. Since then a group of authors have highlighted different factors of the systemic competitiveness approach, including the mesoeconomic level of competitiveness – or of interfirm and institutional relations (Mesopartner 2008; Meyer-Stamer 2005), the governance and control of whole chains and respective segments and the technological and detailed characteristics of each of the products and processes. Otherwise, the analysis would lack the specific knowledge and could effectively fall in a "romanticism" by which an exclusive local perspective would be able to "determine" the full scale of the GCC and even to negotiate with transnational corporations (Messner 2002). Based on these authors the mesoeconomic level of analysis is critical (Meyer-Stamer 2001), as well as the degree of interfirm integration that allows for different degrees of leaning, innovation and collective efficiency (Lester and Piore 2004; Humphrey and Schmitz 2004).

Territorial Endogeneity
While the former schools of thoughts and respective arguments are relevant in the current discussions and as an option to the neoclassical school of thought, they lack the concept and proposals of "territorial endogeneity", i.e. the specific form in which territories integrate to the world market to specific segments of "glocal" commodity chains and the particularities on the form of the systemic competitiveness they achieve (Dussel Peters 2000; 2008). Thus, it is not the firms, but territories the socioeconomic starting point of analysis

(Bair and Dussel Peters 2006; Vázquez Barquero 2005). From this perspective, it is important to incorporate systemic aspects of competitiveness and far beyond a primitive macro or microeconomic exclusive perspective, as well as of "territorial endogeneity": starting from the respective territories and their potential for collective efficiency in territorial terms, the segments of GCC that integrate globally from a "glocal" perspective – i.e. both glocal and global – as well as their conditions and effects from an economic policy perspective.[6] On the other hand, these concepts allow for a more "functional" understanding of socioeconomic spaces or territories, and according to the specific segments of global commodity chains, i.e. strictly national indicators are in most of the cases not sufficient. In the case of the autoparts-automobile chain in Mexico, for example, the "territory" is determined by the rules of origin and an industrial organization in the North American territory, while products and processes in other segments of commodity chains could be understood in territories at the municipal, city, province or national level. This "functional" perspective of the territory does not overcome or dissolve the nation state, but attempts to understand new socioeconomic formations that have arisen in the last decades.

In this light it is also relevant to mention explicitly that there has been an ongoing conceptual discussion and debate on the causal relationship and association between trade, growth and inequality for several decades in Latin America and internationally. Several topics are relevant in this debate:[7]

(1) There is no final agreement on the direction and causal association between income distribution, poverty and economic growth *vis-à-vis* trade, i.e. while a group of authors highlight the importance of an export-oriented industrialization (EOI) to achieve better growth and specialization patterns that will result in overall development and constitutes the basis for more equal income distribution, other authors highlight the relevance of territorial conditions – for example growth and specialization patterns, as well as equal income distribution – to allow for a successful integration to the world market through trade. The discussion has significant theoretical, but also policy implications, i.e. in the latter case territories would require specific domestic and endogenous conditions to integrate trade processes to its respective territory.

(2) From the perspective of EOI, development and further equality are a result of a more efficient production environment through the abolition of overall market constrains and interventions, against any rent-seeking behavior, that will allow for economic growth, development and equality in the long run. From this perspective, East Asian countries provide empirical evidence to support this theory, such as detailed by Bela Balassa, Jagdish Bhagwatti, Anne Krueger and the World Bank, among others (Dussel Peters 2000). In addition to the critique of a lack of causality between the association of economic growth and trade, there are other critical arguments against the additional association with equality. Relevant are the arguments of: (1) the

lack and insufficiency of evidence regarding the positive impact of trade growth on technical efficiency and productivity, (2) limits to export and trade growth, (3) the sustainability of ever-increasing growth of trade.

What does this concretely mean for the analysis on trade and inequality? Recent studies show that from a historical perspective different "globalization waves" in Latin America – particularly those during 1870–1914 and 1970– to the present, show that the specific composition of trade – raw materials and lack of an efficient manufacturing sector – and a high concentration in a small group of products, generated inequality in LAC (Arroyo Abad and Santos-Paulino 2009). Trade concentration in a few commodities is of concern for political (poor governance and risk of conflict) and economic reasons (volatility and instability in foreign exchange earnings and its micro, meso and macroeconomic effects, as well as potential and unpredictable effects on terms of trade). Dependence on a small group of commodities is also significant in terms of world demand and supply of these products, i.e. if there is a low income elasticity of world demand of these commodities, parallel to low content of skills and technology of exported commodities, as well as linkages and spillovers (Samen 2010).[8] It is from this perspective that trade concentration in both exports and imports can result in negative economic growth rates, development and an overall process deepening inequality. In addition, there is an increasing group of authors and respective studies highlighting that export diversification stimulates economic growth through innovations, knowledge spillovers and learning-by-doing processes.[9]

The relationship between trade concentration and inequality has, off course, many different levels of analysis, and also based on the three prior elements for understanding theoretically globalization, i.e. from a territorial and glocal perspective (i.e. in terms of municipalities, cities, provinces, countries and group of countries) as well as from a systemic perspective (i.e. including macro, meso and/or micro analysis). As a first step, this document will only begin assessing the trade relationship between each of the LAC countries with China and its effect on import and export concentration, as well as the technological characteristics of this trade. Future analysis will have to enrich and deepen this association,[10] as well as to include other class, gender and social aspects of inequality in LAC (Costa 2011).

2.1. Overall Challenges and Main Trade Features between LAC and China

This chapter will focus on two issues. The first one deals with the overall challenges that China is posing to LAC, including topics related to trade, but also beyond this topic. The second issue is the specificities of LAC-China imports and exports, and with explicit reference to the concentration (or not). Both cases are relevant for the future socioeconomic development of LAC and specifically for the equality/inequality discussion in LAC.

It is relevant to highlight that inequality, as well as absolute poverty and inequality, have shown different tendencies in LAC:

• Real wages in the region have not recovered since 1980, with very few national exceptions, i.e. in three decades one of the most relevant source of income has not increased substantially for a period of more than 30 years: GDP average annual growth rate (AAGR) for 1980-2010 was of 2.6%, while that of real wages of -0.6%; Mexico was the most positive case, with an AAGR of 0.1% (CEPAL 2012: 232).

• LAC in the last 30 years has been able to reduce substantially absolute levels of poverty and indigent population – from 44.1% of the population in 2002 to 33.1% in 2009 (CEPAL 2011: 65). In the last 3 decades absolute poverty in Brazil and Mexico, for example, fell from 40.8% and 53% at the beginning of the 1980s to 21.4% and 51.3% at the end of the 2010s, respectively (WDI 2012).

• For the period 1980-2010, however, the Gini coefficient has not varied significantly in none of the most important LAC countries and is extremely high if compared with other regions. For the region and its most important economies the performance in terms of income inequality measured by the Gini coefficient has been similar: after 30 years the coefficient has remained constant, with different tendencies throughout the period.[11]

2.2. Overall Challenges of China for LAC

Latin America and China have had a century-long relationship, at least since the Nao in the 16th century. The relationship has had several phases since then; to understand the current relationship it is important to start with the diplomatic recognition between the respective Latin American countries – mostly since the 1970s – and the People's Republic of China. Beyond this process of political closeness – both bilaterally, regionally and multilaterally –, since the 2000s China and Latin America have increased trade dramatically and, only very recently, also in terms of Chinese foreign direct investments (FDI) to Latin America. While research in Latin America has been insufficient, and considering that it is already the region's second main trading partner, several interesting results have been achieved as a result of research in the region and China. Based on this research, several issues stand out for understanding the massive qualitative challenges that China is posing to the region:

• In broad terms, and from a Latin American perspective, China's socioeconomic performance has been outstanding in the last decades. Based on savings and investments coefficients above 40% in the last three decades, China's GDP per capita – measured in 2000 $US – increased with an AAGR of 8.8% during 1980–2011, i.e. 9, 8.8. and 12 times the GDP performance

of Brazil, LAC and Mexico, respectively (see Table 1). Nevertheless, until 2011 China's GDP per capital was still half of LAC's.

Table 1 GDP per capita in $US constant dollars of 2000
(average annual growth rates) (1960–2011)

	1960-1980	1980-2011	1990-2000	1990-2010	2000-2011	Respective GDP*
Argentina	1,8	1,4	3,3	3,3	4,3	4,40
Australia	1,6	1,8	2,2	1,9	1,3	9,60
Bolivia	1,2	0,6	1,5	1,8	2,2	0,48
Brazil	4,6	1,0	1,0	1,7	2,4	1,82
Canada	2,6	1,4	1,9	1,3	0,8	9,82
Chile	1,5	3,3	4,7	3,8	2,8	2,56
China	2,9	8,9	9,3	9,5	9,0	1,00
Costa Rica	2,9	1,7	2,7	2,6	2,6	2,03
DO**	3,5	2,7	4,2	4,0	3,7	1,58
EAP***	2,9	2,7	1,8	2,4	2,8	2,04
El Salvador	1,3	1,0	3,5	2,5	1,3	0,98
Guatemala	2,8	0,4	1,7	1,3	0,9	0,71
OECD****	2,6	1,8	1,9	1,4	0,8	10,79
Honduras	2,0	0,8	0,8	1,4	1,9	0,53
LAC	2,9	1,0	1,6	1,8	2,2	1,96
Mexico	3,6	0,7	1,7	1,1	0,8	2,38
Nicaragua	0,4	-0,2	1,3	1,4	1,6	0,35
Panama	3,1	2,4	3,0	3,7	5,0	2,52
Peru	1,6	1,3	2,2	3,3	4,7	1,27
United States	2,5	1,7	2,2	1,4	0,6	14,28

* per capita, compared to China (=1); ** Dominican Republic; *** East and Pacific Asia; **** high income countries

Source: own estimates based on WDI (2012).

- This extraordinary historical performance is a result of a long term national systemic strategy implemented with relative coherence fiscal, competitiveness, and employment, industrial, agricultural and other policies in the long run (Wu 2005). Thus, in the "socialist economy with Chinese characteristics" the public sector plays a critical role in its relationship with different forms of markets, and the relationship between private and public firms (Napoleoni 2011, 2012).

- The complex relationship between the public and private sector is critical for understanding current China, and in particular from a Latin American perspective where the public sector and national firms have been massively privatized with the argument of corruption, inefficiency and lack of competitiveness. In the Chinese case, the public sector – understood as the central government, but also provinces, cities, and municipalities, among others – have until 2012 a direct (by ownership) or indirect (by a variety of "incentives") control on China's socioeconomy (OECD 2002; Tejeda Canobbio

2009; USITC 2007). The "omnipresence" of the public sector becomes clearer and more profound studying particular case studies.[12]

- The high degree of pragmatism and flexibility of the highest decision makers in China with the final goal to increase the standards of living of the Chinese population is important from a Latin American perspective. Behind this rather general appreciation there is a profound difference between macroeconomists and a macroeconomic development "fundamentals" – the main decision makers in most of LAC – *vis-à-vis* engineers in China.[13] Such a pragmatic attitude allows to go beyond "conceptual" discussions on growth theory, exchange rate debates, etc. and in which the medium – if either in equilibrium or under conditions of sub or overvaluation, for example – is less important than the final result.

- China, since the beginning of the Revolution in 1949, started a technological upgrading process with long term R&D policies and substantial budgets in the public sector (Feigenbaum 2003; WTO 2010; Rodrik 2006). High capital investments and capital levels are the main source that contributes to growth in the Chinese economy, but the increasing intensity of R&D and innovation in Chinese firms stands out against other international experiences (OECD 2010), particularly LAC.

- Since the beginning of the 21st century, China's integration to the world market has changed substantially: since 2009 China has become the main global exporter, after very high growth rates since the reforms at the end of the 1970s. Nevertheless, the share and relevance of net exports has declined substantially since the end of the 20th century: the contribution of net exports to GDP was very small during 2000–2004 and negative for several years during 2005–2011, i.e. and contrary to the period 1978–2000, since then consumption and capital are the main sources to GDP growth. It is from this perspective and experience – with high levels of savings and investments – that China's 12th Five Year Plan (2011–2015) proposes to deepen this structural change to increase consumption against investments. This proposal has been made several times in LAC, but without the adequate savings and investment rates that allows for such a structural change.

2.3 LAC-China Trade: Concentration or Diversification?

In the most recent period of the LAC-China relationship, trade has been the major factor, and followed only very recently by FDI (Dussel Peters 2012). In this first stage, China has recently become LAC's second major trading partner, and only after the US (Bittencourt et al. 2012; CEPAL 2012).[14] Individually China's presence has increased for all major countries (see Table 2) and, rather surprisingly, even for those in which China does not have even diplomatic ties (such as in most of Central America and the Caribbean). As

a result, China has become the major source of imports in countries such as Paraguay and Chile, and the major export market for Brazil, Argentina and Chile, among others. In Mexico it is its second major trading partner since 2003, and particularly as the result of increasing imports.

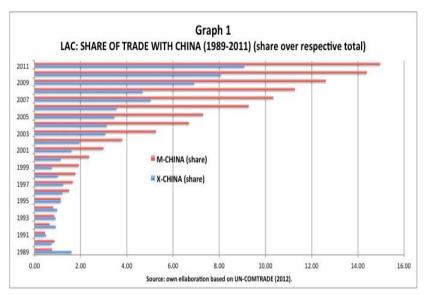**Table 2** Selected Countries of Latin America: China's Importance in Trade (2000 and 2011)

	Exports			Imports		
	2000	**2009**	**2011**	**2000**	**2009**	**2011**
Argentina	6	3	2	4	3	2
Bolivia	18	8	8	7	6	3
Brazil	12	1	1	11	2	2
Chile	5	1	1	4	2	2
Colombia	36	5	4	15	3	2
Costa Rica	26	2	13	16	4	2
Ecuador	120	6	16	129	4	2
El Salvador	44	32	--	21	6	--
Guatemala	44	28	28	17	3	3
Honduras	52	13	--	17	6	--
Mexico	25	7	3	6	2	2
Nicaragua	123	28	19	91	6	3
Panama	27	14	31	22	2	1
Paraguay	13	14	23	3	1	1
Peru	4	2	1	8	2	--
Uruguay	4	2	--	10	3	2
Venezuela	37	3	3	18	4	2

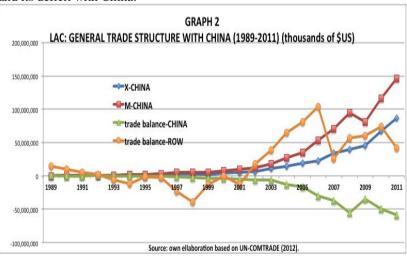*Source:* own calculations based on UN-COMTRADE (2012).

In addition to understand China's increasing presence in terms of trade, it is also relevant to understand that LAC's presence in China has also increased substantially: during 1995–2011 LAC has become China's third most important trading partner – i.e. including exports and imports – with a 6.53% share over China's trade, and only after the United States (12.32%) and Hong Kong (10.03%), and displacing Japan (6.36%) and South Korea (4.04%).

Considering the former tendencies, what are the main characteristics of LAC-China trade until 2011?[15] At least six topics stand out:
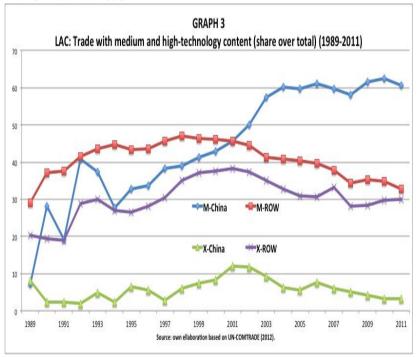
(1) The average annual growth rate (AAGR) of Chinese imports during 2000–2011 accounted for 32.9% to LAC, while exports to China increased by 37.0%; the AAGR of imports and exports to the rest of the world (ROW) were of 8.5% and 9.0%, respectively. This dynamism allowed for a strong growth in China's share over LAC's trade, accounting for 15% of LAC's imports and 9.1% of its exports in 2011, respectively (see Graph 1).

Graph 1
LAC: SHARE OF TRADE WITH CHINA (1989-2011) (share over respective total)

M-CHINA (share)
X-CHINA (share)

Source: own ellaboration based on UN-COMTRADE (2012).

(2) Graph 2 shows additional features of LAC's trade with China. While it is undeniable that LAC's exports to China increased rapidly, so did imports from China. As a result, LAC accounts for an increasing trade deficit with China above $50 billion since 2008, and with the exception of the international crisis of 2009.[16] This regional feature will very probably increase in the future, i.e. LAC will increase its trade surplus with the rest of the world and its deficit with China.
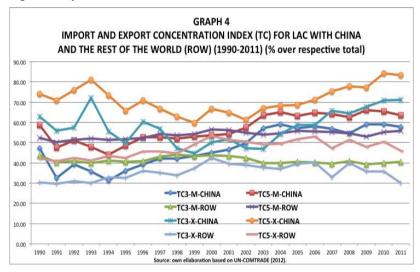

GRAPH 2
LAC: GENERAL TRADE STRUCTURE WITH CHINA (1989-2011) (thousands of $US)

X-CHINA
M-CHINA
trade balance-CHINA
trade balance-ROW

Source: own ellaboration based on UN-COMTRADE (2012).

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(3) LAC's trade with China also reflects an increasing gap between the medium and high-technological[17] imports and exports during 1989–2011. As reflected in Graph 3, the technological level of LAC's exports to China has fallen constantly since 2001 and accounted in 2011 for 3% of total exports, while Chinese medium and high-technology exports to LAC increase constantly their share over total Chinese exports, accounting for more than 60% of LAC's imports from China since 2004. Interestingly, the technology structure of LAC with the rest of the world is very different, with decreasing levels of medium and high-technology level imports and much higher technological levels of exports (of more than 30% of its exports to the ROW since the end of the 1990s, with few exceptions). This structure reflects, and as discussed in the first part of this document, a profound development challenge discussed since the 1950s in LAC and a structure that has reemerged with LAC's trade with China since 2000.[18]

GRAPH 3
LAC: Trade with medium and high-technology content (share over total) (1989-2011)

Source: own ellaboration based on UN-COMTRADE (2012).

(4) The trade concentration index (TC) calculates the main 3 (TC3) and 5 (TC5) chapters of the Harmonized Tariff System over the total respective trade, i.e. in the case of LAC's exports to China, for example, the TC3 calculates the percentage of the main 3 chapters exported to China over total exports to China. Graph 4 reflects a group of tendencies, including: a. through-

out the period the concentration index is much higher – for both, imports and exports – for China than for the rest of the world (ROW), b. LAC's exports to China are extremely concentrated, both for TC3 and TC5; in both cases the index fell during 1990–2000 and increases since then again, in the case of TC5 accounting for 83.37% and against TC5 for ROW of 45.92%, c. similar tendencies can be registered for LAC's imports from China: TC3 and TC5 accounted for 57.63% and 63.44% in 2011, with respect to the same coefficients for the ROW of 40.56% and 55.99%, respectively. These results show, at least statistically and initially, that LAC's trade with China is much more concentrated than with the rest of the world and with an increasing tendency since 2000.

GRAPH 4
IMPORT AND EXPORT CONCENTRATION INDEX (TC) FOR LAC WITH CHINA AND THE REST OF THE WORLD (ROW) (1990-2011) (% over respective total)

Source: own ellaboration based on UN-COMTRADE (2012).

The detailed export and import data for each of the LAC countries during 1989–2011 allows for a profound analysis, which is however not the goal of this paper. In terms of the established goals, two topics are significant.

(5) Differences in the technological content of several LAC countries with China. Table 5 shows the discussed technological gap in LAC's trade with China for a group of selected countries. In general, only two countries show some differences with LAC's average in terms of low technological content of exports to China *vis-à-vis* high technological content of imports coming from China. On the one hand, Costa Rica, which accounts for medium and high-technology content of its exports to China above 90% for several years in the 1990s and 2000s and of 76.57% in 2011, the highest level of the region. This, however, is mainly a result of exports from Intel in Costa Rica, mainly to China and the US (Gitli and Arce 2001). On the other hand, Mexico's relatively high technology content in its exports to China during 1998–2008

and a rapid fall since 2005, which has been analyzed under the "latinoameri-canization of Mexico's exports to China" (Jenkins and Dussel Peters 2009). The other exception is Guatemala, with very low levels of trade with China. Beyond these exceptions, however, there are no important differences in the region in terms of the initially analyzed technology gaps in the LAC-China trade.

Table 3: LAC Medium and High-Technology Content of Trade with China, Share of Total (%) Selected Countries[19] (1990-2011)

Table 3.1: Imports from China (1990-2000 and 2001-2011)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
LAC	28.12	19.14	40.76	37.46	27.76	32.78	33.72	38.22	38.98	41.37	42.95
AR	--	--	--	31.85	32.37	36.25	35.46	40.43	42.50	43.68	47.83
BO	--	--	49.74	40.50	29.49	30.05	29.44	28.28	28.34	26.98	26.00
BR	11.78	14.94	31.24	29.73	22.96	24.35	34.56	37.29	36.63	46.34	51.15
CL	26.10	24.55	22.08	22.07	20.86	20.27	19.83	22.04	21.15	22.03	24.26
CR	--	--	--	--	26.66	24.09	18.83	20.99	24.10	26.73	23.77
GT	--	--	--	17.87	28.09	22.58	21.89	16.77	31.93	16.00	23.93
MX	43.01	16.07	52.65	53.64	32.29	39.29	42.26	50.65	52.37	55.28	53.47
PE	--	--	--	--	31.63	52.41	38.47	36.92	31.65	31.26	34.37
TT	--	5.60	5.25	7.63	5.68	8.38	8.71	13.98	13.05	15.89	15.12
VE	--	--	--	--	1.06	19.51	57.29	51.38	28.73	29.13	27.43

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LAC	45.75	50.04	57.33	60.27	59.68	61.03	59.68	58.20	61.58	62.44	60.70
AR	48.18	31.92	48.80	52.52	51.47	61.41	59.10	52.47	56.19	62.31	62.67
BO	26.20	22.23	25.10	26.67	34.56	39.82	39.51	41.80	39.87	43.68	51.10
BR	48.51	47.12	50.28	56.96	62.80	64.30	60.34	58.33	60.60	59.48	57.39
CL	25.17	28.24	29.99	31.62	35.90	36.77	38.05	36.60	40.37	40.39	42.31
CR	27.71	25.22	25.01	30.56	37.43	36.11	39.76	27.82	35.81	40.21	52.35
GT	27.13	30.01	35.41	24.15	23.84	32.88	23.58	23.68	36.33	35.77	31.00
MX	58.41	64.01	72.80	74.45	72.15	74.13	72.77	72.66	76.43	79.10	76.40
PE	34.67	35.62	42.03	50.98	49.63	47.37	47.11	50.01	54.46	51.35	51.54
TT	18.90	20.77	22.70	22.58	23.93	22.30	26.70	23.63	33.93	34.35	--
VE	38.76	31.03	35.96	43.75	52.07	56.02	65.04	60.52	53.46	54.89	61.36

19 Notes for tables 3.1 and 3.2: AR = Argentina; BO = Bolivia; BR = Brazil; CL = Chile; CR = Costa Rica; GT = Guatemala; MX = Mexico; PE = Peru; TT = Trinidad and Tobago; VE = Venezuela.

Table 3.2: Exports to China, Share of Total (%) (1990-2000 and 2001-2011)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
LAC	2.36	2.23	1.95	4.96	2.21	6.55	5.65	2.89	6.07	7.35	8.33
AR	--	--	--	5.67	2.49	2.57	0.49	0.52	0.79	0.73	1.30
BO	--	--	--	--	0.00	0.00	0.00	17.56	15.22	0.00	0.60
BR	2.01	3.78	2.32	5.56	3.78	12.35	12.23	5.49	4.36	5.20	8.95
CL	0.84	0.18	0.02	0.02	0.00	0.34	0.02	0.37	0.02	0.05	0.05
CR	--	--	--	--	1.28	0.02	2.07	28.62	21.78	9.63	50.54
GT	--	--	--	--	0.00	0.00	0.00	0.00	3.32	28.80	0.02
MX	4.88	0.00	17.86	20.32	0.94	3.39	11.52	17.46	54.16	91.22	66.40
PE	--	--	--	--	0.01	0.00	0.07	0.02	2.99	0.01	0.04
TT	--	--	0.03	0.04	0.37	--	5.84	0.00	0.00	--	0.11
VE	--	--	--	--	0.00	--	0.00	0.00	--	1.45	0.88

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LAC	11.98	11.84	9.15	6.28	5.57	7.58	5.94	5.03	4.09	3.23	3.15
AR	0.62	0.48	0.57	0.71	0.47	0.32	0.26	0.49	0.44	0.26	0.35
BO	0.00	3.81	0.71	0.13	0.00	0.02	0.00	0.00	0.00	0.00	0.00
BR	18.38	11.14	10.44	7.77	6.06	5.51	3.99	4.10	3.25	2.36	2.40
CL	0.24	0.31	0.01	0.01	0.10	0.02	0.10	0.28	0.27	0.05	0.07
CR	71.3 3	91.06	94.45	95.51	96.34	97.42	97.42	96.75	96.16	86.31	76.57
GT	6.75	0.00	0.66	1.63	0.25	3.44	10.03	22.40	3.41	2.30	0.23
MX	62.98	67.66	45.97	62.63	34.03	40.87	40.36	30.13	27.05	27.15	23.62
PE	0.27	0.15	0.08	0.00	0.03	0.03	0.02	0.04	0.01	0.02	0.01
TT	0.80	1.03	7.57	5.83	23.53	16.77	20.03	9.71	15.07	0.60	0.31
VE	0.08	0.66	0.88	0.58	0.39	1.34	--	0.51	0.04	0.18	0.02

Source: Own elaboration based on UN-COMTRADE (2012)[20].

Table 4 LAC: medium and high-technology content of trade with China (share over total respective trade) (1989–2011) (selected countries)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
IMPORTS FROM CHINA											
LAC	28,12	19,14	40,76	37,46	27,76	32,78	33,72	38,22	38,98	41,37	42,95
Argentina	--	--	--	31,85	32,37	36,25	35,46	40,43	42,50	43,68	47,83
Bolivia	--	--	49,74	40,50	29,49	30,05	29,44	28,28	28,34	26,98	26,00
Brazil	11,78	14,94	31,24	29,73	22,96	24,35	34,56	37,29	36,63	46,34	51,15
Chile	26,10	24,55	22,08	22,07	20,86	20,27	19,83	22,04	21,15	22,03	24,26
Costa Rica	--	--	--	--	26,66	24,09	18,83	20,99	24,10	26,73	23,77
Guatemala	--	--	--	17,87	28,09	22,58	21,89	16,77	31,93	16,00	23,93
México	43,01	16,07	52,65	53,64	32,29	39,29	42,26	50,65	52,37	55,28	53,47
Perú	--	--	--	--	31,63	52,41	38,47	36,92	31,65	31,26	34,37
Trinidad y Tobago	--	5,60	5,25	7,63	5,68	8,38	8,71	13,98	13,05	15,89	15,12
Venezuela	--	--	--	--	1,06	19,51	57,29	51,38	28,73	29,13	27,43
EXPORTS TO CHINA											
LAC	2,36	2,23	1,95	4,96	2,21	6,55	5,65	2,89	6,07	7,35	8,33
Argentina	--	--	--	5,67	2,49	2,57	0,49	0,52	0,79	0,73	1,30
Bolivia	--	--	--		0,00	0,00	0,00	17,56	15,22	0,00	0,60
Brazil	2,01	3,78	2,32	5,56	3,78	12,35	12,23	5,49	4,36	5,20	8,95
Chile	0,84	0,18	0,02	0,02	0,00	0,34	0,02	0,37	0,02	0,05	0,05
Costa Rica	--	--	--	--	1,28	0,02	2,07	28,62	21,78	9,63	50,54
Guatemala	--	--	--	--	0,00	0,00	0,00	0,00	3,32	28,80	0,02
México	4,88	0,00	17,86	20,32	0,94	3,39	11,52	17,46	54,16	91,22	66,40
Perú	--	--	--	--	0,01	0,00	0,07	0,02	2,99	0,01	0,04
Trinidad y Tobago	--	--	0,03	0,04	0,37	--	5,84	0,00	0,00	--	0,11
Venezuela	--	--	--	--	0,00	--	0,00	0,00	--	1,45	0,88
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
IMPORTS FROM CHINA											
LAC	45,75	50,04	57,33	60,27	59,68	61,03	59,68	58,20	61,58	62,44	60,70
Argentina	48,18	31,92	48,80	52,52	51,47	61,41	59,10	52,47	56,19	62,31	62,67

Bolivia	26,20	22,23	25,10	26,67	34,56	39,82	39,51	41,80	39,87	43,68	51,10
Brazil	48,51	47,12	50,28	56,96	62,80	64,30	60,34	58,33	60,60	59,48	57,39
Chile	25,17	28,24	29,99	31,62	35,90	36,77	38,05	36,60	40,37	40,39	42,31
Costa Rica	27,71	25,22	25,01	30,56	37,43	36,11	39,76	27,82	35,81	40,21	52,35
Guatemala	27,13	30,01	35,41	24,15	23,84	32,88	23,58	23,68	36,33	35,77	31,00
México	58,41	64,01	72,80	74,45	72,15	74,13	72,77	72,66	76,43	79,10	76,40
Perú	34,67	35,62	42,03	50,98	49,63	47,37	47,11	50,01	54,46	51,35	51,54
Trinidad y Tobago	18,90	20,77	22,70	22,58	23,93	22,30	26,70	23,63	33,93	34,35	--
Venezuela	38,76	31,03	35,96	43,75	52,07	56,02	65,04	60,52	53,46	54,89	61,36
EXPORTS TO CHINA											
LAC											
Argentina	11,98	11,84	9,15	6,28	5,57	7,58	5,94	5,03	4,09	3,23	3,15
Bolivia	0,62	0,48	0,57	0,71	0,47	0,32	0,26	0,49	0,44	0,26	0,35
Brazil	0,00	3,81	0,71	0,13	0,00	0,02	0,00	0,00	0,00	0,00	0,00
Chile	18,38	11,14	10,44	7,77	6,06	5,51	3,99	4,10	3,25	2,36	2,40
Costa Rica	0,24	0,31	0,01	0,01	0,10	0,02	0,10	0,28	0,27	0,05	0,07
Guatemala	71,33	91,06	94,45	95,51	96,34	97,42	97,42	96,75	96,16	86,31	76,57
México	6,75	0,00	0,66	1,63	0,25	3,44	10,03	22,40	3,41	2,30	0,23
Perú	62,98	67,66	45,97	62,63	34,03	40,87	40,36	30,13	27,05	27,15	23,62
Trinidad y Tobago	0,27	0,15	0,08	0,00	0,03	0,03	0,02	0,04	0,01	0,02	0,01
Venezuela	0,80	1,03	7,57	5,83	23,53	16,77	20,03	9,71	15,07	0,60	0,31
LAC	0,08	0,66	0,88	0,58	0,39	1,34	--	0,51	0,04	0,18	0,02
Argentina											

Source: own ellaboration based on UN-COMTRADE (2012).

(6) Table 5 reflects the richness of the trade concentration index – the share of the main 3 chapters in trade with the world and China – for a group of selected countries in LAC. In general, without exception the concentration index is significantly higher in exports to China then for the world. In Brazil, for example, the TC3 for exports to China has been above 60% throughout 1990–2011 and reached levels above 80% since 2010, while its TC3 for exports to the world has always been below 30%, with the exception of 2010 and 2011. In other countries the concentration index for exports is even higher, such as in Argentina, Bolivia and Peru, among others. The concentration index for imports coming from China, however, is significantly lower for the region and all the selected countries. However, also under this heading, import concentration from China is much higher then for total imports (Table 5), without exception of the selected countries. The TC3 for Chinese imports and exports is significantly higher in 2011 for all selected Latin American countries, without exception and reflects the qualitative differences with the rest of the world.

Table 5 LAC: Trade Concentration of the Three Main Chapters
(over respective total) with China (1990–2011) (selected countries)

	1990	1991	1992	1993	1994	1995	1996
TRADE CONCENTRATION, IMPORTS FROM CHINA							
LAC	47,32	32,66	39,35	35,80	31,25	36,08	39,27
Argentina	--	--	--	35,23	33,48	43,35	43,67
Bolivia	--	--	62,64	45,36	28,95	30,32	35,41
Brazil	76,36	73,40	57,29	56,86	47,16	34,71	40,44
Chile	32,99	41,78	41,72	41,85	46,11	43,20	42,36
Costa Rica	--	--	--	--	37,29	27,32	30,50
Guatemala	--	--	--	35,48	40,71	36,89	35,13
México	41,08	34,47	50,95	51,78	38,36	48,58	48,29
Perú	--	--	55,70	--	40,39	41,12	44,40
Trinidad y Tobago	--	39,00	41,24	39,69	35,33	37,31	34,01
Venezuela	--	--	--	--	97,44	60,03	56,71
TRADE CONCENTRATION, EXPORTS TO CHINA							
LAC	62,93	55,89	57,43	72,09	55,46	49,84	60,40
Argentina	--	--	--	63,48	65,27	49,81	73,61
Bolivia	--	--	--	--	100,00	100,00	100,00
Brazil	77,47	68,66	60,28	87,63	87,95	70,84	72,87
Chile	88,23	86,60	82,75	88,65	87,94	86,40	79,43
Costa Rica	--	--	--	--	98,72	99,46	77,31
Guatemala	--	--	--	--	100,00	100,00	100,00
México	65,23	95,41	61,74	52,28	80,79	85,54	64,03
Perú	--	--	99,31	--	98,88	97,35	98,85
Trinidad y Tobago	--	100,00	100,00	100,00	--	100,00	86,41
Venezuela	--	--	--	--	100,00	--	100,00
TRADE CONCENTRATION, IMPORTS FROM THE WORLD							
LAC	43,71	40,05	40,77	39,82	41,07	40,44	40,86
Argentina	--	--	--	48,82	50,21	43,05	44,81

Bolivia	--	--	44,01	40,24	42,02	41,02	38,81
Brazil	51,24	46,83	48,56	45,00	42,46	39,11	42,29
Chile	50,08	43,13	44,76	43,34	42,56	41,77	43,56
Costa Rica	--	--	--	--	29,59	28,56	29,01
Guatemala	--	--	--	39,12	36,48	37,12	37,80
México	35,55	37,34	43,49	44,73	44,13	47,48	47,59
Perú	--	--	38,41	--	38,51	38,57	38,82
Trinidad y Tobago	--	34,07	32,07	40,29	29,57	34,93	40,20
Venezuela	--	--	--	--	40,92	35,85	37,56
TRADE CONCENTRATION, EXPORTS TO THE WORLD							
LAC	30,56	29,74	31,33	30,39	33,27	32,65	36,31
Argentina	--	--	--	31,56	28,62	29,24	33,67
Bolivia	--	--	63,40	55,77	52,51	53,35	44,05
Brazil	27,36	29,79	26,79	26,39	24,71	23,50	23,73
Chile	60,47	54,96	53,35	49,68	49,15	54,66	51,87
Costa Rica	--	--	--	--	50,81	52,36	49,32
Guatemala	--	--	--	44,17	45,12	51,79	45,56
México	59,17	57,07	54,68	54,29	53,59	52,04	54,13
Perú	--	--	52,06	--	50,26	49,43	45,97
Trinidad y Tobago	#DIV/0!	81,97	81,96	75,21	71,03	68,50	73,42
Venezuela	--	--	--	--	84,46	84,63	87,58

	1997	1998	1999	2000	2001	2002	2003
TRADE CONCENTRATION, IMPORTS FROM CHINA							
LAC	42,12	42,06	43,41	45,07	46,49	49,82	57,05
Argentina	45,86	43,66	45,44	48,48	48,86	55,16	61,54
Bolivia	29,97	34,88	37,82	39,32	33,63	32,00	30,77
Brazil	38,76	41,52	52,30	55,12	53,16	54,49	57,43
Chile	41,10	40,46	39,59	39,43	40,46	41,14	41,66
Costa Rica	31,13	36,41	37,10	35,14	31,99	34,63	35,52
Guatemala	34,91	37,64	33,90	27,30	30,16	29,25	34,49
México	55,60	54,63	58,36	56,47	59,08	64,54	73,09
Perú	42,04	36,94	34,50	36,42	36,38	36,84	41,75
Trinidad y Tobago	35,42	30,78	30,45	27,47	28,86	28,70	27,78
Venezuela	71,13	37,15	30,21	35,57	39,78	36,17	34,16
TRADE CONCENTRATION, EXPORTS TO CHINA							
LAC	56,84	47,18	44,71	50,02	51,68	47,26	46,91
Argentina	73,90	62,37	74,12	82,82	87,60	78,22	88,37
Bolivia	100,00	84,62	99,90	94,23	88,97	87,98	92,32
Brazil	65,96	68,38	60,76	61,32	60,79	62,48	62,69
Chile	81,77	71,30	78,20	88,42	82,18	80,74	84,52
Costa Rica	86,46	84,34	81,17	92,38	80,06	91,06	96,25
Guatemala	99,03	96,68	99,01	86,27	79,59	98,93	93,78
México	70,45	86,14	92,69	72,59	69,55	71,45	67,36
Perú	96,06	91,33	98,35	94,95	95,05	95,53	95,27
Trinidad y Tobago	100,00	--	100,00	95,72	95,41	88,03	92,94
Venezuela	100,00	--	60,53	68,55	71,65	73,59	79,14
TRADE CONCENTRATION, IMPORTS FROM THE WORLD							
LAC	42,95	44,09	43,47	43,79	43,65	42,84	40,78
Argentina	47,72	48,85	43,60	43,28	39,27	33,49	36,96

Bolivia	45,74	46,04	44,64	31,30	31,14	34,09	29,99
Brazil	43,36	41,22	44,32	47,45	48,74	46,99	45,57
Chile	43,75	42,71	43,03	44,07	43,00	41,98	43,51
Costa Rica	30,70	39,41	36,62	40,12	41,44	42,44	43,42
Guatemala	34,21	34,30	34,67	35,36	33,27	31,66	33,21
México	47,81	48,68	50,51	52,14	52,34	51,43	49,15
Perú	40,27	37,50	35,95	41,11	38,55	36,05	40,63
Trinidad y Tobago	51,87	45,94	43,96	52,42	54,84	50,12	52,31
Venezuela	44,72	46,48	42,17	40,13	40,52	38,02	32,45
TRADE CONCENTRATION, EXPORTS TO THE WORLD							
LAC	35,42	33,98	37,43	42,51	39,95	39,12	37,92
Argentina	33,45	33,69	31,38	36,51	36,52	36,48	39,16
Bolivia	46,39	43,54	47,01	39,93	50,51	54,63	56,42
Brazil	24,40	25,31	22,18	22,77	21,41	20,52	22,79
Chile	52,95	49,03	49,71	52,17	48,36	48,86	51,32
Costa Rica	42,24	44,34	60,06	52,80	43,17	42,94	48,80
Guatemala	46,39	46,36	41,42	40,89	35,60	41,86	32,37
México	53,69	56,84	59,08	58,84	59,93	58,58	56,83
Perú	43,90	48,54	47,79	45,80	45,26	47,84	49,50
Trinidad y Tobago	69,31	65,90	72,09	80,03	73,67	77,50	83,98
Venezuela	86,31	79,19	88,14	91,40	89,31	88,04	89,67

	2004	2005	2006	2007	2008	2009	2010	2011
TRADE CONCENTRATION, IMPORTS FROM CHINA								
LAC	59,02	57,09	58,07	56,74	54,62	59,17	59,10	57,63
Argentina	62,20	52,79	61,53	60,73	60,71	59,82	62,83	60,45
Bolivia	34,51	33,78	33,48	40,07	42,44	40,44	41,01	43,97
Brazil	58,28	61,54	62,70	58,38	55,97	60,45	58,24	55,28
Chile	41,88	43,45	42,75	43,46	38,51	44,84	42,31	43,16
Costa Rica	36,48	38,14	36,53	39,23	32,34	36,10	40,05	51,17
Guatemala	31,25	30,12	31,79	27,05	26,32	37,98	35,46	29,91
México	74,11	71,28	72,57	72,39	71,71	75,72	77,20	74,27
Perú	48,94	46,95	45,50	46,17	51,00	52,62	48,65	49,55
Trinidad y Tobago	25,56	25,25	26,31	36,55	44,38	42,07	40,41	--
Venezuela	42,25	45,53	51,92	58,09	56,25	50,58	52,41	60,97
TRADE CONCENTRATION, EXPORTS TO CHINA								
LAC	54,27	58,61	58,82	65,80	64,48	67,75	70,86	71,24
Argentina	84,09	85,05	86,07	90,10	90,72	83,00	88,77	87,24
Bolivia	92,42	83,86	92,43	82,42	85,68	95,64	91,71	92,35
Brazil	60,44	60,99	70,90	69,64	74,40	73,82	80,69	81,31
Chile	91,29	92,40	91,73	94,66	91,96	93,35	94,96	93,89
Costa Rica	96,61	97,04	98,20	98,00	97,28	97,28	89,23	87,72
Guatemala	96,52	98,47	87,59	69,08	71,71	81,98	82,88	66,02
México	72,12	48,12	61,15	53,41	61,43	55,50	57,04	63,40
Perú	94,78	94,26	89,20	93,82	92,44	89,77	91,62	91,66
Trinidad y Tobago	56,52	81,66	92,29	87,67	69,58	96,02	85,36	--
Venezuela	84,47	89,24	92,20	--	97,99	93,53	98,68	99,54
TRADE CONCENTRATION, IMPORTS FROM THE WORLD								
LAC	41,07	41,69	41,94	41,52	42,43	41,83	42,74	43,11
Argentina	42,53	44,85	46,60	45,67	43,67	43,74	45,72	44,33

Bolivia	30,33	33,84	37,25	37,43	39,57	38,18	38,86	44,74
Brazil	46,98	48,35	47,93	46,11	46,10	43,44	44,67	45,16
Chile	44,62	48,42	47,85	49,71	49,96	48,15	46,79	49,58
Costa Rica	41,58	46,20	46,78	42,62	43,35	44,06	41,88	41,05
Guatemala	34,38	31,57	39,55	35,10	34,71	34,77	34,36	35,72
México	49,46	48,40	48,01	46,45	45,88	47,99	48,13	47,93
Perú	40,99	42,30	43,12	42,53	42,44	39,84	39,68	40,94
Trinidad y Tobago	50,93	55,71	54,64	52,52	54,88	55,75	50,22	--
Venezuela	38,17	46,40	48,46	49,92	38,21	36,21	42,14	38,67
TRADE CONCENTRATION, EXPORTS TO THE WORLD								
LAC	37,65	40,25	41,01	34,71	41,17	37,85	38,68	33,73
Argentina	36,89	35,22	34,52	32,47	31,60	35,89	33,10	35,07
Bolivia	62,20	67,50	72,73	74,75	77,38	73,78	74,76	78,45
Brazil	24,06	25,67	25,06	24,53	26,97	26,42	32,24	34,88
Chile	60,45	63,12	69,40	70,04	62,76	63,11	68,91	65,40
Costa Rica	44,52	42,70	51,33	49,87	43,64	44,02	44,55	51,24
Guatemala	31,26	37,55	36,89	32,58	30,14	32,44	32,41	31,26
México	55,39	54,32	56,09	57,07	58,16	54,58	55,52	54,57
Perú	53,34	55,12	60,88	59,81	57,54	59,92	61,29	62,32
Trinidad y Tobago	82,02	86,88	89,33	82,35	85,26	86,66	87,20	--
Venezuela	91,00	93,97	97,03	--	96,86	98,28	96,06	59,34

Source: own ellaboration based on UN-COMTRADE (2012).

3. Conclusions

The document attempts to allow for a broad discussion, both theoretically and empirically, on the inequality issue in Latin America and the Caribbean in "space and time," while focusing on a rather new and no longer "secondary" topic of the impact of China in LAC's trade and its effect on inequality.

In the theoretical section, the argument invites the recovery of several concepts of the schools of thought and debates since the 1950s in LAC that are related to different understandings of inequality. Since then, however, there have been several important contributions to understand in more detail the current process of globalization and its effects; i.e. the methodological approaches of global commodity chains and systemic competitiveness, as well as the concept of "territorial endogeneity" are useful for socioeconomic analysis in the 21st century, as well as for a dialogue with the public and private sectors in terms of policies. From this perspective, however, it is not sufficient to use several of the assumptions from Raul Prebisch, for example, specifically regarding his understanding of international relations in the midst of the 20th century and the "core-periphery" relationship, a bias against agricultural and natural resources (and not understanding the potential of segments in commodity chains, including the former), as well as the concept of "structural heterogeneity" and the resulting understanding on equality and inequality, but rather, they require additional reflections and enrichment in space and

time. Thus, LAC today, for example, is much more complex and polarized then in the midst of the 20th century, with segments of value-added chains, households, sectors, whole territories and countries fully integrated to the world market, and vast majorities excluded from these processes. Inequality, from this perspective, is increasingly a process of this "polarization process" in the last part of the 20th century. There is, without a doubt, need for further conceptual elaboration on these topics to understand the concept of "inequality" issue in LAC at the first decade of the 21st century.

The second contribution of this document is to discuss and invite to understand the deep challenges that China is posing to LAC. As discussed in the third section, China in the last three decades and until 2012 has a different understanding of development, also based on the training and specialization of policy makers in China (*vis-à-vis* LAC). A long-term, flexible and very pragmatic perspective, in addition to the critical role of the public sector, are fundamental features of "Maonomics" (Napoleoni 2011) in contrast to a macroeconomic and dogmatic view of a "laissez faire" development in LAC. The qualitative challenge for LAC, however, is not only at the conceptual level, but particularly at the performance level: in the last three decades China has outperformed LAC significantly in most of the existing socioeconomic indicators. The constant question remains: how long can most of LAC continue with these conceptual categories and policies?

The third contribution relates to the quick and dynamic "engagement" between LAC and China, particularly at the trade level since 2000. From this perspective, it is not only relevant to understand the extreme dynamism of this new relationship, but particularly some of its main characteristics. From this perspective, China is not only generating a massive trade deficit for the region as a whole, but also for each of its countries, i.e. a debate of "winners and losers" in the relationship of LAC with China is insufficient for understanding the profound and dynamic impacts of China on each of the countries of LAC. As discussed in the third section of this document, China is exporting massively medium and high-technology products, while LAC's exports to China are declining in their technology content. The last part of this section highlights that LAC's trade with China is also exploding its trade concentration levels, both for exports and imports, i.e. only a few chapters of the Harmonized Tariff System account for most of trade with China.

The latter topic, as discussed in the second section, is worrisome for the issue of equality and inequality in this case, i.e. the increasing concentration of imports and exports in LAC – far beyond overall trade – can increase the levels of socioeconomic inequality in LAC. If we were to expand the currently insufficient stock of case studies of how ownership, territorial structures and firms are profoundly reorganized in their trade with China, the potential impact of this kind of trade is even more portentous for inequality in LAC. It is not "old wine in new bottles," but rather substantial changes

and shifts that have occurred within LAC as a result of its relationship with China, that will be followed by FDI and other firm-level strategies, and in turn which will require a response at all levels in order not to deepen socio-economic inequality and unsustainability in the region.

NOTES

1. I wish to thank very much the desiguALdades.net network for its support during my research stay at the network's facilities at the Freie Universität Berlin in June and July of 2012. The results of the research are of my own responsibility.

2. Since then – and until the 1970s in particular – there was a wide debate on development theory continuing this discussion, with authors such as Lewis, Rosenstein-Rodan, Albert O. Hirschman and later Eduardo Fajnzylber, among others. In several of these cases, the respective authors highlighted issues such as the underdevelopment of labor markets, balance of payment and current account limitations and bottle-necks, financing, innovation and production, among others, as well as different kind of "gap models" related to trade and the current-account (Dussel Peters 2000; Ros 2000).

3. "It is worth remembering that during the past two decades, talking about active industrial policy conducted by the State was a virtual anathema in the development lexicon that prevailed under the Washington Consensus. Talking about equality was, too" (CEPAL 2012: 18).

4. "The vision of equality as a guiding principle and direction means spreading capacity-building, job opportunities and access to social benefits and safety nets throughout the fabric of society" (CEPAL 2012: 14).

5. There are, however, significant differences in income elasticities of exports depending on their technology intensity: in Mexico and Brazil, for example, income elasticity of exports was of 0.75 and 0.92 for 1962–2008 and of 2.15 and 1.89 for high-tech products (CEPAL 2012).

6. The former aspects are not only relevant from a theoretical perspective, but have crucial effects from a territorial perspective of competitiveness – territories from this perspective are function depending on the specific GCC and can refer to a municipality or town or a group of countries such as NAFTA-for socioeconomic development in the current process of globalization. Trade, industrial and business policies, from this perspective, require to integrate a global and territorial perspective that includes the particularities of the segments at the respective territorial level: its integration to specific GCC that determines their socioeconomic characteristics re-garding specific products and processes, the type and size of the firm, as well as the industrial specificity, financial needs, technology, R&D, training, orientation (domestic market and/or exports), upgrading, etc. Policy proposals for competitiveness and their respective instruments should explicitly start from these points and "glocal" perspective to enrich discussions and debates within the academic sector, but also together with the private and public sectors.

7. For a full discussion see: Dussel Peters (2000) and Dani Rodrik (2001).

8. One of the most traditional indicators for trade-concentration is the Herfindahl-Hirschmann index, defined as the square root of the sum of the squared shares of exports of each industry in total exports for the region (Samen 2010).

9. There has been a long and ongoing debate on the relationship between country size, trade concentration and the effects on economic development and dependence on trade (Khalaf 1974). More recently, several authors (Al-Marhubi 1998; Piñeres and Ferrantino 1997) have presented economic results addressing a positive association for 91 countries for 1961–1988 for GDP and export diversification (towards manufacturing products).

10. The analysis of Helpman, Itskhoki, Muendler and Redding (2012), for example, examines the trade-wage relationship for Brazil with micro-level information.

11. Based on the World Development Indicators (WDI 2012), the cases of Brazil and Mexico are paradigmatic: the Gini coefficient was of 57.93 and 46.26 at the beginning of the 1980s, increased during the 1980s, fell during the 1990s and is, at the end of the 2000s, at 54.69 and 48.28, i.e. at similar levels as 3 decades ago.

12. Such is the case, for example, for specific value-added chains (such as yarn-textile-garment, electronics or the autoparts-automobile chains), but also trade, foreign direct investments and other concrete topics in which the public sector in this complexity is crucial (Bittencourt et al. 2012; Dussel Peters 2012a).

13. Eugenio Anguiano Roch (2012) examines for example how out of the main 9 members of the Permanent Committee of the Political Bureau (PCPB) of the Central Committee of the 17th Congress in 2007 only 1 (Li Keqiang) was a lawyer and economist, while the rest were engineers, chemists and geophysics.

14. If we do consider the European Union as a single trading partner, China will displace the EU before 2020 (CEPAL 2012).

15. The source of export and import value is UN-COMTRADE (2012). Additionally it is important to highlight that LAC and its respective countries were defined as the source of imports and exports (and contrary to China). In the case of LAC and particularly Mexico, there are wide statistical differences in trade information.

16. China's contribution to LAC's trade, however, was lower than expected for 2000–2011, i.e. of 21.88% of its imports and 13.47% of its exports. This issue is significant and should be analyzed in depth in the future, since these low coefficients could be a result of trade substitution with other countries, i.e. LAC's exports to China increase but fall for other countries (for example to the US and/or to the EU).

17. Medium and high-technological chapters of the Harmonized Tariff System were defined as those under chapters 84–90.

18. Initial findings (Bittencourt et al. 2012) show that intra-Latin American trade has a relatively high share of manufacturing and intraindustrial trade which has been increasingly displaced by China's exports, such as in the case of Argentina-Brazil since the late 1990s.

19. Notes for Tables 3.1 and 3.2: AR = Argentina; BO = Bolivia; BR = Brazil; CL = Chile; CR = Costa Rica; GT = Guatemala; MX = Mexico; PE = Peru; TT = Trinidad and Tobago; VE = Venezuela.

20. Source applies for Tables 3.1 and 3.2.

21. Notes for Tables 4.1 to 4.4: AR = Argentina; BO = Bolivia; BR = Brazil; CL = Chile; CR = Costa Rica; GT = Guatemala; MX = Mexico; PE = Peru; TT = Trinidad and Tobago; VE = Venezuela.

22. Source applies for Tables 4.1 and 4.2.

23. A group of studies of soybeans in Argentina, consumer electronics, mining/steels sectors in Brazil, PC industry in Mexico, copper and shoe and leather in Chile, among others, and all related to China (see Cuadernos de Trabajo del Cechimex), suggest that rapid trade with China is also concentrating the ownership structure and backward and forward linkages in the respective countries.

REFERENCES

(2011), *Anuario estadístico de América Latina y el Caribe. Estadísticas sociales 2010.* Santiago de Chile: CEPAL.

Al-Marhubi, Fahim (1998), "Export Diversification and Growth: An Empirical Investigation," *Applied Economics Letters* 7: 559–562.

Amin, Samir, Charles Bettelheim, Emmanuel Arghiri, and Christian Palloix (1971), *Imperialismo y comercio internacional. El intercambio desigual*. México, D.F.: Siglo XXI.

Arroyo Abad, Leticia, and Amelia U. Santos-Paulino (2009), "Trading Inequality? Insights from the Two Globalizations in Latin America," *UNI-WIDER Research Paper* 44.

Bair, Jennifer, and Enrique Dussel Peters (2006), "Global Commodity Chains and Endogenous Growth: Export Dynamism and Development in Mexico and Honduras," *World Development* 29(11): 203–221.

Bittencourt, Gustavo (ed.), Enrique Dussel Peters, Celioand Hiratuka, and Martha Castillo (2012), *El impacto de China en América Latina: comercio e inversiones*. Montevideo: Mercosur.

Economic Commission for Latin America and the Caribbean (CEPAL) (1990), *Productive Transformation with Equality*. Santiago de Chile: CEPAL.

Cardoso, Fernando, and Enzo Falleto (1969), *Dependencia y desarrollo en América Latina*. México, D.F.: Siglo XXI.

Costa, Sérgio (2011), "Researching Entangled Inequalities in Latin America. The Role of Historical, Social, and Transregional Interdependencies", *desiguALdades.net Working Paper Series* 9, Berlin: desiguALdades.net Research Network on Interdependent Inequalities in Latin America, online: http://www.desigualdades.net/en/Working_Papers/index.html.

Santos, Teotonio dos (1970), *Imperialismo y dependencia*. México, D.F.: Era.

Dussel Peters, Enrique (2000), *Polarizing Mexico. The Impact of Liberalization Strategy*. Boulder, CO: Lynne Rienner.

Dussel Peters, Enrique (2008), "GCCs and Development: A Conceptual and Empirical Review," *Competition and Change* 12(1): 11–27.

Dussel Peters, Enrique (2013), "La economía china desde la crisis internacional en 2008: estrategias, políticas y tendencias," *Economía UNAM* 10(28): 53–69.

Dussel Peters, Enrique (2012a), "Chinese FDI in Latin America: Does Ownership Matter?," *GDEA Working Paper* 33: 1–22.

Dussel Peters, Enrique (2012b), "The Autopart Parts-Automotive Chain in Mexico and China. Co-Operation Potential?," *The China Quarterly*(March): 82–110.

Esser, Klaus, Wolfgang Hillebrand, Jörgand Meyer-Stamer, Dirk Messner (1994), *Systemische Wettbewerbsfähigkeit. Internationale Wettbewerbsfähigkeit der Unternehmen und Anforderungen an die Politik.* Berlin: German Development Institute.

Feigenbaum, Evan A. (2003), *China's Techno-Warriors. National Security and Strategic Competition from the Nuclear to the Information Age.* Stanford, CA: Stanford University Press.

Gereffi, Gary, and Miguel Korzeniewicz (1994), *Commodity Chains and Global Capitalism.* Westport, CT: Praeger.

Gitli, Eduardo, and Randall Arce (2001), "El ingreso de China a la OMC y su impacto sobre los países de la Cuenca del Caribe," *CEPAL Review* 74: 87–107.

Gutiérrez de Piñeres, Amin, and Michael Ferrantino (1997), *Export Dynamics and Economic Growth in Latin America.* Burlington, VT: Ashgate.

Helpman, Elhanan, Oleg Itskohi, Marc-Andreas Muendler, and Stephen J. Redding (2012), "Trade and Inequality: From Theory to Estimation" NBER Working Paper Series 17991.

Hirschman, Albert O. (1958), *The Strategy of Economic Development.* New Haven, CT: Yale University Press.

Humphrey, John, and Hubert Schmitz (2004), "Governance in Global Value Chains," in Hubert Schmitz (ed.), *Local Enterprises in the Global Economy.* Cheltenham: Edward Elgar, 95–109.

Jenkins, Rhys, and Enrique Dussel Peters (2009), *China and Latin America. Economic Relations in the 21st Century.* Bonn/México: GDI/CECHIMEX/UNAM.

Khalaf, Nadim G. (1974), "Country Size and Trade Concentration," *The Journal of Development Studies* 11(1): 81–85.

Lester, Richard, and Michael Piore (2004), *Innovation. The Missing Dimension.* Cambridge, MA: Harvard University Press.

Mesopartner (2008), *Milestones in a Process of Innovation, Change and Development.* Germany/Argentina: Mesopartner.

Messner, Dirk (2002), "The Concept of the 'World Economic Triangle:' Global Governance Patterns and Options for Regions," *IDS Working Paper* 173: 1–99.

Meyer-Stamer, Jörg (2001), "Was ist meso? Systemische Wettebewerbsfähigkeit: Analyseraster, Benchmarking-Tool und Handlungs rahmen," *INEF-REPORT* 55.

Meyer-Stamer, Jörg (2005), *Systemic Competitiveness Revisited. Conclusions for Technical Assistance in Private Sector Development.* Duisburg: Mesopartner.

Napoleoni, Loretta (2011), *Maonomics. Why Chinese Communists Make Better Capitalists than We Do?* Crawley, Western Australia: UWA Publishing.

Napoleoni, Loretta (2012), "The Chinese Miracle. A Modern Day Industrial Revolution," *Cuadernos de Trabajo del Cechimex* 1: 1–16.

Ocampo, José Antonio (2001), "Raúl Prebisch and the Development Agenda at the Dawn of the Twenty-first Century," *CEPAL Review* 75: 23–37.

Organization for Economic Co-operation and Development (OECD) (2002), *China in the World Economy. The Domestic Policy Challenges.* Paris: OECD.

Organization for Economic Co-operation and Development (OECD) (2010), *OECD Economic Surveys. China.* Paris: OECD.

Prebisch, Raúl (1964), *Nueva política commercial para el desarrollo.* México, D.F.: Fondo de Cultura Económica.

Rodrik, Dani (2006), "What Is so Special about China's Exports?," *NBER Working Paper Series* 11947.

Rodrik, Dani (2001), *The Global Governance of Trade as if Development Really Mattered*. New York: UNDP.

Ros, Jaime (2000), *Development Theory and the Economics of Growth*. Ann Arbor, MI: University of Michigan Press.

Samen, Salomon (2010), "A Primer on Export Diversification: Key Concepts, Theoretical Underpinnings and Empirical Evidence," *Growth and Crisis Unit-World Bank Institute* 1–23. Mimeographed.

Tejeda Canobbio, Enrique (2009), *Instituciones transicionales en China. El caso de la industria electrónica (1980-2008)*. PhD Thesis, Graduate School of Economics, National Autonomous University of Mexico.

United Nations-Commodity Trade Statistics Database (UN-COMTRADE) (2012), *UN-COMTRADE*, at: http://comtrade.un.org (last accessed 15/02/2013).

United States International Trade Commission (USITC) (2007), *Description of Selected Government Practices and Policies Affecting Decision Making in the Economy*, *USITC Publication 3978*.

Vázquez Barquero, Antonio (2005), *Las nuevas fuerzas del desarrollo*. Madrid: Antoni Bosh Editor.

World Development Indicators (WDI) (2012), *World Development Indicators*. Washington, D.C.: World Bank.

Wu, Jinglian (2005), *China's Long March Toward a Market Economy*. Shanghai: Shanghai Press and Publishing Development Company.

World Trade Organization (WTO) (2010), *Trade Policy Review. Report by the Secretariat*. Geneva: WTO.