



**LUND UNIVERSITY**  
School of Economics and Management

**Master in Economic Development and Growth**

**The South goes East:  
Panel data research on Latin American growth versus trade  
with China**

**Alexandra Vigh**

[alexandra.vigh.386@student.lu.se](mailto:alexandra.vigh.386@student.lu.se)

*Abstract:* China is increasingly shifting attention to other developing continents, recently particularly towards Latin America. Trade between the Asian giant and Latin America has exponentially grown in the last decade; however, the question arises whether trade cooperation, the exports of mainly primary commodities or related manufactures and the import of manufactures, is beneficial for the Latin American economies. Has the growing trade already impacted Latin American growth figures? Are there other reasons behind growth? A dynamic panel data model is used for studying the direct exporting and importing effects of China on the growth of Latin American economies from the period 2001 to 2010. According to the results, there is strong evidence on growth momentum in Latin America as well as on the importance of investment in the growth of the countries. Exports to China do not enhance growth unconditionally; however, exporting oil to China might support growth. Further evidence highlights that imports of manufactures could positively impact growth. Though, trade with advanced partners do not have significant impact on Latin American growth despite their large shares in total trade.

*Key words:* Latin America, growth, China, primary commodity, manufactures, trade

**EKHR92**

Master thesis (15 credits ECTS)

June 2012

Supervisor: Martin Andersson

Examiner: Astrid Kander

## Table of contents

<b>1.</b>	<b>Introduction .....</b>	<b>2</b>
<b>2.</b>	<b>Literature review .....</b>	<b>5</b>
2.1.	Debate on primary exports and manufactured imports versus growth.....	5
2.1.1.	Natural resource exports.....	5
2.1.2.	Export concentration and growth by destination .....	7
2.1.3.	Imports versus economic growth.....	8
2.2.	Latin America in focus.....	9
2.2.1.	Short review of economic history .....	9
2.2.2.	Effects of China on Latin America .....	12
<b>3.</b>	<b>Trade between China and Latin America .....</b>	<b>14</b>
3.1.	Exports .....	18
3.2.	Imports .....	20
3.3.	Latin American trade with other partners.....	22
<b>4.</b>	<b>Empirical Analysis .....</b>	<b>23</b>
4.1.	Data and Methodology .....	23
4.2.	Results of the estimations .....	27
4.2.1.	Correlations.....	27
4.2.2.	GMM estimations.....	31
4.3.	Summary of results contrasting to findings of Balamoune-Lutz (2011).....	41
<b>5.</b>	<b>Concluding remarks.....</b>	<b>43</b>
	Appendices.....	45
	Appendix 1. List of countries for the estimations.....	45
	Appendix 2. Variable description.....	45
	Appendix 3. Summary statistics of the variables.....	46
	Appendix 4. Gross Fixed Capital Formation for selected regions and economies, period 2001-2010, in percentage of GDP.....	46
	Appendix 5. Average GDP per capita in selected Latin American economies, for the period 2001-2010, in percentage. ....	47
	Appendix 6. Average GDP growth rates in selected Latin American economies, for the period 2001-2010, in percentage. ....	48
	References .....	49

## 1. Introduction<sup>1</sup>

Developed economies have long traded with the developing continents of Latin America and Africa, whereas as China emerges to be a global economic power it is rapidly expanding trade with the two continents. China's rise as the manufacturing hub of the world and therefore, as well the consumer of primary commodities has outreaching effects on the global economic and geopolitical scene. Joining the World Trade Organization in 2001 lowered trade barriers and significantly increased its trade with Latin America. China, the country with double-digit growth figures since 2005, has more firmly recovered in the aftermaths of the financial crisis of 2008-2009 than advanced economies and has since hit double-digits growth figures again. While advanced economies supplying manufacturing exports to global markets were severely affected, many of the resource rich countries managed to cope with the financial crisis (Sinnott et al., 2011). Latin American recovery was significantly supported by demand for the primary commodities from emerging markets, most crucially China. Debate arises whether emerging trade relations with China could be the change for these countries or would only create a further lock-in situation to be the source of primary products. What role China could play in the economic life of Latin American countries?

As from Africa and Latin America mostly raw materials and, from the latter additionally manufactures resting on natural resources are exported to China to meet the needs of rising domestic demand (Hogenboom, 2009), whereas from China manufacturing goods are imported to these two regions questions have arisen whether in terms of growth and development this cooperation is fruitful for Latin American countries partnering China.

As the Chinese economy is still far away from being a developed one, there is certainly need for further raw materials for the growth of the economy which ensures that the Chinese demand for primary commodities from nor Latin America or Africa will substantially decrease or stop in the coming future (Baliamoune-Lutz, 2011). However, as the global market destinations for raw materials increasingly shift from the developed world to the emerging economies the debate arises whether there are different effects on the exporter country's growth between the differing destinations. This research is in line with the growth by destination thesis, which highlights that it

---

<sup>1</sup> I am grateful to my supervisor, *Martin Andersson*, for the guidance and encouragement. I would like to thank my *Friends* for their invaluable comments and the MEDEG Program for financing my postgraduate study. This thesis would not have been possible unless the love and lifetime support of my *Family*. Errors and omissions are my sole responsibility.

does matter for the exporter where the destination of the products is. On the other hand, as a vital trading partner, China has also emerged as a source of manufacturing imports and with the transformation of import markets previously served by advanced economies the effect of Chinese imports on the importer's growth might be also differing than importing from elsewhere.

However, as South-South cooperation evolves Latin American countries should ensure benefits for the domestic economy from the investments and the dynamically growing trade relations and China's presence in the region. McMillan and Rodrik (2011) show that labour in Latin-America since 1990 has been moving out of manufacturing to low labour productivity sectors of agri-food and mining and therefore, the structural change have "been growth reducing". Latin America has traditionally been dependent on Western foreign powers that often used the resources without creating positive spill over to the host economies. The support coming from China for enhancing South-South cooperation in the last decade has been important for Latin America (Hogenboom, 2009). The "Global South" could potentially also mean limiting the influence of the US on Latin American countries in economic life and policy making such as the case of the free trade advocated by the Washington Consensus.

In light of this discussion, the topic of Sino-Latino economic cooperation and its effects on the latter countries have become one of the focal areas of research institutions dealing with Latin American studies such as the Economic Commission for Latin America and the Caribbean of the United Nations (ECLAC). A number of publications emphasize the need for cooperation between Asia and Latin America, however, as highlighted by ECLAC (2010) and Jenkins (2010) the empirical evidence of the effects of China on Latin America is rather limited, particularly there is a serious lack of empirical works on imports.

According to Jenkins (2010), the Chinese effect can be examined from the aspects of foreign direct investment and trade, both creating direct and indirect effects. Through trade the aspects are the following: market growth of exports to China, the effects of imports from China, exports of countries to third markets and increased commodity prices. The first two issues of trading with China, which are the major focus for this thesis, have direct effects on the local economy. Expanding exports of primary commodities, raw materials to China includes both positive and negative effects such as the benefits to the exporter country in terms of foreign revenue and technology enhancement, or the employment effect of the structural shift back to the primary sector which is unable to accommodate the excess labour supply. Imports of largely manufactured goods from China, on the one hand, increase competition to local producers particularly in the

largest economies for instance in Brazil, however, also mean potential gains for business due to cheaper access to capital goods and for consumers from lower prices and greater variability.

Trade effects of China from the aspects of increasing primary commodity exports and related manufactures, and growth of manufactured imports from China in the context of Africa has been recently studied by Balamoune-Lutz (2011). In this paper this model will be adapted for studying the direct trade effects of China from 2001 to 2010 on the growth of 19 Latin American economies – which will be referred to as Latin America as these economies account for more than 93 percent of the GDP of the region. As a result, this thesis aims to contribute to the discussion on three separate issues: a) whether empirics support the growth by destination hypothesis and see if exporting to China has a different importance than to advanced economies in the growth of Latin American countries; b) whether export concentration indicated by interaction terms in the model affects growth figures negatively as suggested by many authors; and finally, c) whether the effect of Chinese manufacturing imports is positive to growth in the importer Latin America countries.

The time frame spans from 1990 to the latest available data of 2011 to focus on the recent two decades of exponentially growing trade relations with China. However, for the empirical modelling only from the year of 2001, the participation of China in the WTO till 2010 will be utilized due to the data availability. To model the growth of the countries dynamic panel data framework and GMM estimations will be used. The main contribution of this paper lies in the timeframe as it covers the period of the exponential trade expansion and import boom since 2003. The results of the paper, therefore, could contribute to the discussion on a very recent phenomenon.

The paper is organized as follows: after the Introduction, Section 2 embraces the literature on a wide-range of debates in order to highlight the complexity of trading with China. Covered areas will be natural resources *vis-à-vis* growth, export concentration, growth by destination and imports of manufactures along with a background on Latin American trade policies and the terms-of-trade debate. Section 3 aims at introducing Latin American trade relationships with China since the period 1990 contrasting to other trade partners. Section 4 is designed to highlight the methodology and guide the reader through the results while contrasting to findings of Balamoune-Lutz (2011). Finally, Section 5 concludes.

## 1. Literature review

The thesis quests to find evidence on the effects of trade with China on Latin American growth; therefore, it is required to review literature in a number of related discussions. Firstly, the debate on the role of natural exports is highlighted versus economic growth, followed by a review on export concentration, the hypothesis of growth by destination and the importance of imports in growth. Finally, with Latin America in focus the Chinese effect on Latin America will be discussed and in order to better understand the recent trade developments of the last decade a historical background on industrial and trading policies of the region is presented.

### 1.1. Debate on primary exports and manufactured imports versus growth

#### 1.1.1. Natural resource exports

In the early 1950s Prebisch and Singer – under debate whether independently - came up with the theory that primary commodity exports are hindering the development of countries particularly studied in the Latin American context as there was a deteriorating terms of trade effects vis-à-vis countries exporting manufactured goods (Toye and Toye, 2003). According to the hypothesis, for underdeveloped countries the road is to industrialize and therefore, diversify the production and exports of goods away from primary products if they intend to overcome uneven development present in the world economy (Obokoh and Ehiobuche, 2011). Furthermore, this line of thought would also imply that trading in manufacturing sector creates much higher positive spillovers to the domestic economy than specializing in the trade of natural resources (Rocha, 2010). According to Rocha (2010), the Dutch disease theorists further focus on this aspect and claim that positive spillovers from tradable manufacturing originate from the learning by doing which is not present in the case of primary commodity sectors. Decades following the thesis empirical development economics research have supported the original hypothesis with emphasizing on the “curse of natural resources” and that resource-rich countries fail to achieve export-led growth (Sachs and Warner, 1995, 1999, 2001). However, it is important to note that using cross-sectional empirics as employed by Sachs and Warner in several studies may hide the endogeneity potentially present between resource abundance and growth variables (Rocha, 2010). Furthermore, as Wright and Czelusta (2007) highlight these regressions are also “subject to bias” as the natural resource dependence variables might act as proxies for the lack of development given that a country does not productively employ the resources. Therefore, recently a number of studies using panel data regressions have examined and questioned the validity of the Prebisch-Singer argument. Rocha (2010) finds, using a panel data covering the period of 1970 to 2000 and more than 65 countries,

that exports of natural resources do create positive spillovers for the economy at least “as high as the manufacturing sector” added to the result that the exporting sector also embraces higher productivity than the domestic one. The author, furthermore, adds that the below average growth performance of some resource rich countries is possible due to the slow growth of exports of natural resources rather than the resource itself, though, the paper does not attempt to discuss the case of extreme export concentration. Wright and Czelusta (2007) stress the evidence of the US where the successful expansion of the natural resource industries such as copper and their productivity growth was supported by the technological progress and adaptation and discoveries from the mid-19<sup>th</sup> to the mid-20<sup>th</sup> century.

Additionally, the demand boom for primary commodities flourished since 2003 potentially further supports opposing views to the Prebisch-Singer hypothesis. Collier and Goderis (2007) by employing a panel data cointegration analysis find that once the commodity booms and their long-run negative effects are controlled for, resource abundance –in non-agricultural commodities as in the case of agricultural goods no long-run negative effect has been identified- itself positively influences the growth rates on average between countries. Furthermore, countries with good institutions are able to completely offset and avoid these long-run negative effects.

In light of this evidence, it is important to take into consideration two different aspects, the recent commodity boom and the state of institutions in Latin America. The third boom of commodity prices began in 2003 and so far despite a short decline during the financial crisis in 2008 the boom carries on building on large demands coming from emerging markets. The role of China is evidently the case as its import growth alone between 2000 and 2008, 2009 has accounted for 113 and 125 percent of the global copper and iron ore import growth respectively (Radetzki, 2010). While in 2001 15.7 percent of global refined copper consumption was attributed to China, a figure slightly below of corresponding US data 17.8 percent, by 2010 the share of China has grown to almost 40 percent whereas advanced economies including the US have dramatically reduced their consumption shares (Cochilco, 2011). Concerning the state of institutions in Latin America from the database of the World Governance Indicators (2011) it becomes clear that the region in aggregate is the highest ranked developing continent and countries belong to the highest 50-75 percentile with the exception of Colombia in some and Venezuela in all the indicators. This is a major contrast to Sub-Saharan Africa where aggregate figures show percentile ranks close to 25 and among are the worst institutional quality performers. Therefore, this difference when contrasting the empirical evidence should be highlighted between the two continents.

### 1.1.2. Export concentration and growth by destination

Export concentration, which refers to the sectoral distribution of goods in the export basket, is a further debated concept in terms of its effects on growth of the exporting countries as in most cases it is referred to high share of primary commodities in the exports. Balamoune-Lutz and Ndikumana (2007) have showed, for instance, that in the case of Africa export concentration has a positive effect on growth which the authors interpret as the oil export boom. Nevertheless, openness and concentration in interaction seems highly significant and negative indicating that resource booms cannot sustain high growth on the long-run. In more open economies export diversification is found to have significant positive impact on economic growth. Diversification is emphasized as it could potentially decrease vulnerability of a country in terms of price volatilities and weather conditions for primary commodities. Nevertheless, at high trade openness good institutions are vital in ensuring gains from trade confirming the view of Collier and Goderis (2007). For instance, through good institutions investment activities following trade expansion could enhance local growth, as well as they can play key role in supporting economic stability in case of a resource boom. Githinji (2010) analyses trade between Africa and the Gulf states and emphasizes that the increase of comparative advantage for both partners is through the exports to closer destinations as this is a form of export diversification. The paper highlights “diversification at two levels”. One is concerning the number of products in the export basket as previously discussed, while the second level is about the number of partners. Both are used in order to increase the ability to offset economic downturns in different areas of the world and in international prices. Particularly, in the case of developing countries, diversification in the second level is also an important aspect to consider.

This coincides with the hypothesis that apart from what a country exports the destinations of the exports might also matter for the growth of the exporter. This is referred to as the growth by destination hypothesis by Balamoune-Lutz (2011). Destinations could be thought of as individual countries such as the case with the US or China, due to their sheer sizes of the economy. However, one can also consider groups: whether the destinations are advanced economies or other developing countries, high income or dynamically growing economies. This is the basis of the claim that emerging trade with China might be different from other countries due to considerations such as the sheer market size or the continuous industrialization effort of the Asian giant that requires resources. In light of the above, Balamoune-Lutz (2011) studies whether exports to China are growth enhancing in African economies particularly if exports are



concentrated. The author also includes in the Arellano-Bond GMM estimations variables to measure the exports to OECD countries, in order to examine whether in the case of African countries ii matters what the destinations of the goods are. According to the results between exports to OECD and African growth “there is an inverted U-relationship” which implies that above a limit exports are negatively impacting on growth. Therefore, trade with more advanced nations on average are growth-enhancing in African partners unless the country reaches very high export concentration in primary commodities. Meanwhile, no unconditional positive effect of exports to China has been noted but countries with higher export concentration seem to benefit more. This shows that trade benefits might greatly differ between destinations. Finally, the author finds strong evidence for the positive role of imports from China on African growth confirming results of Maswana (2009).

### **1.1.3. Imports versus economic growth**

As the above evidence as well suggests, not only exports but imports can also be potentially important for growth. Maswana (2009) highlights that based on cointegration and causality results there is no evidence for export-led growth hypothesis in the case of any African countries, however, for South Africa and Kenya there is some evidence on import-led growth particularly arising from the imports of capital goods. Cheaper access to machinery for Latin American companies in theory can offer a lot of advantages for the domestic business sector. Lee (1995), originally, studies the question whether capital goods imports are important for growth and finds for the period 1960 to 1985 using an endogenous growth model that smaller, especially developing countries can benefit from importing capital goods. They even grow faster due to the cheaper access to machinery which produces large benefits in the production of consumer goods. The paper also highlights that foreign components for investment are good for growth as more efficient and cheaper machinery can increase capital accumulation efficiency and hence, income growth. Nevertheless, López and Thirlwall (2006) note that trade liberalization in Latin America and effect of imports on import-competing sector has been large in terms of decreases in employment and wages, whereas Goldberg and Pavcnik (2004) denote that due to the capital goods imports demand for schooling and skills have increased in developing countries. This claim suggests that the role of education and training needs to increase in many Latin American countries if they want to be competitive. Also, based on the above considerations imports could potentially indirectly affect inequality particularly through wages. Nevertheless, as will be discussed

in the next section, inequality in many countries of the region has been improving particularly in the recent decade.

Micro studies conducted in Africa have shown the adverse affects of the Chinese import competition on local manufacturers. Gebre-Egziabher (2007) studies footwear producers in Ethiopia and finds that as a result of the distinguished quality, price and design of the Chinese imports many firms need to restructure, close down or downsize the production. As a policy implication, therefore, the authors stress on the need for cooperation between businesses and government in order to facilitate advancements for instance in technology, quality control and training of workers to cope with the increasing foreign competition. Elu and Price (2010) analyze the same question and examines whether the increasing Chinese imports to Sub-Saharan Africa enhance technology transfer and therefore, total factor productivity (TFP) growth of local manufactures. According to the results, TFP in general is not statistically significantly affected by more trade openness to China. Moreover, as TFP at firms' level is not impacted by trade with China, the trade cooperation is not a source of long-run growth in living standards. Nevertheless, the analysis only focuses on China, whereas the impact of other trade partners could be also investigated.

Overall, Jenkins (2010) highlights that the increasing competition to local manufacturers concerning trade with China is a very sensitive topic in many countries of Latin America, nevertheless, empirical studies in this field do not cover the recent surge of imports from 2003 (as Figure 1. as well reveals), therefore, there is a need to research on its effects. Nevertheless, as exports could be examined from the point of view of destinations, we could also see whether there are differences based on the origins of the imports. However, based on the claim of Fischer (2010) as more than half of the exporting companies in China are foreign owned and its products are rather part of a global value chain we would rather expect no major differences between advanced partners and China.

## **1.2. Latin America in focus**

### **1.2.1. Short review of economic history**

The US has been a major trade partner and largest receiver of Latin American exports by already the aftermaths of the Second World War and the start of import substitution period in the early 1950 - significantly influenced by the Prebisch-Singer thesis. Europe joined in to be a major

importer of goods from Latin America during the recovery period. Most of the Latin American large economies began the strategy of export promotion by the mid-1960s and gradually reoriented from import substitution (ISI) policies (De Paiva Abreu, 2006). While reduction of domestic market protection was rather slow, exporters were encouraged by export subsidies in various sectors. Nevertheless, smaller economies such as Peru and countries in the Caribbean were facing difficulties in diversifying exports, followed ISI strategy also during the 1960s notwithstanding market size disadvantages. Fischer (2010) emphasizes that as a consequence of the large needs to import for persuading the ISI policies a foreign exchange gap have increased also calling for the urgency of foreign financial help. Additionally, among many of the industrializing sector companies were large multinationals with foreign, - mainly US based – ownership structure, therefore, supporting growth rates of the industries. According to results of Pages (2010) emphasized in McMillan and Rodrik (2011), the labour productivity between 1950 and 1975 increased “almost 4 percent annum”, half of it accounted for by the structural change.

During the expansion of world trade between 1967 and 1973, Latin America significantly increased the exports of manufactures as well as introduced new goods such as soybean to the export market despite macroeconomic instability in the previous years in almost all economies of the region except Mexico (De Paiva Abreu, 2006). Nevertheless, the region had to face the increasing competition of raw material exports from other developing countries which caused major deterioration in the balance-of-payments (Haber, 2006). Meanwhile, “tariff walls” were protecting the domestic economy from particularly consumer goods, however, tariffs on capital goods and raw materials were also well above the rates of advanced economies. Following the oil crises of 1973 and 1978-79 the regional responses to the price shocks largely differed, however, most countries, even the oil exporters, deeply suffered from an increase of foreign indebtedness, exchange rate overvaluation and high inflation eventually resulting in the debt crisis of 1982. Larger economies such as Brazil, Argentina and Mexico revived import substitution towards intermediate goods and intensified export promoting policies, although, the latter following the oil field discovery in 1976 almost exclusively emphasized on promoting the new commodity. The oil exporters nationalized the sector, even though afterwards Venezuela, Bolivia performed poorly with the exception of Ecuador. For coffee producing Central American countries like Guatemala and Costa Rica and for Colombia the world coffee price boom after 1975 was an important relief (De Paiva Abreu, 2006). The last group of countries, Paraguay and Panama retreated from promoting industrial goods and instead focused on primary commodities and service sector exports. The decade ending in 1990 including the debt crisis is often referred to as the “lost decade” for Latin America with negative productivity growth (McMillan and Rodrik, 2011).

During the reform period of the 1990s (starting from the end of 1980s) GDP figures have improved and between 1991 and 1995 the region managed to be above the world average in growth figures for the first time since 1979 (Loser, 2008). A wide range of market friendly reforms were implemented covering all areas of economic life as taxation, financial liberalization, monetary stabilization, privatization and trade liberalization. “Convertibility” system was introduced to control hyperinflation in line with fiscal and monetary stabilization aiming for instance to eliminate multiple exchange-rate regimes (Salvucci, 2006). As part of the trade liberalization process average tariff rates were significantly cut starting from 1985, whereas by 1999 in almost all countries in the region were decreased to less than 15 percent in both manufacturing and primary sectors (Lora, 2006). As a result of the stabilization policies and financial liberalization capital flows slowly returned to the region. Furthermore, the US influence proved its high peak with the creation and acceptance of Mexico into NAFTA. Meanwhile, in the South four countries joined to create MERCOSUR in 1991.

McMillan and Rodrik (2011) analyze structural change in developing regions and find that contrary to Asia, where since 1990 labour has been moving from the low-productivity sectors to high- ones, Latin America (in line with Africa) increasingly shifted back to primary production between 1990 and 2005. Nevertheless, in Latin America, in many countries the export sector has very high productivity and technology use as well identified in the paper as positive productivity growth in the period. On the other hand, for the sectors it is rather impossible to again employ all workers due to large scale usage of technology. As a consequence unemployment in the region has risen since 1990s as well as the other alternative of going into informality. The authors also confirm that exchange rate policy and undervalued currency, as will be discussed in the next section concerning trade with China, is increasingly contributing to “growth enhancing structural change”.

However, despite negative structural change and unemployment, inequality has been falling in the last two decades significantly in Latin America. Previously, high inequality rates denoted to exist largely due to the colonial legacy and the system of private land ownership (Fischer, 2010). According to SEDLAC (2012), a comparison of Gini coefficients at national levels show the fall of inequality in nearly all over Latin America such as Peru, Uruguay, Paraguay, Nicaragua since 1990 at least up to the financial crisis of 2008. Mexico despite the financial crisis managed to decrease inequality even in 2010. However, there are examples for stagnating figures with no improvement as the case with Venezuela (the last available figures are for 2006), and for significant worsening of

figures in 2010 as Honduras. Finally, the only major outlier is Costa Rica, who based on the Gini values experienced significant backlash in inequality in the whole period starting from 1990.

In line with inequality figures, the region as well has contributed to significant alleviation of poverty in the recent decade since 2002. In 1990 almost half of the population was considered poor; by 2002 the total figure only decreased by 5 percent; whereas recently based on the 2011 estimates the share of poor stood at 30.4 percent (ECLAC, 2011). Therefore, by 2010 poverty figures have reached their lowest values in two decades, which is a particularly large success in light of the severe global financial crisis. Finally, the demographical phenomenon denoted as the “window of opportunity” emphasized by Székely and Montes (2006) highlights that the dependency ratio has become much lower in the last decade meaning that more working age population is able to support children, students and elderly. This phenomenon could possibly last for some decades even further highlighting the role of education and the possibility for growth in the near future.

### **1.2.2. Effects of China on Latin America**

One of the most comprehensive studies on the role and effects of China on Latin America are prepared by Jenkins and co-authors (2008, 2010) who, as already highlighted in the introduction, emphasize on trade and investment effects of China which create both direct and indirect impact on the region. Trade aspects include the boom of imports from China, increasing exports to China, competition in exports to third markets and upward pressure on commodity prices. Increased imports according to Jenkins et al (2008) could either impact local producers and displace businesses, or could also mean only replacing other import supplier countries. Interestingly, the analysis of the effects of imports is limited by the tendency of high smuggling rates particularly between Central American smaller states which could significantly alter recorded importing figures.

Due to the size of the Chinese market and its demand, there is a upward pressure on commodity prices, and although, exporting countries earn revenues in foreign currency to pay for the imports, they might also further specialize in producing a few commodities and become vulnerable to price and other shocks. Nevertheless, exports of mainly primary commodities to China are also the result of high tariff protection exercised by the Asia giant, prevailing particularly in agriculture (Jenkins et al., 2008). Higher trade barriers are in place for more processed imported goods which could result in trade partners lowering added value of goods and exporting only unrefined commodities. Third market exports from Latin America might also suffer from increased competition from China, while the scale of affected sectors is also under debate. Nevertheless, the

rise of exports to China could be particularly beneficial for countries offering complementary goods such as Chile. According to Wise and Quiliconi (2007) Chile, based on the “export similarity index”, from the region is the most fitting trade partner in terms of complementarities. The compatibility had certainly supported the creation of FTA between Chile and China which entered into force in 2006 marking the first FTA with China within the region (Ministry of Commerce of PRC, 2012).

Hence, the terms-of-trade debate has come to surface again with the rise of influence of China in the region. However, as Kaplinsky (2006) as well emphasizes in the current era the debate could be opposing to the view of Prebisch-Singer as due to the price changes resource rich countries might experience an improving terms-of-trade. This could be supported by the figures on the increasing commodity prices, previously highlighted, especially since 2003 and the, meanwhile, decreasing prices for many of the manufacturing goods in world markets. The latter effect is particularly significant for products of labour-intensive manufactures similar to those exported by China; nevertheless, manufacturing goods are highly heterogeneous (Jenkins et al., 2008). Therefore, the rise of trade relations with China in the new Millennium could result in significant benefits to especially resource rich Latin American countries, contrary to the experience of previous decades when “terms-of-trade did indeed run against commodities” (Kaplinsky, 2006) giving rise to protectionism and heavy industrialization efforts in the region. However, for countries producing similar goods to China and importing primary commodities such as many Central American nations, terms-of-trade might worsen as a result of the rise of giant. Therefore, as Wise and Quiliconi (2007) stresses there is also a “strong cause for concern”.

This analysis as well highlights the complex impact of China on Latin America and the debate with the participation of both optimists and pessimists. Nevertheless, it is also important to notice that despite recent trends in increasing trade, Latin America still remains one of the most closed regions in the world concerning trade openness (Loser, 2008).

In order to also briefly highlight the current empirical evidences on the effect of China on Latin America, there is also a need to provide an overview on FDI. From the investment point of view the aspects could be twofold as either China is investing in the countries, or the effect is on the FDI coming from other countries. Considering the first issue, resource seeking FDI has already been made in Latin America for four particular commodities: copper, iron, oil and soy. Descriptive statistics is available on the investments made by China in Latin America, but data is fairly unreliable as investment projects are drawn for the long-term as well as often with altering time schedules. There are a number of recent agreements between China and oil exporters in the region

on oil pipeline constructions (Wise and Quiliconi, 2007). In contrast to Africa, Latin American countries with the exception of smaller states as Costa Rica and Grenada do not receive aid in the form of grants or concessionary loans from China (Lunn et al., 2009). Latin America, however, received between 2002 and 2007 the largest amount of government-sponsored investment targeted specifically to the natural extraction industries. Nevertheless, trade is the major relation with China, whereas FDI from China is a much more significant source to Africa where it targets improvements in infrastructure and manufacturing plants.

Finally, the empirical literature on the effects of China on Latin America largely focuses on the second aspect and studies whether FDI inflows to China and Asia are competitors or complements to FDI to Latin America. García-Herrero and Santabárbara (2007) using a Generalized Method of Moments (GMM) find no “China effect” in general except in case of Mexico and Colombia, which due to their similar export structure are negatively affected since the WTO accession of China. Chantasawat (2005) analyses the same question and according to the results finds no relation between FDI to the two regions. The extended work of Chantasawat et al (2010) confirm the results by two-stage least squares estimation including a proxy for “the China Effect”, however, also highlight the possibility of Mexico being seen as a competitor to China in terms of locating multinationals based on wage considerations.

## **2. Trade between China and Latin America**

During the period 1990 to 2011 China has become the third largest trading partner of Latin America, following the US and the EU constituting an important source of foreign revenue and demand. As shown in Figure 1 trade with China<sup>2</sup>, both exports and imports, rapidly increased after 2001-2002, although, the latter between 2002 and 2008 intensified at a higher rate. Following a 16 percent drop in the imports from China during the financial crisis between 2008 and 2009, the two figures move parallel. However, on Latin American scale there is a trade deficit even though exports from the region to China in the last two reported years since 2009 have increased by 45% percent annually.

---

<sup>2</sup> In this paper, under trade with China the special administrative regions of Hong Kong and Macao are also included in the figures. In order to avoid biases trade data is collected with the reporting country being the Latin American partner.

Figure 1: Export and import values of 19 Latin American countries with China, in million USD. Period 1990-2011. Source: International Monetary Fund (IMF) (2012), own calculations

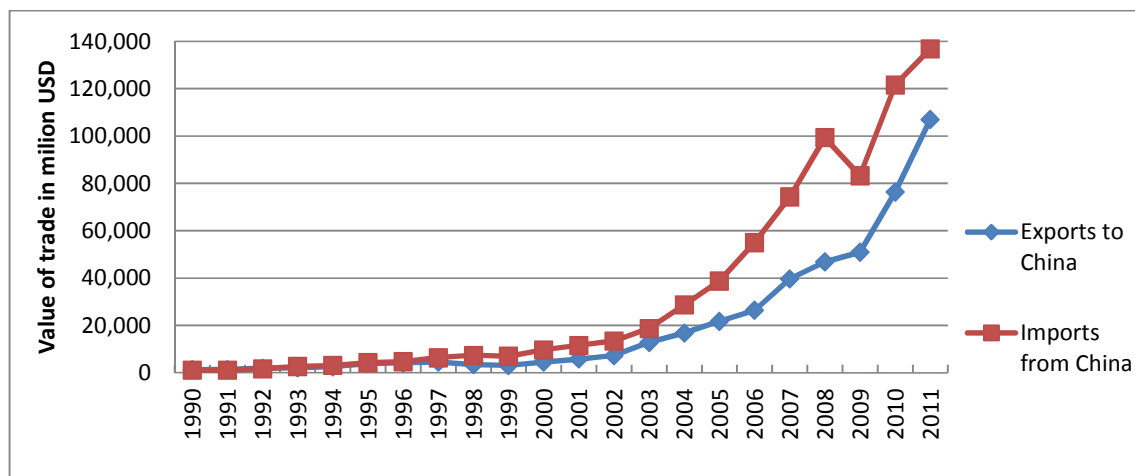


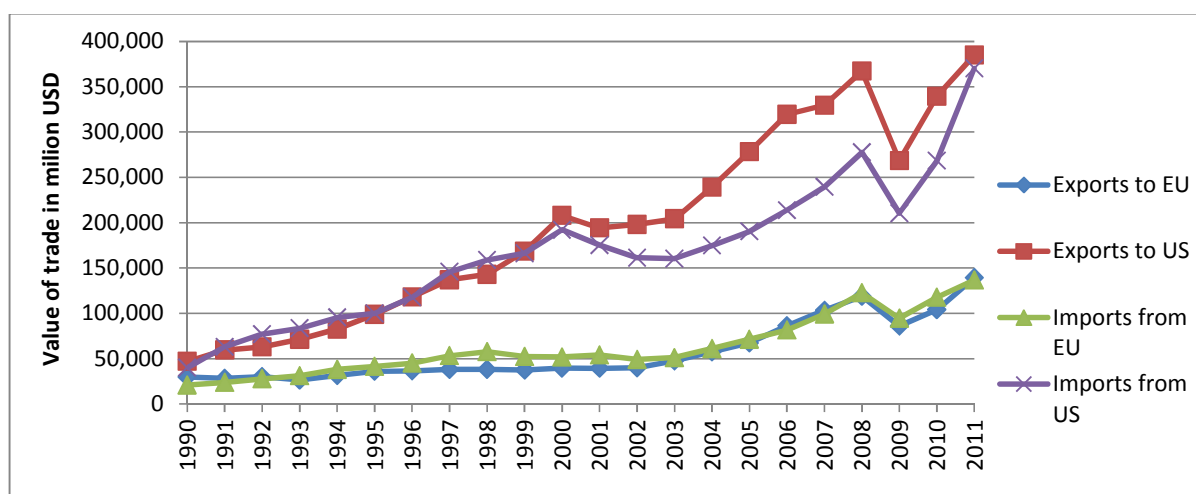
Figure 2 reveals the volumes for the two most important trading partners and the evolution of imports and exports for the same period. In case of the US, trade volumes have already increased between 1990 to 2000 almost 4 times, however, larger increase in trade with the EU only began after 2002, the economic crises affecting some countries in Latin America. An interesting phenomenon is visible on the two graphs when looking at the crisis year of 2002 when despite the negative economic turn in many countries trade with China, both in terms of exports and imports grew at high rates in aggregate levels. In the worst affected economy, Argentina, although, there was a sudden drop in imports in the year 2002, the figures recover by 2004. As far as exports are concerned, following a halt in the figures from 2001 to 2002 by 2003 exports to China doubled the pre-crisis level. However, the effect of the crisis was felt much more severe in the trade relations between advanced economies and Argentina. Trade values of Argentina with both the EU and the US reached their peak in 1998 and were already negatively affected in the preceding years, but similarly to China, exports were not significantly altered by the crisis. Nevertheless, imports from advanced economies only reached their pre-crisis 1998 peak after a decade in 2008 and due to the financial crisis severely affecting advanced economies the figures rebounded again in 2010-2011.

Overall, as the scale of values are much higher in the case of the US and EU, the comparison between trade with China should not be between absolute trade values, however, taking into consideration the increases and the value of 2011 compared to the start of the period 1990. Overall, exports to China have increased from the base value of the year 1990 by 148 times, whereas if we take the base value of the year 2000 the 2011 figure is 23 times of that. In the case of imports the figures are 169 and 14 times, respectively. If we look at the EU, in comparison with the base year of 1990 exports and imports have increased 4.7 and 6.5 times by 2011, whereas 3.5



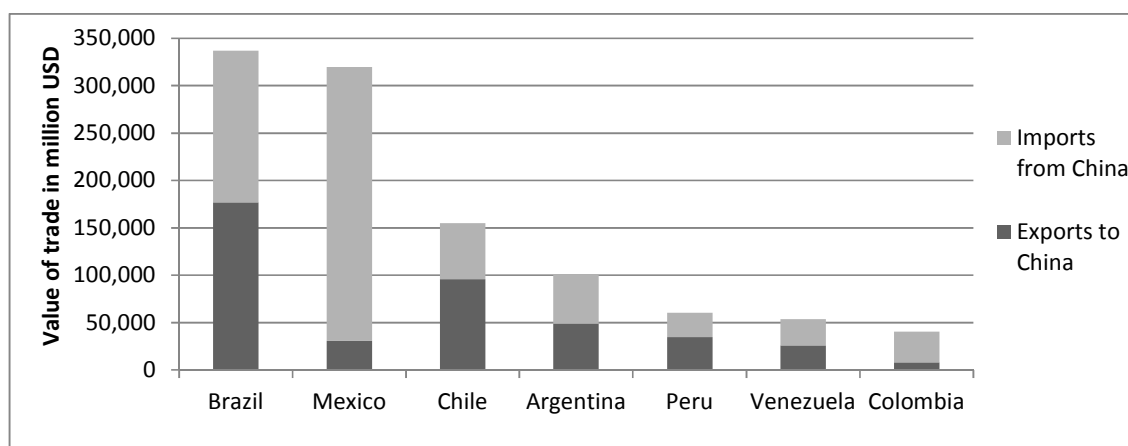
and 1.8 times if the base year of 2000 is chosen. US trade increases with the Latin American countries reveal a similar pattern of 8 and 9 times raise in the two decades, whereas only 2.6 and 2 times in the last decade. This analysis already highlights the importance and scale of the recent phenomenon of increasing trade relations with China.

**Figure 2: Export and import values of 19 Latin American countries in trade with US and EU, in million USD. Period 1990-2011. Source: IMF (2012), own calculations**



Considering total trade Brazil and Mexico are by far the largest trading partners, nevertheless, it is vital to note the trade structure differences shown in Figure 3. Whereas in the case of Brazil total imports and exports are almost equal for the period 1990 to 2011, 90 percent of the trade with Mexico arises from imports. Chile and Peru exported 62 and 35 percent more respectively than imported in the period 1990 to 2011, whereas Argentina and Venezuela imported a small percentage more than exported to China. Finally, Colombia is the other outlier, similar to Mexico, with four times more imports than export figures.

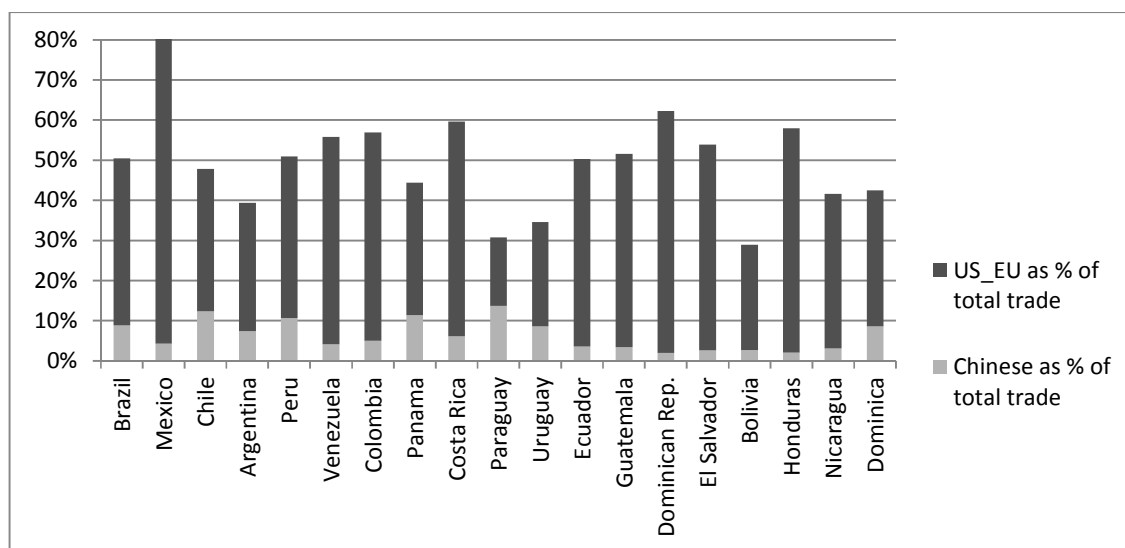
**Figure 3: Top 7 Latin American trade partners of China, cumulative values in million USD for the period 1990-2011. Source: IMF (2012), own calculations**



From the figure it becomes evident that within Latin America there are great differences in trade relations to China, accordingly, the effect of China can vary significantly. The first countries include resource and primary commodity rich economies, mainly Brazil, Venezuela, Chile, Peru and Argentina. Whereas the latter group, Mexico and Colombia being the largest among, are often engaged in the same production and industries such as textile, garments, electronics and auto parts, therefore, in the literature are frequently identified as competitors of China (Jenkins, 2010), alongside with Central American states such as Guatemala. Although, it is important to note that Mexico is both a large oil and copper producer as well.

Although, China is a significant trading partner for Latin America, for China the share of trade with the region in 2010 was 5.5 and 6.4 percent of total trade with the world, exports to Latin America and imports from the region, respectively. These shares were only 0.8 and 2.2 in 1990, therefore, in general it could be also seen that the region for China is still more important in terms of commodity imports. For Latin American economies for the period 1990 to 2011 on average total trade with China accounted for 6.3 percent, whereas in the case of some outliers such as Chile, Paraguay and Peru the share was well above 10 percent. On the other hand, Figure 4 as well shows that shares of trade with US and EU have been very large in total. With the exception of Bolivia, Paraguay and Uruguay who geographically diversify exports, the three large trading partners (including China) account for at least 40 percent of total trade, whereas in many countries the figure reaches even half of total trade. Based on this large figure, some impact on growth is expected from trade.

**Figure 4: Share of trade with China and the US and EU in total trade of Latin America, cumulative values in percentages for the period 1990-2011. Source: IMF (2012), own calculations**

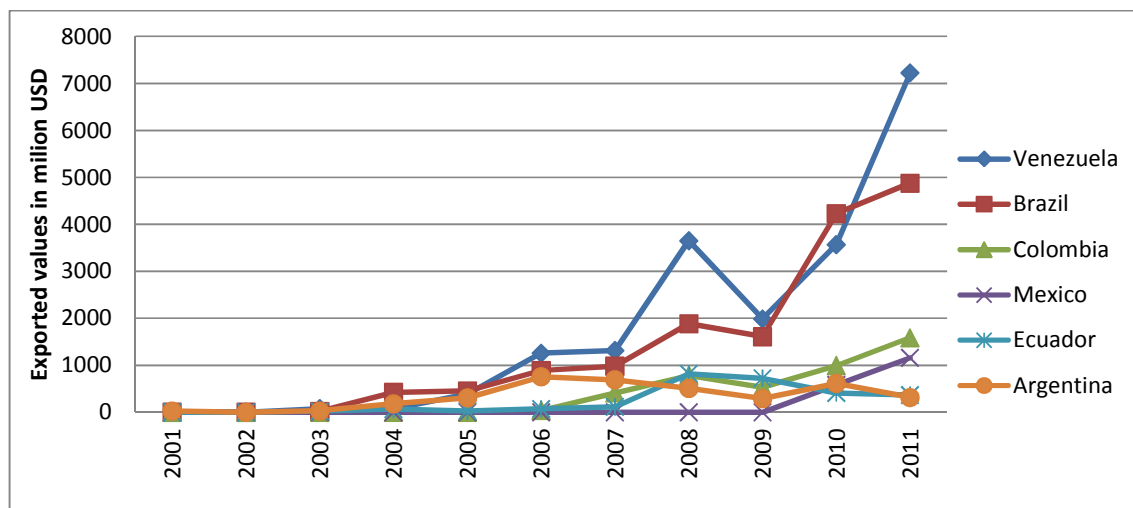


## 2.1. Exports

The increasing incomes of the large population and the industrialization process raise the need for resources of agricultural products and minerals from around the world. China has had rising shares in worldwide demand for commodities particularly in the recent decade. According to the latest available FAOSTAT (2012) data, in 2009 soybeans alone bought by China were the world's largest value of agricultural commodity imports. On the top 10 agricultural imports of the Asian giant are, furthermore, palm oil, rubber, cotton, soybean oil, cattle, chicken meat and maize. In light of this it is important to notice that after the US, Brazil is the second largest exporter of soybeans and the first exporter of chicken meat in the world. Furthermore, Argentina on the list of major commodity exports was placed 7<sup>th</sup> with cake of soybeans in 2009. Soybean exports to China reached up to 46% of total soybean exports from Argentina, and a similar figure in Brazil according to figures of ECLAC (2008). In 2009 five South American countries (Brazil, Argentina, Paraguay, Uruguay and Bolivia) were on the list of the top 10 soybean producers of the world, alongside with China who demands much more soybean for the increasing population and middle income families than it produces.

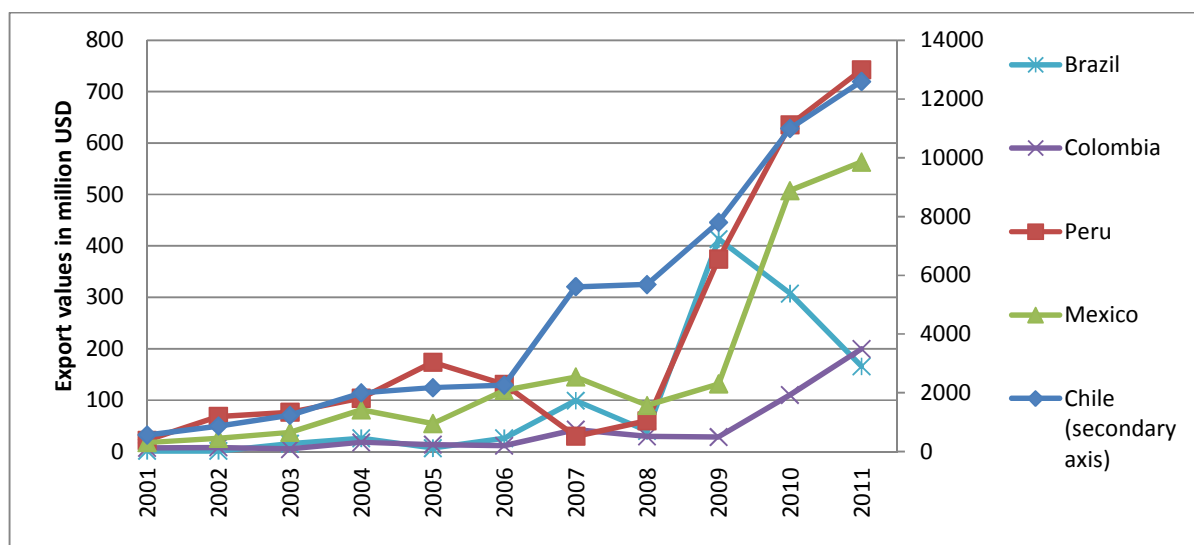
According to the estimates of the Central Intelligence Agency (CIA), China after the US was the second oil consumer in the world with 9.4 million barrels per day in 2011 and imported more than 5 million barrels daily (CIA, 2012). Furthermore, in the previous century China was responsible for half of the growth of global oil consumption (Radetzki, 2010). From Latin America Venezuela and Mexico were in the top 15 oil exporters of the world in 2010 and together accounted for 7.3 percent of the world total exports, however, the latter's strong economic ties to the US implies that the Northern neighbour is its largest oil market (UN comtrade, 2011). As revealed in Figure 5 Venezuelan and Brazilian crude oil exports to China significantly increased after 2004-2005. However, Mexican oil exports have greatly increased only since 2009. Only crude oil exports to China are significant from Latin American countries, with the exception of Venezuela, from where non-crude higher value added petroleum oil exports to China are also among the top 5 sources of imports in the Asian giant (International Trade Centre, 2012).

Figure 5: Export values of crude oil to China by the major oil exporters in the region, in million USD, for the period 1990-2011. Source: International Trade Centre (2012)



The Chinese government supports infrastructure building to a great extent, whereas as well 38 per cent of the stimulus package of 2008 was spent on transport and power infrastructure including highways and airports (Tong, (2010), p. 51.). These policies and the great expansion in housing create a vital demand for iron ore, steel and copper of the Latin American producer countries. In the mining sector, 42% of Chilean and 34% of Peruvian copper are traded with China whereas the two South American countries are the first and third largest copper producers in the world respectively (Copper Investing News, 2010, ECLAC, 2008). Chile exported refined copper and copper alloys at the greatest scale to China in the year 2010 and accounted for more than 20 percent of the total imports of China from the world (UN comtrade, 2011, International Trade Centre, 2012). In Figure 6 the Chilean graph is placed on the second axis, as values are significantly higher than any other export values in the region. Nevertheless, the large increase after 2008 in the case of Peru, and after 2009 of Mexico and Colombia should be seen as increasing signs for cooperation with China.

Figure 6: Export values of copper (and articles thereof) to China by the major copper exporters in the region, in million USD, for the period 1990-2011. Source: International Trade Centre (2012)



Based on the above figures it is evident that resource rich countries are keen on supplying the Chinese market. In Latin America, agricultural goods and primary commodities from the mining sector have increased the technological content which allowed the region to as well increase the shares of manufactures exports based on raw material industries. Nevertheless, as McMillan and Rodrik (2011) point out in the period 1990-2005 the within component of the productivity growth was below the figures of all other regions in the world including Africa. Therefore, there is certainly more room for embracing technology and use it with efficiency in the production.

## 2.2. Imports

China, nevertheless, has vast interest in the exporting side of the relations too. China's comparative advantage to even most developing countries is the abundant labour force with low wages. In the future as Yang outlines, there is certainly more role for exports and external demand in the economic growth of China which have been rising particularly since the WTO membership of 2001 (Yang and Lim, 2010). Although, exports in 2008 made up only 5 percent of the Chinese GDP, they are vital for maintaining the growth figures of at least 8 percent annually that keeps the unemployment rate, one of the main concerns of the Chinese government, low. Therefore, China is increasingly looking for potential markets in developing countries both in Africa and Latin America. As revealed in Figure 3 the largest Chinese importing countries in volumes from Latin America are the two biggest economies: Mexico and Brazil.

Based on data from the International Trade Centre (ITC) (2012) (which is only available since 2001) the majority of imports of Latin America are clearly manufactured goods. Even in the case of Brazil which is one of the most diversified exporting nation as well as importing country, more than half of the foreign incoming goods are manufactures. Tough, in the number of economies there is a significant increase in primary goods and decrease in manufactures in the top 5 to 10 import goods. A clear example is El Salvador where in 2001 the share of manufactures in the top 10 total imports were more than 80 percent whereas by 2011 this figure was reduced to 60 percent. On the other hand, the highest share of manufactures is demanded by Mexico with 90 percent in 2001, however, its value of the top 10 imports also declined by 10 percent by 2011.

In the period 2003 to 2011 there is a clear exponential import surge from China and at aggregate levels Latin America has an external deficit in trade with China. The main underlying factor how China reaches external surplus – with the rest of the world - is the exchange rate policy and government’s role in monetary issues. Yuan, the Chinese currency, was kept undervalued mostly prior to 2005 to enhance export competitiveness (Cline, 2010). However, as international pressure was put on the government, the authorities allowed appreciating the currency by 25 per cent. As the financial crisis hit in 2008 in order to reinforce exports in the global meltdown the government froze the movement of the yuan. Finally, - in June 2010 the recent reform allowed for another appreciation since – though only of some percent (Beattie, 2011). However, for China exchange rate policy reforms can bring about consequences on the export figures as the example shows: during 2005 to 2008 the export growth was significantly less than prior to 2005, while as well as in 2011 it slowed down (BBC, 2011).

It is also important to note that the political acceptance of Taiwan also influences the relations towards China. Around half of the countries in the world in that recognizes Taiwan over the People’s Republic of China are in Latin and Central America and in the Caribbean (Keating, 2011). Hence, trade relations with China are far more complicated. However, as Jenkins (2010) notes even these states have experienced a significant increase of imported goods from China.

### 2.3. Latin American trade with other partners

Despite the significant increase in trade with China, the US remains the largest trade partner for most Latin American economies. For instance, in the case of Colombia, a recent free trade agreement (FTA) with the US entered into force on the 14<sup>th</sup> of May, 2012 and could further increase the share of trade with the US which is already as high as 38 and 25 of the total exports and imports, respectively (Colombia Reports, 2012, Martínez, 2012). Although, 70 percent of Colombian agricultural products to the US become tariff free on immediate terms, several organizations have already expressed their concerns about the expected loss in farmers' revenues resulting from the competition with heavily subsidized US agricultural sector despite the government's claim on large trade and job increases (The Miami Herald, 2012). Concurrently, 80 percent of the US industrial and consumer goods can enter Colombia freely under the new FTA. This could also mean in the future that local manufacturers would suffer from the increased competition unless they modernize and improve processes. This recent trading partnership as well shows that the US still has a significant influence on the countries in the region.

Regional trade is also notable in Latin America, however, there are recent signs of growing tensions between the largest two members of MERSOCUR, Argentina and Brazil, following the implementation of further import licences by the Argentine government in an attempt to limit the "destabilizing flood of imports" (Chicago Tribune, 2012). The issue has put further pressure on Argentina as the EU has filed a complaint to the WTO which could mean serious trade sanctions on the Latin American economy if the EU wins the case (Day, 2012). Nevertheless, not only Argentina uses various trade instruments to increase exports over imports. Brazil has recently devaluated the currency in order to promote exports and limit import amounts as well as strengthened control of Chinese manufacturers (Chicago Tribune, 2012). As Brazil claims the step is necessary due to the "currency war" played by advanced nations and China as they keep their currencies low to gain competitiveness (Leahy, 2012). Nevertheless, as analysts point out there would be a need to rather increase competitiveness and the low productivity levels. Considering currency, however, there are also signs of cooperation between the two large MERCOSUR economies as they have recently moved further in trade relations by advocating the SML, a payment system allowing for the trade partners to pay in their local currencies (The Wall Street Journal, 2012).

### 3. Empirical Analysis

#### 3.1. Data and Methodology

Large body of the growth literature utilize cross sectional estimation for identifying social, political and economic factors for growth in line with the widely cited work of Mankiw et al. (1992) (Yanikkaya, 2003, Glaeser et al., 1995, Barro, 1991). Nevertheless, in order to increase the efficiency, a number of recent empirical studies have used panel data estimations for growth regressions to take advantage of the time dimensions and variation of the data (Milton et al., 2005). The advantage of panel data methodology is the employment of country-specific fixed effect which captures the time invariant specific country characteristics in addition to the substantial sample size allowed by variation within countries (Collier and Goderis, 2007).

In light of the above, this analysis is conducted in panel data with 19 countries for the time period 2001 to 2010. The period was chosen due to the fact that China as a trade partner has become particularly important from the point of view of Latin America only, as the country joined the WTO in 2001. Furthermore, this also coincides with the availability of data on trade by product groups which might help to answer the question of Chinese trade influence on Latin American growth.

The following growth panel model is used to estimate the effect of Chinese trade on the growth of GDP per capita of the 19 Latin American countries:

$$y_{i,t} = \alpha + \beta y_{i,t-1} + \mathbf{X}_{i,t} + \mu_i + \gamma_t + \epsilon_{i,t} \quad (1)$$

where  $i$  and  $t$  denotes country and time, respectively, in the panel framework. The variable  $y$  is GDP per capita (in constant 2000 USD terms) in logarithmic form to denote growth,  $\alpha$  is a constant,  $\mathbf{X}$  is a row vector including endogenous and exogenous factors for determining growth,  $\mu_i$  denotes the country-specific fixed effect,  $\gamma_t$  time fixed effects and  $\epsilon_{i,t}$  the error term which is assumed to be independently and identically distributed.

As in the case of growth, some of the variables might be endogenous previously highlighted by the literature meaning that the error terms correlate with some of the explanatory variables, therefore, the Arellano-Bond Difference GMM estimations could be the solution (Arellano and Financieros, 2003, Roodman, 2006). Furthermore, this method works also well with short panel time dimensions ( $T=10$ ) and a country dimension that is larger, such as in this case  $N=19$  (Mileva, 2007). The Arellano-Bond Differenced GMM estimator uses the all the previous lags of the levels of the endogenous variables as instruments additionally to the strictly exogenous regressors in



order to take advantage of all information available (Baum, 2006). A system of equations is created, one equation for each year, in this case. The instruments from predetermined variables enter into each equation in differenced form, therefore, the later the period the more lagged values are available.

This paper builds on the variable choices of the growth literature and furthermore, on the set of trade indicators included in Balamoune-Lutz (2011). In order to answer the question how trade with China both in import and export consideration affects growth in the Latin American trading partners further *exports to China* and the *imports from China* variables are included collected from the IMF Direction of Trade Statistics. As the sheer sizes of the Latin American countries widely differ, these variables are also reported in the model as percentages of GDP. In order to control for effect on growth of trade with other major partners *export to US and EU* and *import to US and EU* variables are introduced as percentages of the country's GDP.

For testing the explicit hypothesis, whether export concentration is negative or positive for growth, the model is analysed by adding interaction terms of *exports to China* and *primary* and *exports to China* and *oil* (dummy) following the model specification of Balamoune-Lutz (2011). The variable *primary* measures the ratio of primary commodities in the country's top 5 to 9 exports, chosen depending on whether the state exports a few goods or a variety of products in order for the ratio to be representative. In each country the sample of top exports account for on average around 55 percent of the total exports, whereas in some cases such as Venezuela and Ecuador the top 5 exports account for approximately 90 percent of the total. Nevertheless, in the case of Brazil and Argentina, this figure is much lower indicating that the exports are more diversified. Additionally, as among the Latin American countries are major exporters of copper a third interaction term between *exports to China* and *copper* dummy is introduced for export concentration. Oil and copper dummy values are 1 if the country is a major exporter of the commodity and zero otherwise. Major oil exporters in the region include Argentina, Brazil, Colombia, Ecuador, Mexico and Venezuela accounting for 97.65% of Latin American total oil exports, whereas major copper exporters are Brazil, Chile, Colombia, Mexico and Peru accounting for 99.33% of Latin American total copper exports. However, it is important to notice, that under oil and copper not only raw material exports are included but manufactures based on the primary industry. As it was previously highlighted the debate on export concentration and growth is complex, therefore, no expectations are placed beforehand on the signs of coefficients.

For control explanatory variables are indicators of human capital, financial development, investment level and openness to trade. The first one is proxied by the years of schooling as it is

preferred to secondary school enrolment in the case of Latin America as drop-out rates are rather high as well inequality is affecting the different quartiles at various rates. Years of schooling data is the most frequently recorded variable within the education statistics for the period under investigation. Furthermore, it is the most comparable variable with latest UNDP 2011 figures due to the statistical differences applied to other indicators and is widely used in the growth literature of the Latin American countries. It is recorded for the group aged 25 and older collected from the SEDLAC database<sup>3</sup>. The human capital variable of years of schooling was problematic in the case of two countries. According to the estimation of the UNDP, the value for Dominica is set as 7.68 for the entire period under investigation in this thesis; therefore, the same value is utilized for all years (UNDP, 2011). In the other case education variables for Chile were only available for the years 2003, 2006 and 2009, therefore, the missing years were calculated using a simple average formula resulting in continuous improvement in the years of education without any decline in any year in between.

For measuring financial development domestic credit to the private sector in percentage of GDP (*credit*) is taken from the World Databank in line with Balamoune-Lutz (2011) who states that, although, there is in theory an expected positive correlation with growth, the causality of the effects is rather unclear. Gross fixed capital formation (*invest*) (GFCF) is used as investment level in percentage of GDP which is an often utilized variable in the literature (Wang and Yao, 2003). GFCF appears as expenditure in the national accounts and the figure is denoted as shares of GDP to measure the amount invested into fixed assets from the revenues collected in a given year, therefore, it is not a cumulative value. The openness to trade (*open*) variable measures the importance of trade for the economy as it is also measured in percentage of GDP. Usually smaller countries have a much larger percentage shares in GDP, such as in the case of Honduras, Paraguay, Panama and Costa Rica, which often record total trade in a given year as a larger value than GDP. Nevertheless, openness is affected by several aspects such as political affiliation, level of resource abundance as well by the size of the domestic market. The latter two could be important reasons behind the low trade openness figure for Brazil where the large population could potentially provide a vital source of market for the goods produced in the country. Trade liberalization and its effects on growth up to date are highly debated. According to advocates the positive effect of trade liberalization is often found in the service sector such as telecommunications rather than in trade with goods (Mattoo et al., 2006). According to Greenaway et al (2002), who use a number of different indicators, trade liberalization affects growth with a lag,

---

<sup>3</sup> For a discussion on the indicators of human capital see Mankiw et al. (1992), Barro (2001) and Lee and Mason (2009).

nevertheless, even the authors agree that the empirical literature on growth effect in developing regions “are mixed”. Rodriguez and Rodrik (2001) highlight that trade barriers and economic growth can be potentially positively related and careful analysis is needed when it comes to the choice of indicators which result is confirmed by Yanikkaaya (2003) particularly in the case of developing countries.

The thesis includes two variables of institutional quality measured by the Worldwide Governance Indicators (2011). The two variables selected, government effectiveness and rule of law are line with the literature on natural resources and exports (Sachs and Warner, 2001, Balamoune-Lutz, 2011), as these are the most directly related to trade and are expected to impact on trading practices the most out of all the six measures. The missing values of government effectiveness (*gov\_eff*) and rule of law (*law*) in 2001 are estimated using the median value of the year before and after.

For the second part of the analysis, the major focus is on imports and the effect of manufactured goods from China on the country’s growth. In an intention to provide empirical evidence on the role of manufactured goods imports particularly from China on the developing and higher income states of Latin America an additional variable, *manufactures\_imp* is introduced to the model, which in line with the variable *primary* measures the ratio of manufactured goods in the top 10 imports of the country. As in the sample imports are more diversified, the top 10 product groups are taken into consideration for the valid representation. This variable is used to interact with the *imports from China* in order to better address the question. For control it is also interacted with the *imports from US\_EU* variable to see potential differences in the origins.

Additionally, two dummy variables are included in order to disaggregate the continent of Latin America. As there are large income differences between states the dummy *rich* aims at identifying countries with higher GDP per capita than 5000 USD (in 2000 constant terms) and signal them with a value of 1. It is not an indicator of size of the economy as per capita figures are taken into consideration. Under the *rich* dummy countries considered are Argentina, Chile, Dominica, Costa Rica (since 2007), Mexico, Uruguay and Venezuela (average GDP per capita for the period 2001 to 2010 are displayed in Appendix 5.). The additional dummy variable included is *MERCOSUR* and its value is 1 if the country is a member of MERCOSUR, and zero otherwise. The reason to include MERCOSUR lays in the possibility that membership and therefore, increased trade in between countries might have some impact on growth.

The Arellano-Bond GMM estimations require no reported serial correlation in the AR (2) second order as well as passing the Sargan test of over-identifying restrictions which implies the validity of instruments (Greenaway et al., 2002). In the Sargan test under the null hypothesis the instruments are valid, therefore, a rejection of the test might indicate that the instrumental variables “might not have been exogenous” (Beugelsdijk and Eijffinger, 2005). Nevertheless, it is important to note that once the instruments used become very large in number in comparison to the number of groups (countries), the Sargan test might be weak. Based on the above, in the reports apart from the coefficient values and robust standard errors the results of the first and second order autocorrelation tests and p-values in the case of Sargan tests are indicated. In exception of the two institutional indicators, all variables are in logarithmic forms for estimation purposes. The interaction terms that are originated from dummies are also exception as values of 0 cannot be converted into logarithmic form. The estimations are carried out with the statistical programme of STATA, version 11.2.

## **3.2. Results of the estimations**

### **3.2.1. Correlations**

Calculating the correlations between variables pair-wise is the first step in the analysis. Table 1 reports the outcomes, indicating in bold the significant correlations. A number of variables are significant in the case of exports to China. First of all, as it was expected exports and imports to and from China are strongly and positively correlated indicating that the region once establishes trade relations with China trade flows grow to both directions. There are also signals of trade diversion as growing exports to China are negatively correlated to imports from advanced economies. Exports to China are, furthermore, strongly correlated with a number of variables. Statistically significant -at 1 percentage level- and positive (0.5169) its correlation with GDP per capita growth of Latin American economies as it is also shown in Figure 7, which is a major difference to the findings of Balioune-Lutz (2011). However, it is vital to note that correlations do not impose causality link; therefore, we cannot suppose that exports to China are causing growth in the selected Latin America region. Additionally, correlation between exports to China and the human capital variable is also significantly positive which is very interesting in light of the latter’s strong negative correlations to imports from US and EU. It connotes that countries with export to China have more years of education such as the case of Chile, where the share of exports to China is the one of the largest in the region as compared to total trade as well as its educational indicators are one of the highest in Latin America. The two institutional indicators are correlated with many explanatory variables, among them the exports (and in one case the imports) to China,

however, not in the case of trade with advanced partners. This finding might be surprising as in the case of the other developing continent, Africa, the correlation with Chinese exports and imports were significantly negative arguing for the claim on China’s unwillingness to make pre-conditional investments or trade with partner countries in terms of eg. democracy and human rights (Jenkins and Peters, 2010) unlike the advanced economies and international institutions would demand. However, the notion of China trading with countries of worse institutional quality seems invalid from the results of this analysis.

**Table 1: Correlations**

	exp_China	imp_China	growth	human	invest	open	credit	gov_eff	law	exp_US_EU	imp_US_EU	primary
imp_China	<b>0.6065</b>											
growth	<b>0.5169</b>	0.1742										
human	<b>0.5426</b>	0.0957	<b>0.6541</b>									
invest	-0.0542	0.0301	-0.0391	-0.0742								
open	-0.16	<b>0.2039</b>	<b>-0.2717</b>	-0.1565	<b>0.3263</b>							
credit	0.1136	0.1695	0.0019	0.0669	-0.0427	<b>0.4026</b>						
gov_eff	<b>0.4509</b>	<b>0.1904</b>	<b>0.67</b>	<b>0.4472</b>	-0.0797	-0.0589	<b>0.4933</b>					
law	<b>0.4118</b>	0.1784	<b>0.5383</b>	<b>0.4083</b>	-0.0262	0.1057	<b>0.5543</b>	<b>0.9102</b>				
exp_US_EU	-0.1044	-0.1069	0.0625	-0.0933	<b>0.2915</b>	0.0385	<b>-0.193</b>	0.0106	0.0039			
imp_US_EU	<b>-0.3019</b>	0.0899	-0.1036	<b>-0.4414</b>	<b>0.3443</b>	<b>0.5847</b>	<b>0.2018</b>	0.0673	0.1442	<b>0.5158</b>		
primary	0.0954	-0.0485	<b>-0.2872</b>	-0.0233	0.0946	<b>-0.2007</b>	-0.146	<b>-0.2044</b>	-0.1308	<b>-0.2669</b>	<b>-0.5303</b>	
manufactures	0.0217	-0.0274	<b>0.2748</b>	<b>0.306</b>	0.0544	-0.0867	-0.104	0.0664	0.0271	-0.009	-0.0823	-0.1164

Bold denotes significance on at least 10 percent.

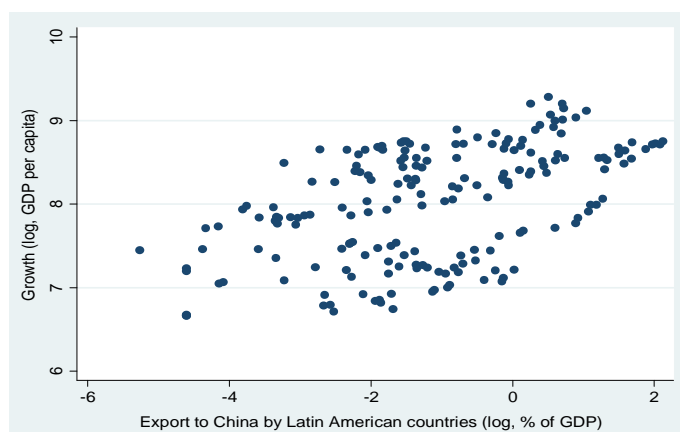
The trade openness measure is positively correlated with imports from China – even stronger with imports from advanced economies - , however, is negatively and statistically significantly correlated to growth in the region. This finding is in line with the argument of Rodriguez and Rodrik (2001) on the notion of trade barriers enhancing economic growth. Nevertheless, it is important to note that the openness variables used in this study measures trade as shares of GDP, which can also imply that smaller economies with larger trade importance in the economy imports more from China and the US and EU. On the other hand, openness is also negatively correlated with export concentration measured by the variable *primary*.

*Primary* appears to be negatively related to most of the variables in the equation with the exception of exports to China and fixed capital formation denoted by *invest*, though, these two positive correlations are very weak and statistically insignificant. The discussion on the possible negative correlation between growth and primary exports were previously highlighted, nevertheless, the correlation does not imply whether GDP growth causes a shift to increasing manufacturing exports or higher export concentration results in lower growth rates. This result is opposite to the

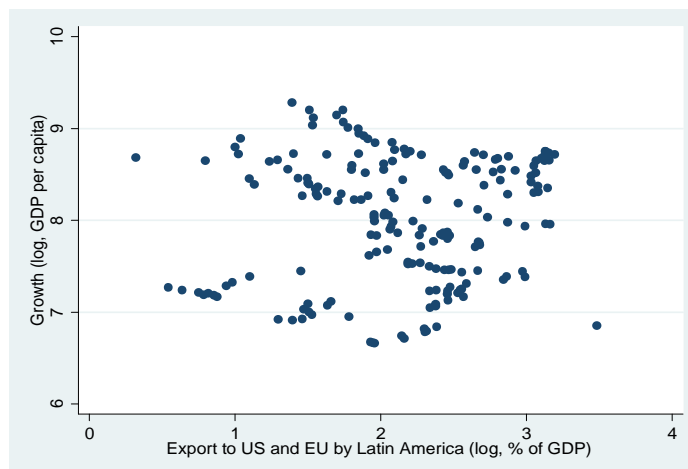
positive, though, very weak correlation found in the case of Africa in Balamoune-Lutz (2011). Higher shares of exports of primary products are also negatively correlated with openness and institutional quality, the first one suggesting strong evidence for the case of less open countries engaging in export diversification such as Brazil, whereas the second one is in line with the association of Sachs and Wagner (1999) of worse institutional qualities and primary commodity exporting nations. Interestingly, export concentration and destinations to advanced economies are negatively associated which could potentially be significantly influenced by the case of Mexico exporting a large share of low-skilled manufactures to the US.

Finally, there is a positive correlation between manufacturing imports and growth in Latin America in the last decade and also to human capital which might indicate that countries with potentially higher skilled labour force imports capital goods for local production of consumer goods. Figure 7-10 show the correlation graphs of exports and imports from both China and the advanced partners and growth in Latin America.

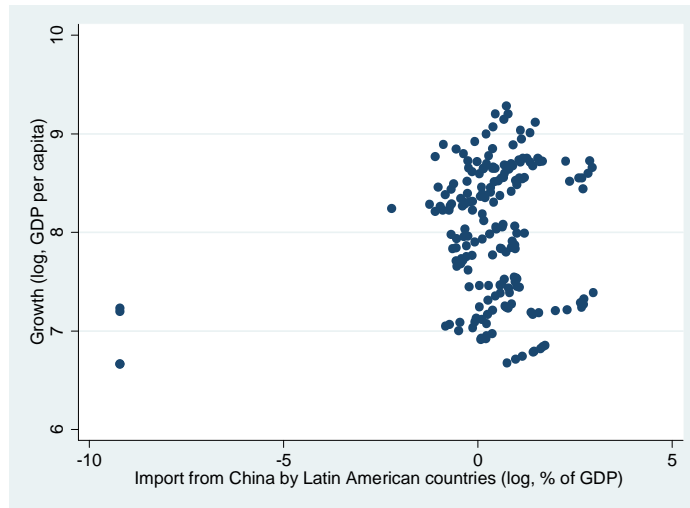
**Figure 7: Exports to China and growth in Latin America**



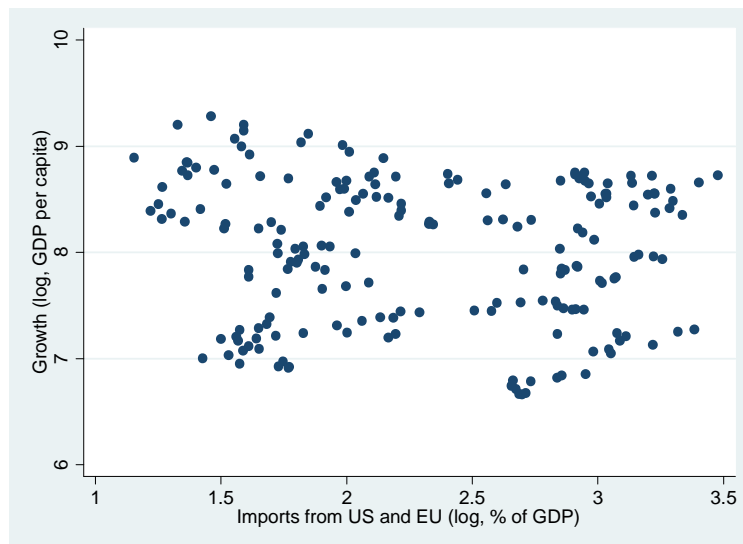
**Figure 8: Exports to US&EU and growth in Latin America**



**Figure 9: Imports from China and growth in Latin America**



**Figure 10: Imports from US&EU and growth in Latin America**



The correlations used in the model specification the following way: those variables that are found to be highly correlated to growth are included as endogenous factors in the GMM estimations and robustness checks. Therefore, in the GMM estimations with growth as the dependent variables openness, human capital, government efficiency, rule of law, exports to China and the two measures primary and manufactures are treated as endogenous variables. On the other hand, no strictly exogenous variables were identified to use as further instrumental variables.

### 3.2.2. GMM estimations

The first estimations are shown in Table 2 with the Sargan test of over-identifying restrictions reporting the validity of the instruments used in the model. It is visible that all instruments in the different model specifications are valid as we cannot reject the null hypothesis of validity of instruments indicated by the p-values reported in square brackets. The Arellano-Bond test for serial autocorrelation also reveals that at the second order, no specification is serially correlated. Further reported are the Arellano-Bond and Sargan tests chi squared distributions. One- and two-step GMM estimations were run, however, the latter resulted in highly inefficient estimates in addition to problems with precision caused by severe downward bias (Baum, 2006). Therefore, the one-step GMM estimations are reported and used for the analysis. As in the period under investigation, from 2001 to 2010 several global events could have influenced all the countries, such as the financial crisis in 2008 or even the 2001 terrorist attack which significantly affected global travels, year instruments were used in all specifications and proved to be in nearly all cases significant at least on a 10 percent level. The instrument for the year 2009 was significant and positive in almost all specifications at already 1 percent indicating the effect of the recovery on growth following the bust after the global shock. In the first two columns (1) and (2), the clear focus is on the role of exports and imports from China, however, are not found to be significant. Three variables turn out to be statistically significant – as is the case in further specifications -. Firstly, the lagged term of the dependent left-hand side variable of growth shows significance at 10 percent and as well have a large coefficient. This provides some evidence for the presence of a growth momentum in the region during the analyzed decade.

A variable of further interest is investment measured by GFCF which shows in the basic equations significance at 5 percent, and later increases to even 1 percent level. The strong positive coefficient could indicate that the real importance for Latin American growth is investment in fixed assets for businesses, within manufacturing and in industries based on primary commodities alike. The last significant variable is the dummy for higher income countries in the region. The strong positive coefficient highlights that richer economies in the region have potential to reach higher growth rates. The trade variables with China do not enter significant into the model specification, however, exports have consistently negative coefficients, whereas imports enter positively to the relationship. It is furthermore, interesting that exports to major partners of US and EU are not significant and seem not to have impact on the growth within the region in the previous decade.



In column (3) and (4) the variable primary exports is added to measure export concentration, and although, its coefficient is negative it appears statistically insignificant. Nevertheless, investment increases to 1 percent significance, as well the variable imports from China gains more significance, however, only shows p-values of 15 percent, therefore, implies that are very weakly impacting the growth. Meanwhile, the dummy for higher income becomes significant only at 10 percent level. Finally, in column (5) and (6) the terms of exports to China and to US and EU are interacted with export concentration, respectively. Although, coefficients are positive in both cases they are insignificant, nevertheless, with the interaction in case of China shows 15 percent significance just as the case with exports to China variable, the latter with strongly negative coefficient. To cross-check the result, two-step estimations are employed (specification is not reported due to high inefficiency) resulting in the exports to China variable to become significant at 10 percent level. In light of the result there is weak evidence that exports to China has a negative impact on growth. On the other hand, there is no affirmation on any significant impact of exports to advanced trade partners despite their trade importance in the shares of total trade in each individual country. Once export concentration and exports to China are controlled for credit becomes also significant at 5 percent level, however, the coefficient is negative contrary to the theory that financial development is positively contributing to growth. Imports from US and EU were insignificant and created high levels of autocorrelation at second order, therefore, were omitted from the specifications of Table 2. Imports from China were only significant at 20 percent in columns (3) and (4).

Nevertheless, it is important to highlight that shares of trade with China in the countries' GDP figures are still extremely low, in one third of the total observations less than 1 percent of GDP, whereas in approximately ten observations as high as 19 percent ( in the case of Dominica and Paraguay).

**Table 2: Arellano-Bond one-step Difference GMM estimates**

Dependent variable: Log of real GDP per capita ( <i>growth</i> )								
	(1)	(2)	(3)	(4)	(5)	(6)		
<i>lagged growth</i>	0.464 *	0.475 *	0.451 *	0.462 *	0.438 *	0.462 **		
	(0.242)	(0.239)	(0.224)	(0.222)	(0.255)	(0.221)		
<i>exp_to_China</i>	-0.004	-0.004	-0.003	-0.003	-0.070 +	-0.003		
	(0.005)	(0.005)	(0.005)	(0.005)	(0.047)	(0.005)		
<i>imp_from_China</i>	0.005	0.005	0.005	0.005	0.004	0.005		
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)		
<i>human</i>	-0.074	-0.081	-0.108	-0.114	-0.104	-0.111		
	(0.284)	(0.295)	(0.246)	(0.258)	(0.259)	(0.265)		
<i>invest</i>	0.154 **	0.159 **	0.165 ***	0.170 ***	0.191 ***	0.170 ***		
	(0.062)	(0.064)	(0.053)	(0.056)	(0.057)	(0.056)		
<i>open</i>	0.010	-0.009	0.002	-0.016	-0.066	-0.013		
	(0.078)	(0.100)	(0.057)	(0.073)	(0.078)	(0.075)		
<i>credit</i>	-0.046	-0.048	-0.044	-0.045	-0.073 **	-0.043		
	(0.046)	(0.045)	(0.036)	(0.037)	(0.031)	(0.039)		
<i>gov_eff</i>	0.069	0.066	0.042	0.041	0.027	0.039		
	(0.054)	(0.056)	(0.052)	(0.053)	(0.054)	(0.048)		
<i>law</i>	0.034	0.031	0.036	0.034	0.024	0.036		
	(0.047)	(0.050)	(0.044)	(0.044)	(0.047)	(0.039)		
<i>MERCOSUR</i>	0.101	0.095	0.087	0.081	0.081	0.080		
	(0.133)	(0.128)	(0.116)	(0.111)	(0.117)	(0.115)		
<i>rich</i>	0.061 **	0.059 **	0.049 *	0.048 *	0.061 *	0.047 *		
	(0.024)	(0.024)	(0.025)	(0.024)	(0.029)	(0.024)		
<i>exp_to_US_EU</i>		0.009		0.009	0.010	-0.003		
		(0.028)		(0.024)	(0.027)	(0.106)		
<i>primary</i>			-0.002	-0.001	0.030	-0.007		
			(0.014)	(0.014)	(0.027)	(0.051)		
<i>primary × exp_to_China</i>					0.016 +			
					(0.010)			
<i>primary × exp_to_US_EU</i>						0.003		
						(0.025)		
Observations	152	152	152	152	152	152		
Arellano-Bond test	-2.36	-2.25	-2.32	-2.18	-1.60	-2.17		
of order 1	[0.018]	[0.025]	[0.020]	[0.029]	[0.109]	[0.030]		
Arellano-Bond test	-1.49	-1.47	-1.50	-1.45	-1.34	-1.47		
of order 2	[0.136]	[0.142]	[0.135]	[0.146]	[0.180]	[0.142]		
Sargan test	38.11	38.69	48.94	49.45	41.39	49.81		
	[0.419]	[0.349]	[0.281]	[0.231]	[0.498]	[0.191]		

Note: All specifications are estimated with a constant but not reported. The robust standard errors are reported in parenthesis. The significances are represented with \*, \*\* and\*\*\* at the 10%, 5% and 1% levels respectively. P-values are shown in squared brackets in the case of Arellano-Bond and Sargan tests. Time dummies and instruments are included in all specifications but are not reported. The number of instruments in column (1) and (2) are 56, whereas in subsequent columns were increased to 64. + denotes significance at 15% for the aim of hypothesis testing.

In the second round of estimations, instead of the variable *primary*, oil and copper are used to proxy for export concentration in different specifications. Unfortunately, in case of the Arellano-Bond Difference GMM oil and copper dummies show multicollinearity with the lagged growth variables which arises the need in case of other independent variable to drop the variable that causes multicollinearity in the specification. However, the lagged value of growth is an integral part of the dynamic model and therefore, cannot be omitted. Nevertheless, the main focus for

answering the question whether primary commodity exports to China impact on Latin American growth is the interaction between the oil and copper dummies and exports to China. Therefore, Difference GMM estimations are carried out while STATA omits the dummy terms. However, in order to further check the validity of the results and see the effects of the independent dummies, Blundell-Bond System GMM estimations are also run in line with the Difference GMM (denoted by S and D, respectively, next to the specification numbers in Table 3). The Blundell-Bond System GMM is believed to be a better method than the Difference GMM if the coefficient on the lagged dependent variable is approaching 1, therefore, is a random walk. Although, it is not clearly the case with the estimates of Table 3, the coefficients of the lagged growth in the Difference GMM estimations are high. Nevertheless, an additional assumption that the “instrumental variables are uncorrelated with the fixed effects” is to be made (Roodman, 2006).

System GMM results in general show more efficient estimates based on the significance levels. It is also vital to note that in the estimation more instruments are used as a system with two equations are created, one in differences and one in levels, and these level variables in the second equation are instrumented with their own differences (Mileva, 2007). As a consequence, the Sargan test becomes weak and unreliable and in order to opt for robust standard errors the Hansen test is used for determining the validity of the instruments. The p-values of 1 indicate that the null of instrumental validity cannot be rejected; therefore, all specifications pass the test.

The two columns of (1) show dummy variable oil with controlling for trade with China and the membership of MERCOSUR. The high significance of oil implies that there is some evidence that large exports of oil, in general without specifying the destination, negatively impacts on growth. As the variable MERCOSUR turns out to be highly insignificant in the following estimations as well as it caused autocorrelation with the imports to US and EU, it was omitted. In columns (2) trade with advanced economies are also included in line with oil dummy, nevertheless, is not significant. The impact of oil is further maintained, however, the dummy for richer economies loses some significance in the System GMM. Columns (3) include the interaction terms for export concentration to China and in both estimations the coefficients are positive and weakly significant at 10 percent level. This implies that there might be evidence for the growth by destination hypothesis if we consider oil exports to China. Interestingly, once we control for export concentration in oil and exports to China, the significance of investment disappears. This could also mean that large shares of fixed investments are made in the oil exporting sector potentially targeted by increasing FDI received from China in contrast to the US and EU. Meanwhile,

columns (4) confirm that there is no evidence that exports to US and EU significantly impact on growth, coefficients are even negative.

In terms of autocorrelation, however, in nearly all System GMM estimations there is a weak significance present in second orders. Nevertheless, it can be potentially argued that as there is significant correction from the first to the second order, the autocorrelation might disappear in the following orders; therefore, it is not invalidating the results.

**Table 3: GMM estimates (controlling for oil)**

Dependent variable: Log of real GDP per capita ( <i>growth</i> )													
	(1)D	(1)S	(2)D	(2)S	(3)D	(3)S	(4)D	(4)S					
<i>lagged growth</i>	0.464 *	1.003 ***	0.498 **	1.006 ***	0.439 **	0.995 ***	0.475 **	1.005 ***					
	(0.242)	(0.015)	(0.232)	(0.015)	(0.208)	(0.017)	(0.203)	(0.014)					
<i>exp_to_China</i>	-0.004	0.0002	-0.004	0.0004	-0.013	-0.002	-0.004	0.0001					
	(0.005)	(0.003)	(0.005)	(0.003)	(0.009)	(0.004)	(0.005)	(0.003)					
<i>imp_from_China</i>	0.005	-0.002	0.005	-0.001	-0.007	-0.007	0.006 +	-0.001					
	(0.004)	(0.003)	(0.004)	(0.003)	(0.007)	(0.006)	(0.004)	(0.003)					
<i>human</i>	-0.074	0.062 **	-0.050	0.045	-0.184	0.065 **	-0.063	0.049					
	(0.284)	(0.025)	(0.282)	(0.036)	(0.336)	(0.027)	(0.272)	(0.030)					
<i>invest</i>	0.154 **	0.099 ***	0.209 ***	0.096 **	0.111	0.073 **	0.201 **	0.094 **					
	(0.062)	(0.032)	(0.070)	(0.034)	(0.083)	(0.033)	(0.074)	(0.040)					
<i>open</i>	0.010	-0.029	-0.004	-0.022	0.003	-0.011	0.005	-0.020					
	(0.078)	(0.021)	(0.087)	(0.026)	(0.124)	(0.022)	(0.093)	(0.030)					
<i>credit</i>	-0.046	-0.012	-0.045	-0.017	0.026	-0.016	-0.046	-0.017					
	(0.046)	(0.014)	(0.047)	(0.014)	(0.065)	(0.011)	(0.048)	(0.014)					
<i>gov_eff</i>	0.069	0.007	0.059	0.003	0.032	-0.008	0.063	0.004					
	(0.054)	(0.019)	(0.056)	(0.019)	(0.048)	(0.012)	(0.059)	(0.017)					
<i>law</i>	0.034	-0.012	0.010	-0.004	0.001	0.014	0.010	-0.005					
	(0.047)	(0.013)	(0.049)	(0.012)	(0.053)	(0.015)	(0.048)	(0.012)					
<i>rich</i>	0.061 **	-0.010 **	0.056 ***	-0.011	0.042 *	-0.008	0.063 ***	-0.009					
	(0.024)	(0.011)	(0.015)	(0.011)	(0.021)	(0.012)	(0.016)	(0.014)					
<i>MERCOSUR</i>	0.101	0.016 +											
	(0.133)	(0.010)											
<i>exp_to_US_EU</i>			0.025	-0.006	0.012	-0.006	0.030	-0.004					
			(0.026)	(0.010)	(0.029)	(0.009)	(0.025)	(0.012)					
<i>imp_from_US_EU</i>			-0.060	-0.005	0.033	0.003	-0.052	-0.005					
			(0.043)	(0.010)	(0.069)	(0.010)	(0.042)	(0.010)					
<i>oil</i>	omit	-0.048 ***	omit	-0.042 **	omit	-0.009	omit	0.027					
		0.017		(0.019)		(0.017)		(0.067)					
<i>oil x exp_to_China</i>					0.035 *	0.019 *							
					(0.020)	(0.010)							
<i>oil x exp_to_US_EU</i>							-0.026	-0.006					
							(0.047)	(0.023)					
Observations	152	171	152	171	152	171	152	171					
Arellano-Bond test	-2.36	-2.36	-1.82	-2.36	-1.10	-2.16	-1.93	-2.43					
of order 1	[0.018]	[0.018]	[0.068]	[0.018]	[0.273]	[0.030]	[0.053]	[0.015]					
Arellano-Bond test	-1.49	-1.76	-1.36	-1.74	-0.27	-1.4	-1.16	-1.73					
of order 2	[0.136]	[0.079]	[0.174]	[0.081]	[0.789]	[0.156]	[0.247]	[0.084]					
Sargan test	38.11		38.78		18.82		37.83						
	[0.419]		[0.346]		[0.988]		[0.341]						
Hansen test	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]	[1.00]					

Note: All specifications are estimated with a constant but not reported. The robust standard errors are reported in parenthesis. The significances are represented with \*, \*\* and\*\*\* at the 10%, 5% and 1% levels respectively. P-values are shown in squared brackets in the case of Arellano-Bond, Sargan and Hansen tests. Time dummies and instruments are included in all specifications but are not reported. D denotes Difference GMM estimates, whereas S stands for System GMM results.

The same test is used with the dummy variable of copper to proxy for export concentration and use the interaction variable of copper and exports to China. As can be seen from columns (1) the System GMM increased the significance of the lagged growth variable, however, as *copper* was added to the specification the dummy *rich* lost its significance. The significance of higher income disappears in the further System GMM estimations (2) and (3) as copper is added, which could imply that once we control for exports of copper higher income countries do not embrace higher growth rates than other countries in the region. Two countries belong to both groups of rich and major copper exporters: Chile and Mexico. Furthermore, as *rich* dummy loses significance in column (4) already at the Difference GMM estimation – when an interaction of copper and exports to advanced economies is introduced, it might be the case that rich non-copper exporting countries do not have an impact on growth from exports to elsewhere in the world. In column (3) the introduction of interaction of copper and exports to China is insignificant in both estimations; therefore, it could provide some evidence that copper exports to China do not have yet a large impact on the growth of countries. However, in column (4) the interaction with exports to US and EU has a very weak significance and a negative sign. Imports from both partners seem to be marginally and weakly significant at 20 percent in all Difference estimations. Nevertheless, whereas with China they enter positively, the coefficients in the case of US and EU are negative.

As in columns (4) the institutional variables are insignificant and also cause high autocorrelation, they are omitted from the specification.

**Table 4: GMM estimates (controlling for copper)**

Dependent variable: Log of real GDP per capita ( <i>growth</i> )												
	(1)D	(1)S	(2)D	(2)S	(3)D	(3)S	(4)D	(4)S				
<i>lagged growth</i>	0.464 *	0.996 ***	0.498 **	1.000 ***	0.500 **	0.999 ***	0.458 ***	1.003 ***				
	(0.242)	(0.018)	(0.232)	(0.017)	(0.228)	(0.018)	(0.151)	(0.013)				
<i>exp_to_China</i>	-0.004	0.0033	-0.004	0.0035	-0.004	0.002	-0.003	-0.012				
	(0.005)	(0.004)	(0.005)	(0.003)	(0.005)	(0.003)	(0.006)	(0.005)				
<i>imp_from_China</i>	0.005	-0.005 +	0.005	-0.004 +	0.005 +	-0.003	0.004	-0.002				
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)				
<i>human</i>	-0.074	0.023	-0.050	0.022	-0.050	0.031	-0.343	0.064				
	(0.284)	(0.022)	(0.282)	(0.032)	(0.280)	(0.037)	(0.336)	(0.042)				
<i>invest</i>	0.154 **	0.058 **	0.209 ***	0.063 **	0.211 ***	0.057 **	0.167 **	0.046 **				
	(0.062)	(0.026)	(0.070)	(0.028)	(0.072)	(0.026)	(0.074)	(0.024)				
<i>open</i>	0.010	0.017	-0.004	0.015	-0.002	0.007	0.010	0.056 **				
	(0.078)	(0.015)	(0.087)	(0.017)	(0.089)	(0.019)	(0.123)	(0.030)				
<i>credit</i>	-0.046	-0.019	-0.045	-0.024 +	-0.046	-0.025 +	-0.072	-0.037 +				
	(0.046)	(0.017)	(0.047)	(0.016)	(0.065)	(0.015)	(0.053)	(0.024)				
<i>gov_eff</i>	0.069	-0.014	0.059	-0.023	0.059	-0.022						
	(0.054)	(0.026)	(0.056)	(0.029)	(0.056)	(0.028)						
<i>law</i>	0.034	0.015	0.010	0.021	0.013	0.016						
	(0.047)	(0.015)	(0.049)	(0.016)	(0.044)	(0.017)						
<i>rich</i>	0.061 **	-0.005	0.056 ***	-0.007	0.055 ***	-0.002	0.032	-0.004				
	(0.024)	(0.015)	(0.015)	(0.015)	(0.016)	(0.013)	(0.026)	(0.020)				
MERCOSUR	0.101	0.020 +										
	(0.133)	(0.012)										
<i>exp_to_US_EU</i>			0.025	-0.016	0.025	-0.019	0.029	-0.012				
			(0.026)	(0.012)	(0.027)	(0.013)	(0.027)	(0.017)				
<i>imp_from_US_EU</i>			-0.060	0.002	-0.061 +	0.008	-0.035	0.003				
			(0.043)	(0.015)	(0.042)	(0.019)	(0.052)	(0.016)				
<i>copper</i>	omit	0.021	omit	0.022	omit	0.028	omit	0.163				
		(0.017)		(0.016)		(0.021)		(0.119)				
<i>copper × exp_to_China</i>					-0.002	0.010						
					(0.028)	(0.010)						
<i>copper × exp_to_US_EU</i>							-0.079 +	-0.051				
							(0.050)	(0.044)				
Observations	152	171	152	171	152	171	152	171				
Instruments	56	105	56	105	56	105	40	73				
Arellano-Bond test of order 1	-2.36	-2.18	-1.82	-2.42	-1.81	-2.41	-1.92	-2.40				
	[0.018]	[0.029]	[0.068]	[0.016]	[0.071]	[0.016]	[0.055]	[0.016]				
Arellano-Bond test of order 2	-1.49	-1.93	-1.36	-1.95	-1.37	-1.91	0.06	-1.69				
	[0.136]	[0.054]	[0.174]	[0.051]	[0.170]	[0.056]	[0.949]	[0.091]				
Sargan test	38.11		38.78		38.65		22.75					
	[0.419]		[0.346]		[0.308]		[0.357]					
Hansen test	0.00	0.00	0.00	0.00	0.00	0.00	1.78	0.00				
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]				

Note: All specifications are estimated with a constant but not reported. The robust standard errors are reported in parenthesis. The significances are represented with \*, \*\* and \*\*\* at the 10%, 5% and 1% levels respectively. P-values are shown in squared brackets in the case of Arellano-Bond, Sargan and Hansen tests. Time dummies and instruments are included in all specifications but are not reported. D denotes Difference GMM estimates, whereas S stands for System GMM results.

The second part of the estimations shown in Table 5, where only again one-step Difference GMM is applied, aims at studying the effect of imports of manufactures on the region's growth. In column (1) openness was omitted due to its lack of significance which as being an endogenous variable decreased as well the number of instruments to 48 increasing efficiency as higher the

number of instruments, the less robust results are. The output confirms the importance of the growth momentum and investment in the 2001-2010 growth of the region; furthermore, highlights the effect of higher income countries. In columns (1) and (2) imports of manufactures show significance at 10 percent with the expected positive sign meaning that there could be some evidence that the higher the share of manufactures in the country's total imports the higher the expected growth. With adding exports to the US and EU to the specification in column (3) manufactures lose significance, however, imports from the US and EU gain, although, with a negative coefficient. In column (4) imports from China are interacted with manufactured imports, however, the result is significant only at 15 percent, while the dummy rich loses significance. This implies very weak evidence on imports of more manufactures enhancing the growth effects of imports from China. The independent effect is, although, only weakly significant at 15 percent, for the first time enters into the model with negative coefficient. In the final specification of column (5) the interaction term with imports from the US and EU is statistically insignificant revealing that it seems there is no evidence on manufactured imports from advanced countries to have a direct impact on growth in Latin American economies.

**Table 5: GMM estimates for imports of manufactures**

Dependent variable: Growth in per capita GDP ( <i>growth</i> )										
	(1)		(2)		(3)		(4)		(5)	
<i>lagged growth</i>	0.494	*	0.451	**	0.465	**	0.436	**	0.462	**
	(0.257)		(0.215)		(0.218)		(0.211)		(0.219)	
<i>imp_from_China</i>	0.004		0.006	+	0.005		-0.390	+	0.005	
	(0.004)		(0.004)		(0.004)		(0.241)		(0.003)	
<i>exp_to_China</i>	-0.004		-0.004		-0.004		-0.005		-0.004	
	(0.007)		(0.005)		(0.005)		(0.006)		(0.005)	
<i>human</i>	-0.022		-0.054		-0.092		-0.262		-0.111	
	(0.284)		(0.251)		(0.284)		(0.391)		(0.300)	
<i>invest</i>	0.129	**	0.177	**	0.191	**	0.155	*	0.183	**
	(0.054)		(0.067)		(0.070)		(0.085)		(0.073)	
<i>open</i>			0.049		0.011		0.008		-0.003	
			(0.074)		(0.093)		(0.114)		(0.095)	
<i>credit</i>	-0.021		-0.029		-0.034		0.018		-0.024	
	(0.040)		(0.047)		(0.049)		(0.079)		(0.052)	
<i>gov_eff</i>	0.033		0.051		0.050		0.017		0.051	
	(0.033)		(0.050)		(0.049)		(0.039)		(0.044)	
<i>law</i>	-0.001		0.007		0.004		0.007		0.002	
	(0.066)		(0.044)		(0.046)		(0.056)		(0.047)	
<i>rich</i>	0.044	**	0.044	***	0.046	***	0.029	+	0.037	*
	(0.019)		(0.011)		(0.012)		(0.018)		(0.018)	
<i>imp_from_US_EU</i>			-0.056		-0.062	+	-0.038		-0.429	
			(0.044)		(0.044)		(0.054)		(0.474)	
<i>exp_to_US_EU</i>					0.019		0.026		0.017	
					(0.025)		(0.019)		(0.025)	
<i>manufactures</i>	0.169	*	0.097	*	0.078	+	-0.001		-0.116	
	(0.089)		(0.053)		(0.051)		(0.071)		(0.249)	
<i>manufactures</i> × <i>imp_from_China</i>							0.090	+		
							(0.055)			
<i>manufactures</i> × <i>imp_from_US_EU</i>									0.09	
									(0.11)	
Observations	152		152		152		152		152	
Arellano-Bond test of order 1	-2.68		-2.40		-2.08		-1.52		-2.39	
	[ 0.007]		[0.016]		[ 0.037]		[0.129]		[0.017]	
Arellano-Bond test of order 2	-0.29		-0.49		-0.69		-0.50		-0.83	
	[ 0.775]		[0.624]		[0.492]		[0.619]		[0.408]	
Sargan test	35.49		42.53		41.32		29.40		40.80	
	[0.225]		[0.210]		[ 0.214]		[0.693]		[0.196]	

Note: All specifications are estimated with a constant but not reported. The robust standard errors are reported in parenthesis. The significances are represented with \*, \*\* and\*\*\* at the 10%, 5% and 1% levels respectively. P-values are shown in squared brackets in the case of Arellano-Bond and Sargan tests. Time dummies and instruments are included in all specifications but are not reported.

As both Difference and System GMM estimations work only with linear functional relationships (Roodman, 2006), in order to check for the robustness of the results the squared values of exports to China and to US and EU are introduced. The results are shown in Table 6 and reveal no non-linear relationship as all squared values are insignificant. The table, furthermore, confirms the significance of oil independently having a significant but negative effect on growth and the positive highly significant impact of importing high shares of manufacturing. Finally, there is weak evidence that imports from the advanced partners are negatively affecting growth in Latin America.



Although, the robustness check when controlling for copper is not reported as it resulted in high autocorrelation, it confirmed the insignificance of copper exports from Table 4.

**Table 6: GMM estimates (robustness checks)**

Dependent variable: Growth in per capita GDP ( <i>growth</i> )								
	CON=primary		CON=oil					
	(1)	(2)D	(2)S	(3)				
<i>lagged growth</i>	0.472 **	0.485 **	1.026 ***	0.522 **				
	(0.213)	(0.218)	(0.018)	(0.192)				
<i>imp_from_China</i>	0.006	0.004	-0.005	0.008				
	(0.006)	(0.005)	(0.004)	(0.024)				
<i>exp_to_China</i>	0.0001	-0.002	-0.012	-0.001				
	(0.018)	(0.014)	(0.013)	(0.006)				
<i>human</i>	-0.253	-0.245	0.032	-0.251				
	(0.246)	(0.280)	(0.031)	(0.172)				
<i>invest</i>	0.226 **	0.202 **	0.116 **	0.157 ***				
	(0.083)	(0.078)	(0.049)	(0.053)				
<i>gov_eff</i>	0.093 +	0.106 *	0.008	0.044				
	(0.057)	(0.053)	(0.024)	(0.046)				
<i>rich</i>	0.038	0.046 +	-0.016	0.006				
	(0.0329)	(0.027)	(0.029)	(0.034)				
<i>imp_from_US_EU</i>	-0.109 +	-0.094	-0.035 +	0.039				
	(0.067)	(0.078)	(0.023)	(0.122)				
<i>exp_to_US_EU</i>	0.066	0.094	-0.0005	0.023 *				
	(0.064)	(0.125)	(0.065)	(0.012)				
<i>manufactures</i>				0.186 ***				
				(0.061)				
CON	-0.014	omit	-0.049 *					
	(0.030)		(0.025)					
<i>exp_to_china</i>	0.001	0.0005	-0.001					
	(0.001)	(0.001)	(0.001)					
<i>exp_to_US_EU</i>	-0.005	-0.012	0.003					
	(0.014)	(0.027)	(0.018)					
<i>imp_from_china</i>				0.001				
				(0.003)				
<i>imp_from_US_EU</i>				-0.025				
				(0.024)				
Observations	152	152	152	152				
Arellano-Bond test	-1.53	-1.80	-2.12	-2.63				
of order 1	[0.127]	[0.071]	[0.034]	[0.009]				
Arellano-Bond test	-1.51	-1.25	-1.43	-0.79				
of order 2	[0.131]	[0.210]	[0.153]	[0.427]				
Sargan /Hansen	27.95	23.78	0.00	36.73				
test	[0.467]	[0.304]	[1.000]	[0.125]				

Note: All specifications are estimated with a constant but not reported. The robust standard errors are reported in parenthesis. The significances are represented with \*, \*\* and \*\*\* at the 10%, 5% and 1% levels respectively. P-values are shown in squared brackets in the case of Arellano-Bond and Sargan tests and Hansen test in column (3). Time dummies and instruments are included in all specifications but are not reported.

The reason to use System GMM during controlling for oil and copper was to cross-check results and see the effect of the resource abundance independently. Nevertheless, as results are highly confirming and autocorrelations are much higher in the case of System GMM, the Difference GMM estimations are used for benchmarking results in this thesis.

### 3.3. Summary of results contrasting to findings of Baliamoune-Lutz (2011)

The estimations in all specifications confirm that there is strong evidence for the presence of a growth momentum in the period 2001 to 2010 in Latin America as well as opt for the importance of investment. The recent growth momentum could indicate that the poor performance of the region in productivity growth reported in McMillan and Rodrik (2011) have improved since 2005 and it could further advance in the near future.

There is evidence that exports to China are not unconditionally supporting growth in Latin America; it is weakly supposed that exports to China - in aggregate including agricultural goods - are negatively impacting growth. However, oil enhances the positive effects of exports to China on growth figures; whereas, oil exports alone might negatively impact growth in the exporting country. Therefore, there might be evidence on the growth by destination hypothesis if Chinese oil imports are concerned. This finding is very interesting in light of Figure 5 previously shown. GDP per capita growth of major exporters such as Venezuela was well above regional average in the years between 2004 and 2008 just in the period when the Chinese demand for crude and refined petroleum oil significantly increased. The fast recovery after 2009 of the Mexican economy could also be supported by the newly emerging trade partnership with China since 2010. It is also vital to note that in the estimations the year 2011 is not included, even though, the trade with China in oil have skyrocketed during the course of the last year. Therefore, we could expect that in the coming future there will be more role of oil exports to China in the region's growth. Interestingly, once we control for export concentration in oil and exports to China, the significance of investment disappears. This could also mean that large shares of fixed investments are made in the oil exporting sector, potentially targeted by increasing FDI received from China. The finding is in line with the claim of Baliamoune-Lutz (2011) that an important channel for impact on growth is the "export-related inward" FDI. The result coincides with evidence from Africa as the oil boom is identified as a potential source of growth. As further export concentrations are studied, no evidence suggests significant impact on growth in the region.

As far as imports are concerned the estimations provide robust evidence that higher shares of manufactures in the imports enhance growth, as well as there might be some positive impact of manufacturing imports from China on growth in Latin America. Nevertheless, we need to account for the fact that the trade with China is still very small in comparison to the GDP and the effects might further increase as trade and imports increase.

On the other hand, there is no robust evidence that trade with advanced partners have any large impact on growth of Latin American partners despite the large share of trade with the North, although, there might be some negative effect of imports and growth-enhancing impact of exports on growth. This finding is rather puzzling given the importance and size of trade with the US and EU and the finding of Balamoune-Lutz (2011) who stresses a robust inverted-U relationship between exports to OECD and growth in Africa.

Significant evidence suggests that countries with higher initial income can embrace growth more, although, this effect might not be robust if the copper exporting nations, Mexico and Chile are not considered. The robust results on the significance of higher income and investment level can potentially indicate that the effect of higher income works through the creation of investment and increasing fixed assets of businesses, as the latter was stressed by Lee (1995). A deeper look at the GFCF figures of the region (graph found in Appendix 3) highlights that the regional shares surpassed that of the advanced economies since 2005, though it had largely followed the US GFCF the years before. Since 2007 the region's share is above the world averages showing similarities with the Sub-Saharan African values. However, in comparison with the African evidence studied by Balamoune-Lutz (2011) GFCF in this region shows much higher significance for growth. It could potentially be the result of education and skills so that capital goods have higher returns in Latin America. In fact education levels are one of the key differences between the two continents as the literacy rates of the adult population displays a gap between Latin American countries and Sub-Saharan Africa of almost 30 percent. This figure has been constant since 1990 (World Databank, 2012). The average years of total schooling in Latin America is significantly higher, however, there are also major differences within the region as Guatemala and Honduras for the period 2000 to 2010 reported half the years of Chile and Argentina (SEDLAC, 2012, Barro and Lee, 2010).

Based on the above results it is hard to yet empirically assess the recent trade emergence with China and denote it as a blessing or a curse. There might be already smaller indications of advantages in manufacturing imports and exports of oil; however, the positive effect is not unconditional as the rise of primary exports to China might not translate into benefits for Latin American countries in the long term.

#### 4. Concluding remarks

It seems likely that the real growth momentum comes for Latin American economies from capital investments within the economy to increase technological content of both within primary industries of mining and agriculture as well as to improve facilities of manufacturing and increase competitiveness. If fixed assets, capital goods enhance growth, skills and training is required from the locals to support the growth effect in the whole economy.

But how much will poor people benefit? The impact on the poor still remains a question as the skill and capital intensive mining and, even to some extent; agricultural sectors - especially, soybean production – provide little employment to unskilled labour. Do they then benefit from cheaper imported consumer goods? Is the government able to appropriate enough rents on the exports to ensure that the lowest levels of the society can also benefit from growth and increasing primary exports? Apparently, the growth momentum already shows large improvements in poverty alleviation enabled by increasing wages as the figures of poverty have reached by 2010 their lowest values of the last two decades (ECLAC, 2011). On the other hand, the growth momentum could also be supported by the “window of opportunity” emphasized by Székely and Montes (2006) even further highlighting the role and importance of education in the current era.

Nevertheless, it is also vital to see that the current analysis have shortcomings and could not address all the trade effects of China. This thesis could be, therefore, in further research expanded by looking at the role of commodity booms and include in the model a number of variables on commodity price indexes present in the literature. Additionally, the analysis could also be augmented by empirically investigating whether imports from China create significant obstacle for trade between Latin American economies, substitute imports from the region and therefore, puts local manufactures into difficulties. It would be also important to research whether imports have a direct impact on poverty and inequality through the access of cheaper consumer goods and machinery.

In light of the recent developments even between 2010 and 2011, it could be particularly interesting to re-estimate the relationship in the near future and see if and after how long the boom in imports and exports with China could significantly impact the Latin American economies.

As commodities play a crucial role in the economies of Latin America it is an area of top priority for policy makers (Sinnott et al., 2011). There will be certainly winners and losers from the rising impact of China in the region and within countries as well, therefore, policy makers should ensure

that the growth potentially enhanced by increase trade cooperation could reach all layers of the society and every sector benefit, whereas losers are compensated from the aggregate gains. Meanwhile, the growth momentum of Latin America could provide major opportunities for the region to foster growth and further decrease inequality and poverty rates. The emergence of South-South cooperation could provide a basis for global growth and prosperity in the coming decades.

## Appendices

### Appendix 1. List of countries for the estimations

Argentina	Guatemala
Bolivia	Honduras
Brazil	Mexico
Chile	Nicaragua
Colombia	Panama
Costa Rica	Paraguay
Dominica	Peru
Dominican Republic	Uruguay
Ecuador	Venezuela
El Salvador	

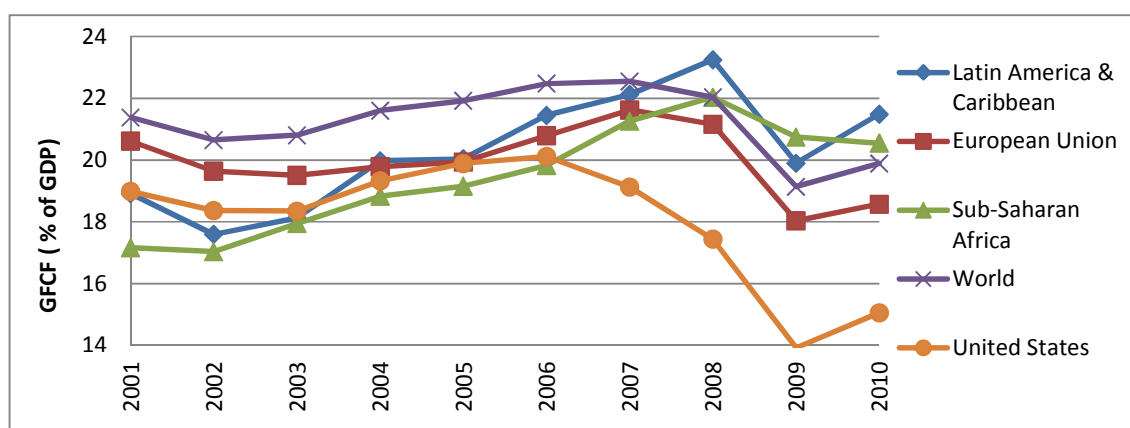
### Appendix 2. Variable description

Variable	Definition	Source
<i>growth</i>	GDP per capita in log form, using constant 2000 USD	World Development Indicators
<i>exp_to_China</i>	The share of export to China in GDP (%)	IMF Direction of Trade Statistics
<i>imp_from_China</i>	The share of import from China in GDP (%)	IMF Direction of Trade Statistics
<i>exp_to_US_EU</i>	The share of export to US_EU in GDP (%)	IMF Direction of Trade Statistics
<i>imp_from_US_EU</i>	The share of import from US_EU in GDP (%)	IMF Direction of Trade Statistics
<i>primary</i>	The ratio of primary products in the country top 5-9 exports (%)	International Trade Centre
<i>manufactures</i>	The ratio of primary products in the country top 10 imports (%)	International Trade Centre
<i>invest</i>	Gross fixed capital formation as ratio of GDP (%)	World Development Indicators
<i>openness</i>	The sum of total imports and exports of goods to GDP (%)	World Development Indicators
<i>credit</i>	Domestic credit provided to the private sector (% of GPD)	World Development Indicators
<i>human</i>	Average years of schooling for the age 25 and above	UNDP
<i>gov_eff</i>	Indicator of government effectiveness	World Governance Indicators
<i>law</i>	Indicator of rule of law	World Governance Indicators
<i>copper</i>	Dummy variable taking a value of 1 if the country is major copper exporter, zero otherwise	International Trade Centre
<i>oil</i>	Dummy variable taking a value of 1 if the country is major oil exporter, zero otherwise	International Trade Centre
<i>MERCOSUR</i>	Dummy variable taking the value of 1 if the country is member or the organization and zero otherwise	MERCOSUR information
<i>rich</i>	Dummy variable taking the value of 1 if the GDP per capita of the country is above 5000 USD in 2000 constant USD and zero otherwise	World Development Indicators

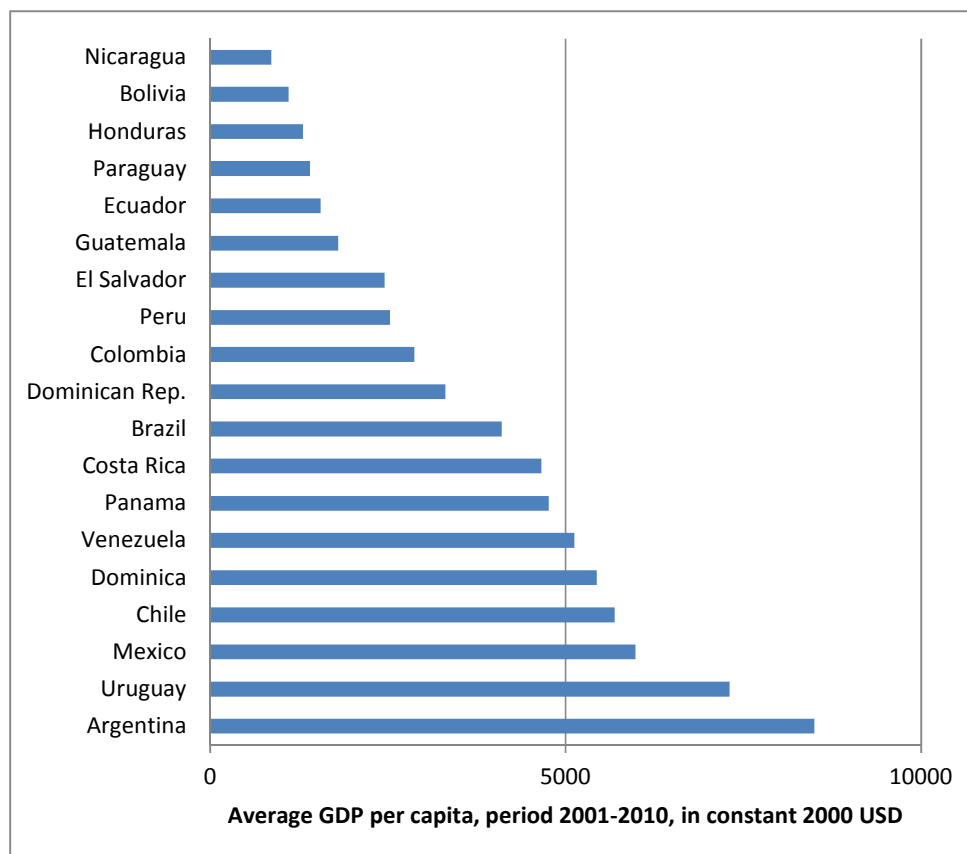
### Appendix 3. Summary statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP per capita growth ( <i>growth</i> )	190	8.015647	0.67698	6.662247	9.282607
<b>TRADE</b>					
Exports to China ( <i>exp_to_China</i> )	190	-1.25253	2.010277	-9.21034	2.117689
Imports from China ( <i>imp_from_China</i> )	190	0.319455	1.678846	-9.21034	2.979148
Exports to US and EU ( <i>exp_to_US_EU</i> )	190	2.140023	0.646263	0.318588	3.48257
Imports from US and EU ( <i>exp_from_US_EU</i> )	190	2.305463	0.639183	1.153834	3.476905
Primary ( <i>primary</i> )	190	4.065803	0.618734	2.324657	4.600434
Manufactures ( <i>Manuf</i> )	190	4.265748	0.171777	3.427104	4.5519
<b>CONTROL VARIABLES</b>					
Human capital ( <i>human</i> )	190	2.057619	0.208886	1.4005	2.410371
Investment ( <i>invest</i> )	190	3.014864	0.217886	2.399866	3.585347
Trade openness ( <i>open</i> )	190	4.171981	0.433767	3.079098	5.053019
Financial development ( <i>credit</i> )	190	3.459066	0.53184	2.171543	4.68735
Government effectiveness ( <i>gov_eff</i> )	190	-0.20655	0.559389	-1.11857	1.274359
Rule of law ( <i>law</i> )	190	-0.43235	0.687139	-1.64301	1.294357

Appendix 4. Gross Fixed Capital Formation for selected regions and economies, period 2001-2010, in percentage of GDP.

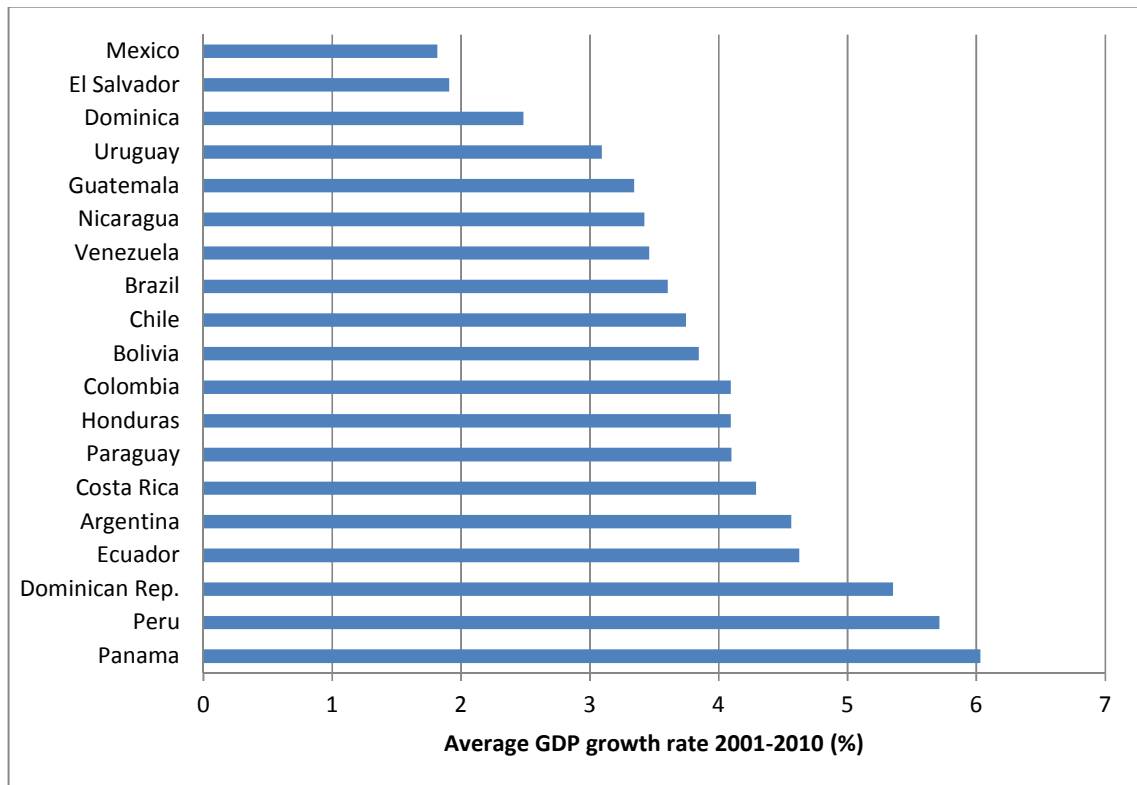


Appendix 5. Average GDP per capita in selected Latin American economies, for the period 2001-2010, in percentage.





Appendix 6. Average GDP growth rates in selected Latin American economies, for the period 2001-2010, in percentage.



## References

- ARELLANO, M. & FINANCIEROS, C. D. E. M. Y. 2003. *Modelling optimal instrumental variables for dynamic panel data models*, Centro de Estudios Monetarios y Financieros.
- BALIAMOUNE-LUTZ, M. & NDIKUMANA, L. 2007. The growth effects of openness to trade and the role of institutions: New evidence from African countries.
- BALIAMOUNE-LUTZ, M. 2011. Growth by Destination (Where You Export Matters): Trade with China and Growth in African Countries\*. *African Development Review*, 23, 202-218.
- BARRO, R. & LEE, J. W. 2010. *Barro-Lee Educational Attainment Dataset* [Online]. Available: <http://www.barrolee.com/data/yrsch.htm> [Accessed 10 May 2012].
- BARRO, R. J. 1991. Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, 106, 407-443.
- BAUM, C. F. 2006. *An introduction to modern econometrics using Stata*, Stata Corp.
- BBC. 2011. *China's export growth slows down* [Online]. Available: <http://www.bbc.co.uk/news/business-13723433> [Accessed 5 February 2012].
- BEATTIE, A. 2011. *US-China trade ties: A heated exchange* [Online]. Available: <http://www.ft.com/intl/cms/s/0/8d773dbc-1c2a-11e1-9631-00144feabdc0.html#axzz1h4HPKCRA> [Accessed 20 December 2011].
- BEUGELSDIJK, M. & EIJFFINGER, S. C. W. 2005. The Effectiveness of Structural Policy in the European Union: An Empirical Analysis for the EU-15 in 1995–2001\*. *JCMS: Journal of Common Market Studies*, 43, 37-51.
- BLÁZQUEZ-LIDOY, J., RODRÍGUEZ, J. & SANTISO, J. 2006. *Angel or devil?: China's trade impact on Latin American emerging markets*, OECD.
- CALVO, G. A. & TALVI, E. 2005. Sudden stop, financial factors and economic collapse in Latin America: learning from Argentina and Chile. National Bureau of Economic Research.
- CHANTASASAWAT, B., FUNG, K., IIZAKA, H. & SIU, A. 2010. FDI Flows to Latin America, East and Southeast Asia, and China: Substitutes or Complements? *Review of Development Economics*, 14, 533-546.
- CHANTASASAWAT, B. & INSTITUTE, A. D. B. 2005. *Foreign direct investment in East Asia and Latin America: is there a People's Republic of China effect?*, Asian Development Bank Institute.
- CHICAGO TRIBUNE. 2012. *Exclusive: Brazil targets Argentina with trade licenses* [Online]. Available: <http://www.chicagotribune.com/news/sns-rt-us-brazil-argentina-tradebre84e0az-20120515,0,5707417.story> [Accessed 16 May 2012].
- CIA. 2012. *The World Factbook - Oil imports* [Online]. Available: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2175rank.html> [Accessed 15 May 2012].
- CLINE, W. R. 2010. Renminbi Undervaluation, China's Surplus, and the US Trade Deficit. Peterson Institute for International Economics.
- COCHILCO 2011. *Yearbook: Copper and Other Mineral Statistics 1991-2010*. Santiago: Comisión Chilena del Cobre.
- COLLIER, P. & GODERIS, B. 2007. Commodity prices, growth, and the natural resource curse: Reconciling a conundrum. CSAE Working Paper.
- COLOMBIA REPORTS. 2012. *FTA will negatively affect 1.8 million farmers in Colombia: Report* [Online]. Available: <http://colombiareports.com/colombia-news/economy/24021-oxfam-slams-ftas-impact-on-colombias-farmers.html> [Accessed 14 May 2012].
- COPPER INVESTING NEWS. 2010. *The Top 10 Copper Producing Countries* [Online]. Available: <http://copperinvestingnews.com/4147/the-top-10-copper-producing-countries/> [Accessed 20 March 2012].
- DAY, P. 2012. *Exclusive - EU to lodge suit against Argentina with WTO* [Online]. Available: [http://www.swissinfo.ch/eng/news/international/Exclusive\\_-](http://www.swissinfo.ch/eng/news/international/Exclusive_-)

- [\\_EU\\_to\\_lodge\\_suit\\_against\\_Argentina\\_with\\_WTO\\_-\\_source.html?cid=32695242](#) [Accessed 16 May 2012].
- DE PAIVA ABREU, M. 2006. The External Context. In: BULMER-THOMAS, V. C., JOHN H. ANDCORTÉS, ROBERTO (ed.) *The Cambridge Economic History of Latin America: Volume II: The Long Twentieth Century*. New York, United States: Cambridge University Press.
- ECLAC 2008. Economic and Trade Relations between Latin America and Asia-Pacific. The link with China. Santiago, Chile.
- ECLAC 2010. Chapter III: Direct investment by China in Latin America and the Caribbean In: ECLAC (ed.) *Foreign Direct Investment in Latin America and the Caribbean*.
- ECLAC 2011. Latin America: Poverty and Indigence, 1980-2011.
- ELU, J. U. & PRICE, G. N. 2010. Does China Transfer Productivity Enhancing Technology to Sub-Saharan Africa? Evidence from Manufacturing Firms. *African Development Review*, 22, 587-598.
- FAOSTAT. 2012. *Trade - Commodities by countries* [Online]. Available: <http://faostat.fao.org/site/342/default.aspx> [Accessed 15 May 2012].
- FISCHER, A. M. 2010. Is China turning Latin? China's balancing act between power and dependence in the lead up to global crisis. *Journal of International Development*, 22, 739-757.
- GARCIA-HERRERO, A. & SANTABÁRBARA, D. 2007. Does China have an impact on foreign direct investment to Latin America? *China Economic Review*, 18, 266-286.
- GEBRE-EGZIABHER, T. 2007. Impacts of Chinese imports and coping strategies of local producers: the case of small-scale footwear enterprises in Ethiopia. *The Journal of Modern African Studies*, 45, 647-679.
- GLAESER, E. L., SCHEINKMAN, J. A. & SHLEIFER, A. 1995. Economic growth in a cross-section of cities. *Journal of Monetary Economics*, 36, 117-143.
- GOLDBERG, P. K. & PAVCNİK, N. 2004. Trade, inequality, and poverty: What do we know? Evidence from recent trade liberalization episodes in developing countries. National Bureau of Economic Research.
- GREENAWAY, D., MORGAN, W. & WRIGHT, P. 2002. Trade liberalisation and growth in developing countries. *Journal of Development economics*, 67, 229-244.
- GIŤHĨNJI, M. 2010. Dhows to Planes: Trade Relations between the Arabian Gulf and Africa and their impacts on Development. *Journal of African Development*, 12, 132-55.
- HABER, S. 2006. The political economy of industrialization. In: BULMER-THOMAS, V., COATSWORTH, J. H. & CONDE, R. C. (eds.) *The Cambridge Economic History of Latin America: Volume II: The Long Twentieth Century*. New York, United States: Cambridge University Press.
- HOGENBOOM, B. 2009. Latin America and the Rise of China: Possibilities and Obstacles for Development. In: PAUS, E., PRIME, P. B. & WESTERN, J. W. (eds.) *Global giant: is China changing the rules of the game?* New York: Palgrave Macmillan Ltd.
- IMF 2012. Direction of Trade Statistics (Edition: May 2012). DOI: <http://dx.doi.org/10.5257/imf/dots/2012-05>: ESDS International, University of Manchester.
- INDICATORS, W. G. 2011. *The Worldwide Governance Indicators (WGI) project* [Online]. Available: <http://info.worldbank.org/governance/wgi/index.asp> [Accessed 1 May 2012].
- INTERNATIONAL TRADE CENTRE. 2012. *Trade by Product Groups* [Online]. Available: [http://www.trademap.org/tradestat/Product\\_SelCountry\\_TS.aspx](http://www.trademap.org/tradestat/Product_SelCountry_TS.aspx) [Accessed 29 April 2012].
- JENKINS, R. 2010. China's Global Expansion and Latin America. *Journal of Latin American Studies*, 42, 809-837.
- JENKINS, R. & PETERS, E. 2010. *China and Latin America: Economic relations in the twenty-first century*, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE).
- JENKINS, R., PETERS, E. D. & MOREIRA, M. M. 2008. The impact of China on Latin America and the Caribbean. *World Development*, 36, 235-253.
- KAPLINSKY, R. 2006. Revisiting the revisited terms of trade: Will China make a difference? *World Development*, 34, 981-995.

- KEATING, J. 2011. *Why does Central America still love Taiwan?* [Online]. Foreign Policy. Available: [http://blog.foreignpolicy.com/posts/2011/05/12/why\\_does\\_central\\_america\\_love\\_taiwan](http://blog.foreignpolicy.com/posts/2011/05/12/why_does_central_america_love_taiwan) [Accessed 9 March 2012].
- LEAHY, J. 2012. *Brasília cheers the real's decline* [Online]. Available: <http://www.ft.com/intl/cms/s/0/67db11fa-9dad-11e1-838c-00144feabdc0.html#ixzz1uqyhj6ll> [Accessed 16 May 2012].
- LEE, J.-W. 1995. Capital goods imports and long-run growth. *Journal of Development Economics*, 48, 91-110.
- LORA, E. 2006. Structural reforms in Latin America: what has been reformed and how to measure it.
- LOSER, C. The Prospects for Latin America: Risks and Opportunities with a Historical Perspective. 2008.
- LUNN, T., FISHER, H., GOMEZ-GRANGER, J. & LELAND, A. 2009. China's Foreign Aid Activities in Africa, Latin America and Southeast Asia, R40361, Washington, DC: Congressional Research Service.
- LÓPEZ, P. P. & THIRLWALL, A. 2006. Trade liberalization, the income elasticity of demand for imports, and growth in Latin America. *Journal of Post Keynesian Economics*, 29, 41-61.
- MANKIW, N. G., ROMER, D. & WEIL, D. N. 1992. A contribution to the empirics of economic growth. *The quarterly journal of economics*, 107, 407-437.
- MARTÍNEZ, H. 2012. *Trade Deal "Throws Country into Jaws of Multinationals," Critics Say* [Online]. Available: <http://ipsnews.net/news.asp?idnews=107808> [Accessed 17 May 2012].
- MASWANA, J.-C. 2009. Can China Trigger Economic Growth in Africa? *Chinese Economy*, 42, 91-105.
- MATTOO, A., RATHINDRAN, R. & SUBRAMANIAN, A. 2006. Measuring services trade liberalization and its impact on economic growth: An illustration. *Journal of Economic Integration*, 21, 64-98.
- MCMILLAN, M. S. & RODRIK, D. 2011. Globalization, structural change and productivity growth. National Bureau of Economic Research.
- MILEVA, E. 2007. Using Arellano – Bond Dynamic Panel GMM Estimators in Stata. Fordham University.
- MILTON, B.-F., RICARDO GONÇALVES, S. & ELIEZER MARTINS, D. 2005. THE EMPIRICS OF THE SOLOW GROWTH MODEL: LONG-TERM EVIDENCE. *Journal of Applied Economics*, 8, 31.
- MINISTRY OF COMMERCE OF PRC. 2012. **China-Chile FTA** [Online]. Available: <http://fta.mofcom.gov.cn/topic/enchile.shtml> [Accessed 25 May 2012].
- OBOKOH, L. O. & EHIUBUCHE, C. 2011. *Globalisation of Finance: Analysis of the Impact of Exchange Rate Deregulation on Small and Medium Sized Enterprises Development in Nigeria* [Online]. Available: <http://www.icsb2011.org/download/18.62efe22412f41132d41800011456/526.pdf> [Accessed 5 May 2012].
- RADETZKI, M. Primary Commodities: Historical Perspectives and Prospects. Natural resources, finance and development: Confronting Old and New Challenges, 2010 Algiers.
- ROCHA, F. 2010. Natural Resource Curse and Externalities from Natural Resource Exports.
- RODRIGUEZ, F. & RODRIK, D. 2001. Trade policy and economic growth: a skeptic's guide to the cross-national evidence. MIT Press.
- ROODMAN, D. 2006. How to Do xtabond2: An Introduction to "Difference" and "System" GMM in Stata. Center for Global Development Working Paper 103.
- SACHS, J. D. & WARNER, A. M. 1995. Natural resource abundance and economic growth. National Bureau of Economic Research.
- SACHS, J. D. & WARNER, A. M. 1999. The big push, natural resource booms and growth. *Journal of development economics*, 59, 43-76.
- SACHS, J. D. & WARNER, A. M. 2001. The curse of natural resources. *European Economic Review*, 45, 827-838.
- SALVUCCI, R. 2006. Export-led industrialization. In: BULMER-THOMAS, V., COATSWORTH, J. H. & CONDE, R. C. (eds.) *The Cambridge Economic History of Latin America: Volume II: The Long Twentieth Century*. New York, United States: Cambridge University Press.
- SEDLAC. 2012. *Stats* [Online]. Available: <http://sedlac.econo.unlp.edu.ar/eng/statistics-detalle.php?idE=37> [Accessed 10 May 2012].
- SINNOTT, E., NASH, J. & DE LA TORRE, A. 2011. Natural Resources in Latin America and the Caribbean: Beyond Booms and Busts? : World Bank.

- SZÉKELY, M. & MONTES, A. 2006. Poverty and Inequality. In: BULMER-THOMAS, V., COATSWORTH, J. & CORTÉS CONDE, R. (eds.) *The Cambridge Economic History of Latin America: Volume II: The Long Twentieth Century*. New York, United States: Cambridge University Press.
- THE MIAMI HERALD. 2012. *U.S.-Colombia Free Trade Agreement goes into effect* [Online]. Available: <http://www.miamiherald.com/2012/05/14/v-fullstory/2799483/us-colombia-free-trade-agreement.html> [Accessed 15 May 2012].
- THE WALL STREET JOURNAL. 2012. *UPDATE: Argentina, Brazil Local-Currency Trade Makes Slow Headway* [Online]. Available: <http://online.wsj.com/article/BT-CO-20120517-716280.html> [Accessed 18 May 2012].
- TONG, S. 2010. Chapter 3: China's Decisive Response to the Economic Crisis Bears Fruits. In: TONG, S., WONG, J. & ZHENG, Y. (eds.) *China and the Global Economic Crisis*. East Asian Institute. Series on Contemporary China.
- TOYE, J. & TOYE, R. 2003. The origins and interpretation of the Prebisch-Singer thesis. *History of Political Economy*, 35, 437-467.
- UN COMTRADE 2011. 2010 International Trade Statistics Yearbook Volume II - Trade by Commodity. New York: United Nations Statistics Division.
- UNDP. 2011. *International Human Development Indicators* [Online]. Available: <http://hdrstats.undp.org/en/indicators/103006.html> [Accessed 2 May 2012].
- WANG, Y. & YAO, Y. 2003. Sources of China's economic growth 1952–1999: incorporating human capital accumulation. *China Economic Review*, 14, 32-52.
- WISE, C. & QUILICONI, C. 2007. China's Surge in Latin American Markets: Policy Challenges and Responses. *Politics & Policy*, 35, 410-438.
- WORLD DATABANK 2012. World Development Indicators. <http://databank.worldbank.org/ddp/home.do?Step=3&id=4>.
- WRIGHT, G. & CZELUSTA, J. 2007. Resource-Based Growth Past and Present In: LEDERMAN, D. & MALONEY, W. F. (eds.) *Natural Resources Neither Curse nor Destiny* Washington: The World Bank and Stanford University Press.
- YANG, M. & LIM, T. S. 2010. Chapter 2: Recession Averted? China's Domestic Response to the Global Financial Crisis. In: TONG, S., WONG, J. & ZHENG, Y. (eds.) *China and the global economic crisis*. East Asian Institute. Series on contemporary China.
- YANIKKAYA, H. 2003. Trade openness and economic growth: a cross-country empirical investigation. *Journal of Development economics*, 72, 57-89.