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Specialization and Adjustment during the Growth of China and India:

The Latin American Experience

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Abstract

This paper examines the extent to which the growth of China and India in world markets is affecting the patterns of trade specialization in Latin American economies. The authors construct Vollrath's measure of revealed comparative advantage by 3-digit ISIC sector, country, and year. This measure accounts for both imports and exports. The empirical analyses explore the correlation between the revealed comparative advantage of Latin America and the two Asian economies. Econometric estimates suggest that the specialization pattern of Latin A—with the exception of Mexico—has been moving in opposite direction of the trade specialization pattern of China and India. Labor-intensive sectors (both unskilled and skilled) probably have been negatively affected by the growing presence of China and India in world markets, while natural resource and scientific knowledge intensive sectors have probably benefited from China and India's growth since 1990.

This paper—a product of the Office of the Chief Economist for Latin America/Caribbean—is part of a larger effort in the department to understand the effects of the growth of China and India on Latin American/Caribbean economies. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dlederman@worldbank.org.

Specialization and Adjustment during the Growth of China and India: The Latin American Experience[*]

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1. Introduction

In 1980 Latin America (LA) was twice as large as China and India in terms of gross domestic product (GDP), which jointly represented 3 percent of world GDP. By 2004, due to the rapid growth of the Asian economies, LA was 20 percent smaller than China and India.[1] Today China is the sixth largest economy in the world when measured in terms of GDP and India is the tenth largest economy. Together they account for 6.4 percent of world GDP, with China being roughly three times larger than India.

The growth of China and India has been accompanied by their rapid integration into world markets, while LA's global integration has risen relatively slowly. LA had a trade to GPD ratio roughly equal to the trade to GDP ratio of China in the late 1980s, and two times larger than the trade to GDP ratio of India. By 2004 the trade to GDP ratio of China was 35 percent larger than the trade to GDP ratio of LA, and India's trade to GDP ratio was only 14 percent smaller than LA's. China is currently the third largest trading economy in the world (behind the United States and Germany), while India ranks 25th in terms of trade value.

The fast growth of China and India and their rapid integration into world markets have probably affected the patterns of trade specialization of other economies. They have been taking market share away from LA exporters in certain markets, but the growing demand of China and India has benefited others. The importance of China and India as a destination for LA exports increased four-fold since 1990 when they represented less than 1 percent of LA exports. This signals a significant increase in trade opportunities, even though the levels remain quite low, generally representing less than 10 percent of total imports (see Figure 1). The share of China and India in total LA imports also increased significantly over the period, signaling that their growing presence may be hurting some firms in LA but also benefiting consumers (see Figure 2).

[1] Note that by 1990 LA was still 65 percent larger than China and India. Since then LA's GDP grew at an average annual rate of 4.4 percent, India at 5.7 percent, and China at 12.9 percent. All numbers refer to the GDP valued in 2000 USD dollars.

This paper examines the extent to which LA's trade patterns have changed as a consequence of the growing presence of China and India in world markets. If LA trade specialization has changed, are its exports becoming more intensive in natural resources, scientific knowledge, skilled or unskilled workers? How do adjustment patterns differ across countries within LA? The answers to these questions could help policy markers accompany the adjustment process with long- and short-term policies, such as education, technical training, innovation policies, and perhaps trade-adjustment assistance programs for workers. From an academic viewpoint, since China's and India's growth was exogenous to the performance of LA economies, then the growth of China and India provides an important opportunity to study the effects of global shocks on structural change in developing countries.

There is a growing literature that argues that there is no strong trade competition between China and LA countries, with the exception of Mexico and some Central American economies (e.g., Blazquez-Lidoy, Rodriguez, and Santiso 2006). These authors based their conclusion on low export similarity indices across industries between LA and China.[2] There are two problems with the indices of export similarity. First, they fail to capture the importance of each product in world markets. That is, China and LA can have very different export shares in products that are heavily traded in world markets, and very similar ones in products that are not heavily traded, which would result in export similarity indices that underestimate the degree of similarity. Second, by focusing only on exports they fail to capture two important phenomena, namely the growth of intra-industry trade in intermediate goods and the opportunity that the growing economies of China and India represent for LA economies. Castro, Tramutola, and Monat (2005), for example, argued that an important share of the recent export boom in commodities experienced by Argentina is due to China's growing demand for commodities over the last 15 years (see Figure 3).[3]

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[2] More precisely their index of export similarity is given by $1 - 1/2 \sum_n \left| s_n^{LAC} - s_n^{China} \right|$, which is below 0.5 for all LA countries with the exception of Mexico.

[3] There are two other problems with indices of export similarity. First, similar products can be exported to different markets, thus representing little competition in specific markets. Second, exports of similar

We address the two problems associated with export similarity indices and provide sector-level evidence of how China and India's growing presence in world markets has been affecting LA's trade specialization. First, we construct an index of Revealed Comparative Advantage (RCA) at the global level that accounts for exports, but also imports, as well as the relative size of world markets to capture the overall competitiveness of each country by sector (Vollrath 1991).[4] We then explore the evolution of the correlation between LA RCAs on the one hand and Chinese and Indian RCAs on the other hand over the past two decades. These exercises suggest the extent to which LA is competing in the same product markets as China and India, as well as whether Chinese and Indian growth represents opportunities for LA exports. Finally, after determining the factor intensities of LA economies in each sector (see Appendix), we explore the implications of Chinese and Indian growth for the relative demand of factors of production in LA. The heterogeneity of country experiences within LA is emphasized throughout.

The results suggest that LA's trade specialization—with the exception of Mexico—has been moving in opposite direction from the trade specialization of China. This indicates that LA's trade structures are becoming increasingly complementary to the specialization of China. China's specialization pattern at the end of the period (early 2000s) was negatively correlated with the specialization pattern of most LA economies (again, Mexico is an exception). India's specialization pattern, in contrast, seems to be positively correlated even at the end of the period with those of most LA economies (with the exception of the Andean countries). In terms of the opportunity that the internal market of these two economies may represent for LA economies, we found no evidence that their bilateral trade has a significant effect on LA's specialization patterns, beyond the impact that China and India's trade pattern with the world has on LA's specialization pattern. This is probably due to the still relatively small size of the bilateral trade between

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products to the same market can be subject to demand complementarities, due for example to the growing presence of production networks. Evidence provided by Lederman, Olarreaga, and Soloaga (2006) suggest that these complementarities can be large, at least at the aggregate level. However, these two problems will not be addressed in this paper.

[4] To compare RCAs across time and countries we do a simple correction to Vollrath's index, which is discussed in the next section.

LA economies and China and India. Finally, we found that labor (both unskilled and skilled) was the factor that was most likely negatively affected in the period under study, while natural resources and scientific knowledge have benefited from the growing presence of China and India in world markets.

The rest of this paper is organized as follows. Section 2 provides *prima facie* evidence regarding the level and evolution of the correlation between LA RCAs and those of the two Asian economies. Section 3 describes the empirical methodology used to identify the direction in which China and India are pushing the trade specialization of LA and discusses the results. Section 4 concludes.

2. How similar are LA, Chinese, and Indian RCAs?

We start by constructing an index of RCA for China, India, and 13 LA economies for which there is reliable trade data available at the sector level (ISIC 3 digit) from 1990 to 2004.[5] We then explore the evolution of Chinese, Indian, and LA RCAs over the last this period to provide *prima-facie* evidence regarding the extent to which China and India's specialization patterns are correlated with LA specialization patterns.

2.1 RCA indices

Vollrath (1991) proposed a measure of RCA that corrects for three problems associated with the traditional Balassa measure of RCA.[6] First, it eliminates any double counting problem by excluding the sector and country trade values in the aggregates that are used as benchmarks to compare a country/sector RCA. Second, it is based on a measure of net exports, which allows the RCA to capture intra-industry trade. Third, Balassa's index is asymmetric as it varies between 0 and infinity, with values between 0

[5] The 13 economies are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Costa Rica, Guatemala, Mexico, Nicaragua, Peru, Uruguay, and Venezuela. Together they represent 98 percent of the Latin America's GDP.

[6] Balassa's measure of RCA of country *c* in sector *s* is given by: $RCA_s^c = \left(X_s^c / X^c\right) / \left(X_s^w / X^w\right)$, where are exports of country *c* in sector *s*, X^c are total exports of country *c*, X_s^w is world trade in sector *s*, and X^w is total world trade.

and 1 indicating that the country does not have a comparative advantage in a given sector and values between 1 and positive infinity signaling that the country has a comparative advantage in that sector. The measure proposed by Vollrath (1991) is symmetric, with positive values indicating revealed comparative advantage and negative values a revealed comparative disadvantage. The symmetry of the RCA index is an important feature for econometric analysis.

More formally, the RCA proposed by Vollrath (1991) is given by:

$$RCA_{s,t}^{c} = \ln\left(RXA_{s,t}^{c}\right) - \ln\left(RMA_{s,t}^{c}\right) \tag{1}$$

where

$$RXA_{s,t}^{c} = \left(X_{s,t}^{c}\right)/\left(X_{-s,t}^{c}\right)/\left(X_{s,t}^{-c}\right)/\left(X_{-s,t}^{-c}\right) \tag{2}$$

$$RMA_{s,t}^{c} = \left(M_{s,t}^{c}\right)/\left(M_{-s,t}^{c}\right)/\left(M_{s,t}^{-c}\right)/\left(X_{-s,t}^{-c}\right) \tag{3}$$

where $X_{s,t}^{c}$ are exports of country *c* in sector *s* at time *t*, $X_{-s,t}^{c}$ are total exports of country minus exports of good *s* at time *t,* $X_{s,t}^{-c}$ is world exports in sector *s* at time *t*, minus $X_{s,t}^{c}$, and $X_{-s,t}^{-c}$ is total world exports minus $X_{s,t}^{-c}$ and $X_{-s,t}^{c}$. *M* stands for imports and subscripts and superscripts are defined in the same way as in the case of exports.

The Vollrath (1991) index, however, is imperfect for international comparisons over time. The average value of $RCA_{s,t}^{c}$ across sectors *s* will vary across countries and time. The average value will depend on the degree of concentration of exports and imports in each country/year. So in order to make inferences regarding which country has a stronger comparative advantage in apparel, or whether a country's comparative advantage in apparel has increased over time, we need to normalize all $RCA_{s,t}^{c}$ values by their country/year mean. More formally, the measure of RCA we use is:

$$\hat{RCA}^{c}_{s,t} = RCA^{c}_{s,t} - \sum_{s} \frac{RCA^{c}_{s,t}}{n} \qquad (4)$$

where n is the number of sectors s.

Table 1 provides summary statistics for $\hat{RCA}_{s,t}$ based on trade data across ISIC 2-digit sectors in 1990 and 2004 for LA as a whole, the Andean countries (Bolivia, Colombia, Ecuador, Peru, and Venezuela), Central America (Costa Rica, Guatemala, and Nicaragua), Mexico, the Southern Cone (Argentina, Brazil, Chile, and Uruguay), China, and India.

In 1990 LA's comparative advantage (when $\hat{RCA}_{s,t} > 0$) was in commodities: agriculture (ISIC 11), logging (ISIC 12), fishing (ISIC 13), crude petroleum (ISIC 22), ore mining (ISIC 23), food manufacturing (ISIC 31), basic metal industries (ISIC 37), and electricity and gas (ISIC 41).[7] In 1990 China's comparative advantage was relatively similar. It was concentrated in logging (ISIC 12), fishing (ISIC 13), coal mining (ISIC 21), crude petroleum (ISIC 22), other mining (ISIC 29), food manufacturing (ISIC 31), textile and apparel (ISIC 32), non-metal products (ISIC 36), and other manufacturing (ISIC 39). Thus of the eight two-digit sectors in which LA had a comparative advantage in 1990, there were four in which China also had a comparative advantage. The comparative advantage of India in 1990 was also relatively similar to the one observed in China, and to a lesser extent in LA. It was concentrated in agriculture (ISIC 11), logging (ISIC 12), fishing (ISIC 13), ore mining (ISIC 23), food manufacturing (ISIC 31), textiles and apparel (ISIC 32), non-metal products (ISIC 36) and other manufacturing (ISIC 39). Thus, of the eight sectors in which India had a comparative advantage in 1990, there were six in which China also had a comparative advantage and five in which LA also had a comparative advantage.

[7] LA's comparative disadvantage was in some commodities such as coal mining (ISIC 21) and other mining (ISIC 29), but mainly in manufacturing: textile and apparel (ISIC 32), wood products (ISIC 33), paper products (ISIC 34), chemicals (ISIC 35), non-metal products (ISIC 36), fabricated metal products (ISIC 38), and other manufacturing (ISIC 39).

The specialization patterns of LA and the two Asian economies diverged between 1990 and 2004. By 2004 China and LA only shared two sectors of comparative advantage. With India, the number of sectors remained unchanged, thus suggesting less divergence. Table 1 also provides information about industries that have experienced a significant change in comparative advantage of more than 0.5 points in the RCA. The RCAs of industries/countries that increased appear in bold; those that declined are underlined. The data suggest that India and China experienced large increases in their RCAs of manufacturing sectors and large falls in commodities (agriculture, fishing, logging, and mining). In LA the changes have been modest.

LA's relatively stable specialization patterns, however, hide intra-regional differences. For example, Mexico and to a lesser extent Andean and Central American countries have a similar pattern to the one observed in China and India, although not as pronounced. The Southern Cone, in contrast, experienced increases in their comparative advantage for commodities, while their comparative advantage in manufacturing declined.

Overall this first look at the data suggests that the specialization pattern of LA in 1990 was relatively similar to the ones of China and India. LA's specialization diverged from China's and India's, which experienced shifts towards manufacturing industries, while LA's specialization pattern remained relatively stable. However, this hides some differences within LA, with Mexico moving in the same direction as China and India, while the Southern Cone moved in an opposite direction. The evolution of Andean and Central American specialization patterns is in between the evolution of the two other LA sub-regions.

2.2 Correlation between LA's and Chinese and Indian RCAs

To systematically assess whether LA has been specializing in the same sectors as China and India, we calculated the cross-sector correlation between LA's RCAs and those of the two Asian economies by year. Positive values of these correlations indicate that countries have similar specialization patterns, and therefore compete in the same

markets. Negative values indicate that the specialization patterns complement each other, and that the growth of China and India is an opportunity for LA firms, as China or India's net import demand will be large when LA's net export supply is large. We also explore the evolution of these correlations between 1988 and 2004.

Figure 4 shows the evolution of the correlation between Chinese and Indian RCAs and the RCAs for the aggregate of 13 LA countries in our sample. At the beginning of the period the correlation was positive but modest (around 0.2), suggesting that China and India were specializing in the same products as LA. However, the trend is clearly downwards, and by the end of the period the correlation with China was around -0.2 and the correlation with India was close to zero. This suggests that by the end of the period LA's trade specialization was complementary to the Chinese specialization pattern and unrelated to India's.

Figures 5, 6, 7, and 8 show the correlations for the Andean, Central American, Mexican, and the Southern Cone RCAs with those of China and India. In the case of the Andean countries (Figure 5) the pattern is very similar to the one observed for LA as a whole. In the case of Central America (Figure 6) the correlation with China shows a similar trend, but the correlation with India remains relatively stable and positive, suggesting that India had a specialization pattern that evolved in the same direction as Central America's. For Mexico, the pattern is quite different. The trend is upwards in both cases since the early 1990s, thus suggesting that Mexico's trade structure is converging with China's and India's. This finding does not necessarily mean that Chinese and Indian exports are hurting Mexican export prospects, since both could be improving together perhaps as a result of the operation of global production networks. In the case of the Southern Cone, both correlations show a declining trend, which suggests that the Southern Cone is moving away from the specialization pattern of China and India. Note, however, that in the case of India, the correlation is still positive and relatively high by the end of the period (around 0.2). Thus, with the exception of Mexico, the patterns of specialization of China and India seem to be diverging from LA's, but India's trade specialization remains relatively more similar to LA's when compared to China.

2.3. What sectors are driving the fall of China/India-LA RCAs correlation?

The fact that the specialization pattern of LA is moving away from the specialization pattern of China and India may be due to various forces. On the one hand, LA may be specializing in a few products (concentrating its exports) where China's presence is not very strong or declining. On the other hand, LA may be diversifying its export bundle into new sectors. To ascertain what is driving the evolution of the correlation of RCAs, Figures 4 to 8 also show the evolution of an export concentration Herfindhal index (higher values indicate a more concentrated export bundle), where the right hand side vertical axis provides the scale. The evidence suggests that LA as a whole has been moving towards higher concentration of its export bundle throughout the period. This trend is mainly driven by a strong move towards concentration of exports by the group of Andean countries since the mid 1990s and some mild trend towards concentration in the Southern Cone. In contrast, Central America has shown some strong diversification of its export bundle, and Mexico some mild diversification. During the same period China moved towards a more concentrated export bundle, in particular since the mid 1990s, while India has shown some diversification. Overall this suggests that the explanation behind the falling correlation between LA and China is that LA and China are moving towards more specialization but in a different set of products. In the case of India, the trend would also be explained by the diversification of India's export bundle.

Some key questions remain unanswered. For example, in which sectors is LA specializing and what are the sectors in which China and India are specializing? In order to answer these questions we look at the evolution of RCAs between 1990 and 2004 at the 3 digit level of the ISIC for LA, the Andean group, Central America, Mexico, the Southern Cone, China, and India. In order to focus on the observed negative trend in the correlation between RCAs of LA and those of China and India, we identify 6 potential cases which can explain this trend:

1. China/India RCA increases, and LA (or any of the LA sub-groups) RCA remains constant (China/India is specializing in a product where LA comparative

advantage remains stable). LA is becoming relatively less competitive (or a larger importer of this product).

2. LA RCA increases, and China/India RCA remains constant (LA is specializing in a product where China/India's comparative advantage remains stable). LA is becoming relatively more competitive.

3. China/India RCA increases, and LA RCA declines (China/India is specializing in a product where LA is withdrawing). China/India is a threat for LA.

4. LA RCA increases, and China/India RC declines (LA is specializing in a product where China/India is withdrawing as an exporter). LA is taking the opportunity offered by China/India's withdrawal as an exporter.

5. China/India RCA declines, and LA RCA remains constant (China/India is withdrawing as an exporter from a product where LA's comparative advantage remains stable). China/India's withdrawal as an exporter does not seem to have an effect on LA.

6. LA RCA declines, and China/India RCA remains constant (LA is withdrawing as an exporter from a product where China/India's comparative advantage remains stable). LA's withdrawal as an exporter does not seem to be caused by China/India.

We then categorize each industry according to one of the aforementioned six categories. Industries where the observed RCA trends cannot help explain the negative trend in RCAs correlations are categorized with a value of "0". These are industries that could either explain a positive or a zero trend in the correlation between LA RCAs and the RCAs of China and India.

Table 2 provides the full categorization by industry for LA as a whole and for each sub-regional country group. The evidence suggests that the overall negative trend in the RCA correlation between LA and China and India is mainly explained by the evolution of RCAs in agriculture, fishing, forestry, and mining. Moreover, the explanation has to do with the decline in China's comparative advantage associated with its growing demand for these products, but it is not due to an improvement in the

comparative advantage of LA. It seems, therefore, that in these sectors LA is partly missing the opportunity offered by demand growth in China and India.

The negative trend cannot be explained by the evolution of RCAs in the manufacturing sector (mostly "0"). There are some exceptions: food manufacturing and beverages, where LA increased its RCA while China's and India's RCAs declined (partly due to their growing demand); professional and scientific equipment, where China's RCA declined; tobacco, textiles, and iron and steel where China's RCA rose and LA's declined; printing, paper, pottery, non-metallic mineral products and fabricated metal products where either China or India experienced RCA improvements, but without discernable trends in the RCA of LA in these sectors.

There is little heterogeneity across LA sub-groups with the exception of Mexico, where the "0" category was relatively more common. This is not surprising given that Mexico was the only LA sub-group for which we observed a positive trend in the correlation of RCA with China and India's RCAs.

In sum, with the exception of Mexico, LA's specialization pattern has diverged from that of China and India between 1990 and 2004, leading to more complementary trade specialization patterns. This is mainly due to the evolution of their RCAs in agriculture, fisheries, forestry, and mining, but not in manufacturing (with a few exceptions), where the RCA indeces of China and India are moving in the same direction as the RCAs of LA countries (with a few exceptions such as food manufacturing, beverages, and professional and scientific equipment). Yet LA economies did not seem to take advantage of the growing appetite of China for raw materials, as they maintained the same levels of RCAs in sectors where China's comparative advantage declined. That is, as world markets for these products grew, LA was not able to grab a bigger share of this growing pie.

3. Factor Intensities and LA's Trade Specialization

The objectives of this section are three-fold. First, we explore with a more systematic approach and controlling for country-year effects whether China and India

RCAs are diverging from LA's. Second, we explore the role played by their bilateral trade in shaping LA's specialization pattern. Third, we identify the broad categories of products –defined according to their factor use— that experienced stronger competition or demand from China and India. Are unskilled-labor intensive sectors being hurt by the enhanced specialization of China and India in these products? Are natural resource sectors experiencing stronger demand from China and India than other sectors? What about skilled-labor intensive sectors and sectors intensive in scientific knowledge? The answers to these questions could help target factors of production when designing policies to help maximize the opportunities offered by the growth of China and India, while minimizing the adjustment costs.

3.2 Empirical Strategy

The empirical methodology is straightforward. We explain the RCAs of LA with the RCAs of China and India, as well as the bilateral exports of each LA economy with China and India, controlling for country-year effects. This empirical model can be written as:

$$RCA_{c\in LAC,s,t} = \beta_0 + \beta_{c\in LAC,t} + \alpha_1 RCA_{CHINA,s,t} + \alpha_2 RCA_{INDIA,s,t} + \alpha_3 XN_{CHINA\leftrightarrow c\in LAC,s,t} + \alpha_4 XN_{INDIA\leftrightarrow c\in LAC,s,t} + \varepsilon_{c\in LAC,s,t} \quad (5)$$

where $RCA_{c\in LAC,s,t}$ is the RCA of country *c* (belonging to our 13 LA countries) in sector *s*, at time *t*, *XN* are net bilateral exports of each LA economy to either China or India depending on the variable, and $\varepsilon_{c\in LAC,s,t}$ is an error term where we allow for clustering of the error term within each industry every year. We estimated these models for the pooled sample of 13 LA countries, but also for the 4 country groups (Andean, Central America, Southern Cone, and Mexico).

A positive coefficient on the RCA of China or India would indicate that LA's specialization pattern is similar to the one observed in China and India, whereas a negative coefficient would indicate that the specialization pattern of LA is

complementary to the specialization pattern of China and India. A positive coefficient on the bilateral net export variable would indicate that exports to China or India are concentrated in sectors where LA's comparative advantage lies, and that at least through this direct channel the growth of China and India is shaping the specialization of LA economies.

To assess which factors of production have faced declining or rising demand due to the rise of China and India, we also estimated equation (5) with dummies for unskilled-labor intensive sectors, skilled-labor intensive sectors, natural-resource intensive sectors, and scientific-knowledge intensive sectors, as well as their interaction with the RCAs of China and India. The interpretation of the coefficients on the interaction variables is similar to the one discussed above: positive coefficients indicate converging specialization patterns in those industries to a greater extent than that of the average sector not included in the set of factor-intensity dummy variables, and negative coefficients suggest more complementary specialization than in the excluded sectors.

One challenge is the need to identify sector factor intensities. There are broad classifications for some of these factors, but they are not specific to LA. At the level of aggregation of our data, sectors that are unskilled-labor intensive in high-income countries may be skilled-intensive in LA (e.g., textiles) as discussed by Feenstra and Hanson (2003). Moreover, to our knowledge there is no worldwide classification of factor-intensity at the 3 digit level of the ISIC. Consequently there is no other solution but to estimate the factor intensities of each sector in LA. To do this, we follow Kohli (1991), Harrigan (1997), and Redding's (2002) revenue-function approach and estimate the sign and statistical significance of the Rybcynski elasticities for each of the four factors of production in each of the ISIC 3-digit industries for the pooled sample of 13 LA countries. The methodology and results are discussed in the Appendix.

3.3 Results

The conditional correlations of LA and each of the four sub-regions' RCAs with the RCAs of the two Asian economies are shown in Table 3. In the first column, LA's

RCA is negatively correlated with China's RCA, although the coefficient is not statistically significant. This suggests that China's RCA is at worst not correlated with LA's RCA, and therefore one shouldn't expect much competition from China in world markets, but rather a mild reinforcement of LA's RCA on products due to larger Chinese demand. In contrast, the correlation with India's RCA is much larger, positive, and statistically significant, thus suggesting that competition from India in world markets may be more of a challenge for LA. As India's size in world markets is only about a fifth of China's size, this may be not be a problem today, but rather in the future if India continues to grow at its current rates, whereby in less than twenty years India would have the same size as China today.

Bilateral net exports are insignificant in all regressions, suggesting that LA's exports to China and India are neither positive nor negatively correlated with LA's comparative advantage once we control for China and India's RCAs (and country*year dummies). The fact that we are controlling for China's RCA and that the Chinese RCA tends to be negatively correlated with LA's RCAs suggests that the insignificant coefficient on bilateral net exports of LA to China may be due to the fact that these variable is correlated with China's RCA. The insignificant coefficients also reflect the relatively small bilateral trade between LA and the two Asian economies.

There are some interesting differences across LA sub-regions. China's RCA has a positive and significant coefficient for the sub-sample of Andean countries. The coefficient is also positive for Mexico, but statistically insignificant. These positive coefficients suggest that for these countries Chinese competition in third markets may be stronger than for LA as a whole. In the case of Central America and the Southern Cone the coefficient on the Chinese RCA is negative and significant, suggesting that the Chinese specialization pattern may be complementary to the specialization pattern in these two regions. In contrast, the specialization patterns of these two regions seem to be more similar to the specialization pattern of India with large positive and significant coefficients on India's RCA. The coefficient on the Indian RCA is also positive for Mexico, but the coefficient is statistically insignificant. In the case of the Andean countries, the coefficient on the Indian RCA is small, but negative and significant

suggesting that the trade specialization pattern of the Andean countries tends to be a bit more complementary with the specialization pattern of India than the one of LA or Mexico.

Table 4 provides the results for the specifications where we introduce the interaction terms between China and India RCA and the four factor intensity dummies (unskilled labor, skilled labor, natural resources and scientific knowledge), as well as the four factor intensity dummies separately. The coefficients on the dummies suggest that on average throughout the period LA's comparative advantage lies in sectors that are intensive in natural resources, scientific knowledge, and unskilled labor, in decreasing order. Its comparative *dis*advantage lies in skilled-labor intensive sectors. There is some heterogeneity across regions, however. Andean countries' factor intensities mimic the one observed for LA as a whole. Central America has its comparative advantage in sectors intensive in natural resources and unskilled labor (although the latter is not statistically significant), and they have a comparative *dis*advantage in sectors intensive in scientific knowledge and skilled labor. Mexico's comparative advantage seems to lie in unskilled- and skilled-labor intensive sectors, and natural resources, whereas its comparative *dis*advantage lies in sectors intensive in scientific knowledge (although none of the coefficients are statistically significant). The Southern Cone comparative advantage lies in natural resource intensive sectors, skilled labor, and scientific knowledge, whereas its comparative *dis*advantage lies in unskilled intensive sectors.

Which factors will be more affected by the growth of China and India in world markets? The coefficients on the interaction terms reported in Table 4 allow us to answer this question. In the case of the pooled sample of 13 LA countries all the interaction terms are statistically significant with the exception of the interaction of China's RCA with the dummies for sectors that intensively use unskilled labor and scientific knowledge. Sectors intensive in unskilled labor would suffer from the rising competition from India in world markets, but these sectors show some small (and statistically insignificant) complementarity (i.e., negative coefficient) with the specialization pattern of China. Sectors that are intensive in the use of skilled workers would be suffering from the rising competition from India and China in world markets, although it is worth noting

that these industries may be unskilled-labor intensive in China and India (as sectors' factor intensities were estimated in a sample that only included LA countries). Sectors that intensively use scientific knowledge show strong complementarity with India's specialization pattern. Finally, natural-resource intensive sectors show strong complementarities with the specialization pattern of both China and India.

There are some differences across LA sub-regions. For example, in Central America and the Southern Cone complementarities seem to be concentrated in natural-resource intensive sectors. In contrast, Mexico's complementarities are concentrated in scientific-knowledge intensive sectors. There are not large qualitative differences between LA's results and the results for each of the other sub-regions. Overall these results suggest that the growth of China and India has probably affected sectors that are relatively labor intensive (skilled and unskilled), while natural-resource and scientific-knowledge intensive sectors in LA have benefited from China and India's growth in world markets.

4. Concluding Remarks

Is LA competing in the same products with China and India's exporters, or is the growing demand of China and India in world markets helping LA exporters? We answer these questions by exploring the correlation between the trade specialization patterns of LA, China, and India.

The evidence suggests that the overall specialization pattern of LA economies—with the exception of Mexico—has been diverging from the trade specialization pattern of China and India. This indicates that LA's trade specialization is becoming more complementary to the specialization pattern of China and India. China's specialization pattern at the end of the period studied (early 2000s) was negatively correlated with the specialization pattern of most LA economies (again Mexico being an exception). India's specialization pattern, however, seems to be positively correlated even at the end of the period with those of most LA economies (with the exception of the Andean countries), although this correlation did fall slightly over time. However, given the smaller size of

India (it represents a fifth of China in world markets), this may not be bad news so far. The over-time decline in the correlation between LA, Chinese, and Indian RCAs seems to be associated with natural-resource intensive sectors, such as agriculture, fisheries, forestry, and mining, but not manufacturing sectors. Moreover, it is explained by declining RCAs in these sectors in China and India, rather than increases in LA comparative advantage.

Regarding the potential effects that China and India as export markets for LA may have on the specialization patterns of LA economies, we found no evidence of significant effects. The bilateral net exports of LA to the two Asian economies do not seem to have a discernable impact on LA's specialization pattern in spite of their rapid growth, probably due to the still relatively small size of the bilateral trade of LA economies with China and India. Jointly they represent 5 percent of LA's exports and 7 percent of LA imports.

Finally, regarding the factors of production that have been affected by the growing presence of China and India in world markets, we found that labor (both unskilled and skilled) was the factor that was most likely negatively affected, while natural resources and scientific knowledge probably benefited from the growing presence of China and India in world markets. LA governments may need to envisage policies aiming at mitigating the potential adverse effect of the growth of China and India on unskilled and skilled labor by targeting workers in the affected industries, rather than by raising protectionist barriers to trade since the latter will also hurt domestic consumers, and users of imported intermediate goods, which would reduce the potential export gains by sectors that are benefiting from the emergence of China and India. In this regard, this paper contributes to this policy discussion by identifying the specific sectors that may be shedding skilled and unskilled workers as a consequence of the growth of the two Asian economies.

References

Barro, Robert J., and Jong-Wha Lee (2000), "International Data on Educational Attainment: Updates and Implications", CID Working Paper No. 42.

Blazquez-Lidoy, J., J. Rodríguez, and J. Santiso (2006), "Angel or Devil? Chinese trade Impact on Latin American Emerging Markets", Working Paper #252, OECD.

Calderón, C. (2007), "Trade, Specialization and Cycle Synchronization: Explaining Output Co-movement between Latin America, China and India", www.worldbank.org/laceconomist.

Castro, L., Castro, J. Tramutola, and L. Monat (2005) *China: como puede la Argentina aprovechar la gran oportunidad*, Edhasa Editorial, Buenos Aires.

Feenstra, R., and G. Hanson (2003), "Global Production Sharing and Rising Inequality: A Survey of Trade and Wages," in Choi E.K. and J. Harrigan (eds.) *Handbook of International Trade*. Blackwell: Malden, MA, 146-185.

Harrigan, J., (1997), "Technology, Factor Supplies, and International Specialization: Estimating the Neoclassical Model", *American Economic Review* 87, 475− 94.

Kohli, U., (1991), *Technology, Duality and Foreign Trade* Ann Arbor, University of Michigan Press.

Nicita, A., and M. Olarreaga (2006), "Trade, Production and Protection, 1976-2004," available at www.worldbank.org/trade.

Redding, S. (2002), "Specialization Dynamics," *Journal of International Economics* 58, 299-334.

Vollrath, T. L (1991), "A Theoretical Evaluation of Alternative Trade Intensity Measures of Revealed Comparative Advantage," *Welwirtschaftliches Archiv* 130, 265-79.

Appendix: Determining factor intensities by industry in Latin America

To identify industries' factor intensities, we estimated Rybcynski elasticities for four factors of production, namely unskilled labor, skilled labor, scientific knowledge, and natural resources. Following Kohli (1991), Harrigan (1997), and Redding (2002), we assume a translog GDP function which depends on goods prices, factor endowments, and total factor productivity. The translog function is sufficiently flexible to locally approximate the true underlying revenue function. We assume that the GDP functions are common across all 13 LA countries and time (except for common Hicks neutral technology differences over time). Imposing symmetry of cross effects, assuming linear homogeneity of degree 1 in factor endowments and prices, taking the first order condition, and rearranging we obtain a share equation where the contribution of each industry in GDP is explained by the log of all goods prices, the log of all factors of production and the log of the common TFP. We further assume that goods are homogenous and traded freely so that all goods prices are equal. This allows us to replace all prices by year dummies, which will also capture the common TFP. Thus, the final share equation is explained by the log of factor endowments and year dummies, allowing us to focus on the impact that an increase in each factor endowment would have on the level of production in each industry in LA. The empirical equation for each industry is:

$$s_{ct} = \alpha \ln(unskilled_{ct}) + \beta \ln(skilled_{ct}) + \gamma \ln(scientific\_knowledge_{ct}) + \lambda \ln(natural\_resources_{ct}) + \delta_t + \varepsilon_{ct} \quad \text{(A.1)}$$

where $s_{ct} = value\_added_{ct} / GDP_{ct}$ is the share of each industry's in the country's GDP. The other variables are the per-capita factor endowments by country and year. Skilled and unskilled endowments come from Barro and Lee (2000). Unskilled individuals are defined as those with incomplete secondary education. Skilled individuals are those with complete secondary education or higher. Scientific knowledge is proxied by the number of scientific journals per capita, and natural resources by arable land. Data for these two endowments and GDP come from the World Bank's *World Development Indicators*

database. Data on value added by industry come from UNIDO. Regressions are run for the 13 Latin American economies in our sample. The time coverage is potentially from 1988 to 2004, but this depends on data availability (in particular value-added). Nicita and Olarreaga (2006) describe the available data on trade and value-added.

A good is intensive in one of the four factors above if the coefficient of the relevant factor is positive and significant at least at the 10 percent level. Appendix Table 1 shows when this occurs in each 3-digit ISIC industry, by providing the estimated coefficient for those variables that are positive and significant in each regression. Note that some industries may be intensive in several factors of production. For example, agriculture is intensive in natural resources and unskilled labor, whereas mining is intensive in unskilled labor and scientific knowledge. In contrast, for footwear and other manufacturing industries we could not estimate their factor intensities.

We also calculated RCAs by factor intensity for the years 1990 and 2004 for LA as a whole. Results are reported in Appendix Table 2. In 1990 LA had a strong comparative advantage in natural-resource intensive sectors, and a strong comparative disadvantage in unskilled labor. There had been little movement by 2004, with a slight improvement in the comparative advantage of sectors intensive in unskilled labor and scientific knowledge, and a decline in the comparative advantage in natural resources and skilled labor. There are small differences within LA, with the exception of Mexico, which had a comparative advantage in scientific-knowledge intensive sectors and a comparative *dis*advantage in skilled-intensive sectors.

Appendix Table 1: Estimating factor intensities in LA industries

INDUSTRY		FACTOR INTENSIVE				
ISIC CODE	NAME	UNSKILLED LABOR	SKILLED LABOR	NATURAL RESOURCES	SCIENTIFIC KNWOLEDGE	R^2
311	Food production				0.333 (0.144)	0.1303
313	Beverage industries		0.926 (0.191)			0.2648
314	Tobacco manufactures	1.309 (0.349)	0.577 (0.116)			0.4306
321	Manufacture of Textiles	3.59 (0.555)	0.73 (0.177)			0.3865
322	Wearing apparel					0.1660
323	Manufacture of Leather	0.892 (0.17)	0.346 (0.052)			0.5149
324	Manufacture of Footwear					0.2020
331	Manufacture of Wood			0.077 (0.033)	0.5188* (0.028)	0.1153
332	Manufacture of Furniture	0.338 (0.113)			0.041 (0.010)	0.2777
341	Manufacture of Paper				0.227 (0.044)	0.2782
342	Printing, publishing	0.902 (0.200)	0.208 (0.0642)		0.0401 (0.0186)	0.3348
351	Industrial Chemicals	2.098 (0.968)	0.532* (0.289)		0.216 (0.093)	0.4552
352	Other chemical products	2.813 (0.707)			0.284 (0.066)	0.1848
353	Petroleum refineries		1.546* (0.830)	0.606 (0.266)		0.1744
354	Miscellaneous products					0.1273
355	Rubber products	0.533 (0.151)			0.083 (0.013)	0.3803
356	Plastic products				0.090 (0.021)	0.1796
361	Manufacture of Pottery	0.388 (0.087)	0.045 (0.022)			0.2053
362	Manufacture of Glass				0.054 (0.009)	0.4276
369	Other non metallic products			0.062 (0.03)		0.1952
371	Iron and steel basic industries				0.317 (0.044)	0.3808
372	Non-ferrous metals				0.496 (0.166)	0.1799
381	Fabricated metal prod				0.126 (0.036)	0.2981
382	Machinery except electrical	1.980 (0.320)			0.341 (0.029)	0.6117
383	Electrical machinery	2.303 (0.371)			0.328 (0.036)	0.5015
384	Transport equipment	3.676 (0.631)			0.546 (0.0579)	0.5506
385	Professional and scientific	0.177 (0.054)	0.0760 (0.018)			0.3631
390	Other manufacturing industries					0.1360
1	Agriculture	328.78 (33.508)		296.69 (9.247)		0.5187
2	Mining	1.277* (0.727)			1.401 (0.144)	0.1591

Note: We only report coefficients that were positive and statistically significant at the 10 percent level. Standard errors are provided in parentheses. * Denotes significance at the 10%; for all other reported coefficients their statistical significance is higher.

Appendix Table 2: RCAs by factor, 1990-2004

	LA		Andean		Central America		Southern Cone		Mexico	
	1990	**2004**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**
Unskilled	-1.13	-0.95	-0.40	-0.56	-0.89	-0.74	-0.40	-0.56	-0.33	-0.35
Skilled	-0.25	-0.32	-1.09	-0.73	-1.29	-0.62	-1.09	-0.73	-0.54	-0.43
High Tech	-0.21	0.16	0.50	0.55	0.02	0.36	0.50	0.55	0.57	0.75
Natural Resources	1.60	1.11	0.99	0.74	2.17	1.00	0.99	0.74	0.30	0.03

Note: Authors' calculations as described in the text of the appendix.

Figure 1: Share of China and India in Latin American exports, 1990 versus 2004

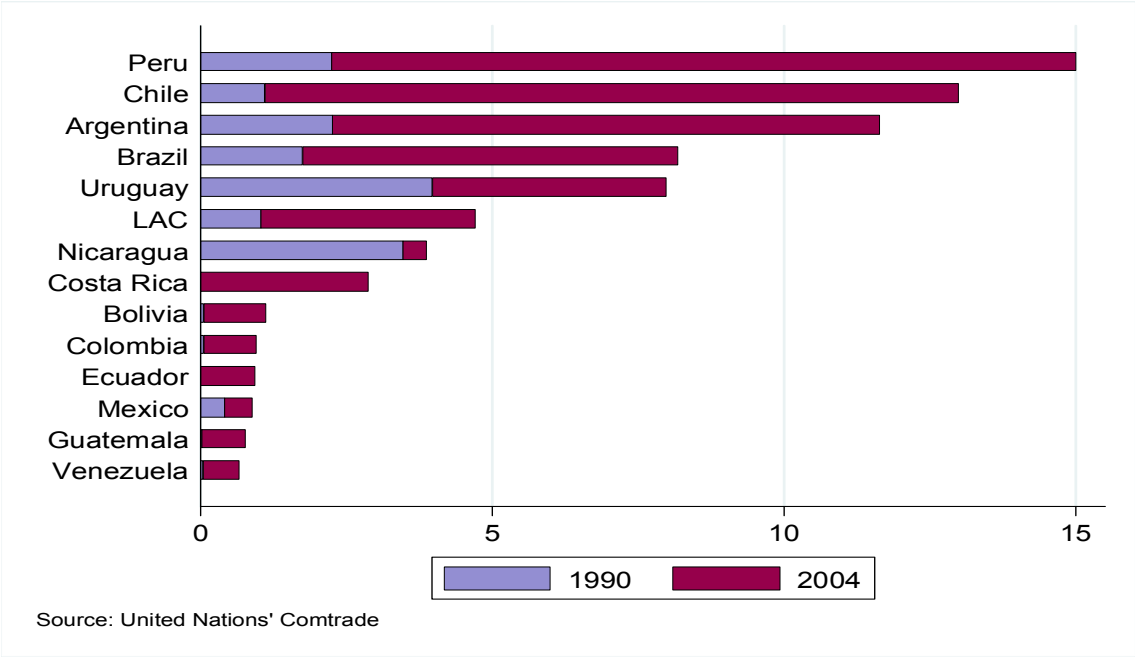


Figure 2: Share of China and India in Latin American imports, 1990 versus 2004

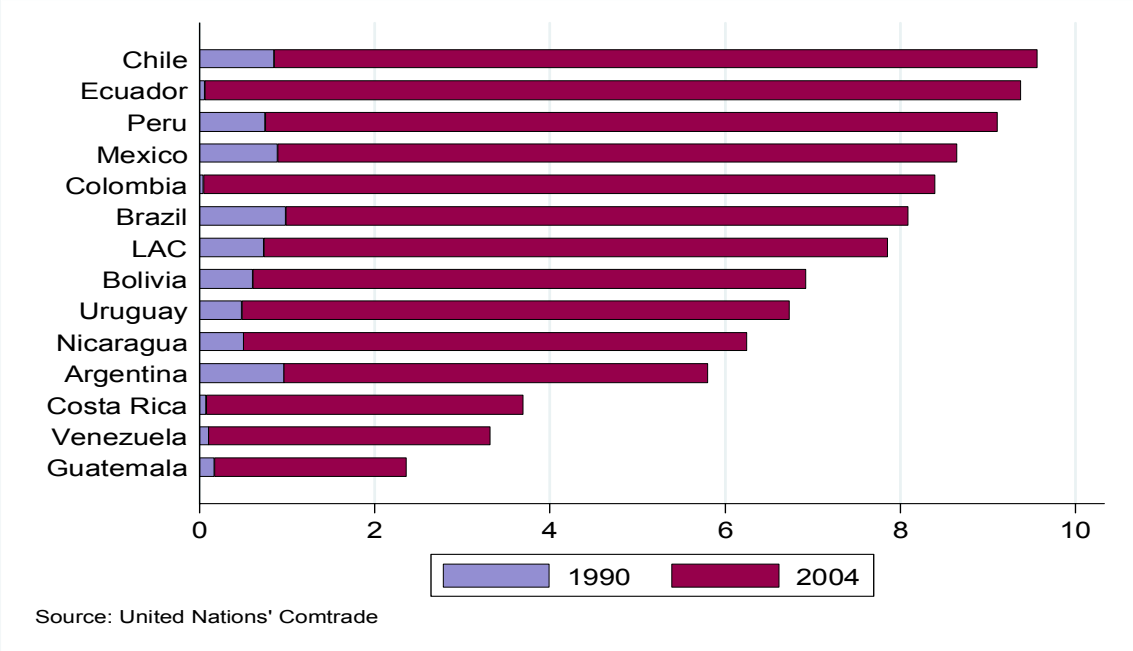


Figure 3: The growing Chinese appetite for Commodities

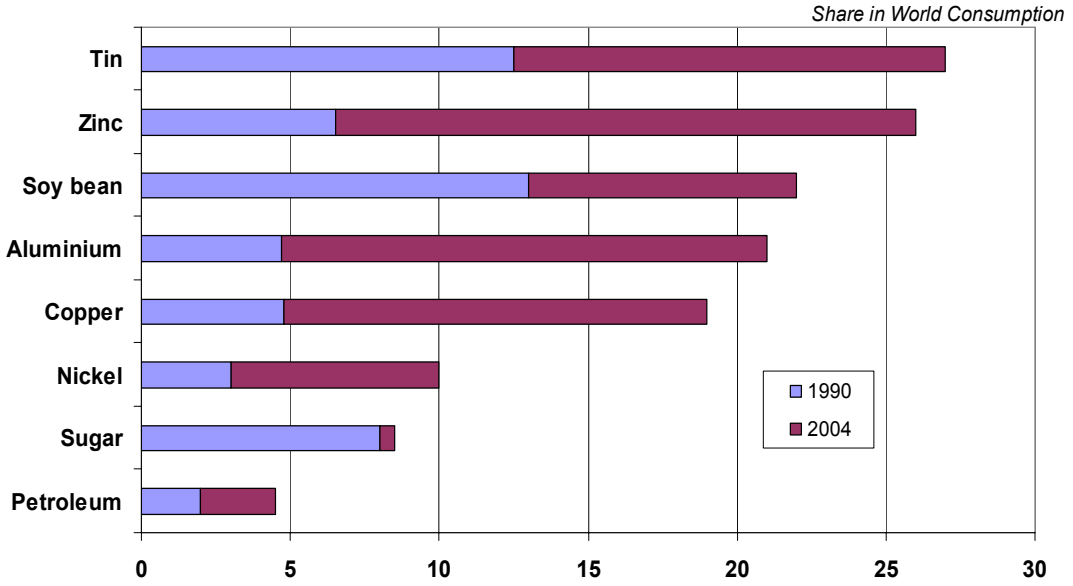
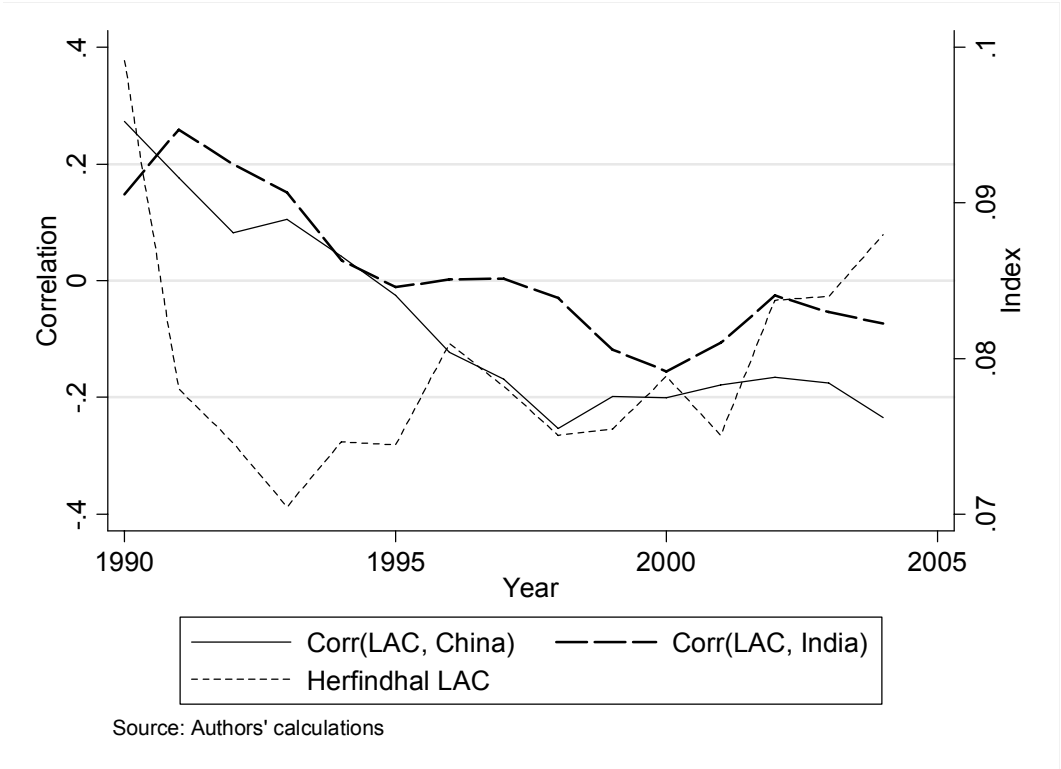
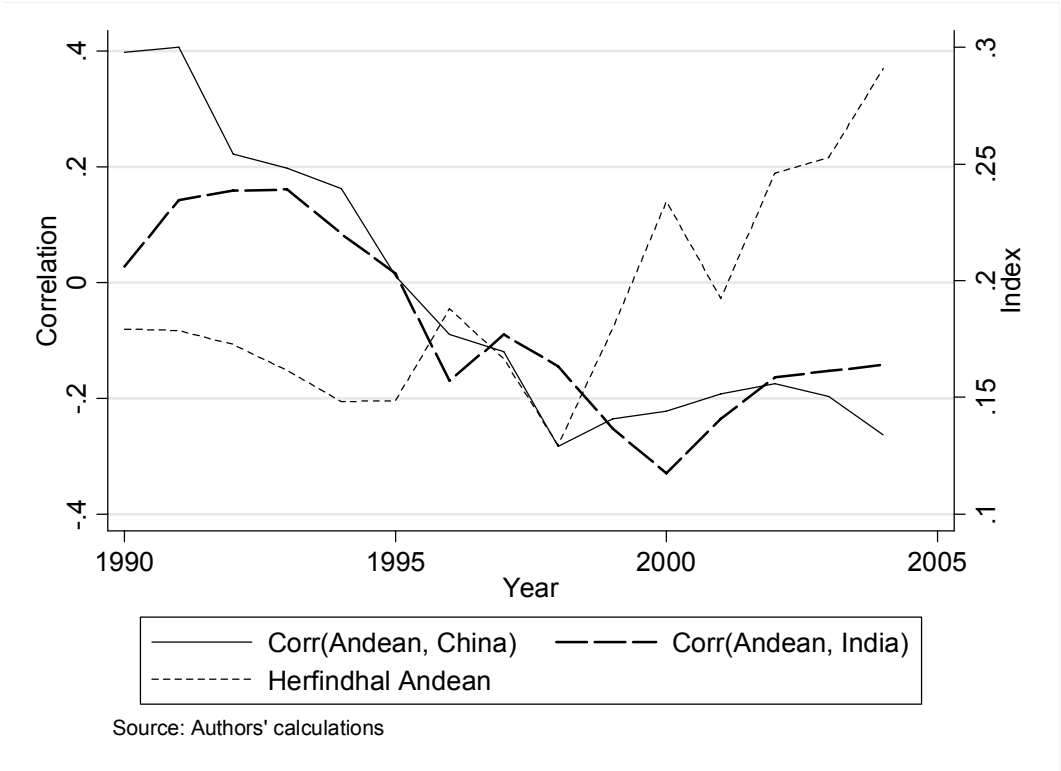


Figure 4: Is LA competing in the same products as China and India?



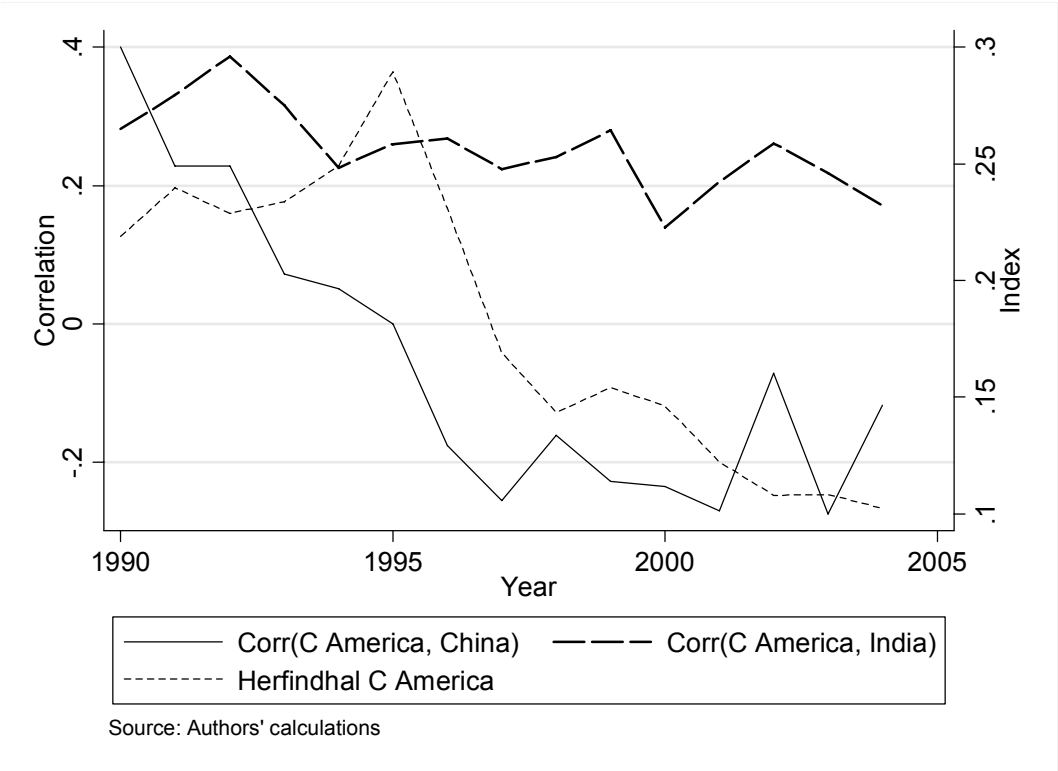
Source: Authors' calculations

Figure 5: Are Andean countries competing in the same products as China and India?



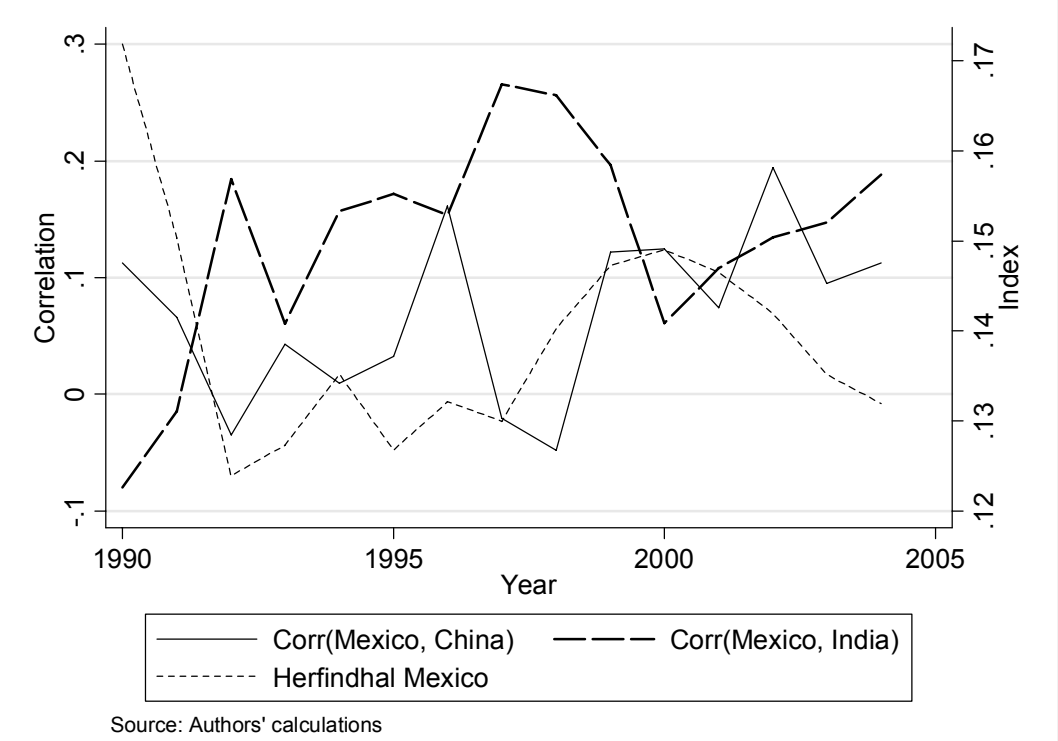
Source: Authors' calculations

Figure 6: Is Central America competing in the same products as China and India?



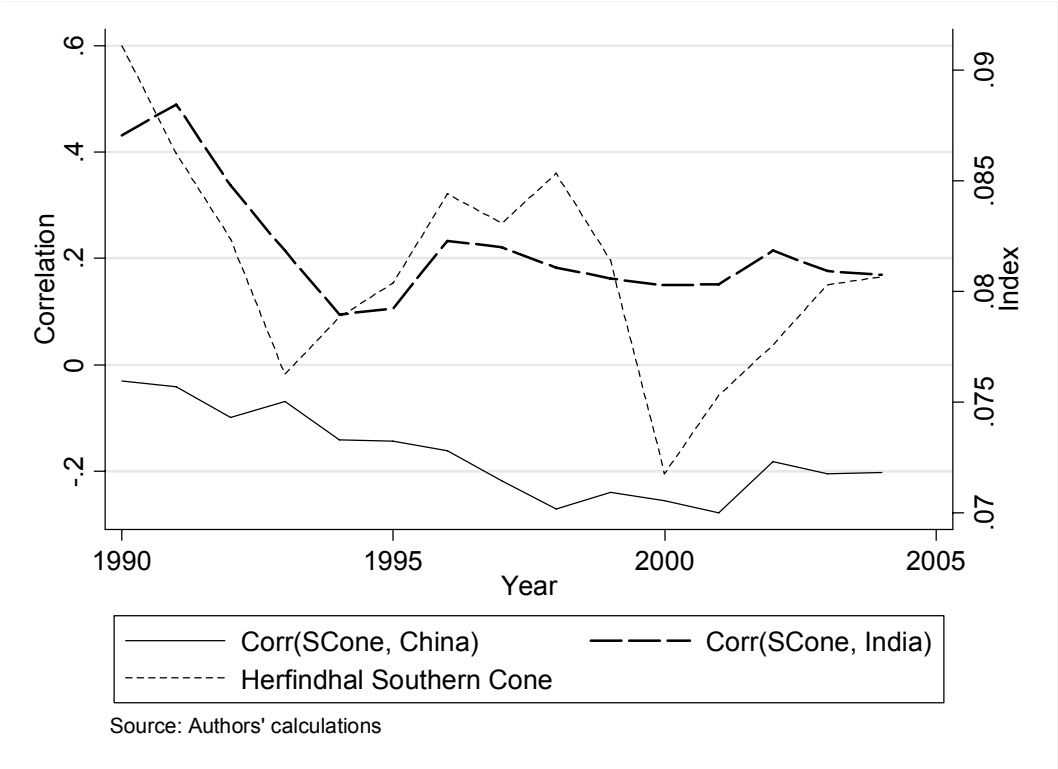
Source: Authors' calculations

Figure 7: Is Mexico competing in the same products as China and India?



Source: Authors' calculations

Figure 8: Is The Southern Cone competing in the same products as China and India?



Source: Authors' calculations

Table 1. RCA indices by sector and country/region in 1990 and 2004

		LA		Andean		Central America		Southern Cone		Mexico		China		India	
ISIC	**Name**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**	**1990**	**2004**
11	Agriculture.	0.77	0.54	0.27	-0.05	3.46	2.17	1.93	1.52	0.17	0.20	-0.13	-1.10	1.93	0.72
12	Logging	0.95	0.55	-0.71	-0.60	2.72	1.64	2.37	1.37	0.08	0.32	0.07	-1.46	0.78	-0.70
13	Fishing	1.61	1.65	3.96	1.59	3.39	2.53	**1.56**	**2.13**	2.93	1.32	2.40	0.73	5.13	4.51
21	Coal Mining	-0.67	-0.23	3.75	2.97	0.72	-∞	**-7.63**	**-6.33**	-3.15	-6.66	2.15	1.85	-3.45	-3.23
22	Crude petr.	2.70	1.32	5.97	3.29	-0.99	-0.72	**-3.18**	**-0.78**	5.42	2.81	2.61	-2.70	**-10.34**	**-5.80**
23	Ore mining	**1.73**	**2.31**	**1.71**	**4.17**	-∞	-1.81	2.13	2.57	1.10	0.39	-1.96	-3.51	3.25	1.89
29	Other mining	-0.29	-0.58	-1.98	-1.78	-0.57	-0.77	0.33	-0.23	0.72	0.32	3.05	-0.23	**-1.81**	**0.33**
31	Food manuf.	0.13	0.37	-1.08	-0.76	1.50	0.84	1.94	1.89	**-1.54**	**-0.39**	0.14	0.17	1.69	0.30
32	Textile&App.	-0.04	-0.50	-0.37	-0.73	0.60	0.37	1.24	0.15	**-0.85**	**0.11**	**0.71**	**1.87**	3.64	2.36
33	Wood prod.	**-0.38**	**0.62**	0.02	0.29	1.82	0.27	1.35	1.75	**-1.08**	**0.92**	**-0.86**	**1.87**	**0.01**	**0.81**
34	Paper prod.	-1.28	-0.92	**-2.59**	**-1.79**	**-0.96**	**-0.38**	0.53	0.46	**-2.19**	**-1.19**	**-2.07**	**-1.10**	**-2.50**	**-1.28**
35	Chemicals	-1.60	-1.58	**-2.33**	**-0.47**	-0.94	-0.72	-0.66	-1.18	-0.79	-0.92	-0.97	-0.66	**-0.57**	**0.43**
36	Non-metal prod	-0.71	-0.47	-1.05	-0.76	-0.03	-0.85	-0.11	-0.05	0.17	0.27	0.75	1.10	0.40	0.78
37	Basic metal ind	0.41	0.26	**-0.56**	**0.61**	-0.37	-0.10	2.00	1.31	-0.22	-0.39	**-1.32**	**-0.63**	-1.10	-0.77
38	Fabricated metal	**-2.66**	**-1.29**	**-4.79**	**-3.61**	**-2.41**	**-0.50**	-1.67	-1.65	**-1.45**	**0.28**	**-2.00**	**-0.07**	-1.11	-0.96
39	Other manuf.	-1.10	-0.88	-0.28	-1.24	0.26	-0.35	-0.43	-1.05	**-0.84**	**0.13**	**0.46**	**2.66**	4.04	0.64
41	Electricity&gas	0.46	-1.23	NA	-1.13	**-8.20**	**-1.62**	-1.69	-1.80	**1.57**	**2.54**	**-3.01**	**1.18**	NA	NA

Note: When the RCA takes the value of -∞, this indicates that the country did not export that product in that year, but that it imported some, when it takes the value of +∞, it indicates that the country did not import that product in that year, but that it exported some; NA indicates that the country neither import, nor export that product in that year. Numbers in **bold** indicate that there was an increase of the RCA of that industry in that country/region of more than 0.5 points between 1990 and 2004, and numbers that are underscore indicate that there was a decline of the RCA of that industry in that country/region of more than 0.5 point between 1990 and 2004. All other industry-country combinations are within the -0.5 and +0.5 point change in the RCA.

Table 2: Which industries help explain LA's diverging patterns of specialization with respect to China and India? And what is the adjustment?

ISIC CODE	Name	LA	Andean Countries	Central America	Southern Cone	Mexico
111	Agriculture & livestock	5,0	0,0	5,0	5,0	5,0
113	Hunting & trapping	5,1	5,0	0,3	5,0	0,3
121	Forestry	5,0	0,0	5,0	0,0	5,0
122	Logging	0,0	4,4	5,1	0,1	0,1
130	Fishing	5,0	0,6	5,0	0,0	0,0
210	Coal Mining	0,0	0,0	0,0	0,0	0,0
220	Crude Petroleum & Gas	5,0	5,0	4,0	4,0	0,0
230	Metal ore mining	5,5	0,0	0,3	5,5	0,0
290	Other Mining	5,1	5,1	5,1	5,1	5,3
311	Food Manufacturing 1	4,4	4,5	4,0	4,4	4,2
312	Food Manufacturing 2	4,4	0,3	0,0	3,3	0,0
313	Beverage Industries	3,0	0,0	4,4	4,4	4,4
314	Tobacco	3,6	3,0	3,0	3,0	3,0
321	Textiles	0,0	3,6	3,0	3,0	3,0
322	Wearing Apparel	0,0	0,0	0,0	3,0	0,0
323	Leather and products	0,0	6,0	1,5	0,5	0,0
324	Footwear	0,0	0,0	3,6	0,0	0,0
331	Wood and products	0,0	3,0	3,2	0,2	3,6
332	Furniture and fixtures	1,5	2,0	0,1	1,0	0,0
341	Paper and products	0,1	3,0	0,0	0,1	0,1
342	Printing and products	1,0	2,0	1,0	1,0	1,0
351	Industrial chemicals	0,1	2,0	0,1	0,1	0,3
352	Other chemical products	0,1	0,3	4,0	0,0	0,1
353	Petroleum refineries	0,3	0,0	0,1	0,0	0,3
354	Miscell. petroleum products	0,0	2,2	0,0	0,0	0,0
355	Rubber products	0,0	0,0	0,0	0,0	2,0
356	Plastic products	0,0	1,0	0,0	0,0	0,0
361	Pottery, china & earthenware	1,0	2,0	1,0	1,0	0,0
362	Glass and products	0,1	0,0	0,2	0,0	6,3
369	Non-metallic mineral products	0,0	1,1	0,0	0,0	0,0
371	Iron and steel basic industries	1,1	0,0	6,0	3,1	1,1
372	Non-ferrous basic industries	0,0	0,0	2,0	0,0	0,0
381	Fabricated metal products	2,2	1,1	1,1	1,1	1,1
382	Machinery except electric	0,0	0,0	6,6	1,0	0,0
383	Electrical machinery	0,0	0,0	0,0	0,0	0,0
384	Transport equipment	0,0	0,0	1,0	0,0	3,0
385	Professional and scientific	4,0	4,0	6,0	4,0	4,0
390	Other industries	0,0	0,6	6,6	0,0	0,0

Note: The first number corresponds to the relation between China and LA, the second one refers to India and LA. The significance of each number is explained below and discussed in the text.

0. The pattern observed would either explain a positive trend, or the absence of a trend in the correlation between LA RCAs and China/India's RCAs.
1. China/India RCA Index increases and LA RCA Index is stable over time
2. China/India RCA Index is stable and LA RCA Index grows over time
3. China/India RCA Index increases and LA RCA Index decreases over time
4. China/India RCA Index decreases and LA RCA Index increases over time
5. China/India RCA Index decreases and LA RCA Index is stable over time
6. China/India RCA Index is stable and LA RCA Index decreases over time

Table 3. Linear regression model. Dependent variable: RCA Index

	LA	Andean Countries	Central America	Mexico	Southern Cone
RCA China	-0.02	0.18	-0.11	0.09	-0.26
	(0.04)	(0.08)*	(0.04)**	(0.06)	(0.05)**
RCA India	0.16	-0.06	0.36	0.03	0.36
	(0.03)**	(0.06)	(0.06)**	(0.05)	(0.05)**
Bilateral net exports of LA to China	-4.47e-06	8.27e-07	1.51e-06	-6.71e-08	8.63e-09
	(2.62e-06)	(4.49e-07)	(9.80e-07)	(2.21e-07)	(9.52e-08)
Bilateral net exports of LA to India	-1.84e-06	1.08e-07	-1.9e-05	-7.94e-07	1.01e-07
	(3.59e-05)	(1.97e-06)	(1.57e-05)	(1.64e-06)	(7.95e-07)
Constant	-0.32	0.02	-0.26	-0.21	0.09
	(0.36)	(0.37)	(0.23)	(0.06)**	(0.33)
R^2	0.06	0.05	0.15	0.02	0.12
Observations	8376	3236	2538	650	2587

Note: All regressions have country*year dummies (in the case of Mexico only year dummies). Standard errors are in parenthesis, and are corrected non-parametrically for clustering within industry-year (except in the case of Mexico where standard errors are White robust); * stands for statistical significance at 5%. ** stands for statistical significance at 1%.

Table 4: Where is China and India's competition stronger?

	LA	Andean countries	Central America	Mexico	Southern Cone
RCA China	0.03	0.05	-0.06	0.12	0.05
	(0.05)	(0.10)	(0.07)	(0.07)	(0.09)
RCA India	0.25	0.31	0.20	0.08	0.27
	(0.04)**	(0.09)*	(0.06)*	(0.06)	(0.07)*
RCA China*unskilled	-0.09	-0.23	0.07	-0.30	-0.11
	(0.05)	(0.09)*	(0.08)	(0.07)**	(0.08)
RCA China*skilled	0.39	0.38	0.22	0.42	0.44
	(0.06)**	(0.12)**	(0.10)**	(0.09)**	(0.11)**
RCA China*scien_K	0.04	0.27	0.11	-0.02	0.17
	(0.06)	(0.11)*	(0.09)	(0.09)	(0.10)
RCA China*nat_res	-0.21	-0.26	-0.49	0.51	-0.01
	(0.08)*	(0.15)	(0.13)**	(0.14)**	(0.15)
RCA India*unskilled	0.25	0.15	0.37	0.03	0.45
	(0.04)**	(0.08)	(0.07)**	(0.06)	(0.08)**
RCA India*skilled	0.23	0.34	0.01	0.18	0.12
	(0.05)**	(0.09)**	(0.09)	(0.07)**	(0.09)
RCA India*scien_K	-0.41	-0.92	-0.06	-0.24	-0.16
	(0.05)**	(0.10)**	(0.08)	(0.08)**	(0.09)
RCA India*nat_res	-0.37	-0.27	-0.18	-0.04	-0.78
	(0.05)**	(0.10)**	(0.09)**	(0.08)	(0.10)**
Unskilled	0.15	0.27	0.14	0.15	-0.09
	(0.06)*	(0.11)**	(0.09)	(0.09)	(0.09)
Skilled	-0.21	-0.20	-0.71	0.06	0.11
	(0.06)**	(0.12)	(0.11)**	(0.10)	(0.11)
Scientific Knowledge	0.55	0.81	-0.23	-0.09	0.85
	(0.07)**	(0.13)**	(0.10)**	(0.10)	(0.13)**
Natural Resources	2.44	2.88	1.93	0.21	2.53
	(0.08)**	(0.15)**	(0.12)**	(0.12)	(0.15)**
Bilateral next exports	-4.13e-06	8.67e-07	1.58e-06	-8.71e-08	-9.84e-09
of LA to China	(2.22e-06)	(4.29e-07)*	(8.36e-07)	(2.03e-07)	(7.73e-08)
Bilateral net exports	-7.32e-06	-1.18e-07	-2.1e-05	-3.46e-07	2.27e-07
of LA to India	(3.46e-05)	(1.74e-06)	(1.43e-05)	(1.48e-06)	(6.58e-07)
Constant	-1.45	-1.44	-0.50	-0.48	-1.05
	(0.34)**	(0.34)**	(0.21)**	(0.10)**	(0.30)**
R^2	0.16	0.20	0.31	0.16	0.30
Observations	8376	3236	2538	650	2587

Note: All regressions have country*year dummies (in the case of Mexico only year dummies). Standard errors are in parenthesis, and are corrected non-parametrically for clustering within industry-year (except in the case of Mexico where standard errors are White robust); * stands for statistical significance at 5%. ** stands for statistical significance at 1%.