Market diversification and exports growth in Latin America

Lenin Balza, María Caballero, Leonardo Ortega y José Pineda*

Universidad Central de Venezuela

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Abstract.

This paper document the export decomposition of 10 Latin American countries, both at the level of products as well as the level of destination markets between 1970 and 2004. Our results suggest that the main source of explanation of export growth comes from those goods that usually have been exported or traditional goods, although new exports have a significant share in total export growth. We also find in all the cases that the appearance of new market destination is an important source of export growth and the reduction of industry concentration that has been observed. Therefore, from the policy point of view, this paper suggests that search and extend export markets destinations is fundamental to develop a more diversified export supply in Latin American countries.

Key word: Trade policy, economic integration, diversification
JEL Classification: F13, F15 y F43

* Research Economist, Corporación Andina de Fomento.
Please any send comments or suggestions to: jpineda@caf.com

1. Introduction

In recent decades, we have witnessed an increase of export growth around the world. Also, topics such as specialization and productive diversification are an important point in many of the studies on development (CAF 2005). But diversification or specialization on export destinations have received little attention so far. In this regard our research is motivated by the following stylized facts which led us to study both markets diversification and specialization patterns in the explanation of export growth of 10 Latin American countries.

Export levels have increased about six times since 1970. In addition, it is clear that there was an increase in the growth rate of exports since 1990 (see table 1 below). This process was led by countries like Hong Kong, whose exports grew at a very higher rate. While Latin American countries showed an increase in exports growth rates since the 90s. However, this effort has not been enough and as a result Latin America has lost ground in the global trade[1].

Table 1: Annual growth rates of exports (1980-2005)

Countries	Annual growth (1980-1990)	Annual growth (1990-2005)	Annual growth (1980-2005)
Argentina	4.32%	7.83%	6.42%
Bolivia	-1.16%	7.20%	3.86%
Brazil	4.44%	8.83%	7.08%
Chile	5.93%	10.19%	8.49%
Colombia	5.39%	7.41%	6.60%
Costa Rica	3.44%	10.59%	7.73%
Ecuador	0.90%	8.60%	5.52%
Guatemala	-2.45%	10.21%	5.15%
Honduras	-3.85%	8.06%	3.30%
Mexico	5.30%	13.99%	10.51%
Nicaragua	-2.40%	6.17%	2.74%
Panama	-0.47%	6.97%	3.99%
Paraguay	11.28%	3.77%	6.78%
Peru	0.14%	9.63%	5.83%
Trinidad and Tobago	-6.73%	10.20%	3.43%
Uruguay	4.71%	4.56%	4.62%
Venezuela	-0.67%	7.48%	4.22%
Korea	13.11%	9.86%	11.16%
Finland	6.33%	5.97%	6.11%
Hong Kong	14.28%	8.46%	10.79%
Ireland	10.33%	10.21%	10.25%

Source: UN (2006) and own calculations.

When we look inside Latin America we have found that there are significant heterogeneities between countries in the region in terms of their export growth performance. In that sense, we found countries that have consistently increased their annual export growth rates, such as Brazil, Chile and Mexico, which reached the highest rates in the region (between 7% and 10% annually) in the period 1980-2005. Likewise, we found other countries such as Bolivia, Paraguay, Uruguay and Venezuela,

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[1] See CAF (2005).

who recorded a significant decline in the annual exports growth rates, which reached on average around 4% between 1980 and 2005 for these countries.

Another element that is important to highlight is that export concentration in Latin America is following a downward trend, when the concentration ratio has decreased from 0.23 to 0.16 between the period 1970-1972 to 2003-2004 (CAF 2006)[2]. However, Latin American exports continue more concentrated than in other countries in the world, such as Korea, Finland, Hong Kong and Ireland (see Table 2). This point is interesting to mention given that countries with low levels of export concentration have experienced the greater rate of export growth.

Table 2: Herfindahl-Hirschman (Concentration) Index of exports.

Years	Latin America	Korea	Finland	Hong Kong	Ireland
1970-1972	0.23	0.05	0.03	0.06	0.04
1973-1975	0.21	0.03	0.03	0.05	0.03
1976-1978	0.19	0.03	0.03	0.06	0.03
1979-1981	0.22	0.03	0.03	0.04	0.02
1982-1984	0.25	0.04	0.03	0.04	0.03
1985-1987	0.18	0.03	0.03	0.03	0.04
1988-1990	0.15	0.03	0.02	0.03	0.03
1991-1993	0.13	0.03	0.02	0.03	0.03
1994-1996	0.12	0.04	0.03	0.02	0.05
1997-1999	0.10	0.04	0.04	0.03	0.06
2000-2002	0.12	0.04	0.05	0.03	0.07
2003-2004	0.16	0.05	0.04	0.03	0.07

Source: UN (2006) and own calculations.

Another factor that has occurred since the mid 80's and 90's is the fact that Latin America has entered into negotiation of trade agreements (either multilateral or bilateral). In that sense, it should be noted that both Chile and Mexico have signed at least 8 trade agreements, including agreements with countries outside the continent and different levels of development. These two countries have also experienced some of the highest export growth rates, suggesting that could exists a positive relationship between the search for new export markets by the signing of trade agreements and exports growth.

The stylized facts presented above, lead us to presume that the emergence of new markets is an important element to explain the increase on exports and the reduction of export concentration in Latin America.

The rest of the paper is organized as follows. Next section shows different views on topics such as the relationship between economic development and productive diversification, with emphasis on the emergence of new export activities, cluster development, as a way to improve

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[2] CAF (2006) used Herfindahl-Hirschman Index as a measure of concentration. This index takes values between 0 and 1, so that the values close to 0 indicate poor concentration, while values close to 1 indicate high concentration.

productivity, and the role of trade agreements in the process of export destination diversification. Section 3 describes the methodology used for the export decomposition. Section 4 presents the results. Finally, section 5 concludes with some policy implications.

2. Literature review

After a view of the growth strategies of emerging countries, we have found that a large number of these countries have focused their efforts on getting the benefits from outward-oriented growth policies. The growth performance of South-East Asian countries and even China, are an example of how a development strategy towards achieve greater international integration, as well as elimination of trade barriers, result in greater economic and social benefits. For that reason, in recent decades many developing countries have chosen to adopt development strategies to increase their international insertion[3].

After reviewing the literature on the subject, we have found that in general terms there is some kind of consensus among economists that openness has a positive impact on economic growth. In fact, there are several papers that support this view such as Dollar (1992), Sachs and Warner (1995), Feenstra and Rose (1997), Edwards (1998), Dollar and Kraay (2002) and Wacziarg and Welch (2003). However, Rodriguez and Rodrik (2000) put doubt on that consensus when they made criticism to methodological aspects of this literature, which they argued, make difficult to find a causal link between trade openness and economic growth.

Rodriguez (2006)[4] performed a new analysis of the most recent research literature and concludes that once again they fail to show convincing evidence to draw a connection between openness and economic growth. Rodriguez (2006) also highlight that might exist a positive or negative relationship between trade and growth, just that the information contained in the data is not robust enough to conclude on that.

In that sense, as Bhagwati and Srinivasan (1999) have pointed out there is the need to make studies at the country level in order to analyze the existence of positive links between openness and economic growth rather than the cross-section analysis. In this regard, some examples of country studies are Jonsson and Subramanian (2001) and Pineda (2004)[5], who found for South African and Venezuela, respectively, a positive relationship between trade openness and economic growth.

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[3] Rodrik (1995), (1996) and (2003), has pointed out the role of industrial policy of some of these countries, suggesting that this could be more important than the export orientation.

[4] Rodriguez (2006), highlight that some of the countries that have recorded faster economic growth since the 90's as Lebanon and Lesotho, have implemented policies that hamper free trade, while countries where free trade policies were applied as Moldova and Mongolia, have been collapses in its economic growth rate.

[5] Pineda (2004) shows using several methodologies and econometric databases that higher tariffs reduce total factor productivity growth.

On the other hand, Lederman and Maloney (2003) studied the impact of the export composition on economic growth. These authors note that export concentration has a negative effect on economic growth. The structure of preferences and portfolio arguments provide a theoretical framework that can argue the reasons why countries tend to diversify their economies. But according to Imbs and Wacziarg (2003), the stages of diversification could be a result of the interaction of productivity raises and trading cost. These authors suggest that poor countries tend to diversify their economies until reach a relatively high level of per capita income, which dominate the agglomeration forces, and specialization start to take place. They also show evidence that the sectoral concentration of countries exports describes a U-shaped with respect to the levels of their per capita income.

In line with this, Lederman and Klinger (2005), taking into account the importance of productive diversification in developing countries, show that an export basket of a certain country begins to diversify by the increase in its income, until reach a point where the diversification stops and specialization take place. They also highlight the relationship between discovery and development levels, which responds to the similarity between diversification and the inclusion of new export products.

Hausmann and Rodrik (2003) have pointed out that export activities generate a kind of market signal, in the sense that they could be identifying the activities where countries show comparative advantages. They argue that countries should focus on something that so far has received little attention by the economic literature, the self-discovery and learn what kind of goods could be produced cost-effectively. In this sense, when local producers "discover" a new profitable export activity, it generates information to the rest of the market about where new investment could be directed, which generate knowledge with a value social.

Geographic Dimension of Export growth

Economic agglomeration at the global level now appears to be something more than evident, as indicated Henderson et al. (2000), the high-income regions are concentrated in a few areas, nearly 50% of world GDP is generated by only 15% of the world's population. Half of the poorest of the world's population generates only 14% of world GDP and 17 of the 20 poorest nations in the world are in Africa.

In this sense, the New Economic Geography[6] has developed a novel approach to indicate that the presence of agglomeration forces that affect the location of production, mostly what is

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[6] These arguments have been developed based on Henderson et al. (2000), Fujita et al. (2000) and Ottaviano (2006).

known as the effects of market access, which suggests that firms located their production in the largest and extensive markets. A second force that combines the effect of market access to intermediate goods, is generated by the fact that the demand for manufacturing is done not only by consumers but also by the demand of intermediate goods, so intermediate good producers will prefer to locate in areas where there will be a large numbers of firms. In addition, the living cost effects, suggest that good prices tend to be lower in those regions where there are more industries, which generates incentives to introduce economic agglomeration.

The idea of economic agglomeration is that it suggests that an increase in the geographic concentration of industries and firms related results in an increase in productivity, which could explain part of the export growth. However, Rodriguez-Clare (2005) highlights the fact that the geographical concentration offers only a possibility of higher productivity, a possibility that will only be accomplished through some kind of coordination, indicating that an increase in the geographic concentration and agglomeration of industries will not necessarily produce an increase in productivity. He also suggests a set of microeconomic interventions to induce productive cluster formation that include export promotion, regulation to improve quality standards, public investment in infrastructure and policies to facilitate foreign direct investment.

On the other hand, Evenett and Venables (2002) highlights the issue that exporters now sell goods to a larger number of countries than in the past. They suggest that this phenomenon is partly due to information acquired by exporters on new export opportunities. These results show that on average nearly 10% of increased exports are justified by the introduction of new product lines. Furthermore, the authors point out that one third of the export growth is accounted by the sale of existing product lines to new markets. They also find that approximately 60% of this growth is explained by the sale of products to traditional destinations[7].

Trade Agreements and Export specialization patterns

According to figures released by the World Trade Organization (WTO), there have been nearly 170 trade agreements, which reflect a clear direction of the economies towards a greater international insertion. Pantano et al. (2004), investigates the benefits associated with the formation of trading blocs and they indicate the emergence of scale economies, arising from having a bigger market. They also note that a nation that belongs to a trading bloc would start to export or produce goods that otherwise would never occur without the existence of tariff preferences. This could allow the incorporation of new activities in those sectors that have a comparative advantage and then

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[7] Evenett and Venables (2002) studied the exports growth of 23 developing countries.

generates trade creation, but also could induce trade diversion which would be welfare reducing for the bloc.

Sanguinetti and Volpe (2005), analyzes specialization patterns for export manufacturing for three of the member of MERCOSUR (Argentina, Brazil and Uruguay) plus Chile. The evidence obtained in this research suggest that both Argentina and Brazil (countries with comparative advantages in manufacturing), showed a regional orientation (with the bloc) of their exports much more pronounced, especially in sectors with higher tariff preferences. Uruguay and Chile experience a drop in the export specialization to MERCOSUR countries. Finally, it is important to mention that preferential access tends to divert trade towards countries that provides preferences (trade bloc), making sectors favored by these preferences become relevant at the regional level but remaining relatively inactive with the rest of the world.

3. *Methodology and data*

We followed Evenett and Venables (2002) methodology, which decompose total exports by product line and by destination market in 23 countries. We focused our sample in 10 Latin American countries: Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Mexico, Paraguay, Peru and Venezuela[8].

We used bilateral exports of these 10 countries disaggregated both by product lines and destinations reported by UN Comtrade from 1970 to 2004. This data base allowed us to decompose total exports both by product lines and destinations. We used the Standard International Trade Classification (SITC Rev. 1) at the four digit level because it includes data since the 70's for all the countries in our sample. This classification include 625 product lines, and the decomposition by destination include a total of 225 countries taken as trading markets or destinations. Other countries not included in this list were aggregated in an special category called Other countries[9]. We also made some modifications on some of the destinations to make them homogeneous between years to avoid the problems associated with any country that suffered changes in its political status. The criteria employed to make them homogeneous is described in Appendix 2. The export values

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[8] See Appendix 2.
[9] Exports to those countries aggregated in this category do not represented more than 5% of total exports in each country of the sample. Those countries are reported by UNComtrade as: African Customs Union, US Pacific Island, Other Asian nes, Christmas Island, Mariana Island, South Antartic, Free zones, Guam, Other Europe nes, New Caledonia, Palestinian Terr, Indian Oceam Terr, Br Virgin Island and so on.

between 1970-2004 were expressed in real terms using the Consumer Prices Index of USA (with a base year of 1970)[10] to facilitate comparison of exports between years.

We calculated dummy variables to identify when the exports of a product line was relevant in 1970-1974 or in 2000-2004. It depends on if the exports of a product line exceed or not a threshold level equivalent to 0.01% of average total exports at the beginning period (1970-1974) for each country. This allow us classify product lines as traditional export lines if they are relevant in both periods, new export lines if they are only relevant in the final period, and death export lines if they are only relevant at the beginning period.

We also made dummy variables to identify relevant export destinations for traditional and new export lines. The threshold level in this case was 0.5% of average in exports for each line (traditional or new line) in the beginning period. This destination decomposition allows us classify trading markets as traditional destinations if they are relevant in both periods, in new destinations if they are only relevant in the final period, and in death destinations if they are only relevant in the beginning period. Thus, we can decompose changes in total exports between 1970-1974 and 2000-2004 by export lines and by destination markets, which allow us the analysis of export patterns due to each type of decomposition in each country studied.

Finally, we made some modifications to methodology presented by Evenett and Venables (2002) in order to improve our results. First, we choose threshold levels for each export line and for each market destination that take into account the differences presented by product line and by country and not a fixed value for all countries and for all product lines. Second, we worked with more disaggregated trading data. Third, we take into account more trading partners (225 countries instead of just 92).

4. Results

Decomposition by product line

The decomposition by product line was done with the purpose of establishing the extent to which export growth was generated by the introduction of new export products, by volume changes on existing products, or by the disappearance of formerly exported products. As we explain previously, the goods that a nation did not export at the beginning of the period but did export in the period 2000-2004, are considered new product lines. We call death products lines to the set of goods that a nation stopped exporting or only exported in the period 1970-1974, whereas the traditional products are the set of product that were exported at the beginning of the period and continued being exported at the end of the period. For this decomposition, we follow Evenett and

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[10] The source of CPI of USA was the U.S. Department of Labor.

Venables (2002), with the difference that in this study we used different groups of countries, data and years.

In general terms, we see an increase in the number of lines exported by the 10 countries in our sample. Nevertheless it is clear that such an increase in the number of exported lines was moderate in most of these countries compared to other regions where the experienced growth of the exported lines turns out to be widely superior[11].

Undoubtedly export growth is due to the increase of the traditional goods, which can be attributed to the importance that have those goods that are in this category for 10 countries in study. Table 3 reports the results of the decomposition by product line, for the number of lines exported in each period and for category. Table 4 presents the share of the export growth that fall in each category and the percentage of the total change in exports.

Table 3: Export growth decomposition by product line

Country	N° of product lines exported 70-74	N° traditional product lines # Ci	N° new product lines # Ni	N° death product lines # Di	N° of product lines exported 00-04
Argentina	286	250	126	36	376
Bolivia	47	28	137	19	165
Brazil	281	247	188	34	435
Chile	90	79	241	11	320
Colombia	234	189	140	45	329
Ecuador	73	54	170	19	224
Mexico	274	258	209	16	467
Paraguay	81	54	139	27	193
Peru	110	90	184	20	274
Venezuela	54	39	119	15	158
Korea	291	263	178	28	441
Finland	278	243	112	35	355
Hong Kong	282	271	175	11	446
Ireland	323	287	121	36	408

Source: UN (2006) and own calculations.

Table 4: Share of the total export growth due to changes in exports of each product line category

Country	Traditional Products ci	New Products ni	Death of Products di	% of the total change in exports 70-74 / 00-04
Argentina	88,7%	14,3%	-3,1%	162,8%
Bolivia	-267,96%	371,03%	-6,14%	14,8%
Brazil	84,82%	15,85%	-0,73%	243,6%
Chile	79,7%	20,6%	-0,4%	267,8%
Colombia	87,7%	15,6%	-3,3%	213,3%
Ecuador	80,50%	20,50%	-1,20%	190,6%
Mexico	80,4%	19,7%	-0,1%	1935,3%
Paraguay	82%	24,3%	-6,4%	169,2%
Peru	32,4%	71,9%	-5,1%	44,5%
Venezuela	108,1%	33,1%	-42,2%	40,1%

Source: UN (2006) and own calculations.

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[11] Part of these results replicated those made at CAF (2006).

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In the case of Argentina, Colombia, Chile, Brazil, and Mexico, it is evident that the introduction of new goods was an important factor in the total final number of lines exported by those countries. Nevertheless, the contribution of these goods to the export growth was moderated. One important thing to say about these group of countries is that the death of a product line rarely happens, explaining very little of their export growth.

On the other hand, in Bolivia, Ecuador, Paraguay, and Venezuela we see that a few traditional goods were exported, compared to other countries of the sample. In spite of this, traditional lines contribute significantly to the total export growth. Additionally, in these countries, the new lines seem to have more importance, although the contribution to the export growth is still modest.

Another important thing of this group is that in Bolivia, Venezuela and Paraguay the death of product lines exported was more frequent than in other countries. On the one hand, in Paraguay an important proportion of the goods exported at the beginning of the period disappeared, although the weight of those goods on the total export growth was not significant. On the other hand, in Venezuela the death of the traditional lines represented an important share of the total export growth and affected negatively the export growth of this country. In the case of Peru, the increase of exports is associated to new product lines, while in other countries the increase of the exports is explained mostly by the traditional products.

Decomposition by destination

In this section we decompose export growth by trading partners. We did a separated decomposition by destination for those goods that were exported by a nation in both 1970-1974 and 2000-2004, and those that were only exported in the final period 2000-2004 (traditional goods and new products lines, respectively).

In this decomposition of trading partners, we call new destination market the partner to which a country exported its goods only on the period 2000-2004, whereas traditional destination market the partner to which a country exported goods both in 1970-1974 and 200-2004, and we call death destination market the partner to which a nation exported goods only at the beginning of the period.

<u>*Decomposition by destination for the Traditional Lines*</u>

In this sub-section we focus on see the extent to which the observed changes in export of traditional goods is accounted for by changes in trading partners. In this sense, we classify the destination markets in order to establish the share of the change of exports that is associated with changes of export partners. Table 5.a (1 and 2) reports the number of trading partners to which was

exported traditional lines by type of destination market. Table 5.b shows the share of the change of traditional exports associated to changes in trading partners for each category.

Table 5.a1: Export growth decomposition by type of destination market for traditional lines

Country	N° of partners 70-74	N° of traditional partners # Ci	N° of new partners # Ni	N° of death partners # Di	N° of partners 00-04
Argentina	2946	1825	3288	1121	5113
Bolivia	177	61	170	116	231
Brazil	3093	2125	5972	968	8097
Chile	614	468	1552	146	2020
Colombia	1931	1315	2513	616	3828
Ecuador	350	226	728	124	954
Mexico	2362	1633	3965	729	5598
Paraguay	300	148	332	152	480
Peru	811	489	1093	322	1582
Venezuela	378	193	472	185	665

Source: UN (2006) and own calculations.

Table 5.a2 Average of number of destination market for traditional lines by type

Country	Mean N° of partners 70-74	Mean N° of traditional partners # Ci	Mean N° of new partners # Ni	Mean N° of death partners # Di	Mean N° of partners 00-04
Argentina	11.78	7.30	13.15	4.48	20.45
Bolivia	6.32	2.18	6.07	4.14	8.25
Brazil	12.52	8.60	24.18	3.92	32.78
Chile	7.77	5.92	19.65	1.85	25.57
Colombia	10.22	6.96	13.30	3.26	20.25
Ecuador	6.48	4.19	13.48	2.30	17.67
Mexico	9.16	6.33	15.37	2.83	21.70
Paraguay	5.56	2.74	6.15	2.81	8.89
Peru	9.01	5.43	12.14	3.58	17.58
Venezuela	9.69	4.95	12.10	4.74	17.05

Source: UN (2006) and own calculations.

Table 5.b: Share of the total change in traditional exports associated to change in trading partners

Country	Traditional Partners ci	New Partners ni	Death of Partners di
Argentina	45.34%	81.97%	-27.81%
Bolivia	19.30%	-59.00%	139.10%
Brazil	48.20%	62.30%	-11.10%
Chile	45.44%	58.60%	-4.37%
Colombia	69.56%	41.68%	-11.23%
Ecuador	69.30%	44.10%	-13.70%
Mexico	93.58%	7.18%	-0.81%
Paraguay	9.44%	116.03%	-25.54%
Peru	-21.96%	319.45%	-203.03%
Venezuela	49.00%	139.27%	-86.96%

Note: The fact that in some cases the sum of all categories is not 100% is due to the presence of irrelevant destinies.
Source: UN (2006) and own calculations.

In general terms we observe that there was an increase in the number of trading partners for traditional product lines in all countries, especially for the cases of Brazil and Chile. However, Peru and Venezuela were countries whose export growth were most affected by the lost of commercial partners for their traditional goods. While Chile and Ecuador were the countries in the sample that lost the fewest partners to which they sell their traditional products.

The results suggest that a big share of export growth can be attributed to sales of traditional products to new export partners in the case of Argentina, Brazil, Chile, Paraguay, Peru, and Venezuela. In spite of this, in Argentina, Brazil, Chile, and in Venezuela a significant share of export growth can be accounted for by traditional partners (more than 40%). This can be due that these partners (traditional partners) represent important markets for the traditional exports of these nations. In the case of Colombia and Ecuador and Mexico, traditional partners represent the greater share of their total export growth.

Decomposition by destination for New Lines

This sub-section analyzes the extent to which the observed changes in export of new product lines are accounted for by changes in trading partners. The results are reported in Table 6.a (1 and 2) and in Table 6.b. Table 6.a shows the number of partners to which was exported new product lines by type of destination. Table 6.b reports the share of the change of new exports associated to changes in trading partners for each type of destination.

Table 6.a1: Export growth decomposition by destination market for new lines

Country	N° of partners 70-74	N° of traditional partners # Ci	N° of new partners # Ni	N° of death partners # Di	N° of partners 00-04
Argentina	915	646	2265	269	2911
Bolivia	114	90	1799	24	1889
Brazil	1569	1282	6012	287	7294
Chile	545	491	6615	54	7106
Colombia	792	598	2253	194	2851
Ecuador	225	182	2673	43	2855
Mexico	1025	851	5899	174	6750
Paraguay	52	34	1244	18	1278
Peru	625	540	3900	85	4440
Venezuela	851	578	2408	273	2986

Source: UN (2006) and own calculations.

Table 6.a2: Average of number of destination market for new lines by type

Country	Average of partners in 70-74	Average of traditional partners # Ci	Average of new partners # Ni	Average of death partners # Di	Average of partners 00-04
Argentina	7.26	5.13	17.98	2.13	23.10
Bolivia	0.83	0.66	13.13	0.18	13.79
Brazil	8.35	6.82	31.98	1.53	38.80
Chile	2.26	2.04	27.45	0.22	29.49
Colombia	5.66	4.27	16.09	1.39	20.36
Ecuador	1.32	1.07	15.72	0.25	16.79
Mexico	4.90	4.07	28.22	0.83	32.30
Paraguay	0.37	0.24	8.95	0.13	9.19
Peru	3.40	2.93	21.20	0.46	24.13
Venezuela	7.15	4.86	20.24	2.29	25.09

Source: UN (2006) and own calculations.

Table 6.b: Share of the total change in new exports associated to change in trading partners

Country	Traditional Partners ci	New Partners ni	Death of Partners di
Argentina	23.60%	77.90%	-1.60%
Bolivia	8.10%	91.90%	0.00%
Brazil	26.30%	73.90%	-0.20%
Chile	20.12%	79.92%	-0.05%
Colombia	24.58%	75.60%	-0.20%
Ecuador	9.50%	90.60%	-0.10%
Mexico	32.22%	67.79%	-0.02%
Paraguay	1.15%	98.89%	-0.04%
Peru	47.62%	52.52%	-0.15%
Venezuela	38.06%	62.45%	-0.53%

Note: The fact that in some cases the sum of all categories is not 100% is due to the presence of irrelevant destinies.
Source: UN (2006) and own calculations.

Results suggest that in all countries in study the total growth of the new exports is accounted by the proliferation of new trading partners, while the disappearance of partners was less frequent. Nevertheless for Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela an important share, over a 30% of total export growth of new product lines is attributed to sales to traditional trading partners. While for Bolivia, Ecuador, and Paraguay almost the totality of the change of new exports is accounted for sales made to the new trading partners. The disappearance of trading partners for this type of goods is very rarely, although Argentina and Venezuela are cases were death destination markets were more frequent.

Share of product lines and trading partners on the total export growth

In this section we present a summary of the export growth decomposition, as the result of the combination of the analysis made by type of export line and by type of destination market,

which allow us emphasize the role of both type of diversification (of good and markets, and their interaction) on the total export growth for the sample of studied countries (see Tables 7-16).

Table 7: Argentina's export growth decomposition by type of line and type of trading partner

Argentina				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	40,2%	3,4%	43,6%
	New	72,7%	11,1%	83,8%
	Death	-24,7%	-0,2%	-24,9%
	Total Lines	88,3%	14,3%	-3,1%
		Traditional	New	Death

Source: own calculations.

Table 8: Bolivia's export growth decomposition by type of line and type of trading partner

Bolivia				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	-51,7%	30,1%	-21,7%
	New	158,1%	341,0%	499,1%
	Death	-372,7%	0,0%	-372,7%
	Total Lines	-266%	371%	6,1%
		Traditional	New	Death

Source: own calculations.

Table 9: Brazil's export growth decomposition by type of line and type of trading partner

Brazil				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	40,9%	4,2%	45,1%
	New	52,8%	11,7%	64,6%
	Death	-9,4%	0,0%	-9,4%
	Total Lines	84%	16%	0,7%
		Traditional	New	Death

Source: own calculations.

Table 10: Chile's export growth decomposition by type of line and type of trading partner

Chile				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	36,2%	4,1%	40,4%
	New	46,7%	16,4%	63,1%
	Death	-3,5%	0,0%	-3,5%
Total Lines		79,4%	20,5%	-0,4%
		Traditional	New	Death

Source: own calculations.

Table 11: Colombia's export growth decomposition by type of line and type of trading partner

Colombia				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	61,0%	3,8%	64,8%
	New	36,6%	11,8%	48,3%
	Death	-9,8%	0,0%	-9,9%
Total Lines		87,7%	15,6%	-3,3%
		Traditional	New	Death

Source: own calculations.

Table 12: Ecuador's export growth decomposition by type of line and type of trading partner

Ecuador				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	55,8%	2,0%	57,7%
	New	35,5%	18,6%	54,1%
	Death	-11,0%	0,0%	-11,1%
Total Lines		80%	21%	-1,2%
		Traditional	New	Death

Source: own calculations.

Table 13: Mexico's export growth decomposition by type of line and type of trading partner

Mexico				
		Lines		
		Traditional	New	Total Partners
Partners	Traditional	75,2%	6,4%	81,5%
	New	5,8%	13,4%	19,1%
	Death	-0,7%	0,0%	-0,7%
Total Lines		80,3%	19,7%	-0,1%
		Traditional	New	Death

Source: own calculations.

Table 14: Paraguay's export growth decomposition by type of line and type of trading partner

Paraguay		Lines			
		Traditional	New		Total Partners
Partners	Traditional	7,7%	0,3%		8,0%
	New	95,1%	24,0%		119,2%
	Death	-20,9%	0,0%		-21,0%
	Total Lines	81,9%	24,3%		-6,4%
		Traditional	New		Death

Source: own calculations.

Table 15: Peru's export growth decomposition by type of line and type of trading partner

Peru		Lines			
		Traditional	New		Total Partners
Partners	Traditional	-7,1%	34,2%		27,1%
	New	103,4%	37,8%		141,1%
	Death	-65,7%	-0,1%		-65,8%
	Total Lines	30,6%	71,9%		-5,1%
		Traditional	New		Death

Source: own calculations.

Table 16: Venezuela's export growth decomposition by type of line and type of trading partner

Venezuela		Lines			
		Traditional	New		Total Partners
Partners	Traditional	53,0%	12,6%		65,6%
	New	150,6%	20,7%		171,2%
	Death	-94,0%	-0,2%		-94,2%
	Total Lines	109,5%	33,1%		-42,2%
		Traditional	New		Death

Source: own calculations.

Tables (7 to 12) show that the share of new trading partners for the case of Argentina, Bolivia, Brazil, Chile, Paraguay, Peru and Venezuela have a significant weight in the explanation of total export growth, with 84%, 499%, 65%, 63%,119%, 141% and 171%, respectively. We want to emphasize that in Bolivia, Paraguay, Peru and Venezuela, the birth of new lines that were exported to new partners was a determining factor to explain total export growth on those countries. With respect to the death of trading partners the negative effect on total export growth was quite significant in the cases of Bolivia, Peru and Venezuela (especially in the case of the traditional export lines). Finally, results show that new trading partners explains the highest proportion of total

export growth, with the exception of Colombia, Ecuador, and Mexico where its traditional partners have the biggest share. This result is particularly important given that this is the case for both traditional and new export lines, which indicates the importance of diversification of destination market in the explanation of total export growth.

5.   *Final remarks*

In this paper we have studied the diversification patterns at the level of destination market for 10 Latin American countries, by implementing the methodology presented by Evenett and Venables (2002) (incorporating what we consider to be some relevant improvements). Our findings show that diversification of destination markets has an important role in the explanation of export growth in the countries in our sample. The appearance of new export partners is a relevant factor to explain export growth, especially for the traditional lines. With respect to this group of products we can say that all countries have incorporated an important amount of new destinies. One exception to this result is the case of Colombia, Ecuador, and Mexico where the traditional markets explain the biggest share of export growth for their traditional export lines. The importance of new trading partners is also present for the case of new lines, especially for the case of Bolivia where the combination of new lines exported to new trading partners explains the biggest share of its export growth. Additionally, we observed that the death of product lines and the death of trading partners inhibit the total export growth. This is the case of Bolivia and Venezuela, countries that showed the smaller rates of export growth, in relation to the other studied countries and have the highest share of death trading partners.

Finally, from the policy point of view this paper suggest that the search and extension of the export markets is essential to enhance the export growth and greater export diversification since they have been most important source of export growth for both traditional and new products. These results indicate that an important factor for future research is to analyze the determinant of the appearance of new destination markets for countries' exports, and the role played by many of the trade agreements that countries have signed during the last decades.

6.   *References*

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APPENDIX 1

In order to make homogeneous all countries to avoid the problems generated by changes in countries political status, we identify two kinds of cases. The first type refers to those countries that at the beginning of the period were separated and the end of the sample are unified (e.g. Federal and Democratic Germany)[12]. In these cases, we decided aggregate them in a unique country for the whole sample. The second type refers to those countries that were aggregated in a unique country at the beginning of the period and then suffered some changes ending in two or more independent countries (e.g. Ex-Soviet Union countries). In these cases, we took the decision of assume like different countries all the disaggregated parts. We create separated reports to countries that disappears and appear in time, even if they had historical or political relations in past. These situations can affect our results of appearance or disappearance of export destination, but this effect is very small because we find that there are only four cases.

In both type of cases, the United Nations Commodity Trade Statistics Database (UN Comtrade) report aggregated or disaggregated countries even if the country did not suffer changes in time. For example, at the beginning of our sample Panama is reported in two parts: Panama excluding Canal Zone and a country so called Panama Canal Zone.

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[12] Countries like Yemen, Ethiopia and Vietnam suffered political changes at the beginning of the sample. The United Nations Commodity Trade Statistics Database (UN Comtrade) reports these countries as different independent parts in those years. However, years later all those independent parts were unified again forming the countries that at present we know. Thus, we always reported those countries as an unique country. Another case is India. In the beginning of the sample it was reported as India excluding Sikkim and Sikkim (an independent state). Nowadays Sikkim is an state of India. For this, we reported all as India.

APPENDIX 2

      We did export decomposition by product line and by destination market of 10 countries in study. To realize these decompositions we averaged annual exports between 1970-1974 and 2000-2004 to reduce any biases due to cyclical fluctuations. To decompose exports by product lines and by market destination we made two windows of time. The first window was made for initial period (average 1970-1974). The second window was made for the final period (average 2000-2004). Combining information of both windows allow us to identify if a countries exports or not a line k to a market destination j. We then constructed following indexes as in Evenett and Venables (2002):

$X_{ij}^{k}(70/4)$ = the mean value of nation i's exports of good k to nation j in 1970-1974.

$X_{ij}^{k}(00/4)$ = The mean value of nation i's exports of good k to nation j in 2000-2004.

$\Delta X_{ij}^{k} \equiv X_{ij}^{k}(00/4) - X_{ij}^{k}(70/4)$ = the change in the value of nation i's exports of good k to nation j.

$X_{i}^{k}(70/4) \equiv \sum_{j} X_{ij}^{k}(70/4)$ = the value of nation i's total exports of good k in 1970-1974.

$X_{i}^{k}(00/4) \equiv \sum_{j} X_{ij}^{k}(00/4)$ = the value of nation i's total exports of good k in 2000-2004.

$\Delta X_{i}^{k} \equiv X_{i}^{k}(00/4) - X_{i}^{k}(70/4)$ = the change in the value of nation i's exports of good k.

$\Delta X_{i}^{k} \equiv \sum_{k} \Delta X_{i}^{k}$ = the change in nation i's total exports.

Decomposition by product line

      We constructed two dummy variables to make exports decomposition by product line. The first dummy variable indicates if a country i exported good k in 1970-1974. Second dummy variable indicates if a country i exported good k in 2000-2004. We introduced a threshold level of export ($\bar{x}$) that is different than Evenett and Venables (2002), since ours is not the same for all countries. In our exercise we introduced a threshold level of 0.01% of average exports in 1970-1974 for each country. Thus, the threshold level varies between countries according to its sizes. Those reports of exports that not exceed threshold level are taken as never has been exported. Dummies variables are constructed as follow:

$$I\left(X_{i}^{k}(70/74)\right)=1 \ \ \text{if} \ \ X_{i}^{k}(70/74) \geq \bar{x} \ \ \ \text{and} \ \ \ 0 \text{ otherwise}^{13}$$

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[13] We refer to relevant lines in 1970-1974 in those cases when the dummy variable is 1.

$$I\left(X_i^{\ k}(00/04)\right)=1 \quad \text{if} \quad X_i^{\ k}(00/04) \geq \bar{x} \quad \text{and} \quad 0 \text{ otherwise}^{14}$$

These dummies variables enable us to classify each pair i,k into one of following four possible sets:

$dumci \equiv \left\{k \middle| I\left(X_i^{\ k}(70/74)\right)=1 \bigcap I(X_i^{\ k}(00/04)=1\right\}=$ the set of product lines k that nation i exported in 1970-1974 and continued to export in 2000-2004.

$dumni \equiv \left\{k \middle| I\left(X_i^{\ k}(70/74)\right)=0 \bigcap I(X_i^{\ k}(00/04)=1\right\}=$ the set of product lines k that nation i did not export in 1970-1974 but did export in 2000-2004.

$dumdi \equiv \left\{k \middle| I\left(X_i^{\ k}(70/74)\right)=1 \bigcap I(X_i^{\ k}(00/04)=0\right\}=$ the set of product lines k that nation i exported in 1970-1974 but no longer exported in 2000-2004.

$dumoi \equiv \left\{k \middle| I\left(X_i^{\ k}(70/74)\right)=0 \bigcap I(X_i^{\ k}(00/04)=0\right\}=$ the set of product lines k that nation i did not export in either 1970-1974 or 2000-2004.

Thus, the set *dumci* contains all product lines that were exported by nation i in both periods which we called traditional export lines. Set *dumni* contains all product lines that only were exported in the last period which we called new export lines. Set *dumdi* contains all product lines that only were exported in the first period which we called death export lines. Set *dumoi* contains all product lines that never were exported or never exceed threshold level.

Changes in total exports associated with each set (*dumci, dumni, dumdi*, and *dumoi*) were calculated as follows:

$c_i = 100 \sum_{k \in dumci} \Delta X_i^{\ k} / \Delta X_i =$ percentage of total change in exports that is associated to traditional export lines.

$n_i = 100 \sum_{k \in dumni} \Delta X_i^{\ k} / \Delta X_i =$ percentage of total change in exports that is associated to new export lines.

$d_i = 100 \sum_{k \in dumdi} \Delta X_i^{\ k} / \Delta X_i =$ percentage of total change in exports that is associated to death export lines.

$O_i = 100 \sum_{k \in dumoi} \Delta X_i^{\ k} / \Delta X_i =$ percentage of total change in exports that is associated to irrelevant export lines.

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[14] We refer to relevant lines in 2000-2004 in those cases when the dummy variable is 1.

Decomposition by destination

      In order to analyze if there is a geographical dimension that can explain the evolution of total exports in each country we made export decomposition by destination market for traditional and new export lines. Following Evenett and Venables (2002) we constructed two dummy variables in each case to identify the effect of different kind of destination market in export evolution. As we did in the previous case, we introduced a threshold level of export ($\bar{x}$) that separate significant and insignificant values of exports. This threshold is lower than used in decomposition by line, another difference in our approach in comparison with Evenett and Venables (2002) that used the same threshold level in both type of decompositions. We used a threshold of 0.5% of total export (average of 1970-1974) of each traditional and new export line[15]. Thus, threshold level varies between countries and between type of destination market by each product lines.

      Dummy variables were constructed as follow:

$$I^{\alpha}\left(X_{ij}^{k}(70/74)\right) = 1 \quad \text{if} \quad X_{ij}^{k}(70/74) \geq \bar{x} \quad \text{and} \quad 0 \text{ otherwise}[16] \quad \alpha = [dumtot, dummi]$$

$$I^{\alpha}\left(X_{ij}^{k}(00/04)\right) = 1 \quad \text{if} \quad X_{ij}^{k}(00/04) \geq \bar{x} \quad \text{and} \quad 0 \text{ otherwise}[17] \quad \alpha = [dumtot, dummi]$$

These dummies variables enable us to classify each export destination for each traditional line into one of following three possible sets:

$$dcici \equiv \left\{ j \mid I^{C}\left(X_{ij}^{k}(70/74)\right) = 1 \cap I^{C}(X_{ij}^{k}(00/04) = 1 \right\} = \text{traditional export destination: trading}$$
partner that nation *i* exported traditional line *k* in 1970-1974 and continued to export in 2000-2004.

$$dcini \equiv \left\{ j \mid I^{C}\left(X_{ij}^{k}(70/74)\right) = 0 \cap I^{C}(X_{ij}^{k}(00/04) = 1 \right\} = \text{new export destination: trading partner}$$
that nation *i* did not export traditional line *k* in 1970-1974 but did export in 2000-2004.

$$dcidi \equiv \left\{ j \mid I^{C}\left(X_{ij}^{k}(70/74)\right) = 1 \cap I^{C}(X_{ij}^{k}(00/04) = 0 \right\} = \text{death export destination: trading partner}$$
that nation *i* exported traditional line *k* in 1970-1974 but no longer exported in 2000-2004.

      In the case of new export lines, dummy variables calculated above enable us to classify each export destination for each newly line into one of following three possible sets:

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[15] We made the same exercise with a threshold of 1% of total export (average of 1970-1974) of each traditional and new export lines and the results present small changes.

[16] We refer to relevant destination market in 1970-1974 in those cases when the dummy variable is 1.

[17] We refer to relevant destination market in 2000-2004 in those cases when the dummy variable is 1.

$dnici \equiv \left\{ j \mid I^N\left(X_{ij}^{\ k}(70/74)\right)=1 \cap I^N(X_{ij}^{\ k}(00/04)=1\right\} =$ traditional export destination: trading partner that nation i exported new export line k in 1970-1974 and continued to export in 2000-2004.

$dnini \equiv \left\{ j \mid I^N\left(X_{ij}^{\ k}(70/74)\right)=0 \cap I^N(X_{ij}^{\ k}(00/04)=1\right\} =$ new export destination: trading partner that nation i did not export new export line k in 1970-1974 but did export in 2000-2004.

$dnidi \equiv \left\{ j \mid I^N\left(X_{ij}^{\ k}(70/74)\right)=1 \cap I^N(X_{ij}^{\ k}(00/04)=0\right\} =$ death export destination: trading partner that nation i exported new export line k in 1970-1974 but no longer exported in 2000-2004.

Changes in total exports of traditional/new export lines associated with each set (dcici, dcini or dcidi in the case of a traditional export line or dnici, dnini or dnidi in the case of a new export line) were calculated as follows:

$c_i^{dumci} = 100 \sum_k \sum_{j \in dcici_j^k} \Delta X_{ij}^{\ k} / \Delta X_i =$ percentage of total change in exports of a traditional line that is associated to traditional destinations of country i.

$n_i^{dumci} = 100 \sum_k \sum_{j \in dcini_j^k} \Delta X_{ij}^{\ k} / \Delta X_i =$ percentage of total change in exports of a traditional line that is associated to new destinations of country i.

$d_i^{dumci} = 100 \sum_k \sum_{j \in dcidi_j^k} \Delta X_{ij}^{\ k} / \Delta X_i =$ percentage of total change in exports of a traditional line that is associated to death destinations of country i.

$c_i^{dumni} = 100 \sum_k \sum_{j \in dnici_j^k} \Delta X_{ij}^{\ k} / \Delta X_i =$ percentage of total change in exports of a new export line that is associated to traditional destinations of country i.

$n_i^{dumni} = 100 \sum_k \sum_{j \in dinini_j^k} \Delta X_{ij}^{\ k} / \Delta X_i =$ percentage of total change in exports of a new export line that is associated to new destinations of country i.

$d_i^{dumni} = 100 \sum_k \sum_{j \in dnidi_j^k} \Delta X_{ij}^{\ k} / \Delta X_i =$ percentage of total change in exports of a new export line that is associated to death destinations of country i.