

Export Growth and Diversification

The Case of Peru

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Abstract

The rapid growth of exports since the early 1990s is a central feature in the extraordinary rise of Peru's economy in recent years. This study puts a lens on this export growth episode, with special attention to two issues. The first one is the role of international price levels as well as export volumes in explaining this growth. The second one is whether Peru has seen a diversification of its exports during this growth episode.

The empirical analysis finds that although the increase in international mineral prices has exerted a significant impact in recent years, much of the growth of Peru's export revenues has also been related to an increase

in volumes. This finding applies to traditional and non-traditional exports, although the importance of volumes is more predominant for the latter. The analysis does not reveal a trend toward greater diversification of Peru's exports since 1993. On the contrary, some of the evidence suggests that the rises in price and volumes in the mining components could be leading to greater concentration. Nonetheless, there is a clear trend toward diversification among non-traditional exports due to the significant emergence of new export products in recent years.

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Export growth and diversification: The case of Peru

By

Javier Illescas and C. Felipe Jaramillo* §

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Javier Illescas and C. Felipe Jaramillo¹

1. Introduction

After posting mediocre results for two decades, Peru's economy has been growing at unprecedented rates in recent years. The country's performance has been outstanding in the Latin American context: growth has averaged 6.8% annually between 2002 and 2008, inflation has been low, poverty indicators have shown a steady decline, fiscal accounts have been strong, FDI flows have been sustained at high levels, and the country has exhibited strong export growth.²

This paper focuses on the rapid growth of exports, one of the central features of the ongoing economic boom. Successive administrations since the early 1990s have implemented market-friendly policies, targeting an outward-oriented approach that relies on exports as a key engine of growth. Results have been positive, with the strongest performance coming in since the early 2000s. Exports have grown from an average of \$6.3 billion in the last years of the previous decade (1998-2000) to an average of \$28.8 billion in 2007-09, i.e. an increase of almost five times in nominal terms over one decade. This rapid rise has been a key contributor to economic growth, and may be an indication that a more sustained period of prosperity for Peru is likely in coming years.³

This study describes the central characteristics of Peru's export boom, with the purpose of analyzing some of its principal trends. Special attention is given to two questions. The first one is whether the increase of external revenue is mainly due to improvements in international price levels or whether rising volumes have also been important. This is an important question because if the boom is due mainly to price variations, then the growth would be chiefly associated with the international rise in mineral prices that has occurred over the past decade and not directly with the market-friendly approach to development implemented. It would also be of concern because its sustainability would be more uncertain, driven by exogenous trends in international markets. If the expansion of volumes is the principal underlying explanation, then it would suggest a more direct link with market reforms, likely to be more long-lasting, linked to an increase in productive investments which should pay off over a longer period of time compared to trends explained by external price volatility.

The second question is whether Peru's range of export products has been diversifying during the recent growth episode. The study presents an empirical analysis of the evolution in the diversification of Peru's export products since the early 1990s. This is an important topic since export diversification is an objective traditionally considered to be a significant factor associated with sustained economic growth. In

¹ The authors thank Diana Ortiz for her assistance in statistical data management.

² The global financial crisis affected economic performance between the end of 2008 and the first half of 2009, when the high growth phase was interrupted. In 2009, the growth rate fell to 0.8%. Nonetheless, the accelerated pace of expansion resumed as from the second half of 2009 and expectations are that growth will be around 8% in 2010.

³ Studies such as that of Jones and Olken (2007) have found empirical evidence that economic take-offs are associated to strong and ongoing expansions in trade flows.

addition, export diversification has been an old concern in Peru, as exports have been characterized historically by their dependence on a small number of primary products (mainly fishmeal and minerals). There is an extensive literature that has argued that greater export diversification is positive for an economy as it becomes less vulnerable to adverse shocks in terms of trade, because of a lower volatility and uncertainty in revenues (e.g, Ghosh and Ostry, 1994). It has also been argued that diversification brings other advantages: positive price shocks are more easily channeled towards economic growth, knowledge spillovers, and it fosters increasing returns to scale and learning opportunities which lead to new forms of comparative advantage (de Piñeres and Ferrantino, 2000). Recent studies have once again raised this issue, as new empirical evidence suggests that greater export diversification is statistically associated with economic growth (Lederman and Maloney, 2007; Hesse, 2006; Carrere, Strauss-Kahn and Cadot, 2007). Even though these studies do not prove the direction of the causality, if diversification is a lever that helps raise growth then the debate on the most appropriate public policies to induce the development of new export products would become particularly relevant.⁴

The paper is divided into five sections, starting with this introduction. The second section briefly reviews the relevant literature on export diversification and its significance for economic development. The third section presents an empirical analysis of the sources of growth of Peruvian export revenues since 2000, aimed at distinguishing between the effects of prices and volumes. The fourth section examines the evolution of various alternative measures of the diversification of Peru's exports. Some conclusions are presented at the end.

2. Literature review

It is well known that the most developed countries tend to exhibit a more diversified export supply compared to low-income countries. For the latter, export supply is usually more concentrated in few agricultural or mining products. This has given rise to the assumption that development is a process associated with growing export diversification.⁵ However, some approaches suggest that export diversification can foster development, opening a debate on the usefulness of public policies to induce a more varied range of export products.

In an application of the financial portfolio theory, following Ghosh and Ostry (1994) various authors have suggested that export diversification reduces risks and reduces instability of aggregate export flows. By reducing macro instability – related to foreign exchange revenues, fiscal receipts and possibly exchange rate and interest rate levels – a lower variability of export revenues could lead to a higher aggregate level of investment. This argument requires assuming that entrepreneurs are risk averse and therefore invest more in more stable macroeconomic environments (Bleaney and Greenaway, 2001). A broad range of arguments has also been developed in support of the importance of developing growing exports of manufactured goods – and therefore, of diversifying exports – related to the knowledge spillovers that may give rise to new production, management and marketing technologies, many of which can benefit other industries (see Gutierrez de Piñeres and Ferrantino, 2000).

⁴ A more recent version of this thesis is reflected in the approaches of Lin (2009), for whom the process of diversification is a necessary process for development, which may require government interventions so as to facilitate the processes of change and innovation.

⁵ Carrere, Strauss-Kahn and Cadot (2007) have provided empirical confirmation, with data of a sample of 159 countries and 17 years that diversification tends to increase as the per capita income increases, though they identify a point of inflection in income levels between USD 20,000-22,000 of purchasing power parity (PPP), after which exports tend to concentrate in a specialized basket of manufactures.

A more controversial view was the structuralist vision that suggests that the diversification towards manufactured goods is a necessary condition for sustained economic growth. This vision was derived from a normative interpretation of growth patterns in developed countries⁶ or from the old theses of Prebisch (1950) and Singer (1950) on the downward trend in the terms of trade of raw material vis-à-vis manufactures. Not far from these arguments, a vast literature has been developed on the so-called “curse” caused by abundant natural resources (the Resource Curse). According to this view, an excessive dependence on the production and export of primary products harms development prospects. One of the reasons quoted most often for justifying this pessimism is the Dutch Disease effect hindering the development of other tradable and “modern” activities in the economy.⁷

The empirical study of Sachs and Warner (2001) has been widely mentioned as a solid piece of evidence of the negative influence of abundant natural resources on economic growth. The study uses Barro-type growth regressions (i.e., multiple countries and periods) and finds a negative significant relationship with variables measuring the abundance of natural resources. Sachs and Warner conclude that the countries suffering this “curse” have to make particularly intense efforts to exit the low growth trap. The theoretical arguments underlying this pessimist vision have been revived in recent years with the conceptual framework presented in the work of Hausmann and Klinger (2007). Using measures of “distance” in the export production space, these authors suggest that the excessive specialization in minerals, hydrocarbons or agricultural products does not facilitate the appearance of new manufactured export goods. Hausmann and Klinger (2008) recommend an active state policy to foment the “discovery” of new export products in new sectors, pointing out that the scant development of new export activities in Peru is a serious flaw during the recent boom.

On the other hand, the so-called “curse” has been viewed with skepticism by another group of studies, for which the abundant natural resources and the specialization therein is not necessarily negative for development. The empirical evidence in favor of the “curse” found by Sachs and Warner is seriously questioned by Lederman and Maloney (2007), who follow the former’s empirical framework to find that falling export diversification (i.e., greater export concentration) produces a negative effect on growth, canceling the effect of the variables measuring the abundance of natural resources. On the other hand, de Ferranti et. al. (2002) document cases of economies with abundant natural resources that have been able to develop rapidly with no need for active policies to foment the development of new products. Likewise, Bonaglia and Fukasaku (2003) argue that low-income economies with abundant natural resources can diversify their activities towards raw material processing and manufactured goods requiring natural inputs. In this sense, they refer to successful countries that have used their mineral and forest resources to develop knowledge-intensive sectors with a high technological content.

Brenton, Newfarmer and Walkenhorst (2007) criticize the excessive emphasis on programs focused exclusively on the development of certain types of products (e.g. manufactures) or on specific phases of the production cycle. They argue that approaches need to take into account each particular economy’s mode of insertion into global markets. They recommend following a portfolio of measures to take advantage of different channels to enhance diversification, including (i) geographical diversification (e.g. by expanding the number of destinations for existing products), (ii) improvements of the quality of existing products, and (iii) taking advantage of opportunities for exporting services.

Although the empirical literature on the link between growth and export diversification is small, a few studies have found that export concentration is associated to a lower growth, confirming the findings of

⁶ The classical references on growth patterns are the work of Chenery (1979) and Syrquin (1989). As regards the diversification of exports, a recent application is the work of Carrere, Strauss-Kahn and Cadot (2007).

⁷ A complete literature review on the “resource curse” can be found in Sinnott et al (2010).

Lederman and Maloney (2007). Al-Marhubi (2000) finds that export diversification encourages economic growth using cross-sectional regressions of growth of countries, using various alternative measures of export diversification. On the other hand, Hesse (2006) estimates an “enhanced” Solow growth model, the results of which show that the concentration of exports is negative for economic growth, after taking into account the effect of investment, population and human capital.

3. Anatomy of Peru’s export boom since 2000

Export growth in cross-country comparison

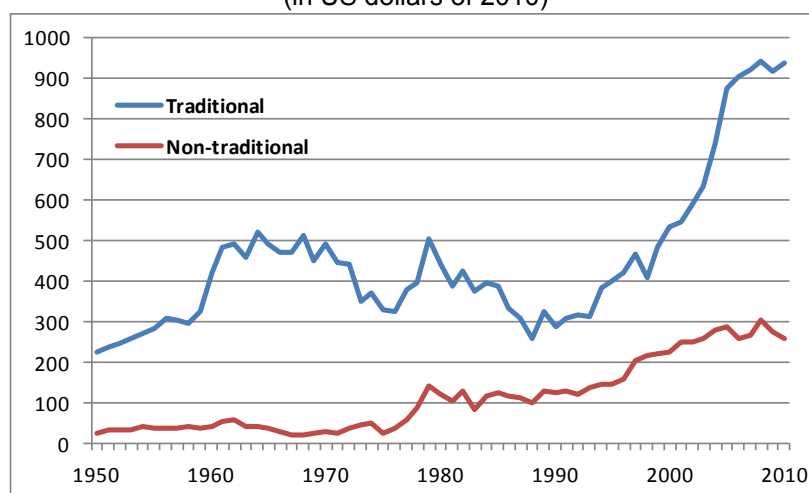
Growth rates for aggregate exports for a sample of Latin American countries are presented in Table 1. The data clearly show a notable boost in the growth of Peru’s exports in the last decade, in both nominal and real per-capita terms (see Figure 1). This behavior has been a pattern shared by many economies in the region, although the average growth rate of Peru between 2001 and 2008 stands out as one of the region’s highest (8.3%, only lower than that of Bolivia).

Table 1: Exports of goods and services, Latin American countries 1961-2008
(real growth rate)

	1961-1970	1971-1980	1981-1990	1991-2000	2001-2008
Argentina	6.7	5.6	5.5	6.9	6.4
Bolivia	n.d.	3.0	2.8	4.9	8.5
Brazil	6.6	10.2	7.7	7.1	8.0
Chile	3.6	11.3	6.3	9.3	6.1
Colombia	3.2	6.1	6.5	6.0	5.4
Costa Rica	10.7	6.1	7.1	10.8	5.7
Ecuador	1.9	14.3	6.1	6.3	5.9
Mexico	5.9	11.9	8.0	13.6	4.6
Peru	3.3	3.3	0.7	8.1	8.3
Uruguay	4.4	7.6	4.7	5.6	6.6
Venezuela	n.d.	-6.8	2.9	1.5	-1.7

Source: WDI

Figure 1: Traditional and Non-traditional per capita Exports, 1950-2010
(in US dollars of 2010)



Given this dynamism, it is likely that Latin American economies are reducing their well-known traditional lag in terms of openness (e.g. the relationship between the size of the trade flows and total economic activity) in comparison to other regions. In this regard, Table 2 shows the ratio of exports to GDP by decade and by country. The figures reveal that Peru has improved its ratio by almost 10 percentage points in the last decade compared to the 1990s (22.6% versus 13.4%), standing out as one of the countries with the largest improvements, along with Argentina, Bolivia and Chile.

Table 2: Exports of Goods and Services from Selected Latin American Countries, 1961-2008
(percent of GDP)

	1961-1970	1971-1980	1981-1990	1991-2000	2001-2008
Argentina	6.3	7.3	9.3	9.0	23.5
Bolivia	n.d.	25.7	22.8	20.3	32.8
Brazil	6.7	7.5	10.1	8.7	14.4
Chile	13.7	19.3	27.5	28.8	40.5
Colombia	12.5	15.5	15.0	16.6	17.1
Costa Rica	25.1	29.4	31.8	40.6	46.1
Ecuador	16.3	24.8	25.7	28.9	30.3
Mexico	7.7	9.1	17.2	24.9	27.3
Peru	18.2	16.6	16.7	13.4	22.6
Uruguay	14.3	15.7	22.6	18.4	26.6
Venezuela	25.3	26.0	25.5	28.2	32.6

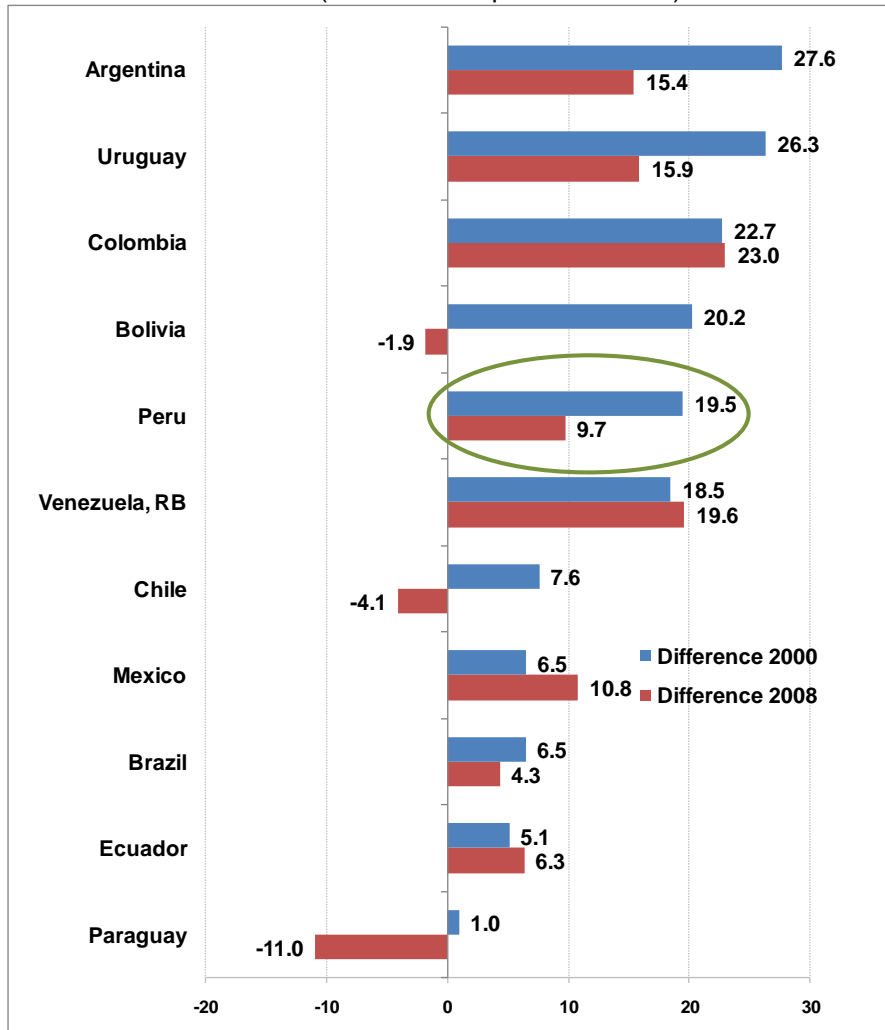
Source: Own calculations using WDI primary data.

To complement this analysis, Figure 2 presents the deviations of the forecasted versus actual export/GDP ratio for a sample of Latin American countries for two years (2000 and 2008), in which

forecasted values are derived from an econometric estimation using a set of determinants often used in the literature.⁸ In this exercise, the greater the deviation, the larger is the country's lag with respect to what would be expected given income level and other parameters. The results indicate that although there has been some progress in reduction of the gap between the predicted and actual values, most Latin American countries still exhibit a significant gap. Peru yields a middling result in terms of reduction of the gap between 2000 and 2008 (i.e., 9.7 pts), behind Argentina, Uruguay, Chile, Paraguay and Bolivia, but above Ecuador, Mexico, Venezuela and Brazil.

⁸ This is a cross-sectional regression, in which the independent variables are per capita GDP, population, geographical area, a dummy variable of ocean access and the oil export coefficient as a proportion of total exports for a sample of 164 countries. For the values of the export to GDP coefficient, per capita GDP and the oil to total export coefficient, the average values of 2000-2008 were used. This exercise is similar to the one presented in Jaramillo and Lederman (2006).

Figure 2: Deviation Exports/GDP, Latin American countries
(actual versus predicted value)



Export growth by categories

Official statistics in Peru break exports down among traditional and non-traditional products.⁹ Traditional products are essentially commodities which Peru has produced and exported historically, reflecting its comparative advantages associated to the relative abundance of resources. Examples include concentrates of and refined copper, lead, zinc, iron, tin, gold, silver, fishmeal and oil, among others.¹⁰

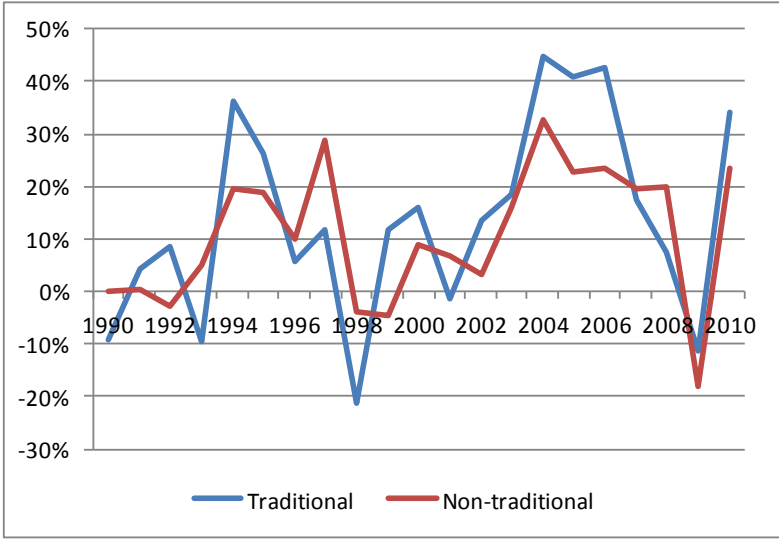
⁹ The distinction between traditional and non-traditional exports does not respond to a formal analytical criterion, but in practice it is used frequently because traditional exports are an approximation of the basic raw materials that were responsible for almost all exports since the end of the 1970s (especially minerals and agricultural commodities) while non-traditional exports are the remaining exports, which though using traditional raw material as inputs have a greater value added than traditional exports.

¹⁰ Including agricultural products whose relative relevance has been declining over time, such as sugar, cotton and coffee.

Non-traditional export products are those that have been developed more recently (roughly, since the 1980s), but they are largely elaborations of traditional raw materials and they therefore have the same source of comparative advantages (e.g. copper products such as wire, sheets etc.) or they are based on the relative abundance of natural resources that have only been developed in more recent times (for example, timber products, fruits and vegetables).

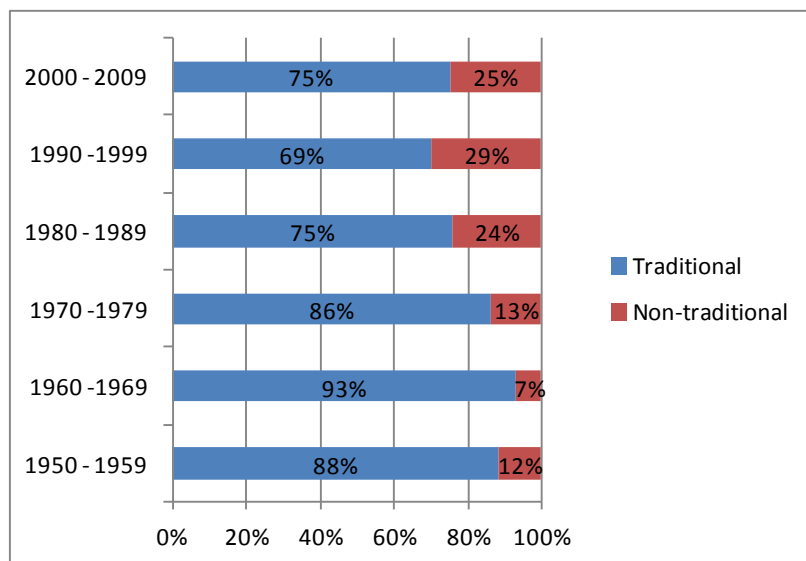
The disaggregated growth rates of the two groups of products reveal that both types of exports have grown remarkably since 2001 (see Figure 3), whereby the traditional products have grown the most between 2002 and 2006, reflecting the rapid growth of international demand and prices of mining products, with an interruption in years 2008 and 2009 due to the international global crisis, when the value of both export categories fell.

Figure 3: Breakdown of Traditional and Non-traditional Exports
(nominal growth rates)



The long-term analysis of the data on the two export groups reveals several key facts. First, traditional exports have been dominant over time and continue to dominate even during the latest economic growth spurt. Second, there are two phases in the evolution of exports since 1950. The first covers the period 1950-92, when exports grew at a slow pace, in a context of strong macroeconomic swings, along with market distortions at the micro level. The second covers the period 1993-2008, in which growth has been faster, with a clear take-off of exports after 2000. Finally, in terms of the share in total exports, it is worth noting that Peru’s non-traditional exports gained steadily in share of total exports until the first decade of the 21st century (see Figure 4). Despite growing at a healthy clip in the post-2000 period, its falling share is due to the faster pick-up in traditional exports associated with the boom of mining investments, international prices, and demand.

Figure 4: Composition of Exports 1950-2009
(percent)



Contribution of prices and volumes

In this section, the issue of the contribution of prices and volumes in the recent high growth in Peru's exports is explored. Due to limitations with the data available, the empirical analysis looks at this question separately for traditional and non-traditional exports.

For the case of traditional exports, between 1994 and 1999 prices hardly varied, with an annual average growth of 0.7%, while volumes grew by 10.6%.¹¹ In contrast, between 2000 and 2009, the prices of these exports grew by an annual average of 13.7% and volumes by 5.3% (see Table 3). In the first period, the high growth of volumes reflects the growing extraction of minerals and hydrocarbons, following changes in the governing laws for both activities, introducing different types of incentives (e.g. related to taxes and exchange rates), the privatization of state mines and the access to agreements on tax stability, which have contributed to boosting the production and the supply of this type of products, despite the low price. In the second period, with the continuous price boom – except at the end of 2008 and the beginning of 2009 due to the international financial crisis -, volumes grew by 5.3%, as a result of the lower grade of the mineral extracted from existing mines and few important new mines coming on stream. This has given rise to a relative stagnation of the volumes in recent years, despite the significant price increase (see Figure 5, mobile average of 6 months on the black line).

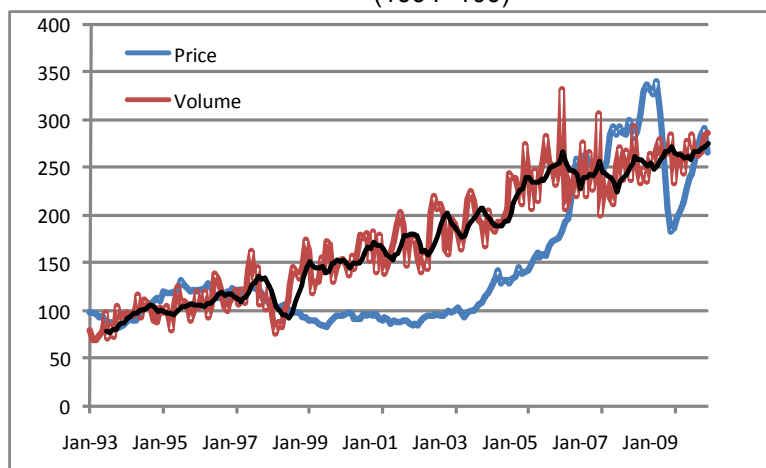
¹¹ / The analysis can only be performed with data starting in 1994, as the data from the Central Bank of Peru has disaggregated data on the prices and volumes of traditional and non-traditional exports as from that date. A study on this same topic is that of Banco Central de Peru (2008).

Table 3: Growth of Export Prices and Volumes
(in percent)

	1994-1999		2000-2010*		1994-2010*	
	<u>Price</u>	<u>Volume</u>	<u>Price</u>	<u>Volume</u>	<u>Price</u>	<u>Volume</u>
Traditional	0.7	10.6	13.7	5.3	9.1	7.2
Non-Traditional	-0.5	12.2	2.4	10.6	1.4	11.1

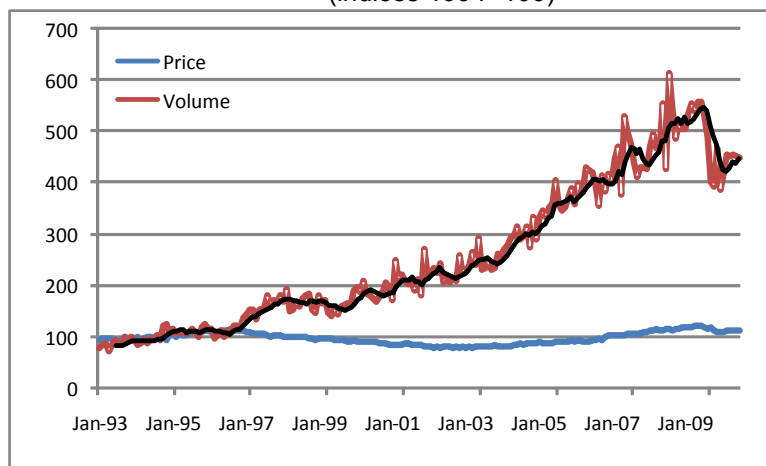
* data as at August 2010
Source: BCRP.
Own elaboration

Figure 5: Prices and Volumes of Traditional Exports 1993-2009
(1994=100)



By contrast, the growth of revenues from non-traditional exports stems mostly from volumes. This positive behavior is likely a result in large part of the success of micro reforms and the overall sustained improvement in the business climate since the 1990s. As proof of this, note that while between 1994 and 1999 the prices fell by an average of 0.5%, volumes grew by 12.2%, and later, when prices increased by 2.4% on average between 2000 and 2010, volumes continued to grow by 10.6% (see Figure 6). This prevalence of the volume effect in non-traditional products is confirmed by the information presented in Table 3, which reveals that in the period 1994-2010, volumes grew by 11.1% while prices only rose by 1.4%. By contrast, during the same period, in the case of traditional exports, prices have contributed somewhat more than volumes to the growth in export values (9.1% and 7.2%, respectively).

Figure 6: Prices and Volumes of Non-Traditional Exports 1993-2009
(indices 1994=100)



4. Trends in export diversification

Although the performance of Peruvian exports has been notable during the last decade, one large concern is the diversification of the range of export products, as the economy has suffered historically from strong swings in its terms of trade due to excessive product concentration. This section presents an analysis of the evolution of the degree of concentration of Peruvian exports since the start of the economic reform phase in the early 1990s until 2009. The analysis relies on the computation of annual time series of diversification indicators between 1993 and 2009¹², as well as a more disaggregated comparison of the degree of export diversification at the product level in two years: 1993 and 2009. The empirical evidence obtained from both approaches indicates that over these two decades, Peru has seen a trend towards a greater concentration of its exports, especially in the post-2000 period. The silver lining is that this greater overall concentration of aggregate exports has gone hand in hand with a greater diversification of the non-traditional export category, which is reflected in the emergence of a large number of new export products.

Concentration indices

This section looks at the evolution of diversification using two different methods of measurement. The first is the proportion of the value of exports of the major export products, a widely used simple and intuitive indicator. The second one is the Herfindahl-Hirschman (HH) index, a well-known indicator used extensively in the literature.¹³ The indicators are calculated using nominal trade information and the

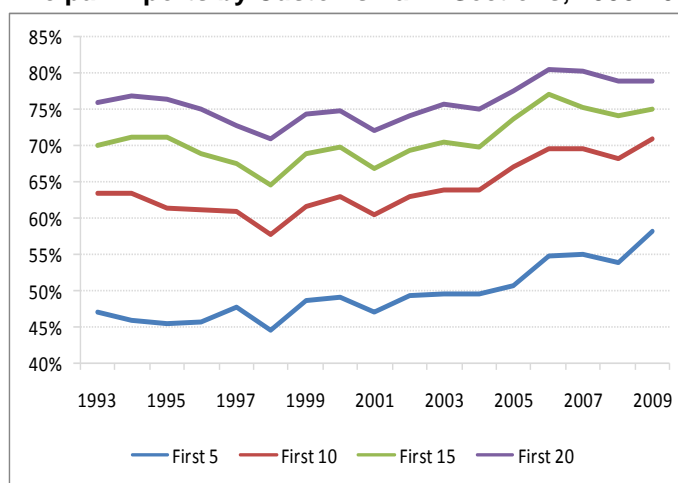
¹² The analysis starts from 1993, the year as from which the Superintendency of Tax Administration has systematized and integrated information with data on the level of subheadings.

¹³ The Herfindahl Index is defined as $HF = \sum_{j=1}^n (x_j)^2$; where n is the number of observations and x the fraction of exports in relation to total non-traditional exports of the j -th SIC; in this case, the range of the index fluctuates from n^{-1} (maximum diversification) to 1 (maximum concentration). Nonetheless, if the idea is to compare

disaggregation of export products according to the Standard Industrial Classification review 3 (SIC-3) of 4 digits for the period 1993-2009.¹⁴

Starting with the simpler measurements of diversification, the more than 1,228 categories of export products are first ranked independently for each year covered in the sample. Once ranked, the value of exports of the major categories are added up and calculated as a percentage of total exports in the year. Figure 7 shows the evolution of the proportion of the value of total exports of the main 5, 10, 15 and 20 products, using the data by customs tariff sections.¹⁵ The different versions of the indicator yield a similar trend, i.e. a slight trend to diversification (downward in the Figure) between 1993 and 1998 (except for the case of the principal 5 products in which the trend seems less evident) followed by a phase of secular growth of the concentration (interrupted by slight declines in some years of the sample). The 5 principal categories account for nearly 47% of exports in 1993, 45% in 1999 (at its nadir), and from then onwards a gradual upward leads to 59% in 2009. In the other versions of this indicator shown in Figure 6, the results are similar, with a significant increase of around 10% in the share of the leading products between 1999 and 2009.

**Figure 7: Proportion of Total Export Value
Principal Exports by Customs Tariff Sections, 1993-2009**



Similarly, the standardized Herfindahl-Hirschman index yields a generally upward evolution, indicating declining diversification.¹⁶ Figure 8 suggests an association between the evolution of the index and that

concentration levels over time, where the number of products is not constant, it is necessary to standardize the index so it would be within the range of 0 to 1. Other indices used in the literature to measure the degree of export diversification include the Concentration Indices (CI), the Hall-Tideman Index (HTI), the Rosenbluth Index (RI), the Comprehensive Concentration Index (CCI), the Hannah-Kay Index (HKI), the Entropy Measure (EM) and the Diversification Index (DI). Bailey and Boyle (1971) provide a review of alternative indices and confirm that most yield comparable results.

¹⁴ A useful exercise to disaggregate the impact of prices from volumes in changes in diversification trends would have used trade data in constant values. However, this could not be attempted in this study as there are no deflators currently available in Peru by 4-digit SIC sectors.

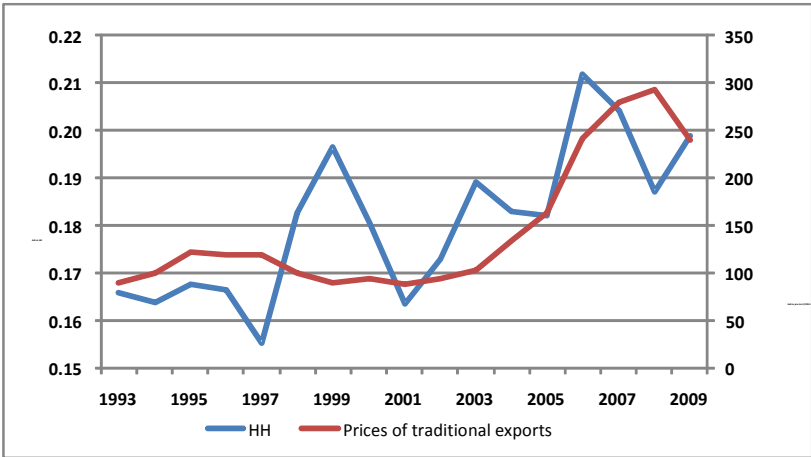
¹⁵ The sections are aggregations of 4-digit tariff subheadings.

¹⁶ A similar exercise using the Herfindahl-Hirschman Index yields broadly similar results to those of the Herfindahl-Hirschman index, and is thus not reported in the body of the paper.

of the price of traditional exports, indicating that the latter may be the likely driver. Traditional exports have accounted for 69-75% of total exports in the period with the bulk of its share accounted by the handful of primary products that dominate the price index depicted -- mainly copper products, fishmeal, non-ferrous metal transformation and refined petroleum products.

A more detailed look at the evolution of the index reveals two distinct phases during the 1993-2009 period. The first one from 1993 to 2001 is associated with a lower rate of growth in the price of traditional exports and a slower decline in diversification. The second phase coincides with the high growth rates of international prices that begin in 2002 and is when diversification declines more sharply. It is important to note that despite the general trend towards lower diversification, towards the end of the period there seems to be a temporary improvement (in 2007 and 2008) which is the likely result of the declining growth in international mining prices and the relative stagnation of export volumes.

Figure 8: Export Concentration Index: 1993-2009

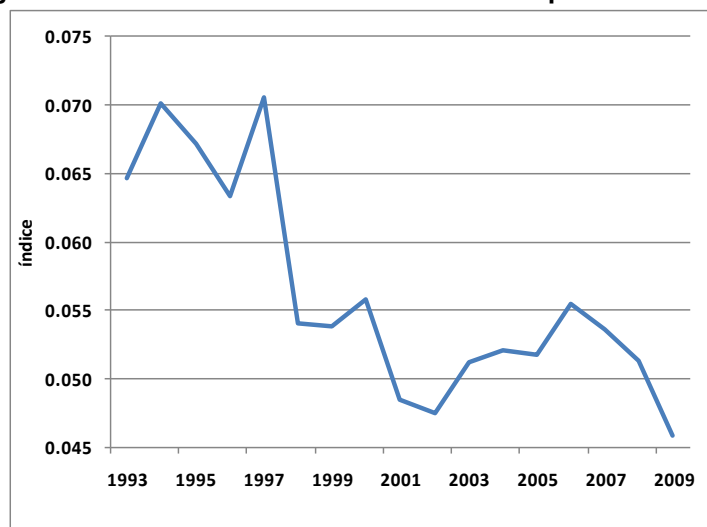


The results of this analysis is largely consistent with the result reported in a recent study by UNECLAC (2010), which compares changes in the average concentration over years 1991-1994 and 2006-2009 for a sample of Latin American economies. While it finds that on aggregate for the region, export diversification has increased between the early 1990s and the end of the 2000s, it finds that Peru, Venezuela, Ecuador, Bolivia, Chile, Panama and Paraguay have bucked that trend -- mostly economies that are well known for their oil, gas and mining exports.

As the aggregate analysis may be clouding important dynamics in some export categories, Figure 9 displays the evolution of the Herfindahl-Hirschman Index applied only for the grouping of non-traditional exports. The overall trend is remarkably different to that of aggregate exports, indicating greater diversification secularly for most of the period, except for the years between 2001 and 2006. This trend may reflect two possible competing hypotheses. One is that Peru may be exporting the same non-traditional products in 2009 and in the early 1990s, but with a new distribution in which the proportion of

the dominant products in this category falls. The second is that a range of new products has appeared in recent years, yielding revenues significant enough to boost diversification indicators.

Figure 9: Diversification of Non-Traditional Exports: 1993-2009



**Table 4: Export Diversification Indicators
(10-digit subheadings)**

	1993			2009		
	Traditionals	Non Traditionals	Total	Traditionals	Non Traditionals	Total
Tariff lines that makes 50% of the total value	3	22	7	3	61	4
Tariff lines that make 70% of the total value	6	61	18	4	143	13
Total tariff lines	75	2,298	2,373	95	4,262	4,357
- Tariff lines that appear in both 1993 and 2009				59	1,861	1,920
- New tariff lines ^{1/}				36	2,401	2,437
- Tariff lines that disappear ^{2/}				16	437	453
Relations tariff lines - country	461	9,826	10,287	612	28,307	28,919

^{1/} Appear in 2009 but not in 1993.

^{2/} Appear in 1993 but not in 2009

Source: SUNAT-MEF.

To explore the issue of the growing diversification among non-traditional exports, Table 4 presents key data that compare the list of the most important export products (by value) in 1993 and in 2009 at a disaggregated level.¹⁷ Overall, the evidence suggests that between these two years, there has been an increase in non-traditional exports both of the intensive margin (i.e., increase of exports due to products already exported to an established destination market) and of the extensive margin (i.e., increase of

¹⁷ Note that the data in Table 4 suggests that traditional exports have not expanded much on the intensive nor extensive margin. In 2009, these products accounted for 77% of total exports with only 7 subheadings explaining 97% of the total. As was the case in 1993, those subheadings were related to copper products, fishmeal, non-ferrous metal transformation and coffee for consumption.

exports as a result of (a) products already exported in the past but going to new destination markets or (b) the appearance of export flows of new products not exported before to any market).¹⁸

To begin with, although the share of non-traditional products in total exports fell to 23% in the period ending in 2009, in nominal terms the value was multiplied by a factor of six (\$6.2 billion in 2009 versus \$1.0 billion in 1993) and the number of subheading-country relations (i.e., total association of exports by subheadings with countries of destination in one year) increased from 9,826 in 1993 to 28,307 in 2009. In addition, the number of 10-digit subheadings of non-traditional exports that account for 50% of the nominal value increased from 22 to 61 tariff lines, while those that account for 70% from 61 to 143 (see Annex III for more details on the subheadings). Furthermore, the number of 10-digit subheadings channeling non-traditional exports grew from 2,298 to 4,262 (an increase of 1,964 subheadings).¹⁹ Of this total, 2,401 tariff lines reflect new non-traditional export products, which gives an idea of the increase of the extensive margin.²⁰

The information from SIC groups also reveals that new export products have developed in established categories of non-traditional exports. This is the case of fabrics and knitwear, which were exported through 19 10-digit subheadings in 2009 and only through 4 subheadings in 1993; fruit processing and preservation (16 versus 5), apparel (27 versus 8) or products of copper and other minerals (15 versus 5).²¹

A preliminary idea of the increase in the intensive margin between 1993 and 2009 can be derived from the increase of the value exported through the 1,861 subheadings that have active export shipments in both years. That value grew from \$0.9 billion to \$2.1 billion, indicating a healthy 5% annual average growth. The 4-digit SIC groups of manufacturing sectors that contributed most to this growth were apparel (except fur), fish products, primary products of precious metals and refined petroleum products (see Figure 10). However, significant increases have occurred across the board for a very large amount of products. Figure 11 compares exports of the leading 6-digit tariff lines in 2009 (70% of the exported value) to the values in 1993 (in many cases exports are low or zero). When ordering the values from high to low, clockwise, for exports in 2009, it is seen that greater export value increases have occurred (in descending order) in T-shirts and singlets of cotton, knitted or crocheted; fresh or chilled asparagus; men's shirts of cotton, knitted or crocheted; fine copper wire; processed or preserved asparagus, not

¹⁸ It has to be noted that in the recent literature there is no uniformity in the definition of the terms “intensive margin” and “extensive margin”. For a more detailed discussion on the definitions, see Besedes and Prusa (2007).

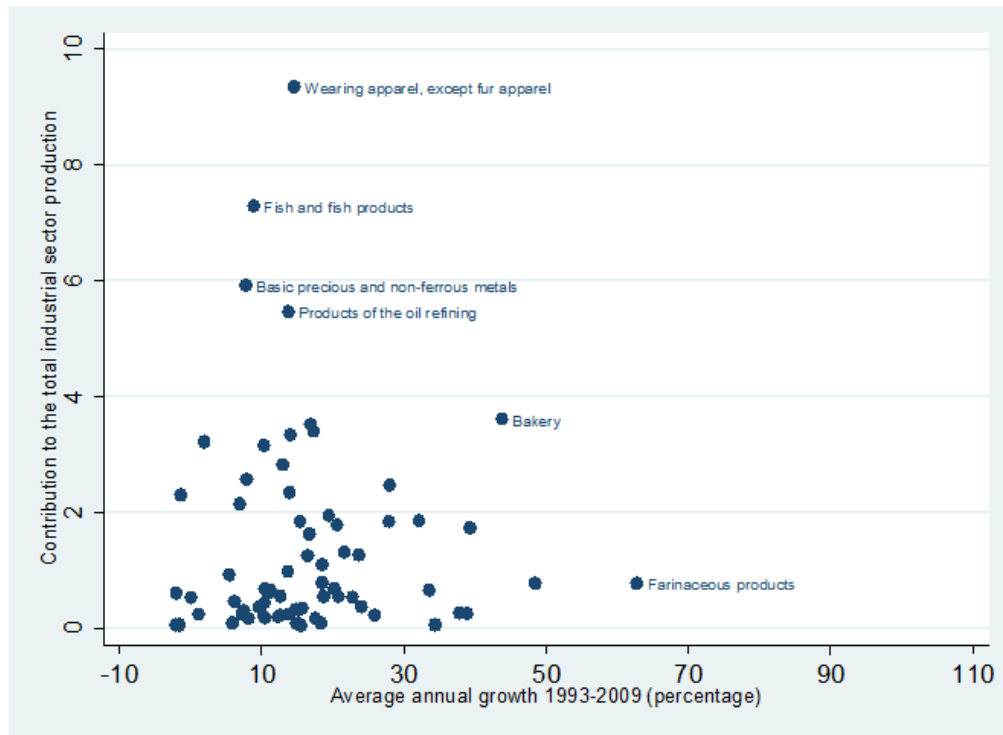
¹⁹ One might think that 10-digit comparisons between distant years may overestimate the extensive margin because of the changes in the nomenclature of the World Customs Organization (WCO) every year at the 6-digit level or of the Andean Community of Nations (CAN) at 8-digit level, which eliminate and add subheadings in these two cases; nonetheless, this risk is low insofar as the Peruvian 10-digit nomenclature of 1992 had 6,483 subheadings and that of 2007 7,370 (the changes of the WCO and CAN were made in these years), i.e. a net increase of only 887 subheadings; of these headings, the increase in non-traditional subheadings only was 874, which is lower than the increase of 1,964 subheadings between 1993 and 2007 under non-traditional exports.

²⁰ A more complicated exercise consists in comparing the leading products already exported in 1993 and which in 2009 are exported to other countries of destination, particularly because when looking at annexes II and III, it is clear that, except for some tariff subheadings (e.g. asparagus, mangos, copper wire etc.) the composition of the leading tariff lines is different in the two years. By way of example, we could mention that fresh or chilled asparagus were exported to 19 countries in 1993 and to 41 countries in 2009; or mangoes and mangosteens to 9 countries in 1993 and to 22 in 2009.

²¹ These increases of subheadings do not seem to be associated to the “administrative unfolding” of 10-digit tariff subheadings with the purpose of being able to continue enjoying the benefit of an export drawback (in view of the heading-company limit of \$ 20 million), as the number of these unfolding was not significant over years 1993-2009.

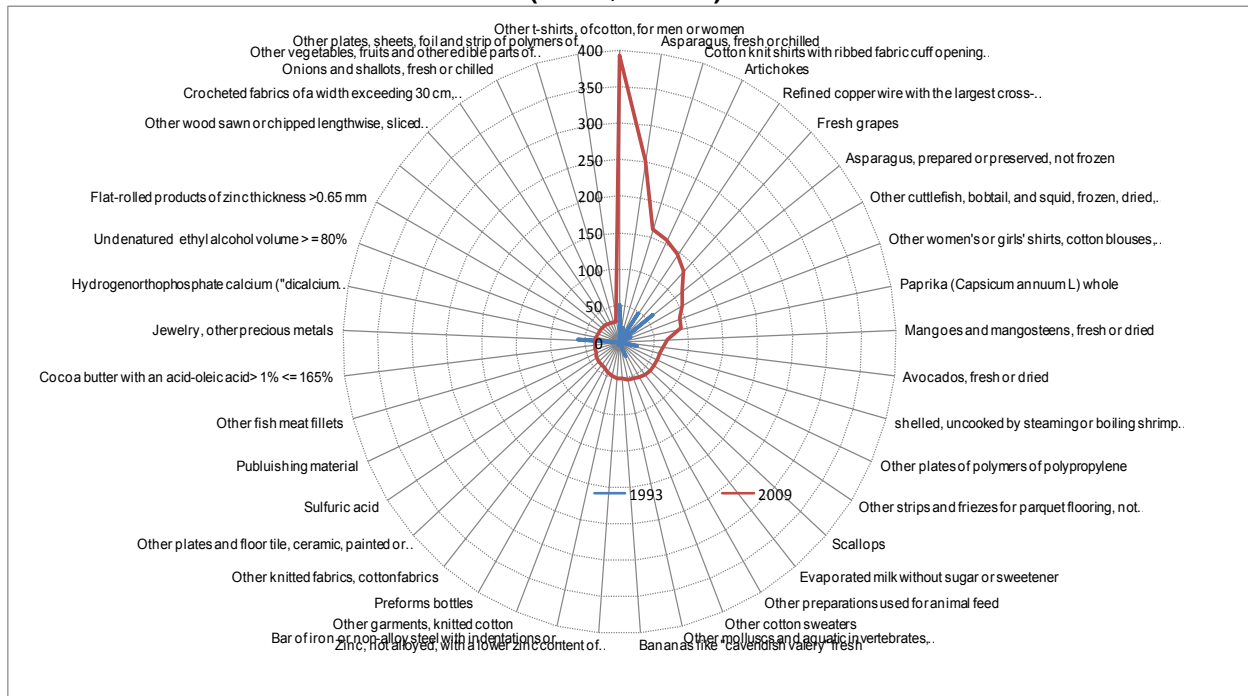
frozen; artichokes; cotton shirts, blouses, singlets and polos; frozen shrimps; cotton sweaters, jerseys, pullovers, cardigans and vests; and processed crustaceans.

Figure 10: Non-Traditional Exports by SIC Sectors: 1993-2009



Source: SUNAT - MEF, Own Elaboration

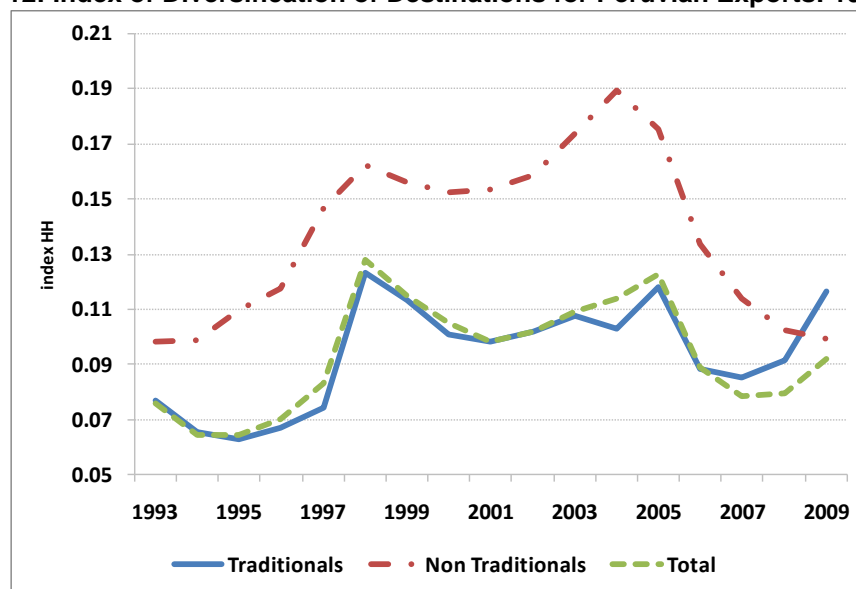
**Figure 11: Non-Traditional Exports by 6-digit subheadings: 1993-2009
(in US\$ million)**



Source: SUNAT - MEF, Own Elaboration

Finally, the analysis turns to the diversification of the destination export markets for which a Herfindahl-Hirschman Index can be calculated for total, traditional and non-traditional exports (See Figure 12). While the total index seems to be dominated by the evolution and value of the traditional grouping, it is significant to note that destination concentration tended to be higher during the bulk of the period; The index follows two phases, one of declining diversification until about 2004, and then a sharp reversal ending in 2009. However, when looking at non-traditional exports, a greater diversification trend is evident since 2004, which possibly can be related to the gradual maturation of market-friendly reforms and greater private sector expectations in a context of both a growing international and domestic, which promoted the rapid expansion of new products and destinations. By contrast, the index of traditional exports exhibits less dramatic swings between 1993 and 2009, as the only significant novelty has been the addition of only one new significant trading destination to the traditional list – i.e, the People’s Republic of China, for which exports from Peru increased from 5.5% in 1993 to 19.1% in 2010.

Figure 12: Index of Diversification of Destinations for Peruvian Exports: 1993-2009



5. Conclusions

Peru's exports exhibited rapid growth during the past decade, largely as a result of a rapid increase in external demand for Peruvian exports – associated with the substantial pace of growth of the global economy – and of growing supply as a result of the implementation of economic reforms since the early 1990s. This has resulted in a tangible increase in the degree of openness of the Peruvian economy (as measured for example by the export/GDP ratio). However, the country has not yet caught up with what would be expected for its income level, as indicated by an empirical analysis that adjusts for a number of other factors associated with openness.

Based on a breakdown of the price and volume effects in traditional and non-traditional exports, this study finds that a significant part of the export value increase of Peru is related to the growth of volumes. The effect of export supply growth has been particularly important in explaining the expansion of the value of non-traditional exports, for which prices have played only a marginal role. Even for traditional exports, and despite booming international price levels after 2000, the increase of volumes has accounted for around 30% of the growth – around 45% for the entire period since 1990. This suggests that the Peruvian export boom has also stemmed from investments in supply expansion, many of which were made prior to the commodity price boom.

The analysis also finds that in the aggregate Peruvian exports have not diversified since the early 1990s, a result that seems to be associated with the booming supply and price of traditional mining exports. However, when isolating non-traditional exports, there is a clear trend towards greater diversification within this group as well as a striking boom in the appearance of new export products in recent years. Although the share of non-traditional exports fell to 23% of total exports in 2009, chiefly as a result of the unprecedented boom in the price of traditional commodities, in nominal terms the value of this export grouping was quintupled and the number of subheading-country relations increased from 9,826 in 1993 to 28,307 in 2009.

The future diversification of Peruvian exports – once mineral prices return to historical levels – will lie to a large extent in development of the non-traditional product supply which, as we have shown, is already showing signs of considerable dynamism in the last few years. Some authors have proposed to adopt more active industrial policies (e.g. the identification and development of clusters, the use of public funds for investments or for granting loans to produce new products etc.) to accelerate the development of new segments. Nonetheless, in view of the dynamic behavior described in this study, it is unclear whether Peru needs to adopt a policy framework that is significantly different from the one that has been consistently applied in the last two decades, which essentially includes the maintenance of macroeconomic stability, openness to trade, gradual improvement of the stock of infrastructure, and of the education, justice and public security services.

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ANNEX I
REGRESSION RESULTS -- DEVIATION OF THE FORECASTED AND ACTUAL VALUE OF
EXPORT/GDP COEFFICIENT

Source	SS	df	MS			
Model	24313.67	5	4862.73399	Number of obs =	164	
Residual	108917.78	158	689.353035	F(5, 158) =	7.05	
				Prob > F =	0.0000	
				R-squared =	0.1825	
				Adj R-squared =	0.1566	
Total	133231.449	163	817.370856	Root MSE =	26.256	

xpbi	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
obi_per_ca~a	.001039	.0002028	5.12	0.000	.0006384	.0014396
poblacin	-7.59e-09	1.73e-08	-0.44	0.662	-4.19e-08	2.67e-08
landsurface	-2.62e-06	1.14e-06	-2.29	0.023	-4.87e-06	-3.65e-07
d_costa	-2.798976	5.11363	-0.55	0.585	-12.89887	7.300914
fuelpor~ts	.1124175	.0776419	1.45	0.150	-.0409323	.2657673
_cons	38.90393	4.624153	8.41	0.000	29.7708	48.03705

ANNEX II

Principal Exports by subheading, 1993 (In million USD)

	Subheading	Name	FOB	Accum. %
1	7113190000	Articles of jewelry and parts thereof, Of other precious metal, whether or not plated or clad with precious metal	60.6	6%
2	2005600000	Asparagus, Prepared or Preserved, Not Frozen	60.1	12%
3	6109100000	T-shirts, Singlets, Other Vests, Knitted or Crocheted, of Cotton	51.2	17%
4	7408110000	Wire of Refined Copper, Maximum Cross-sectional Dimension Exceeds 6 mm	46.9	22%
5	7901200000	Zinc alloys	39.5	25%
6	0306131000	Frozen shrimps	24.7	28%
7	6110200000	Sweaters, Pullovers, Sweatshirts, Waistcoats (Vests), Knitted or Crocheted, of Cotton	21.7	30%
8	6105100000	Men's or Boys' Shirts of Cotton, Knitted or Crocheted	19.8	32%
9	2308900010	Marigold flower flour	19.5	34%
10	5501300000	Filament Tow of Acrylic or Modacrylic	18.4	36%
11	6106100000	Women's or Girls' Blouses, Shirts, of Cotton, Knitted or Crocheted	17.4	37%
12	7907900000	Other articles of zinc	17.2	39%
13	0709200000	Asparagus, fresh or chilled	14.0	40%
14	0304200010	Frozen fillets: Cod	13.6	42%
15	6110100000	Knitted or Crocheted, of Wool	12.7	43%
16	0307000019	Other mollusks, even in shell, live, fresh	12.1	44%
17	2301209000	Flours, Meals, Pellets of Fish, Crustaceans, Mollusks (Non Edible)	11.5	45%
18	5105300000	Fine Animal Hair, Carded or Combed	11.3	46%
19	3402200000	Organic Surface-active Agents; Surface-active, Washing and Cleaning Preparations for Retail Sale	9.9	47%
20	5107100000	Yarn of Combed Wool (Wool Content 85% or More; Not Put up for Retail Sale)	9.1	48%
21	0303000090	Other fish, frozen, excl. fillets	8.8	49%
22	1804000000	Cocoa Butter (Fat and Oil)	8.7	50%
23	6103420000	Men's or Boys' Trousers, Overalls, Breeches, of Cotton, Knitted or Crocheted	7.7	51%
24	5503300000	Acrylic or Modacrylic Staple Fibers, Not Processed for Spinning	7.7	52%
25	0710800000	Other vegetables (including wild vegetables), Uncooked, Cooked By Steaming or Boiling	7.7	52%
26	5205220000	Cotton Yarn (Combed Cotton 85% or More; 714.29-232.56 Decitex)	7.5	53%
27	5208390000	Other Woven Fabrics of Cotton	7.4	54%
28	3203002100	Carmine dye (cochinilla)	6.8	54%
29	5205240000	Cotton Yarn (Combed Cotton 85% or More; 192.31-125 Decitex)	6.6	55%
30	4407009000	Wood sawn or chipped length, sliced etc.	6.3	56%
31	0304100000	Fresh or chilled: fillets and other fish meat	6.2	56%
32	1404109010	Raw Vegetable Materials of a Kind Used in Dyeing or Tanning	6.1	57%
33	0303000010	Sardines, frozen, excluding fillets and other fish meat	6.1	57%
34	5506300000	Acrylic or Modacrylic Staple Fibers, Processed for Spinning	6.0	58%
35	2817001000	Zinc Oxide (white powder)	5.9	59%
36	0713309000	Kidney beans (kidney beans, beans) except used for sowing, dried	5.8	59%
37	5112191000	Other Woven Fabrics (Containing 85% or More of Combed Wool or Fine Animal Hair>200g/m2)	5.8	60%
38	1604131010	Sardines, Prepared or Preserved in Tomato Sauce, in oval containers	5.6	60%
39	2301201020	Non Edible/defatted fishmeal, with fat content <=2% in weight	5.5	61%
40	3301130000	Essential Oil of Lemon	5.5	61%
41	0306190000	Crustaceans, others, incl. meals, flours and pellets of crustaceans, edible, frozen	5.0	62%
42	0804500020	Mangoes and mangosteens	4.9	62%
43	5109100000	Yarn of Wool or Fine Animal Hair (Wool Content 85% or More)	4.9	63%
44	1605901000	Prepared or Preserved Mollusks, Other Aquatic Invertebrates	4.8	63%
45	0712200000	Onions, dried, cut or sliced, or flour, not further prepared	4.7	64%
46	5205250000	Cotton Yarn (Combed Cotton 85% or More; Less than 125 Decitex)	4.7	64%
47	2922421000	Monosodium glutamate	4.5	65%
48	6114200000	Other Garments of Cotton, Knitted or Crocheted	4.5	65%
49	5112193000	Other Woven Fabrics (Containing 85% or More of Combed Wool or Fine Animal Hair)	4.4	66%
50	0307000011	Scallops, size equivalent to over 80 units per pound	4.4	66%
51	1604131020	Fish, prepared and preserved, Whole sardines in tomato sauce, in tall jars	4.3	66%
52	5108200000	Yarn of Fine Animal Hair (Carded; Not Put up for Retail Sail)	4.3	67%

53	5205450000	Cotton Yarn (Multiple Yarn, Per Single Yarn Less than 125 Decitex)	4.0	67%
54	5205120000	Cotton Yarn (Uncombed Cotton 85% or More; 714.29-232.56 Decitex)	3.9	68%
55	5608110000	Made up Fishing Nets of Man-made Textile Materials	3.8	68%
56	7117900000	Other Imitation jewelry	3.8	68%
57	2810000010	Boric acid	3.8	69%
58	8704230000	Motor vehicles for the transport of goods GVW exceeding 20 metric tons	3.7	69%
59	1604200000	Other Prepared or Preserved Fish	3.6	69%
60	0603100000	Flowers and flower buds, cut for bouquets or fresh flower arrangements	3.6	70%
61	6104620000	Women's or Girls' Trousers, Breeches, of Cotton, Knitted or Crocheted	3.2	70%
		SUBTOTAL	60.6	70%
		TOTAL	60.1	100%

Source: SUNAT MEF, Own elaboration

ANNEX III

Principal Exports by subheading, 2009 (In million USD)

	Subheading	Name	FOB	Accu m. %
1	0709200000	Asparagus, fresh or chilled	251.2	4%
2	6109100039	Other T-shirts, of Cotton, for men or women	163.6	7%
3	6109100031	T-shirts, of Cotton, for men or women, one color, uniform, incl. bleached	154.8	9%
4	7408110000	Wire of Refined Copper, Maximum Cross-sectional Dimension Exceeds 6 mm	146.6	12%
5	0806100000	Fresh grapes	134.2	14%
6	2005600000	Asparagus, Prepared or Preserved, Not Frozen	113.8	16%
7	0307490000	Squid: Frozen fillets, Loligo: Loligo opalescens, Loligo pealei, Octopus (Octopus spp)	103.1	17%
8	2005991000	Artichokes	74.2	19%
9	0804502000	Mangos and mangosteens, fresh or dried	70.8	20%
10	0904201010	Peppers (capsicum annum) whole	67.9	21%
11	0804400000	Avocados, fresh or dried	64.2	22%
12	3920209000	Other Plates of Polymers of Propylene	61.0	23%
13	4409291000	Others strips and friezes for parquet, unassembled	60.9	24%
14	0307291000	Scallops	60.7	25%
15	6105100041	Men's or Boys' Shirts of Cotton, Knitted or Crocheted, one color	59.3	26%
16	0402911000	Evaporated milk, not containing added sugar or other sweetening matter	59.2	27%
17	6106100090	Other Women's or Girls' Blouses, of cotton, Knitted or Crocheted	58.1	28%
18	2309909000	Other Preparations of a Kind Used in Animal Feeding	57.5	29%
19	1605909000	Prepared or Preserved Mollusks, Other Aquatic Invertebrates	54.4	29%
20	0803001200	Bananas and plantains of the "Cavendish valery" type, fresh	51.2	30%
21	7901120000	Zinc, not alloyed, Containing by weight less than 99.99 percent of zinc	50.9	31%
22	7214200000	Concrete reinforcing bars and rods, Hot-rolled, Hot-drawn, Hot-extruded	48.4	32%
23	6114200000	Other Garments of Cotton, Knitted or Crocheted	45.8	33%
24	3923302000	Preformed Bottles	42.2	33%
25	6006220000	Other fabrics, of cotton, Knotted or Crocheted	41.0	34%
26	6908900000	Glazed Ceramic Flags	40.9	35%
27	2005992000	Pepper (capsicum annum)	40.7	35%
28	2807001000	Sulfuric acid	39.8	36%
29	6105100051	Men's or Boys' Shirts of Cotton, Knitted or Crocheted, one color, incl. bleached	39.8	37%
30	0306131300	Shrimp tails in shells, uncooked in water or vapor (penaeus spp.)	39.7	37%
31	2005999000	Other Vegetables, Prepared or Preserved (Excluding By Vinegar; Not Frozen), except the ones incl. in 20.06	39.5	38%
32	4911100000	Trade advertising material, commercial catalogs and the like	37.2	38%
33	3042990000	Others, fillets and other fish meat, frozen	36.5	39%
34	1804001200	Cocoa Butter with an acidity index expressed in oleic acid over 1% but lower than or equal to 165%	35.2	40%
35	7113190000	Articles of jewelry and parts thereof, Of other precious metal, whether or not plated or clad with precious metal	34.6	40%
36	2835250000	Calcium Hydrogen orthophosphate (Dicalcium Phosphate)	33.5	41%
37	2207100000	Ethyl Alcohol (Alcoholic Strength 80 degrees or More)	32.5	41%
38	6109100041	T-shirts for boys or girls, Knitted or Crocheted, of Cotton, one color, incl. bleached	30.7	42%
39	3205000000	Color Lakes, Preparations Based on Color Lakes referred to in note 3 of this chap.	30.5	42%
40	4407990000	Other timber, sawn or chipped length, sliced etc.	29.5	43%
41	6004100000	Fabrics, knitted or crocheted, with a width over 30 cm, except those of heading 60.01 with a content of ...	28.4	43%
42	0703100000	Onions and shallots, fresh or chilled	28.2	44%
43	2001909000	Other Vegetables, Fruit, Nut (Prepared or Preserved By Vinegar)	27.3	44%
44	3920100000	Other Plates, Sheets, Film, Foil, Tape, Strip of Polymers of Ethylene	27.3	45%
45	6111200000	Babies' Garments and Accessories, of Cotton, Knitted or Crocheted	27.2	45%
46	6104620000	Women's or Girls' Trousers, Breeches, of Cotton, Knitted or Crocheted	26.9	45%
47	1905310000	Bakers' wares, pastry or sweet biscuits (sweetener added)	26.5	46%
48	5105391000	Others, Fine Animal Hair, Carded or Combed: alpaca or lama	26.1	46%
49	6109100049	Other "T-shirts", of Cotton, for boys or girls	25.8	47%
50	1006300000	Semi-milled or wholly milled rice, whether or not polished or glazed: Parboiled	25.1	47%
51	6110201090	Other sweaters, of cotton	25.1	47%
52	0710801000	Asparagus	24.5	48%
53	4818401000	Baby diapers	23.7	48%
54	0805201000	Mandarins (including tangerines and satsumas); fresh or dried	23.6	49%
55	0303790000	Other fish, frozen, except for livers and roes	23.5	49%
56	2817001000	Zinc oxide (white powder)	22.7	49%
57	6106100021	Women's or Girls' Blouses, Shirts, of Cotton, Knitted or Crocheted, one color	22.5	50%
58	8544491090	Other Electric Conductors, copper	22.4	50%
59	3402200000	Organic Surface-active Agents; Surface-active, Washing and Cleaning Preparations for Retail Sale	22.4	50%

60	6105100042	Men's or Boys' Shirts of Cotton, Knitted or Crocheted, different colors	22.2	51%
61	7407100000	Bars, rods and profiles Of refined copper	21.9	51%
62	4901999000	Other, books, brochures and similar printed materials	21.5	52%
63	2005700000	Olives, Prepared or Preserved, Not Frozen	20.9	52%
64	6105100052	Men's or Boys' Shirts of Cotton, Knitted or Crocheted, different colors, stripes	20.8	52%
65	1902190000	Other pastas, Uncooked; Unfilled, Not otherwise prepared	20.5	53%
66	2810001000	Orthoboric acid	20.3	53%
67	6110209090	Other Sweaters, Pullovers, Sweatshirts, Waistcoats (Vests), Knitted or Crocheted, of Cotton	20.3	53%
68	1801001900	Other, crude cacao	20.1	54%
69	6109909000	T-shirts and singlets, knitted or crocheted, of other textile materials	19.9	54%
70	3907609000	Others, Polyethylene Terephthalate with titanium dioxide	19.6	54%
71	6105100092	Other Men's or Boys' Shirts of Cotton, Knitted or Crocheted, with collar and partial front opening	19.5	54%
72	6106200000	Women's Blouses, Shirts, of Man-made or Synthetic Fibers, Knitted or Crocheted	19.4	55%
73	2815120000	Sodium Hydroxide (In Aqueous Solution; Soda Lye or Liquid Soda)	19.2	55%
74	4011209000	Other Pneumatic Tyres of Rubber, of a Kind Used On Buses or Lorries	19.0	55%
75	2009801200	Juice of passion fruit (passiflora edulis)	18.9	56%
76	6105209000	Men's or Boys' Shirts of Man-made Fibers, Knitted or Crocheted	18.9	56%
77	1604160000	Anchovies (Prepared or Preserved), whole or cut, except chopped	18.1	56%
78	6104420000	Women's or Girls' Dresses of Cotton, Knitted or Crocheted	17.7	57%
79	6802210000	Marble, travertine and alabaster, simply cut or sawn, with a flat or even surface	17.6	57%
80	6205200000	Men's or Boys' Shirts, of Cotton	17.5	57%
81	6109100032	Men's or Boys' Shirts, of Cotton, different colors, drawings, stripes	16.9	57%
82	8474900000	Parts of Machinery and appliances of heading no 84.74	16.9	58%
83	4803009000	Toilet or facial tissue stock, towel or napkin stock etc.	16.8	58%
84	7905000012	Zinc plates, sheets, strip and foil of more than 0.65 mm thick	16.4	58%
85	0805202000	Tangelo (citrus reticulata x citrus paradisis)	15.6	59%
86	3923509000	Other silicon plugs	15.5	59%
87	7117190000	Other Imitation jewelry Of base metal	15.4	59%
88	1604150000	Mackerel (Prepared or Preserved), whole or cut, except chopped	15.4	59%
89	3304990000	Other Beauty, Make-up or Skin Care Preparations	15.3	60%
90	7325910000	Grinding balls and similar articles for mills of Iron or Steel	15.1	60%
91	3303000000	Perfumes and Toilet Waters	15.0	60%
92	7905000011	Zinc plates, sheets, strip and foil of less than or of 0.65 mm thick	15.0	60%
93	7228300000	Other bars and rods, not further worked than hot-rolled, hot-drawn or extruded	14.7	61%
94	1604200000	Other Prepared or Preserved Fish	14.5	61%
95	4407220000	Timber: virola, imbuía and balsa	14.4	61%
96	0303740000	Mackerel, frozen, except for livers and roes	14.3	61%
97	0713399200	Castilla (black-eye beans) (vigna unguiculata)	14.1	61%
98	0304990000	Others: fillets and other fish meat	14.0	62%
99	4818100000	Toilet paper, in reels of <=36 cm wide	13.9	62%
100	0904201030	Pepper (capsicum annum, l,) crushed or ground	13.9	62%
101	0304291020	Others: frozen hake fillets in blocks, skinless, boneless	13.8	62%
102	7408210000	Wire Of copper-zinc base alloys (brass)	13.8	63%
103	0708100000	Peas (Pisum sativum), fresh or chilled	13.6	63%
104	5506300000	Acrylic or Modacrylic Staple Fibers, Processed for Spinning	13.5	63%
105	2301209000	Flours, Meals, Pellets of Fish, Crustaceans, Mollusks or other aquatic invertebrates	13.4	63%
106	1404902000	Tara dye in powder (caesalpinea spinosa)	13.2	63%
107	6106100031	Women's or Girls' Blouses, Shirts, of Cotton, Knitted or Crocheted, with collar, one color, incl. bleached	13.0	64%
108	2005510000	Shelled Beans, Prepared or Preserved, Not Frozen	12.8	64%
109	6006210000	Other fabrics, knitted or crocheted, of cotton, crude or bleached	12.7	64%
110	0306131100	Whole shrimp (penaeus spp.)	12.7	64%
111	1209999000	Other Seeds of herbaceous plants Used mainly for their flowers	12.2	64%
112	5501309000	Other Filament Tow of Acrylic or Modacrylic	12.2	65%
113	0305630000	Anchovy (engraulis spp.), salted, not dried, nor smoked or in brine	12.1	65%
114	3203002100	Carmine dye cochinitilla	11.5	65%
115	0801220000	Brazil nuts, fresh or dried	11.5	65%
116	0407001000	Birds' eggs, in shell for hatching	11.5	65%
117	0710809000	Other vegetables, including wild ones	11.5	66%
118	3924109000	Table Ware and Kitchenware of Plastics	11.4	66%
119	0904209000	Other fruits of the genus Capsicum or of the genus Pimenta	11.2	66%
120	8502131000	Generating Sets With Compression-ignition Engines, Exceeding 375 kva	11.2	66%
121	5109100000	Yarn of Wool or Fine Animal Hair (Wool Content 85% or More)	11.0	66%
122	8430490000	Other Boring or Sinking Machinery	11.0	66%
123	8431490000	The other parts and devices of headings no. 84.26,84.29 or 84.30	10.9	67%
124	0712909000	Other vegetables, vegetable mixes, cut or sliced, ground or crushed	10.7	67%
125	6204620000	Women's or Girls' Trousers, Breeches, of Cotton	10.7	67%
126	6110203000	Cotton cardigans	10.6	67%
127	7907009000	Other articles of zinc	10.6	67%
128	6114300000	Other Garments of Man-made Fibers, Knitted or Crocheted	10.5	68%
129	5503309000	Other Acrylic or Modacrylic Staple Fibers, for Spinning	10.5	68%

130	4820200000	Exercise books	10.3	68%
131	1302391000	Other Mucilages and Thickeners Derived from tara seed	10.2	68%
132	8426490000	Other machines and devices, Self-propelled, on tyres	10.2	68%
133	7007210000	Laminated safety glass, Of size and shape suitable for incorporation in vehicles, aircraft, vessels or others	10.2	68%
134	0811909100	Mango (mangifera indica l)	10.2	69%
135	1211903000	Oregano (origanum vulgare)	10.1	69%
136	5108200000	Yarn of Fine Animal Hair (Carded; Not Put up for Retail Sail)	10.1	69%
137	0306131200	Shelled shrimp tails (penaeus spp.)	9.8	69%
138	0904201020	Pepper (capsicum annum, l,) cut or sliced	9.7	69%
139	1905901000	Salted or flavored crackers	9.7	69%
140	1005903000	Giant white Maize (zea mays amilacea cv gigante)	9.6	69%
141	3923109000	Other articles of plastics	9.5	70%
142	6104220000	Women's or Girls' Ensembles of Cotton, Knitted or Crocheted	9.4	70%
143	4407290000	Timber, sawn, of the tropical timber mentioned in the note of sub par. 1 of this chap.	9.4	70%
		SUBTOTAL	4,315.3	70%
		TOTAL	6,169.1	100%

Source: SUNAT MEF, Own elaboration.