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Revealed Comparative Advantage and Competitiveness in Pear

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ABSTRACT

This article focuses on the study of the comparative advantages and competitiveness in the global pear market. First, it will outline a clear distinction between these two concepts, followed by analysis. This paper provides a new index of competitiveness developed by our research based on the insights offered by a wide range of studies on this subject. The aim is to achieve a new line of analysis to improve and expand the possibilities of present day studies.

Keywords: Revealed Comparative Advantage; Structural Competitiveness; Pear and Fruits market
JEL CLASSIFICATION: Q17, Q13, Q10

1 Executive Summary

Nowadays, fruit and vegetables trade is in a situation of high international competitiveness. Therefore, it is necessary to establish productive cluster plans based on the analysis of structural market.

The concept of comparative advantage can explain the specialization of a country in international trade if there were is no distortions in markets. On the contrary, the real situation is that products present an international market distortion due to market failures and the government intervention. In this context, a product or activity can be competitive even when there is no comparative advantage or a product may have comparative advantage but is not competitive due to government policies. Typically, the product´s competitiveness in the international market depends on the principle of comparative advantages associated with favourable natural factors and lower relative costs of production. It also depends on transport and marketing costs to the end destination. Moreover, its price is also affected by other factors such as product quality, product differentiation, seasonality and government and market policies. The increased competitiveness of a product in the international market is expressed in higher export growth and increased market share.

From the export and import data collected by the International Trade Centre (ITC), the present article provides an analysis of the worldwide evolution of the pear exportation rates such as the revealed comparative advantage and market competitiveness (and its temporal evolution). The latter index represents a new contribution to competitiveness analysis based on large number of studies conducted on this matter.

From this study, we set the export profile of different countries such as: China, Argentina, Netherlands, Italy, USA, Spain, France, etc.

In conclusion, in this paper we aim to explain why some countries may obtain greater benefits than others with their exports. Moreover, we will explain the relationship between comparative advantage, competitiveness and specialization.

2 Objectives

The main objective of this paper is to assess the current situation and developments in the worldwide export of pears using analysis of competitiveness and comparative advantages. It will focus on changes in geographic areas and varieties, according to the sources of data for 2001-2009 from the fruit and vegetable Information Center (CIF SA), and use calculations from the International Trade Centre (ITC) with statistics from the Co2mtrade database and AREFLH Observatory. It is hoped these objectives will improve our knowledge of the strengths and weaknesses of each of the countries studied amongst other benefits.

3 Concepts and Methodology

To achieve these objectives we analyzed the global trade situation for pears through studies that measure the competitiveness and comparative advantage in different markets.

First, it must be clarified that the term "competitiveness" is sometimes used as a synonym for competitive advantages but, although related, both are distinct concepts (Chudnovsky and Porta, 1990).

The concept of comparative advantage can explain the pattern of specialization of a country in international trade if there were no distortions in the markets. On the contrary, competitiveness is an alien concept to economic theory and refers to a real situation that presents a product in an international market affected by the distortion of market failures as the government intervention (Pinto, 1996). Therefore, a product or activity can be competitive even when there is no comparative advantage or a product may have comparative advantage but is not competitive due to government policies.

The competitiveness of a product in the international market depends on the principle of comparative advantages associated with favorable natural factors and lower relative costs of production. It also depends on infrastructure, transport and marketing costs to the end destination. Moreover, its price competitiveness in foreign markets is also influenced by movements in the exchange rate. Finally, competitiveness is also affected by other factors such as product quality, the degree of product differentiation, the seasonality of production and market and government policies of both the exporting country and importing country. The increased competitiveness of a product in the international market is expressed in higher export growth and increased market share. (Contreras-Castillo, 1999).

3.1 Revealed Comparative Advantage

The revealed comparative advantage in an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. The original objective of the indicator used for looking at revealed comparative advantage (RCA) was to analyze and describe the association between trade liberalization and international trade performance, as part of a wider study on patterns of trade specialization (Belassa, 1965). This index was enhanced to analyze the exports of a particular product (Belassa, 1977 and 1979), and compared the national structure of exports in the global market structure. This indicator considers the international market as a space which reflects the pattern of specialization and comparative advantage.

$$\text{Formula:} \qquad I^{k}_{ij} = (X^{k}_{ij} / X^{t}_{ij}) / (X^{k}_{iw} / X^{t}_{iw}) \qquad (1)$$

Where; (I^{k}_{ij}) RCA indicator of product k from country i on country j; (X^{k}_{ij}) Exports of product k by country i to country j; (X^{t}_{ij}) Total exports of country i to country j; (X^{k}_{iw}) Exports of product k by country i to the world (w); (X^{t}_{iw}) Total exports from country i to world (w).

This indicator is part of the RCA family index and measures the degree of importance of a product in exports from one market to another market, versus the importance of exports of the same product in same product exports to the world.

Indicator adopted by the present study

Another export alternative RCA (Pinto, 1996 and Casar, 1994), compares the export portion of a given sector in a country with the passage of the export in this sector in the global market. It turned out to be convenient to measure the comparative advantage of nations quantitatively (Bender and Li, 2002).

$$\text{Formula:} \qquad RCAI = (X^{k}_{i} / X^{k}_{w}) / (X^{K}_{i} / X^{K}_{w}) \qquad (2)$$

Where: (RCAI) Revealed Comparative Advantages Indicator (Index); (X^{k}_{i}) Total exports of product k by country i; (X^{k}_{w}) Total exports of product k for the rest of the world; (X^{K}_{i}) Exports K group by country i; (X^{K}_{w}) K group's total exports for the world (w).

The latter formula is that we use for this investigation in order to analyze the commercial development of pears from the point of view of specialization through comparative advantages in export. This decision is consistent with some (Chudnovsky and Porta, 1990) who recommending using it simply as an indicator of an economy specializing in international trade at a given time.

3.2 Market Competitiveness

This methodology is an intellectual contribution from researchers involved in this study, based on the inexistence of tools for the analysis of structural competitiveness in international trade, based on available data. It focuses on assessing the competitiveness of a country in relation to a particular product, in our case pears, covering its major export destinations and major buyers of the product. This approach is similar to investigations where it is argued that global competition does not affect all countries equally; it can only be understood in relation to specific geographical contexts (Romero, 2007).

It is difficult to provide a unanimous definition of competitiveness, with many doctrines and interpretations, as evidenced by Müller (1992) who treated it as a "magic word". Competitiveness is a concept that has no precise boundaries and is defined in relation to other concepts (Garay, 1998). However, the Spanish Royal Academy dictionary defines the term "competitiveness" as an "ability to compete; rivalry to achieve an end".

The operational definition of competitiveness is the reference point of analysis related to national concerns, different sectors, commodities, products, supply chains, production stages, market operation, conversion, and the goal of inquiry whether short or long term etc. (Pineiro et al, 1993). It is also known as the capacity of an industry -or company- to produce goods with specific quality standards required by specific markets, to use resources at equal or lower levels than those prevailing in similar industries in the world, for a certain period of time "(Haguenauer 1989).

Competitiveness is linked to competencies; it should be understood from systemic and comprehensive actions to resolve problems of context (Tobon, Pepper and García Fraile, 2010). By this definition we find famous contributions on the competitiveness from the labor Porter, with the famous "Porter's competitiveness model or Model 5 forces"(Porter, 1980) and Meyer with its "systemic competitiveness" (Altenburg, Hillebrand and Meyer-Stamer, 1998).

The extensive and detailed introduction to the subject of competitiveness makes clear the diversity of concepts that exist on its definition, business or country/region- and different analytical models, which are not unique. This complex picture requires an indicator of competitiveness for market analysis of pears based on available information.

Proposed Indicator

The proposal focuses on assessing the competitiveness of a country in relation to a particular product, covering its major export destinations, that is to say the major buyers of the product selected for the study. In this research, we analyze pears in different countries in relation to the main international buyers.

The index uses the numerator "market share" in importing countries relevant for that product, and "participation" as the denominator relating to a country that exports a particular product:

$$\text{Formula:} \qquad MCI = (X^{k}_{i} / X^{k}_{w}) / (M^{k}_{ij} / M^{k}_{j}) \qquad (3)$$

Where: (MCI) Market Competitiveness Index; (X^{k}_{i}) Export product "k" in country "i"; (X^{k}_{w}) World export (w) of the product "k"; (M^{k}_{ij}) Import Product "k "the country "i" in country "j"; (M^{k}_{ij}) Total imports product "k" in country "j".

Annual data concentrates on value rather than volume, considering that turnover is more relevant as an indicator of competitiveness in the study because it incorporates the added value of the product analyzed. To the extent that participation in international market share is higher in the country of destination than in the worldwide exports, denotes greater structural competitiveness and vice versa if it is lower.

Therefore, analysis combining the index of market competitiveness and the trend in recent years because it is a variable effect rather than cause, is a valid method for assessing a product's competitive position in a market.

The market share of a country's exports and its temporal dynamics are used as indirect measures of the competitive sector. However, the evolution of market share can be given long-term movement not only through self-external competitiveness via price and other factors, but also by the composition or export specialization, either in terms of product type or in terms of country-or region-export destination. Under these assumptions, if an economy is specialized in exports of goods whose demand is particularly

dynamic, market share may increase even though the competition does not improve. Therefore, the market share can be linked to "specialization" or "competitiveness" (Esteve, 2010). External competitiveness is a reflection of the internal structure of the economy; countries can be competitive on the outside without being internally first (Torres and Lucio, 2003).

With regard to the choice of time interval, it is recommended that there is at least five years worth of data on competitiveness, and market share is a relevant factor to consider higher performance in international trade (Morales Troncoso, 2007a, 2007b). To this respect, Pinto (1969) emphasizes that competitiveness is a variable effect rather than cause and therefore must be analyzed over a period of time. These are keys to our international competitiveness indicator which analyses the market share in foreign trade and its trend over time.

4 Study Results and Analysis

4.1 Revealed Comparative Advantage

The rate of RCA is useful for evaluating the "specialization" in the export of a product with respect to the homogeneous basket of goods exported by a country in the world compared to that in the case of this study, which is the export of fresh pears compared to the total export of fresh fruits. (Figure 1).

To increase information obtained with the index in the chart above, you can analyze the value of the index for the year 2009 (horizontal axis), along with the evolution over the period 2001-2009 (vertical axis).

China: It is unlike the rest of the world producing European-type varieties. This explains the high specialization and positive trend in the RCAI. Also a significant increase in exports of berries and apples has been seen in recent years, which may influence the pear RCAI in the medium term. (Figure 4).

Argentina: Exports of pears are the main fruit marketed internationally with lemon and

citrus, explaining the high level of RCAI. The main varieties produced and marketed are Williams or Bartlett, Packhams and Danjou. The negative trend is due more to the average annual growth rate of fruit exports in Argentina, which is higher than in pears. (Figure 1).

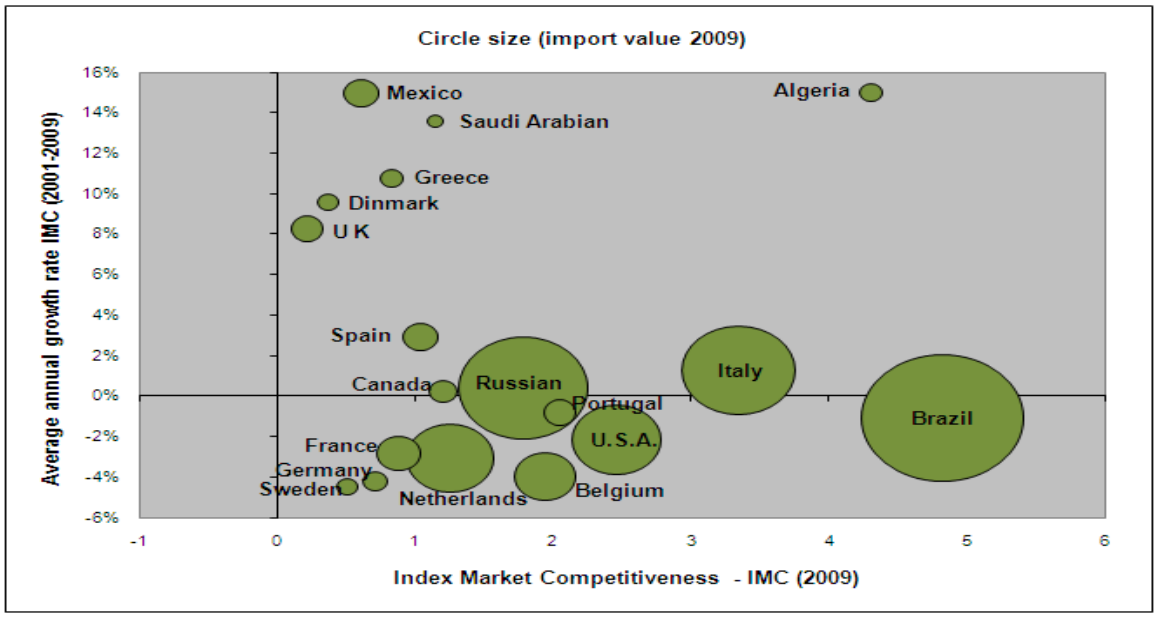


Figure 1. Average annual growth rate IMC. Argentina. (2001-2009).

Portugal: Today's fruit export turnover is more pears of the Rocha variety while before it was mainly banana and plantain. The drop in sales of the latter and dried fruits enhanced the significance of pears in this country. Additionally, an interesting development in foreign sales of berries, citrus and stone fruit has been recorded in recent years. This has been attributed to the comparative advantage over other European countries, with the cost of wages lower and a specialization in Rocha. Average annual sales of pears are higher than the total for fruits; therefore the RCAI denotes specialization and positive trend.

Netherlands: The pear crop is growing based on the variety Conference and the position of medium specialization as Belgium, with a strong presence in intra-EU markets, but the rate of growth of foreign trade is less than the average rate of total fruits and for that reason the RCAI is a negative trend.

China: Apple and citrus are the main fruits exported, and there is a marked growth in grapes and pears, as opposed to a sharp drop in sales of dried fruit. This balance means pears remain unchanged in their relative share, and from there, a RCAI of specialization but stable in recent years. (Figure 4)

South Africa: The main fruits exported are citrus, grapes and apples. The main offering is the pear Packhams, but the country is now seeing an increasing volume of new varieties such as Flamingo and Forelle. The Williams variety has seen steady production, although the area planted to this variety has declined in recent years. Growth in the export of pears, and a retreat from participation in the grapes, shows a country with specialization in this fruit and a positive trend in the RCAI. (Figure 4).

Belgium: Its annual growth in production of pears is important and has influence on the market in Europe and Russia with the Conference variety. Conversion of apple to pear is significant year to year, and so it is positioned with an average RCAI specialization compared with Korea, Argentina and Portugal, and with a stable trend.

Italy: was the main grape fruit exporter at the beginning of the decade, but has now lost position against the growth of sales of apples and berries. Stone fruits also are on the decline when looking at its share of fruit exports, but pears have seen a slight increase in shipments to international markets, allowing Italy to position itself with a medium specialization and positive trend. The most important element is the change from “Williams or Bartlett" to the variety Fetel Abate, with strong specialization in this variety as the main export supply. It also offers interesting varieties such as "Coscia" and "Ercolini".

Chile: The main fruits exported are grapes, with increasing sales of berries, avocados, kiwis, frozen fruits and dried fruits. Apples, stone fruits and pears show less participation from year to year, and for this reason pears have a low specialization and negative trend. The main variety exported is "Packhams" along with varieties like “Coscia”, “Forelle” and “Abate Fetel".

U.S.: Its main export is dried fruit, an increasing trend year by year. This is followed in importance by grapes, citrus, apples and stone fruits. The only new growing fruit exports are berries; with a turnover more than double that of pears. The participation of pears is small relative to total fruit exports, and the trend is decreasing in the relative share of all fruits because turnover does not grow. The main variety grown is "Danjou", the main variety exported; however, in recent years there has been a greater tendency to plant "Williams” or “Bartlett”, with growing acceptance in the domestic market and in Canada.

Spain: Citrus fruit dominates the fruit trade, with a strong position in the fruit basket. The country has also increased its sale of commercial stone fruits, berries and grapes, and dried fruits are relatively stable. However, pears and apples are in decline and that explains the low-skilled and negative trend in recent years.

France: The main exported fruits are apples and stone fruits, as well as nuts and berries. Foreign trade activity in pear is in decline, with falling production, but also falling sales of other fruits. As the rate of decline in pears is lower than other fruits, the rate of the index is negative for pears and positions with low expertise. In general there are lots of varieties such as “Williams or Bartlett", "Guyot", "Comice" and "Conference", but the trend is to eradicate crops year after year due to low profitability.

4.2 Market Competitiveness

Argentina: This country is more competitive in Brazil, as well as in Algeria, being its major supplier of apples (especially "Galas"). In most markets, the situation has had a negative evolution in the competitiveness index, thus it tends to lower market share, and most importantly volume where the situation is stagnant or negative, such as in Brazil, Italy, Russia and USA. The country with greater specialization does not present a positive outlook on the trend of competitiveness, and neither does it on the relationship between culture and territorial proximity as an element in the competitiveness index. Algeria buys pears as a complement to apples, given that it replaced Argentina as a supplier of apples to France, showing high growth in competitiveness. Emerging market Mexico has a preference for the Danjou variety; while in the UK sales of organic pears help explain the dynamic competitiveness. The negative trend in relative prices in dollars in the domestic economy and the effect of inflation and rising wages from union pressure, in addition to a bigger tax burden in relation to Chile in the fruit sector, partly explain the loss of competitiveness markets. All of this is in line with the reports of CAFI (Argentina Chamber of Integrated Fruit Growers).

Chile: has a low index of comparative advantage but presents a level of competitiveness with a very

positive trend in relevant markets such as Italy, and unlike Argentina, which in this market is relatively stable. What explains this situation is the custom of eating a pear or dirty Fetel Abate "Rusenting" in Italy and a pear that produces a similar feature is Chile

while Argentina is clean without "Rousenting", and that makes for competitiveness in both cases. (Figure 2).

Another observation is that spatial proximity also appears as an element of competitiveness, with the markets for Colombia, Ecuador, Peru and Venezuela. It is also important to highlight the trade policy of the government of Chile to free trade or economic agreements with low or zero import tariffs, in addition to this, the low level of labor taxes in relation to other regions of the world

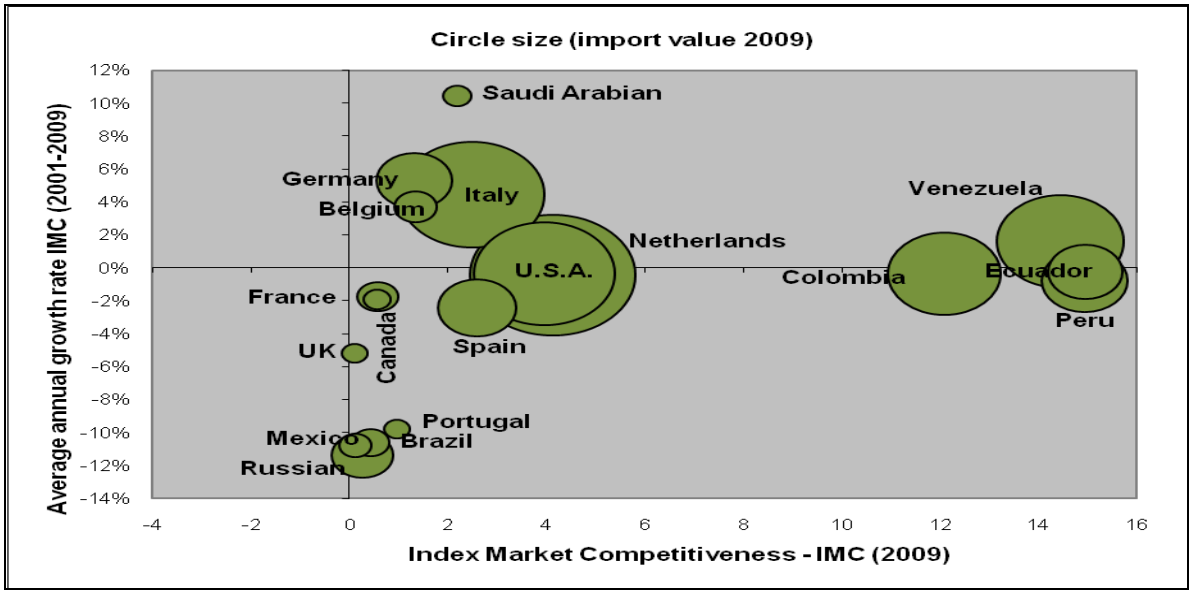


Figure 2. Average annual growth IMC. Chile (2001-2009)

U.S.: RCAI is very low and negative, however the main markets and increased competitiveness are close (Mexico and Canada), selling the variety Bartlett or Williams to Canada, while the exporting Danjou to Mexico. Again territorial geography or proximity, as well as free trade agreements, impact on the competitiveness index. There is also an important advance in sales to Brazil, showing a competitive trend, which added to what we see in Spain and Portugal in share growth markets in the country, explains why Argentina has a negative trend in the more competitive and close market.

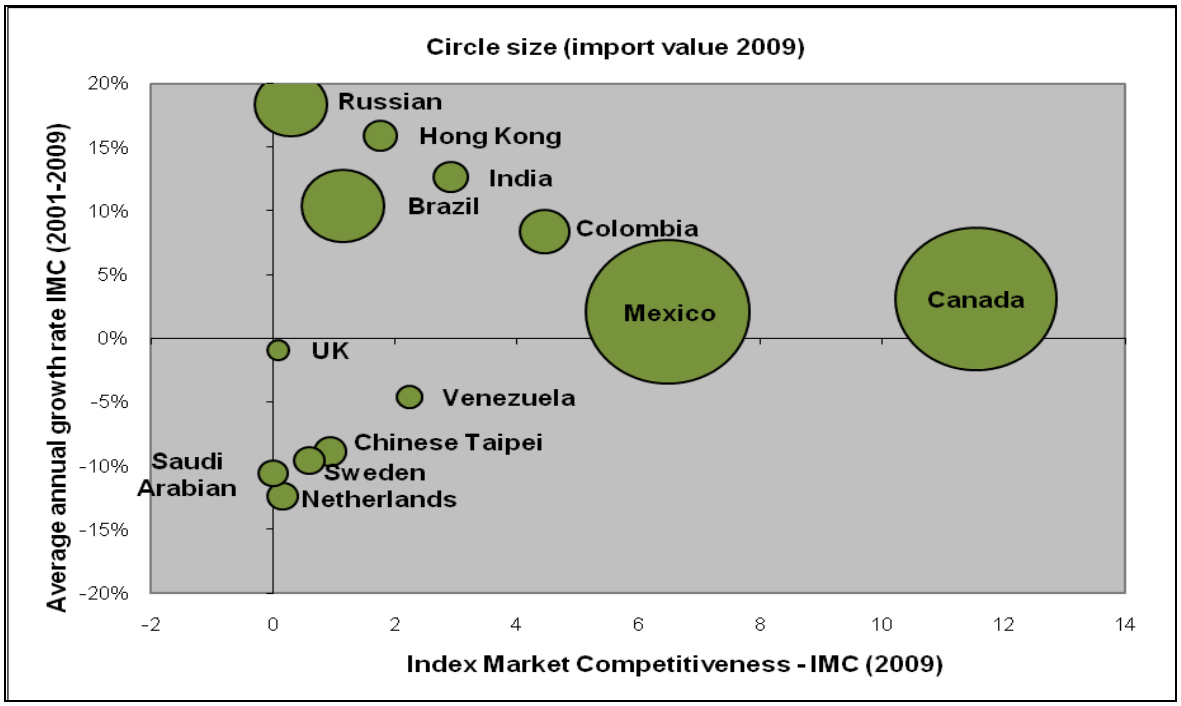


Figure 3. Average annual growth rate IMC. U.S (2001-2009).

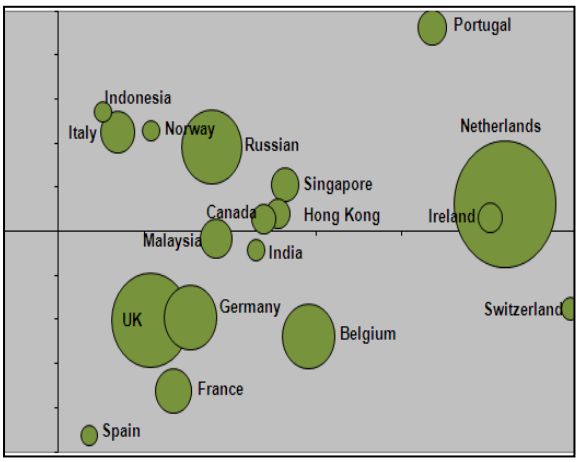
United States, Spain and Portugal, have lower sales prices to counter the season in Argentina, and also the Rocha variety grown in Portugal has become popular in the Brazil. (Figure 3).

The sale of pears from the United States to Mexico benefited from the free trade agreement between Canada, Mexico and the United States, compared with other countries that must pay 20% tariff to sell pears in Mexico. However, some niches allow development like the case of Argentina with the variety "Danjou" as the main supply. (Figure 3).

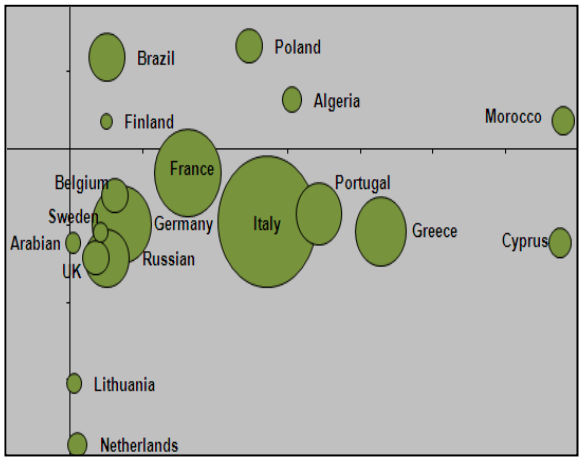
Italy: The main market is Germany, where it provides variety Fetel Abate as the main supply, complemented by Williams and Santa Maria, allowing a high level of competitiveness and remaining stable at the same time by investing in "Abate Fetel. Other markets growing near France are Slovenia, Romania, Greece and Libya, with the United Kingdom behind.

In the charts below it can see the competitive situation of other countries analyzed in the study.

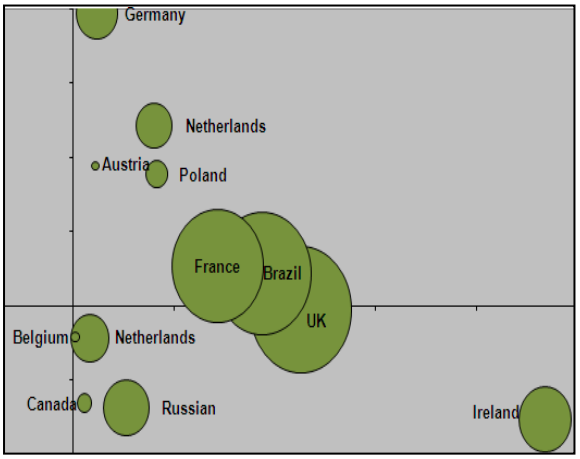
Sudáfrica



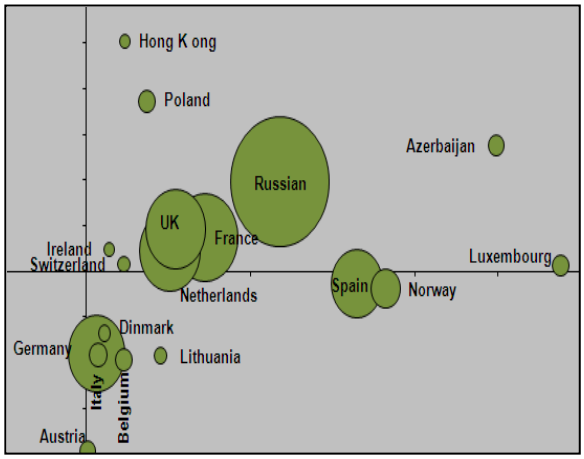
España



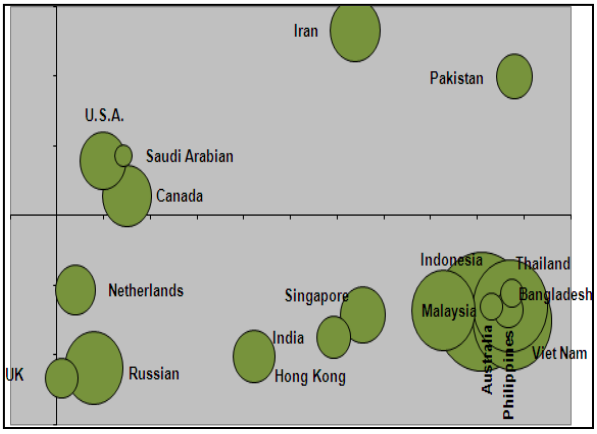
Portugal



Bélgica



China



Corea

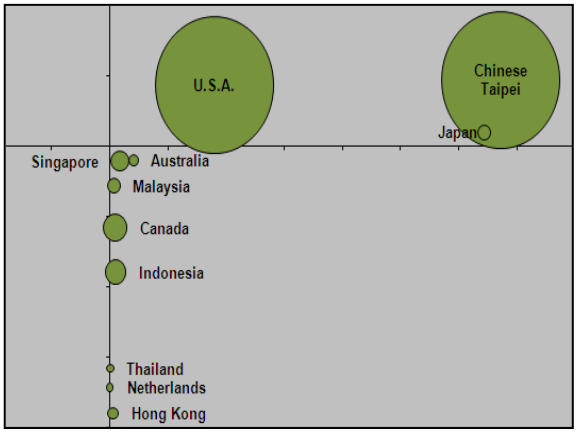


Figure 4. Average anual growth rate. Other Countries.

5 Final Considerations

This article highlights the level of comparative advantage and competitiveness of the countries with a pear market. Through export and import data collected from the International Trade Centre (CCI) and COMTRADE data, the study shows that the competitiveness effect is variable and not only because of a combination of factors and conditions that provide benefits to each countries. Geography, for example, is playing a main role in competitiveness, with nearby markets, as happens in markets with free trade, providing the highest indicator of competitiveness in many cases.

Korea, Argentina, Belgium and Portugal are the countries producing more specialized and higher export positions in terms of fruits, but this is not synonymous with competitiveness as demonstrated by studying each country by the index of market competitiveness. At the other extreme, countries with the lowest comparative advantage are Spain, USA, Chile and France, and for that reason, efficient business development in trade is low, at least in relevant markets or objectives.

It is confirmed, therefore, that the RCAI, based on comparative advantages, it is not a synonym of competitiveness, but it is of productive specialization. There are countries that export a significant volume of pears compared to other fruits, although production is concentrated on one or two varieties, such as Portugal with "Rocha", Italy with "Abate

Fetel", Belgium with "Conference", United States with "Danjou", and Argentina with "Williams" among others. But, against our expectations, not because they are specialized achieve competitiveness in all markets- doesn't make sense.

Another important conclusion of this study is that structural competitiveness is not a global phenomenon, and in it proximity plays an important part, providing an advantage in transport costs, cultural aspects such as a preference for Williams by Italian consumers meaning more variety is exported from Argentina, or the same case in Brazil for Portugal's Rocha pear or the Far East Asian varieties, free trade versus the cost of import tariffs, phytosanitary issues, fruit producers providing continuity and presence throughout the year, the issue of cost and the issue of the current exchange rate. Innovation is a complementary aspect, and today, is more focused on issues of cost advantages in presenting a new product to the consumer.

There are many names of different varieties on the shelf which do not necessarily encourage buying, which was an important conclusion at the Third World Congress of pears in Italy (Interpera 2010). Undoubtedly, geographical location has a strong impact on trade as argued Paul Krugman (1991).

A new paradigm is developed from this methodology for calculating and analyzing the structural competitiveness of the market. It is an important intellectual contribution to our knowledge and beliefs, constituting an excellent laboratory for understanding and developing productive cluster strategic plans linked to international trade. This last comment is because all strategic plans have a vision and it is precisely this methodology of market competition which can facilitate such construction.

References

Altenburg, T., Hillebrand, W., and Meyer–Stamer, J. (1998). "Policies for Building Systemic Competitiveness". Conceptual Framework and Case Studies of Mexico, Brazil, Paraguay, Korea and Thailand. Berlin, German Development Institute.

Balassa, B. (1965.) "Trade liberalization and 'revealed' comparative advantages", *The Manchester School*, **33** (May): 99-123.

Balassa, B. (1977). "Revealed Comparative Advantages Revisited. Analysis of Relative Export Shares of the Industrial Countries, 1953 – 1971", Edition The Manchester School of Economic and Social Studies. Manchester, United Kingdom.

Balassa, B. (1979). "The Changing pattern of comparative advantage in manufactured goods". The Review of Economics and Statistics. pp. 259-266.

Bender, S. and Li, K. (2002). "The changing trade and revealed comparative advantages of Asian and Latin American manufacture exports". Economic Growth Center, Yale University. Paper N° 843.

Casar, J. I. (1994). "El sector manufacturero y la cuenta corriente". Clavijo, Fernando y Casar José Ignacio (compiladores). La industria manufacturera en el mercado mundial.Elementos para una política industrial. *Lecturas El Trimestre Económico*, No. 80. Vols. I y II. Editorial FCE. México.

Chesnais, F. (1981): "The notion of international competitiveness", OECD, París. pp. 10.

Chudnovsky, D. and Porta, F. (1990);"La competitividad internacional. Principales cuestiones conceptuales y metodológicas", CENIT, DT 3, Buenos Aires.

Esteve, V. (2010). "Aumento de la cuota de mercado de las exportaciones de la economía española en el periodo 1994-2007, efecto competitividad o efecto especialización". http://estevev.blogs.uv.es

Garay, L (1998). "Colombia: estructura industrial e internacionalización 1967-1996". Biblioteca Luis Ángel Arango. http://www.banrepcultural.org/blaa

Haguenauer, L. (1989.: "Competitividade, conceitos e medidas. Uma resenha da bibliografia recente com êmfase no caso brasileiro", IEI/UFRJ, TPD No 208, Rio de Janeiro.

Contreras-Castillo, J. M. (1999). "La competitividad de las exportaciones mexicanas de aguacate: un análisis cuantitativo". *Revista Chapingo Serie Horticultura,* Vol. V Núm. Especial: 393-400.

Krugman, P. (1991). "Geography and trade". Gaston Eyskens Lectures.

Morales Troncoso, C. (2007a). "Cómo detectar y analizar oportunidades de exportación. Una herramienta al alcance de las PyMES", Negocios Internacionales, núm: 185, año 16, septiembre de 2007, México, Bancomext, pp. 38-41

Morales Troncoso, C. (2007b). "El desarrollo exportador y la competitividad internacional", Emprendedores, núm: 104, marzo-abril de 2007, México, FCA-UNAM, pp. 35-38.

Müller, G. (1992). "The Kaleidoscope of Competitiveness". Citado por Patricia Rojas y Sergio Sepúlveda, en su artículo "Competitividad de la agricultura: cadenas agroalimentarias y el impacto Del factor localización espacial". Cuaderno Técnico 2009 Del IICA.

Piñeiro, M., Jaffé, W., and y Muller, G. (1993). "Innovation, competitiveness and agroindustrial development". Presented at the meeting of integrating competitiveness sustainability and social development. Paris

Pinto, T., A. (1996). "La competitividad del comercio exterior y la especialización productiva en el Ecuador: 1970-1995". Dirección General de Estudios. Nota Técnica Nº 29. Banco Central de Ecuador.

Porter, M. (1980). Libro Estrategia Competitiva (Primera ed.). CECSA. México, 1982.

Romero Aravena, H. (2007). "Geografía, globalización y geógrafos: desafíos para la geografía Latinoamericana". Universidad de Chile.

Tobón, S.; Pimienta, J., and García Fraile, J.A. (2010). "Secuencias didácticas: aprendizaje y evaluación de competências". México: Pearson.

Torres, M. and De Lucio, J. (2003). "La competitividad sectorial de España a través de la cuota de mercado y de los saldos comerciales". Revista Del Instituto de Estudios Económicos, ISSN 0210-9565, Nº 2-3, 2003. pp. 109-120

Others Electronic References

Asociación de Exportadores de Chile (www.asoex.cl)

Assemblée des Regions Européennes Fruitières, Lègumières et Horticoles. (www.areflh.org)

Cámara Argentina de Fruticultores Integrados (www.cafi.org.ar)

Centro Servizi Ortofrutticoli (http://www.csoservizi.com)

COMTRADE: UN COMTRADE DATABASE (www.comtrade.un.org)

Hortgro Services (www.hortgro.co.za)