THE INTERNATIONAL COMPETITIVENESS AND TARGET MARKETS OF COLOMBIAN BLACKBERRIES*

LA COMPETITIVIDAD INTERNACIONAL
Y LOS MERCADOS DE DESTINO DE LAS MORAS COLOMBIANAS †

A COMPETITIVIDADE INTERNACIONAL
E OS MERCADOS DE DESTINO DA AMORA-FRAMBUESA COLOMBIANAS

LA COMPÉTITIVITÉ INTERNATIONALE
ET LES MARCHÉS CIBLES DE LA MÛRE-FRAMBOISE COLOMBIENNES

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ABSTRACT

This document analyzes the international competitiveness of Colombian blackberries-raspberries between 2003-2007, as well as its potential markets worldwide resulting from some theories and concepts related to international commerce and competitiveness given by authors such as Bela Balassa (1964 y 1970), Schwartz, M., *et al.* (2007), and the Corporación Colombia Internacional, among others. The result shows that this Colombian product has a worldwide productive and competitive potential that can motivate exporting it to potential countries like Canada, USA, the United Kingdom and France.

KEYWORDS:
Blackberry-raspberry, competitiveness, productivity, market intelligence, regional growth, development.

JEL CLASSIFICATION:
F14, L70, Q17.

RESUMEN

El documento analiza la competitividad internacional de la mora-frambuesa colombiana durante el período 2003-2007, así como sus mercados potenciales a nivel mundial, a partir de algunas teorías y conceptos relacionados con el comercio y la competitividad internacional aportados por autores como Bela Balassa (1964 y 1970) y Schwartz, M., *et al.* (2007), la Corporación Colombia Internacional, entre otros. El resultado muestra que este producto colombiano posee un potencial productivo y competitivo a nivel mundial que puede motivar su exportación a países potenciales como Canadá, Estados Unidos, Reino Unido y Francia.

Palabras clave: Mora-frambuesa, competitividad, productividad, inteligencia de mercados (IM), crecimiento, desarrollo regional.
Clasificación JEL: F14, L70, Q17.

RESUMO

O documento analisa a competitividade internacional da Amora-frambuesa colombiana durante o período 2003-2007, assim como seus mercados potenciais a nível mundial, a partir de algumas teorias e conceitos relacionados com o comércio e a competitividade internacional fornecidos por autores como Bela Balassa (1964 e 1970) e Schwartz, M., *et al.* (2007), a Corporación Colombia Internacional, entre outros. O resultado mostra que este produto colombiano possui um potencial produtivo e competitivo

a nível mundial que pode motivar sua exportação a países potenciais como Canadá, Estados Unidos, Reino Unido e França.

Palavras chave: Mora-frambuesa, competitividade, produtividade, inteligência de mercados (IM), crescimento, desenvolvimento regional.
Classificação JEL: F14, L70, Q17.

RÉSUMÉ

Le document analyse la compétitivité internationale de la mûre-framboise au cours de la période 2003-2007, ainsi que leurs marchés potentiels à travers le monde, sur la base de certaines théories et des concepts liés au commerce international et la compétitivité fournies par des auteurs tels que Bela Balassa (1964 et 1970) et Schwartz, M., et al. (2007), la Corporación Internationale en Colombie, entre autres. Le résultat montre que ce produit colombien possède un potentiel productif et compétitif dans le monde. Ce potentiel peut promouvoir son exportation vers des pays comme le Canada, les États-Unis, le Royaume-Uni et la France.

Mots-clés: mûre-framboise, la compétitivité, la productivité, l'intelligence du marché (MI), la croissance, le développement régional.
Classification JEL: F14, L70, Q17.

INTRODUCTION

Since the inclusion of the Neo liberalism model in most countries around the world, the word *competitiveness* has been inside the mind of those who believe in the efficient administration of economic resources, seeking the greatest social well-being; phrases quoted not just for those who believe in market economy, but also for those who attempt to get economic sustainability through an active role in the State.

This word would not be complete if we did not include market globalization as vital source of competitiveness, especially with regards to international trade processes, because it is essentially commodities exchange and competition between firms –with similarities and technological differences– that promote goods and services redistribution, and boost the competitiveness of involved nations.

Colombia has not been apart from this situation, especially since his Constitutional reform in 1991. To conform with its neoliberal philosophy, the bank of international trade was found in 1991, in 1992 Proexport Colombia was born as well as CCI (stands for Corporación Colombia Internacional), having the mission of promoting agricultural industry (Ministerio de Agricultura

y Desarrollo Rural, 1994), later in 2004 and 2006 the methodology to constitute an internal schedule to promote productivity and competitiveness was set up, and two years later, in 2008, the policy of national productivity and competitiveness was published (Conpes 3527, 2008)[1].

With regards to agricultural activities, since 2001 the Ministry of Agriculture started to boost the production of prominent products to be exported, among them **blackberries-raspberries**. Former studies carried out by Corpoica and Ministerio de Agricultura y Desarrollo Rural (2009) show that blackberry's crop has been important for both social and economic growth, and for the establishment of cooperatives.

This situation is very important for the economy as a whole, because it leads to a greater product exportation of Colombian blackberries; however, this is not the only condition required, especially when Colombia should compete together with other well-known countries such as Russia, the United States, Serbia-Montenegro and Poland.

Thus, the aim of this study is to estimate Colombian blackberry´s competitiveness level in international terms and its feasibility to be exported to specific target markets. The study was carried out over five years (2003-2007), taking account of statistical information from the Ministry of Agriculture, FAO, and Colombian National Administrative Department of Statistics (DANE). International competitiveness is determined through a competitive index based on Bela Balassa's theories (1964 and 1970), and Schwartz *et al* (2007). Potential overseas markets are estimated through methodologies applied by CCI (Stands for Corporación Colombia International).

The document is organized in four stages, where this introduction is the first. The second section contains concepts and theories related to overseas competitiveness and exportation. In the third section, we estimate overseas competitiveness levels of blackberries, as well as target countries. The last section offers a conclusion which may be of interest to blackberry farmers.

1. COMPETITIVENESS IN OVERSEAS MARKETS

According to a definition from the World Economic Forum (2009), competitiveness could be defined as the set of institutions, policies, and factors that determine productivity levels of a country, where based on its outcome it is possible to guarantee a nation's adequate level of prosperity. This concept is quite similar to the concept suggested by Cohen *at al.* (1984), to whom *"… competitiveness of nations is based on a better performance of productivity and the ability of the economy to*

modify its products towards higher productivity activities, by which salaries are better".

International trade is one of the most important variables that affect competitiveness, which is transversally implicit in competitiveness characteristics[2]. As Scott (1985) suggests, *"competitiveness refers to the ability of a State to produce and distribute products around the world, competing against other products (tangible and*

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[1] The later document included the conception of competitiveness held by the World Economic Forum (2009): *"… Competitiveness must capture long-turn productivity and economic growth perspective"*; i.e., the policy stated shows the insight wished for the whole country.

[2] Twelve characteristics capture competitive economic bases in a nation. They are: Institution, infrastructure, macroeconomic stability, health and primary education, secondary education and training, efficiency in commodity markets, labour market efficiency, finance market sophisticated, technological availability, market size, business and innovation sophistication.

> *" ... the importance of internationally competitiveness marketplace identification has been shown through macro and microeconomic variables, which justify the usefulness of exporting a greater quantity of goods and services without affecting domestic market. "*

intangible) made in other countries, leading to greater social well-being levels".

When a country is clearly oriented toward overseas trade —calculated as weight exports into gross domestic product (GDP), the existence of Ricardian competitive behavior it is assumed; i.e., it is exported net surplus once the country has supplied the domestic market.

International trade idea is shown in GDP's structure, taking account of national account (supply and demand tables) within a nation, where $Y + M = C + I + G + X$. As it is possible to see, in a country it is offered what is produced (Y) plus what is imported (M), and this is consumed by households (C), enterprises (I), the government (G) and surplus is exported (X). Exports are equivalent to outward demand[3].

So, the suggestion it is feasible that if a country looks for high levels of international competitiveness, it must show that goods and services exported are, essentially, surplus; as a result, it doesn´t alter neither domestic consumption, nor market prices. Businessmen from most countries seek potential marketplaces all over the world willing to buy their products. These products can be accounted for as final goods, inputs or capital goods, or as transport services, trips, communication, building services, insurances, among others[4].

Based on the balance-of-payment theories, Krugman & Obstfeld (2006) have shown that the current account of the balance of payment depends upon both real exchange rates and available national income, which means that a real-exchange rate devaluation, or a national-income rise can positively affect the balance of current account. In mathematic terms, $CC = CC\left(\frac{EP^*}{P}, Y^d\right)$, where CC is the balance of current account, EP^*/P is real exchange rate, E is nominal exchange rate, P^* y P

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[3]   See Lora (1994).

[4]   To look for the items, see *Balance of Payment Handbook*, Fifth Edition., International Monetary Fund, Washington, 2003.

are price index international and domestically, and Y^d is available income.

The former statement is very important to competitive analysis of a country. If a nation wanted to export a greater merchandise volume, it should have a competitive real exchange rate (Hamman, 2005), which can be attained through a greater nominal exchange rate devaluation, or through a relative price increase; this is $e = E_i\,P^*_j\,/\,P_i$ (real exchange rate ecuation). The latter is not enough to be competitive, due to the existence of other economic factors that affect its outcome, e.g. free trade agreements, sanitary measures, transport, and others closer to microeconomic theories.

According to Krugman & Obstfeld (2006, p. 425), international free trade agreements are treaties in which a country gets commitments linked to less protectionism. These sorts of treaties can be unilateral, bilateral or multilateral, allowing other countries to improve their world trade relationships with other countries, to reduce trade tariffs, and to raise economic integration. In turn, no trade tariff measures are *"mechanisms different from trade tariffs which consist of demand requirements or specific procedures to enter goods into borders or territories previously targeted"*[5]. Among these measures there are sanity norms, which let governments to protect health, people and animal life, and establish norms in favor of product quality, especially in food.

In microeconomic terms, there are quite important variables to increase competitive levels, which are related to supply function of enterprises. One variable focuses its attention on productivity factors in the long term, which is possible through endogenous technical changes that cause higher long-term economic growth to firms. Romer (1986), quoted by Sala-i-Martin (1999) suggests that technical changes are achieved through **learning by doing** (learning by investment

said Sala-i-Martin) and **knowledge spillovers** (technology transfer).

The first assumption is obtained on the grounds that companies invest in real capital, machinery, human capital, research and development –R&D–, and a permanent feedback process (Camacho, 2005). This learning can be transferred –suggest authors such as Blomström, Globerman & Kokko (1999), Camacho & Vernazza (2007), and Carlino (2001)– through different channels such as competition between firms (horizontal channel), vertical linkages between industries (vertical channel), and industrial agglomerations. Thus, firms can gain increasing return to scale thanks to higher efficiency levels obtained through activities carried out by firms which cause positive technological externalities to the whole economy.

Until this point, the importance of internationally competitiveness marketplace identification has been shown through macro and microeconomic variables, which justify the usefulness of exporting a greater quantity of goods and services without affecting domestic market; however, a new inquiry to be solved into countries where the desire to capture new markets is part of the agenda has emerged: Which variables determine the international demand of a product? This could be solved by appealing to the microeconomic theories of products.

The demand of a product φ depends upon certain qualitative and quantitative variables which are subject to change in a time period depending on analyzed market. These variables are: price (from the same product), household income, price of complementary or substitute goods, the number of buyers (or number of inhabitants), preferences expectations[6]. The math's are:

$$QD\varphi = f\,(P\varphi\,,I\,d\,,P\gamma\,,N\,,\theta\,,\varepsilon)$$
$$\quad\;\; -\;\;\; +\;\;\; +/-\;\; +\;\; +\; +/-$$

5 Retrieved from: http://www.aladi.org.
6 To deepen theories of demand determinants in either perfect competition or other market structure, it is recommended to see Nicholson (2004), Pindyck y Rubinfeld (2001), Tucker (2002), among others.

Where:

$Q\,D\,\varphi$: Demand of good φ
$P\,\varphi$: Precio del bien φ
Id: Household income
$P\,\gamma$: Price of substitute/complementary goods
N: Size of market
θ: Preference of good φ
ε: Other stochastic variables

The signs of the equation show that demand of φ falls if its price rises, or complementary commodity prices rises; conversely, demand goes up if there is an increase in household income, substitutive goods prices, population, and preferences for the product. This reading is in line with the thesis of perfectly competitive markets (to normal goods); however, not always the rule is true. E.g., if the analyzed goods are considered inferior, then a household income increase does not cause any upward movement in its consumption, instead, it causes a drop $\varepsilon_{\varphi,I} < 0$ or if they are regarded normal goods, i.e. $\varepsilon_{\varphi,I} > 0$, then they can be superior goods $\varepsilon_{\varphi,I} > 1$, where an income rise can trigger an increase of demand, or necessary goods $1 < \varepsilon_{\varphi,I} > 0$ where income growth causes the demand to be higher in lower ratio; or if they are Giffen goods, then $\varepsilon_{\varphi,I} > 0$ (Pindyck & Rubinfeld, 2001).

Other variables such as Market size (N) and preferences (θ) are also fundamental in competitiveness analysis. To the first variable, World Economic Forum (2009, p. 19) suggests that big markets allow the economy to capture scale economies, as well as increase worldwide trade. Preferences have been studied, largely, by scientists of international marketing to whom competitiveness must include worldwide purchasing trends; it is evident that consumers have been calling for healthy products as well as quality and environmentally friendly products, especially in consumerism territories like the USA or Europe during the economic crisis (Voinea & Filip, 2011).

All these demand determinants stated are highly important to estimate consumption functions for a specific market; i.e. to estimate relative weight that represents each variable in purchasing decision-making, but how can international markets to export goods and services be deemed feasible? This question can be solved applying market intelligence (MI).

According to Camacho (2010), MI is a research methodology applied to determine economic and social viability to trade goods and services in potential marketplaces, through explicative variable analysis of supply and demand for a product, both internally and externally, including those political and social factors of interest.

MI is not just a methodology used to impact exports positively or the strategic imports of a country, it is also a mechanism recognized to lead regional economic development into clusters[7].

2. INTERNATIONAL COMPETITIVENESS OF COLOMBIAN BLACKBERRIES AND ITS POTENTIAL MARKETS

2.1 WORLDWIDE RANKING AND INTERNATIONAL TRADE

According to the figures stated in the chart below, countries such as Russia, Serbia-Montenegro and the United States head this ranking producing more than 60 thousand tons yearly, which is a share of worldwide production higher than 9%. The remaining countries account for less proportion in comparison, although they

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[7]   Clusters are productive complex built up around a product, where enterprises interact horizontally and vertically to each other, and institutions are involved in specific fields. As in Clusters there is a global thought and insight (not just for domestic market), market intelligence is saw as a great tool to enter global markets (Ramos, 1999).

produced quantities higher than 6 thousand tons annually. There is a particularity which is that those countries are located in the northern hemisphere, where blackberry crops are more likely to be productive due to the tempe-rature (the best yields are obtained between 11 and 18 Celsius degrees, Corpoica, n.d.) (Chart 1).

Colombia was not included in FAO's ranking (Food and Agriculture Organization), which is disappointing since Colombia produced more than 80 thousand tons of blackberries per year between this study period. Within the country, Cundinamarca is regarded as the most important region in blackberry production, followed by Santander and Antioquia (Chart 2). Just

Chart 1. Worldwide ranking of the 10 greatest producers of blackberries, in tons (2003-2007).

| No. | Country | Year | | | | | Total | Global production Participation rate |
		2003	2004	2005	2006	2007		
1	Russian Federation	150.000	170.000	175.000	175.000	175.000	845.000	34,2%
2	Serbia and Montenegro	79.471	91.725	84.331	79.680	76.991	412.198	16,7%
3	United States	62.142	71.941	82.826	74.843	64.773	356.525	14,4%
4	Poland	42.941	56.800	60.000	52.539	56.391	268.671	10,9%
5	Ukraine	19.700	25.300	20.500	27.200	24.600	117.300	4,7%
6	Canada	14.236	13.828	14.152	12.442	11.517	66.175	2,7%
7	Germany	20.600	20.034	7.000	7.198	6.191	61.021	2,5%
8	United Kingdom	8.500	10.000	12.200	12.220	13.452	56.372	2,3%
9	Hungary	9.258	8.470	6.724	11.900	6.200	42.552	1,7%
10	France	6.830	6.875	5.742	6.724	5.718	31.437	1,3%
	Total	413.678	474.973	468.475	459.294	440.831	2.257.251	
	Annual production, participation rate	94,2%	92,7%	92,7%	88,9%	88,8%		

Sources: Database from FAO – Food and Agriculture Organization of the United Nations.

Chart 2. Annual production of blackberries in Colombia by regions, in tons (2003-2007).

Departments	2003	2004	2005	2006	2007	Total	Domestic production participation rate
Cundinamarca	27.505	28.773	30.347	30.164	34.074	150.863	33,79%
Santander	17.652	18.383	18.724	16.173	16.173	95.645	21,42%
Antioquia	6.624	7.260	7.710	12.623	12.623	42.127	9,44%
Huila	5.957	5.108	5.758	7.211	7.211	31.677	7,10%
Valle del Cauca	5.588	5.370	4.342	4.903	4.903	25.368	5,68%
Tolima	4.399	3.370	3.886	3.667	3.667	18.785	4,21%
Boyacá	2.657	3.080	3.182	3.712	3.712	16.005	3,58%
Norte de Santander	0	3.263	3.879	4.109	4.109	15.223	3,41%
Risaralda	2.000	1.923	1.397	2.802	2.802	10.011	2,24%
Nariño	1.432	1.546	1.786	2.433	2.433	9.226	2,07%
Cesar	1.563	1.662	2.078	1.511	1.511	8.406	1,88%
Caldas	1.456	1.531	1.340	2.095	2.095	7.857	1,76%
Cauca	1.724	2.166	626	1.218	1.218	6.073	1,36%
Meta	821	804	750	815	815	3.955	0,89%
Magdalena	592	816	810	0	0	2.649	0,59%
Quindío	273	231	326	645	645	1.975	0,44%
Casanare	0	0	68	180	180	293	0,07%
Chocó	24	50	50	50	50	224	0,05%
Putumayo	0	9	9	0	0	82	0,02%
Total	80.267	85.345	87.068	98.221	98.211	446.444	100%
Domestic annual fruits production, participation rate	3,00%	3,03%	2,94%	3,00%	3,00%		
Annual worldwide production, in accordance with FAO	3,25%	3,45%	3,52%	3,87%	3,98%		

Sources: Database from Ministerio de Agricultura y Desarrollo Rural in the Year Book of fruits and vegetables 2003-2007, and database from FAO – Food and Agriculture Organization of the United States.

Cundinamarca's production accounts for 3% of global output, which is significant and taken into account by FAO's calculus.

With regard to Exports (Chart 3), Poland heads the list as it exports roughly 26% of worldwide exports, and 50% of its production; the later implies a reasonably apparent consumption, and a relevant production surplus to international trade. Moreover, there is a particular situation with Mexico, who despite being out of the worldwide ranking, showed exports between 25 and 35 thousand tons during 2006 and 2007[8].

In contrast, Germany, Canada, Austria and the United States keep position as the highest import nations of blackberries with a worldwide share between 9% and 13%, approximately, i.e., the production of these countries is not enough to cover domestic demand. The remaining countries account for less than 9% of global imports (Chart 4).

As it is shown in charts 5 and 6, the balance of trade of Colombian blackberries does not have a positive outcome, because seemingly what is produced is consumed. Nonetheless, its target markets are Panama, the United States, Netherland Antilles and Spain.

Chart 3. Worldwide ranking of the 10 greatest exporters of blackberries, in tons (2003-2007).

No.	Country	Year					Total	Worlwide exports participation rate
		2003	2004	2005	2006	2007		
1	Poland	23.540	32.106	16.142	21.326	24.106	117.220	26,0%
2	Mexico	0	0	0	25.443	35.162	60.605	13,4%
3	Spain	5.187	6.110	6.524	7.498	10.009	35.328	7,8%
4	Serbia and Montenegro	7.225	5.560	9.436	5.632	6.794	34.647	7,7%
5	Chile	5.861	4.480	5.288	4.413	8.314	28.086	6,2%
6	Canada	2.475	2.985	3.182	1.771	2.369	13.052	2,9%
7	Germany	867	1.772	1.133	1.005	661	5.438	1,2%
8	France	783	1.077	1.097	985	1.383	5.325	1,2%
9	Netherlands	481	1.253	658	999	1.079	4.470	1,0%
10	Hungary	732	752	1.265	443	252	3.444	0,8%
	Totals	47.421	56.095	44.725	69.245	90.129	307.615	68,3%
	Annual exports, participation rate	96,5%	96,2%	94,5%	95,1%	92,5%		

Sources: Database from FAO – Food and Agriculture Organization of the United Nations.

Chart 4. Worldwide ranking of the 10 greatest imports of blackberries, in tons (2003-2007).

No.	Country	Year					Total	Worlwide exports participation rate
		2003	2004	2005	2006	2007		
1	Germany	18.075	12.502	9.015	12.330	14.612	66.534	13,0%
2	Canada	8.001	7.664	8.063	11.600	18.057	53.925	10,5%
3	Austria	10.006	14.063	11.144	6.303	11.619	53.135	10,4%
4	United States	7.366	8.925	9.926	9.950	14.231	50.398	9,8%
5	Netherlands	7.333	9.745	9.431	7.495	11.554	45.558	8,9%
6	United Kingdom	4.756	5.047	5.656	7.414	8.526	31.399	6,1%
7	France	3.754	4.297	4.346	4.959	5.776	23.132	4,5%
8	Belgium	5.461	4.974	4.040	3.585	3.851	21.911	4,3%
9	Italy	1.437	2.328	2.357	2.699	3.779	12.600	2,5%
10	Switzerland	602	672	611	552	672	3.109	0,6%
	Total	66.791	70.124	65.129	66.887	92.677	361.701	70,7%
	Annual exports, participation rate	96,9%	96,6%	96,4%	96,9%	97,9%		

Sources: Database from FAO – Food and Agriculture Organization of the United Nations.

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[8] It is deducible that these figures correspond to semi-industrialized products of blackberries, what allow us to differentiate between fresh product exports and processed product exports. Apparently this trade refers to processed fruit pulp.

Chart 5. Colombian export ranking of blackberries by country of destination, in tons (2003-2007).

| No.	Country	Year					Total	Worlwide exports participation rate
		2003	2004	2005	2006	2007		
1	Panama	0,00	0,00	0,45	1,12	10,82	12,39	21,5%
2	United States	1,54	2,76	5,25	1,09	0,35	10,99	19,1%
3	Netherlands Antilles	0,37	0,21	0,15	0,61	6,44	7,79	13,5%
4	Spain	0,00	0,17	0,00	0,00	4,93	5,09	8,8%
5	United Kingdom	0,33	2,93	0,00	0,00	0,00	3,26	5,7%
6	Aruba	0,00	0,00	0,00	0,42	0,71	1,13	2,0%
7	France	0,00	0,20	0,00	0,00	0,00	0,50	0,9%
8	Ecuador	0,00	0,00	0,30	0,00	0,22	0,22	0,4%
9	Netherlands	0,06	0,00	0,00	0,11	0,00	0,17	0,3%
10	Venezuela	0,00	0,00	0,00	0,00	0,00	0,00	0,0%
11	Switzerland	0,00	0,00	0,00	0,00	0,00	0,00	0,0%
	Total	2,29	6,27	6,14	3,36	23,47	41,54	72,2%
	Annual exports, participation rate	100,0%	97,6%	99,8%	99,8%	99,8%		

Sources: Database from DANE – DIAN and OEE of Mincomercio.

Chart 6. Colombian import ranking of blackberries by country of origin, in tons (2003-2007).

No.	Country	Year					Total	Worlwide exports participation rate
		2003	2004	2005	2006	2007		
1	Ecuador	0,000	0,000	0,000	0,000	0,000	0,0000	0,0000
2	Chile	0,000	0,000	0,000	0,000	0,004	0,0038	0,0005
	Total	0,0000	0,0000	0,0000	0,0000	0,0038	0,0038	0,0005
	Annual exports, participation rate	0,0%	0,0%	0,0%	0,0%			

Sources: Database from DANE – DIAN and OEE of Mincomercio.

Graph 1. Share (%) of Colombia into worldwide production (2003-2007) if FAO would include it in its calculus.
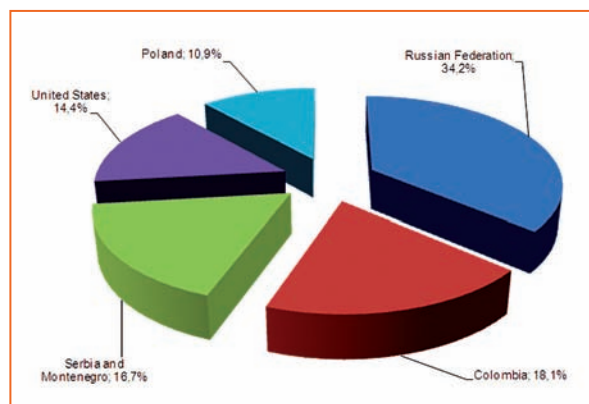
Source: FAO (Food and Agriculture Organization), DANE – DIAN, OEE calculus of Ministry of Commerce, Industry and Tourism (Colombia).
Calculus: own.

If Colombian production were included in blackberry FAO's calculus, it would be positioned second in the worldwide ranking, with an 18,1% share. This matter would probably get the attention of traders and promote an interesting negotiation activity to this agricultural sector. Likewise, it would catch producers' eyes and institutions responsible for this economic sector, because if Colombia joined these countries, it would start writing clear policies in favor of exports of this product. Either way, we will show some calculus of revealed competitiveness index that showcase remarkable outcomes regarding Colombia production competitiveness.

2.2 REVEALED COMPETITIVENESS INDEX

These indices are used to pinpoint competitiveness levels of a product *i* (tangible or intangible) from a

country j worldwide. In this sense, next indicators will be calculated taking into account Schwartz *et al.*, 2007:

a. **Tradability (TR):** This shows the capability of a country j to make up net exportable surplus $X - M$ $X - M$ of product i in relation to its domestic consumption (CA). If the outcome is greater than zero (0), the industry of this product is regarded exporter; conversely, if the outcome is lower than zero (0), there is no competition against imports, and the analyzed country depends on it due to inward demand excess.

b. **Exporting opening level (GE):** This shows the share of exports of a product i from a country j with regards to its domestic consumption. If the indicator outcome is greater than zero (0), it means there is plenty of production to cover its apparent internal demand, and to compete abroad, *ceteris paribus* the imports. This result can never be below zero (0), and the greater the outcome, the better.

c. **Imports penetration level (GI):** This shows the share of imports of product i made by the country j with regards to its domestic consumption. If the indicator approaches to one (1), it may be possible to assume that the country does not produce a necessary quantum to cater to its domestic marketplace, and as a result, this has to import the product greatly.

d. **Relative balance of trade (BCR):** This determines the ratio between the balance of trade of a product i (exports minus imports), and the total addition of exports and imports from a country. The outcome reaches a figure ranged between -1 and 1. Thus, if a country states a negative outcome, it is an importer of this product; whereas it is an exporter if the outcome is positive (Schwartz et al., 2007). Likewise, if the indicator is close to -1, it is possible to identify potential markets, because they are likely to depend on imports to cater for the domestic market.

In the same way, calculus is made considering the following countries: Colombia, Canada, the United States, the United Kingdom, Serbia-Montenegro, Germany, France, Poland and Hungary. They were chosen using the same selection criteria used in the former rankings.

According to the findings in TR, Colombia, Poland and Hungary have the capacity to make up export surplus. As Colombia consumes approximately 90% of its production, it is feasible in the future to create export net surplus. The other countries apparently do not compete as their domestic demand is relatively high and their surplus, if there is one, is not enough to carry out blackberries exportation.

Chart 7. Tradability indicator, exports and imports opening, and relative balance of trade (2003-2007).

Country	X	M	Y	ACC	TR	GE	GI	BCR
		Tons.						
Colombia	8,38	0,00	89.289	89.280	0,00009	0,00009	0,00000	0,99994
Canada	2.610	10.785	13.235	21.410	-0,36349	0,12626	0,48974	-0,57833
United States	0	10.080	71.305	81.385	-0,12417	0,00000	0,12417	-1,00000
United Kingdom	33	6.280	11.274	17.521	-0,35404	0,00194	0,35598	-0,98897
Serbia and Montenegro	6.929	0	169.000	162.071	0,04301	0,04301	0,00000	1,00000
Germany	1.088	13.307	12.204	24.423	-0,52753	0,04875	0,57628	-0,83992
France	1.065	4.626	6,287	9.849	-0,36116	0,10830	0,46946	-0,62663
Poland	23.444	0	53.734	30.290	0,86229	0,86229	0,00000	1,00000
Hungary	689	0	8.510	7.822	0,09921	0,09921	0,00000	1,00000

Source: own calculus based on information stated in charts 1 to 6.

Graph 2. Revelead competitiveness indicators
(average 2003-2007).
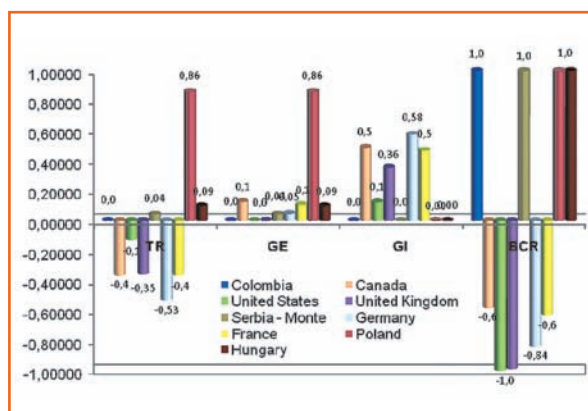
Source: Own elaboration based on chart 7.

To GE, all countries showed outcomes greater than zero. Countries such as Canada, France and, especially, Poland have high export orientation of blackberries. Colombia as well as the United States and United Kingdom have enough production to cater to their domestic marketplaces.

Regarding the penetration level of imports (GI), Colombia, Serbia-Montenegro, Poland and Hungary have an outcome of zero, which points to the fact that these countries, apparently, do not depend on the purchase of blackberries from other countries. Other countries such as Germany,

France and Canada showcase outcomes close to one (1), which mean that they have purchasing power and, evidently, their blackberry production is not sufficient to meet domestic consumption.

Finally, the balance of trade indicator (BCI) shows that Canada, the US, the UK, Germany and France are importers of this product. Furthermore, they are set to become target marketplaces for Colombian blackberry exports. On the other hand, Colombia, Serbia-Montenegro, Poland and Hungary, according to the indicators, may be regarded blackberry net exporters; the latter countries could be regarded competitors to Colombia in the global market.

2.3 MARKET ENTRY MODE (MIM)

This index shows the export dynamic of a product *i* in comparison to a specific market. In its calculus the average percentage variation of exports of a product *i* from a country *j* is combined with the average percentage change of ratio between production of good *i* into total exportation from the same product worldwide.

There are two components here: positioning (average percentage variation of exports) and efficiency (average percentage variation of ratio X_i / X_T). Thus, markets can be classified within a Cartesian graph as follow:

Charts 8 & 9. Market entry mode MIM (2003-2007).

Countries	Positioning	Efficiency	Classification	MIM
	Axis X	Axis Y		
Colombia	182.50%	128.31%	Optimum	3.11
Canada	1.19%	-10.22%	Lost opportunities	-0.090
United States	0.00%	0.00%	Optimum	0.000
United Kingdom	11.41%	-3.99%	Lost opportunities	0.074
Serbia and Montenegro	6.75%	0.75%	Optimum	0.075
Germany	5.70%	-10.56%	Lost opportunities	-0.049
France	17.40%	1.17%	Optimum	0.186
Poland	7.95%	-13.22%	Lost opportunities	-0.053
Hungary	-9.29%	-10.20%	Withdrawal	-0.195

*Source*: Own elaboration based on figures from charts 1 to 6.

i) Optimal (Positioning +, efficiency +),
ii) Vulnerable (Positioning –, efficiency +),
iii) Withdrawal (Positioning –, efficiency –),
iv) Lost opportunities (Positioning +, efficiency –).

Outcomes were as seen in Chart 8 & 9.

In relation to positioning and efficiency components, Colombia, the US, Serbia-Montenegro and France were classified as optimal countries to enter blackberry international market; it is useful to say that the US was selected from this classification since its variations were neutral (zero).

Graph 3. Market entry mode (2003-2007).
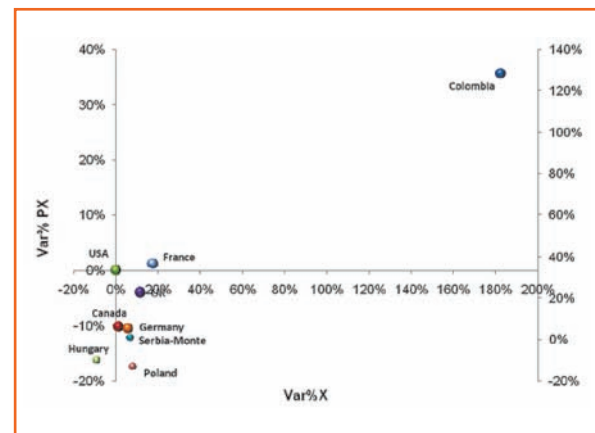
Source: own calculus based on charts 8 and 9.

Colombia has, undoubtedly, plenty of opportunities to enter the global market of blackberries since its MIM is relevant; however, as it has previously been stated, Colombia has production to supply within its borders, not to export. Indeed, if Colombia boosted domestic production to be exported without affecting local consumption, it would be feasible to enter overseas markets selling both fresh blackberries and processed blackberry products.

2.4. REVEALED COMPARATIVE ADVANTAGE INDEX (IE)

This indicator, also called International Specialization Index, allows the measurement of

> "*Colombia has, undoubtedly, plenty of opportunities to enter the global market of blackberries since its MIM is relevant; however, as it has previously been stated, Colombia has production to supply within its borders, not to export. Indeed, if Colombia boosted domestic production to be exported without affecting local consumption, it would be feasible to enter overseas markets selling both fresh blackberries and processed blackberry products.*"

trade performance between a list of countries to a product i, in comparison to the rest of the world. It is between -1 and 1. If the outcome is equal to one (1), it is possible to say the country is greatly competitive and specialized in this product[9].

Chart 10. International Specialization Index (2003-2007).

Countries	IE
Colombia	0.000
Canada	-0.120
United States	-0.159
United Kingdom	-0.098
Serbia and Montenegro	0.118
Germany	-0.200
France	-0.057
Poland	0.382
Hungary	0.013

Source: own calculus based on figures charts 1 to 6.

Graph 4. International Specialization Index (2003-2007).
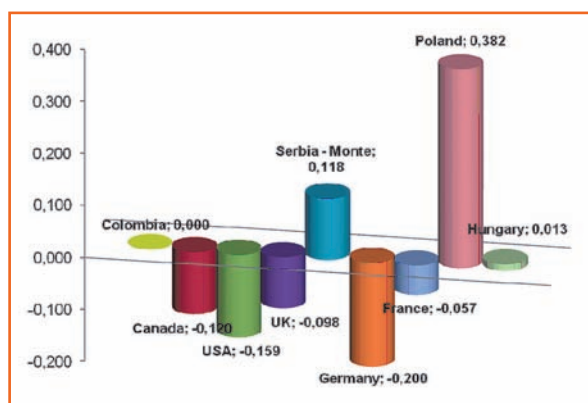
Source: own elaboration based on figures of chart 10.

Taking into account the definition of this index, none of these countries is neither highly competitive nor specialized in blackberry production. Moreover, according to the comparative advantage principle, there may be some factors which suggest –at least to Colombia, Poland and Hungary– a specializing trend in the production of blackberries, although with some difficulties that should be tackled by the government, farmers, and businessmen.

2.5   RANKING OF COMPETITIVENESS

Schwartz *et al*. (2007, p. 9) designed a measure of competitiveness to compare countries that produce a specific product. They based their analysis on statistic intervals in each estimated indicator, in order to assign a final score between 1 (the highest) and 4 (the lowest). As is stated in chart 11, adding the index scores it is possible to determine which countries are more competitive in the international blackberry trade, and which are less competitive. Thus, countries with the lowest score are the most competitive in the global market. The outcome shows that Poland, Colombia, Serbia-Montenegro and Hungary have the highest score; as a result, they are highly competitive in blackberry global market.

Chart 11. Competitiveness ranking of relevant countries (2003-2007).

Countries	TR	GE	GI	BCR	MIM	IE	Total
Colombia	3	4	4	1	1	3	16
Canada	4	4	1	4	4	4	21
United States	3	4	4	4	4	4	23
United Kingdom	4	4	2	4	4	4	22
Serbia and Montenegro	3	4	4	1	4	2	18
Germany	4	4	1	4	4	4	21
France	4	4	1	4	4	4	21
Poland	1	1	4	1	4	1	12
Hungary	3	4	4	1	4	3	19

Source: own elaboration based on charts 1 to 6.

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[9]   If we applied this indicator to Colombian coffee, we were more likely to get a high score (close to 1).
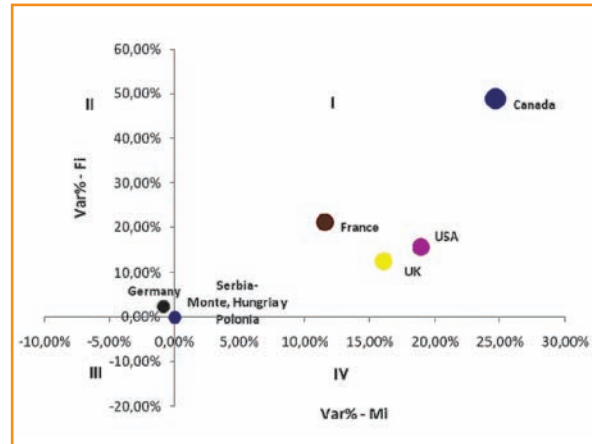
2.6 IDENTIFICATION OF POTENTIAL MARKETPLACES

Estimation of attractive or promissory marketplaces to export products is possible through indicators, graphs and mathematics models which inform decision-making. In this case the attractive marketplace indicator (MA) will be used. This measure is useful in estimating a country´s export potential. MA may show a positive or negative outcome; however, the higher, the better. The figures can be presented in a scatter graph (graph 6), where axis X shows percentage variation of blackberry imports, and axis Y represents a ratio between imports of product i over total imports of products (or fruits in our context) (Graph 5).

Results can be classified as they are shown in Chart 13.

Thus, Canada, France, the United States and the United Kingdom are attractive marketplaces to export blackberries, since import trends are growing as are the ratio between imports of product i and total imports. Germany is regarded as a potential market despite the fact that it is not on side I of the graph.

Graph 5. Attractive marketplaces (2003-2007).

Source: own elaboration based on chart 12.

Chart 13. Quadrants for classification of attractive markets.

Quadrant	Characteristics
I	Marketplaces more attractive to export
II y IV	Potential marketplaces
III	Marketplaces less interesting

CONCLUSIONS

To sum up, it seems that Colombian blackberries are likely to have international opportunities; however, it is necessary to consider matters linked to exports. Likewise, it is quite important to consider opportunities related to value-added product exports, as it is extremely difficult for Colombian farmers to export fresh blackberries (not processed) because of sanitary norms, logistic requirements and product expiration dates. Thus, it seems to us that exports of blackberries should be focused on high value-added products to target sales in attractive marketplaces[10].

To enter overseas markets, it is imperative that government together with farmers work on agricultural productive levels, cooperation, and R&D; the latter is quite important to compete in differentiate markets. For instance, Colombia could develop new blackberry exporting products together with interdisciplinary research centres, businessmen who already export, and the government. We recommend FAO to include Colombia in its statistics as a real potential competitor of blackberries.

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[10] E.g., jams, pulps, packaged juices, freezing juices, and others different from food such as inks, medicines, etc.

REFERENCES

Asociación Hortifrutícola de Colombia - ASOHOFRUCOL (2009). *Leyes y Decretos Reglamentarios*. Bogotá, D.C., consultada el 20 de marzo de 2010. En línea: http://www.finagro.com.co/html/cache/HTML/SIS/CITRICOS/biblioteca_33_Leyes_y_decretos.pdf.

Balassa, Bela (1964). *Teoría de la Integración Económica*. México, D.F.: UTEHA.

Blomström, M.; Globerman, S.; Kokko, A. (1999). "The Determinants of Host Country Spillovers from Foreign Direct Investment: Review and Synthesis of the Literature", in: *Working Paper No. 339*, Stockolm: Stockolm School of Economics.

Camacho, A. & Vernazza, A. (2005). "Transferencia tecnológica de la inversión extranjera directa en la industria manufacturera. El caso colombiano", en: *Revista CIFE*, 8 (10), 7-18.

Camacho, A. (2010). *Inteligencia de mercados*. Bogotá, Colombia: Universidad Piloto de Colombia.

Camacho, A. & Vernazza, A. (2006). "Encadenamientos verticales y transferencia tecnológica en la industria manufacturera colombiana", en: *Revista CIFE*, 9 (11), 77-89.

Carlino, Gerald A. (2001). "Knowledge spillovers: cities' role in the new economy", in: *Business Review*, Federal Reserve Bank of Philadelphia, issue Q4, 17-26.

Corporación Colombiana de Investigación Agropecuaria - CORPOICA (n.d.). *El cultivo de la mora. Proyecto de transferencia de tecnología sobre el cultivo de la mora*.

Lora, E. (1994). *Técnicas de Medición Económica: Metodología y Aplicaciones en Colombia*. Bogotá, Colombia: Tercer Mundo Editores - Fedesarrollo.

"To enter overseas markets, it is imperative that government together with farmers work on agricultural productive levels, cooperation, and R&D; the latter is quite important to compete in differentiate markets. For instance, Colombia could develop new blackberry exporting products together with interdisciplinary research centres, businessmen who already export, and the government. We recommend FAO to include Colombia in its statistics as a real potential competitor of blackberries."

Fondo Monetario Internacional (2004). *Revisión del Manual de la Balanza de Pagos*. Quinta edición (reseña comentada), consultada el 22 de febrero de 2010. En línea: http://www.imf.org/external/np/sta/bop/pdf/esl/aos.pdf.

Hamman, F. (2005). *Tasa de Cambio Real en Mercados Emergentes*. Bogotá, Colombia: Banco de la República.

Instituto Interamericano de Cooperación para la Agricultura - IICA (1999). *¿Qué es la competitividad? Competitividad de la agricultura: Cadenas agroalimentarias y el impacto del factor localización espacial.* Serie Cuadernos Técnicos, 9.

Krugman, P. & Obstfeld, M. (2006). *Economía Internacional: Teoría y Política*. 7 ed., Madrid: Pearson, 297-326.

Martínez, I.M. & De Miguel, M. (n.d.). *Evolución de la producción y comercio mundial de Frutas en el Mundo*. Consultada el 10 de marzo de 2010. En línea: http://repositorio.bib.upct.es/dspace/bitstream/10317/985/1/epc1.pdf.

Ministerio de Agricultura y Desarrollo Rural (1994). *Desarrollo de un sistema de información comercial e inteligencia de mercados para el sector hortofrutícola*, Bogotá, Colombia.

_____ (2008). *Anuario estadístico de frutas y hortalizas 2003 - 2007 y sus calendarios de siembras y cosechas*. Bogotá - Colombia: Dirección de Política Sectorial - Grupo Sistemas de Información.

_____ (2009). *Anuario estadístico de frutas y hortalizas 2004 - 2008 y sus calendarios de siembras y cosechas*. Bogotá - Colombia: Dirección de Política Sectorial - Grupo Sistemas de Información.

Food and Agriculture Organization - FAO (n.d.). FAOSTAT. Consultada el 17 de diciembre de 2009. En línea: http://faostat.fao.org/site/342/default.aspx.

Pindyck, R. & Rubinfeld, D. (2001). *Microeconomía*. Quinta edición, Madrid: Pearson and Prentice Hall, 106-116.

Ramos, J. (1999). *Una Estrategia de Desarrollo a partir de los Complejos Productivos (Clúster) en torno a los Recursos Naturales ¿Una estrategia prometedora?* CEPAL, 6 y 7. Consultada el 20 de febrero de 2010. En línea: http://www.eclac.cl.

Sala-i-Martin, X. (1999). *Apuntes de Crecimiento Económico*. 2ª edición, Barcelona: Antoni Bosch, 7-61, 148.

Scott, B. & Lodge, C. (1985). *US Competitiveness in the World Economy*. Boston: Harvard Business School Press.

Servicio Nacional de Aprendizaje - SENA; Sociedad de Agricultores de Colombia - SAC e Instituto Colombiano Agropecuario - ICA (2006). *Especificaciones técnicas en materia fitosanitaria y organizacional para acceder al mercado de productos agroalimentarios*. Convenio SENA-SAC No. 000152/2005. Bogotá - Colombia.

Schwartz, M.; Ibarra, K. & Adam, C. (2007). "Indicadores de competitividad de la industria exportadora chilena de palta (aguacate)", en: *IV Congreso Mundial del Aguacate*, Viña del Mar - Chile.

Voinea, L. & Filip, A. (2011). "Analyzing the main changes in new consumer buying behavior during economic crisis", in: *International Journal of Economic Practices and Theories*, 1 (1).

World Economic Forum (2009). *The Global Competitiveness Report 2009-2010*. Geneva - Switzerland.

ANNEX

1. INDICATORS

a. Tradability (TR)

$$T_{ij} = \frac{X_{ij} - M_{ij}}{C \cdot A_{ij}}$$

b. Exporting opening level (GE)

$$GE_{ij} = \frac{X_{ij}}{C \cdot A_{ij}}$$

Where: $0 < GE \approx X$

c. Imports penetration level (GI)

$$GI_{ij} = \frac{M_{ij}}{C \cdot A_{ij}}$$

d. Relative balance of trade (BCR)

$$BCR_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$$

Where: $-1 < BCR < 1$

In all of them:

$$C \cdot A_{ij} = Y_{ij} + M_{ij} \; \forall i \neq j \in TR, GE, GI$$

X_{ij}: Exportaciones del producto i por el país j
M_{ij}: Importaciones del producto i por el país j
Y_{ij}: Producción interna del producto i por el país j
$C. A_{ij}$: Consumo aparente del producto i por el país j

2. MARKET ENTRY MODE (MIM)

Positioning (average percentage change of exports)

$m_p = TCM\,X_{ij} = \overline{\Delta\%\,X_{ij}}$: Average percentage change for exports of product i from a country j (axis X).

Efficiency (average percentage change of ratio X_i / X_T).

$m_e = TCM\,PX_{iM} = \overline{\Delta\%\,PX_{iM}}$: Average percentage change of ratio X_i / X_T a product i from a country j; X_T represents worldwide exports for a product i (axis Y). Thus,

$$PX_{iM} = \frac{X_{ij}}{XT_{iM}}$$

Where:

X_{ij}: total exports of product i from country j
XT_{iM}: total exports of product i worldwide

This outcome can be combined to get one indicator called MIM, adding the former calculus. Thus, $MIM = m_e + m_p$; the greater the indicator is, the more competitive the country will be.

3. REVEALED COMPARATIVE ADVANTAGE INDEX

$$IE_{ij} = \frac{X_{ij} - M_{ij}}{X_{iM}}$$

Where:

X_{ij}: Exports of product i from country j
M_{ij}: Imports of product i from country j
X_{iM}: Exports of product i done from all over the world or an specific marketplace

4. ATTRACTIVE MARKETPLACES

$$MA_{ij} = \overline{\Delta\%\,M_{ij}} + \overline{\Delta\%\,PM_{ij}}$$

Where:

$\overline{\Delta\% \ M_{ij}}$: Average percentage change for imports of a product i from a country j (axis X).

$\overline{\Delta\% \ PM_{ij}}$: Average percentage change for ratio $M_{ij} \, / \, M\,T_j$ (axis Y), where:

$$PM_{ij} = \frac{M_{ij}}{\overline{M\,T_j}}$$

M_{ij}: Imports of product i from country j

$M\,T_j$: Total imports of product i made by country j