PRINCIPAL COSTA RICAN TRADE POLICIES IN THE AGRICULTURAL SECTOR 1984-2014

By

AGUILAR LOBO, Rodrigo Alonso

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF DEVELOPMENT POLICY

2017

PRINCIPAL COSTA RICAN TRADE POLICIES IN THE AGRICULTURAL SECTOR 1984-2014

By

AGUILAR LOBO, Rodrigo Alonso

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF DEVELOPMENT POLICY

2017

Professor Chrysostomos
TABAKIS

PRINCIPAL COSTA RICAN TRADE POLICIES IN THE AGRICULTURAL SECTOR 1984-2014

By

AGUILAR LOBO, Rodrigo Alonso

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF DEVELOPMENT POLICY

Committee in charge:

Professor Chrysostomos TABAKIS, Supervisor 

Professor Siwook LEE 

Professor Sherzod SHADIKHODJAEV 

Approval as of May, 2017

ABSTRACT

PRINCIPAL COSTA RICAN TRADE POLICIES IN THE AGRICULTURAL SECTOR 1984-2014.

By

Rodrigo Alonso Aguilar Lobo

Costa Rica has implemented some agricultural policies since 1984. But, these policies have not been evaluated before. This thesis analyzes the principal characteristics of these policies and evaluate them by a correlation analysis with the opening coefficient. Having opening as the best way to improve trade and development, especially in a small country.

ACKNOWLEDGEMENTS

I wish to express my gratitude to my supervising professors, Professor Tabakis, Chrysostomos and Professor Siwook Lee, for their valuable input, patience and guidance throughout the project.

Table of Contents

1. INTRODUCTION

In the early 50s, Costa Rica, Korea, Ireland and Peru held low levels of income per capita, which would not even reach 40 percent of the United States' GDP per capita. From this group, only Ireland increased its income with a 25% margin higher than the one of Costa Rica and Peru. On the other hand, Korea appeared as the poorest country with nearly a third of the income earned by its Latin American peers (Immink, 1993, p.26).

In the 90s, Ireland continued to lead the group. Its income represented 5.7 times greater than Peru's; the latter was 2.6 times greater than Costa Rica's income per capita. In addition, Korea succeeded its Latin American peers with a GDP per capita 3 times higher than the one of Peru by 1992. Just like Korea, Costa Rica as well had reached higher incomes per capita than Peru. In 2015, Costa Rica's GDP was 2.2 times higher than Peru's, in spite of the fact that these nations had developed economically in a similar pace (Immink, 1993, p.29).

This contrasting difference in economic growth between South Korea and Latin America is due to their different strategies towards development. On one hand, South Korea supported a strategy that stimulated production and exports. On the other hand, Latin American countries, like Costa Rica, pursued an economic model named *Import Substitution*.[1] This is the central point of this paper: after import substitution model, Costa Rica implemented an export promotion policy after 1890, trying to improve Costa Rica's performance in global market. It is important to differ/compare whether or not the agricultural policies had a positive impact **in** trade openness.

[1] Among some other countries, Korea and Taiwan attempted an import substitution model, before actively engaging in international trades to improve their domestic value-added and to produce competitive products in an international market.

Today, the most sustainable economic approach is to establish a growing open market. This is enforced by the theory of economic growth, which studies the gradual economic growth of countries. This theory also supports the idea that until a country reaches a steady economic development, it could begin investing on technology and others[2]. (WTO, 2006. P34)

Since 1980, Costa Rica has tried to improve research and technology in productive process. However, the development of technology is an expensive process. In fact, only a selected group of countries holds exclusive rights to its generation[3]. Thus, there are two main ways for a developing country to benefit from technological development, which are: the transfer of technology and direct foreign investment.

The process of transferring technology to a developing nation occurs through international trade[4]. In this regard, Coe expressed *"*when a developed country trades with a developing one, the latter is already investing or somewhat investing in research and development (R &D)" (Coe, 1995, p.124). This process is called Overflow of Knowledge [5] and it refers to the acquisition of technology, found within the acquisition of intermediate and capital goods, which come from foreign investors.

Foreign Direct Investment (FDI) is an indirect mechanism for developing countries to benefit from research and technological development. The promotion of FDI is known as ¨Soft

[2] Total Factor Productivity (TFP) includes improvements in technology as well as organization, know-how, among others.

[3] According to World Bank, between 1970 and 1998, the United States, United Kingdom, Germany, Japan, Switzerland and Holland spent a 90% to 98% of their research and development projects at a global scale (Hallward-Driemeir, 2001).

[4] Another channel studied is foreign direct investment (Mud & Sala-i-Martin, 1999, pp. 276-279).

[5] Also called embodied technology in intermediate and capital goods.

Industrial Policies¨, which do not violate the principles of the World Trade Organization (WTO). On the contrary, it encourages exports and the development of an open economy, based on free trade strategies. (WTO, 2006. P34)

The affirmation above supports the main idea of this paper which is to analyze some Costa Rican agricultural policies since the beginning of the export promotion period and to observe if it shows a correlation on the agricultural open trade index"[6]. This can be done by taking international trade as the ideal strategy to expand the market.

1.1. Purpose of study:

This paper analyzes the main characteristics of some Costa Rican agricultural policies in order to evaluate the impact caused on the agricultural trade opening coefficient.

1.2. General objective

To determine if there is a correlation of some agricultural trade policies implemented by Costa Rica from 1984 to 2015 and the agricultural trade opening coefficient.

1.3. Specific objectives

a) Review the trade policies implemented by Costa Rica during the period 1984-2014.

b) Analyze the main characteristics of the trade policies, enforced by the Costa Rican government.

c) Make a correlation analysis of the agricultural trade policies and the agricultural open trade index.

[6] The the agricultural open trade index is an economic metric calculated as the country's total trade ratio, the sum of exports and imports and the country's gross domestic product (Exports + Imports)/(Gross Domestic Product).

d) Provide recommendations to the government authorities responsible of agricultural policy.

1.4. Hypothesis:

Some of the agricultural policies had a correlation on the agricultural trade opening coefficient.

1.5. Statement of problem

Even though every public policy framework requires a periodical assessment of its outcomes, the lack of evaluation represents a major need in this field. Therefore, for analysis of the role of an agricultural trade policy, it is necessary to consider many historical, political and economic variables.

2. METHODOLOGY

To analyze the major agricultural trade policies implemented from 1984 to 2014, it is necessary to review the literature available. Based on this data, this paper will conduct a study to evaluate the performance of those policies.

First, the researcher will retrieve information from a number of bibliographic sources, both in printed and digital formats. This is done with an effort to (1) provide background information of previous research, (2) identify gaps, and (3) share knowledge for further studies. Finally, a section for discussion of results and suggestions will be presented.

2.1. Agricultural Trade policy in the period 1984-2014

This section will provide a brief description and interpretation of the national agricultural trade policies, among other influential trade factors. This situation involves the

identification of the effects that former administrations have had on the agricultural trade sector from the years 1984 to 2014.

2.2. Correlation of Agricultural Trade policy and Agricultural Trade Openness Coefficient.

A mechanism to assess the outcomes of a trade policy can be done by evaluating its influence on trade opening. It is necessary to appeal international trading opportunities for Costa Rica to improve his economy. In order to carry out a regression analysis, data such as some trade policies and agricultural trade opening coefficient will be considered as an independent variable and as a dependent variable respectively.

2.3. Data Collection

The internet has been the main source of information regarding trade policy and statistics in Costa Rica for national institutions such as the Ministry of Foreign Affairs of Costa Rica. Its website has a significant offer of statistics about trade policies. In addition, the reading of theory in trading models will help to support this paper. Other institutions that provide data about trade policies are: The Ministry of Trade and Industry of Costa Rica, the World Trade Organization, the World Bank and the Trade map among others.

2.4. Data Analysis

Quantitative data will be examined by following a regression analysis process. Moreover, qualitative data will be explored as a result of the documental analysis in the attempt to show the major characteristics and results of each source of data.

2.5. Bibliographic Research

It consists of information from secondary sources such as books, newspapers, magazines, regulations and official data taken from publications issued by governmental institutions.

To grasp an in-depth understanding of the theoretical framework that has regulated trade policies in Costa Rica, it is essential to refer to the official documentation issued by the Costa Rican National Development Plan and Annual Reports of the Ministry of Foreign Affairs of the Republic of Costa Rica.

2.6. Agricultural Openness Coefficient (X+M)/Agricultural GDP

"Opening Coefficient refers to the country's trade percentage of trade, including exports and imports to the country's Gross Domestic Product (GDP)" (Deardorff, 2016, p.18). In this case Agricultural Opening Coefficient refers to trade percentage of agricultural products.

3. QUALITATIVE ANALYSIS: **TRADE CONSIDERATIONS**

Adam Smith, a well-known philosopher and economist, argues that "trade is one of the most important indicators for the development of economic and diplomatic bonds among nations" (Smith, 1976, p.132). Close trade relationships may be fundamental to avoid political conflicts. High trade levels also work as indicators of strong or weak governance. Just like the Costa Rican politician, M. Gutierrez, claims that "the role of governance is essential to ensure the effectiveness of a policy. A successful policy is the one that meets the needs of citizens. In the case of Costa Rica, international trade policies have in many ways benefited our lives" (Gutierrez, 2012, p.78)

In search for a policy that favors economic growth foreign trade policies may serve as a way to promote trade opening and the enlargement of the country's market. This applies,

especially to Costa Rica where its small market has been a problem. In fact, E. Lizano introduces the idea that "The larger the size of the market, the more specialized workforce is required" (Lizano, 2001, p.14). Rapid advancements in technology represent a large investment in infrastructure, education and human resources that only high-end markets can afford, setting aside small markets.

Costa Rica's[7] small market does not provide an ideal economic ground to achieve a rapid economic growth, given the fact that the success of its economy depends on its appeal to Foreign Direct Investment (FDI). I.e., FDI appeal is definitely a key factor to aim for a broader market. For this reason, this document reviews the main aspects of the Costa Rican trade policies, particularly, the ones related to the agricultural sector. These policies are fundamental, as they have long sustained on the country's welfare.

3.1. Trade and its importance from the policies of development

In an attempt to analyze the current use of trade policies, it is necessary to consider the principles of foreign trade theory and the origin of single policies taking into account that both attempt to meet different purposes. The fundamental principles of foreign trade theory lie on the interests and motivations of a country to trade. Indeed, D. Ricardo considers that approaching foreign trade adds value to each nation (Ricardo, 1821). However, from a political view, governments enforce policies with the main goal of contributing to the population's economic health. In this regard, a nation may need to expand its local market to appeal foreign investments.

[7] In this case a small market refers to the small economic demand

From another point of view, trade not only helps to fulfill the basic needs of living but also influences the government's decision-making process. In fact, the country with the largest market and with the greatest human, natural and capital resources is the most attractive one for investments. Therefore, these nations hold a greater capacity to influence the policies that regulate the global market. By doing so, they put their counterparts who struggle to cope with their lack of resources in a position of disadvantage.

Costa Rica can benefit greatly from foreign trade policies. With a small market and a moderate percentage of qualified human resource, its most effective strategy would be to take advantage of the products that result from the agricultural sector. This situation brings us back to the importance of enforcing policies since they represent the starting point to appeal FDI, to induce economic and industrial growth and to affect positively the reputation of the nation in the global market. This panorama shows how trade is important to reach a desirable level of economic and social development. It is important to note that the practice of trading improves the position of a nation in the world. Trade could either imply political power over another market or it could weaken the interdependence of countries, as evident during the 2008 economic crisis.

3.2. Trade Policy

Planning is one of the most important factors that guarantee the future of trade. Governmental institutions are responsible to regulate its legal operations. For this reason, a section in this research is dedicated to the analysis of the existing trade policies agreed during the 2008 economic crisis.

Trade policy affects the economic relations between countries. Free-market trade policies result in faster economic growth and economic independence. In the introduction of this chapter, research supports that free-market trade policies meet the basic needs of living. Consequently, it enhances governance, as claimed by Torno 2010 that "the existence of a consensus in policies, governing international trade and institutions has proven the importance in advancing trade liberalization" (p.21). This idea relates to the fact that trade policy can reduce the impact of an economic crisis, by giving small markets the opportunity to gain competitiveness.

3.3. Costa Rican Trade Policies

This research considers the role of policy-making, which relates to the planning stage, and the role of policymakers. The projections, presented by the government, through the National Development Plan 2006-2010 indicate that exports from 2010 totaled US $13,5 billion (NDP, 2006) In contrast, according to MIDEPLAN, Costa Rica earned only US $9,5 billion (MIDEPLAN, 2010). Based on this information, Costa Rica failed to improve its exports value. The importance of planning becomes more evident as it allows the government to comply with both, the demands of the international market and the needs of the national population.

The Plan for National Development searches for a healthy distribution of its budget to invest on processes such as internal planning, enforcement of favorable policies and feasibility of a multilateral system that sustain the gradual development of internal and external policy.

Regarding the issue of international trade, Velia Govaere 2011, Ministry of Economy Industry and Commerce (MEIC) in Costa Rica stated that "a country's market equals the

world. Its limit is the lack of investment due to the national insufficient competitiveness. From the international view, its limit refers to the nation's capacity to join a global economy"(p.45). As an illustration while the crisis of 2008 affected the global market, the particular markets that depended more on foreign exchange and foreign trade were the mostly affected.

In order to determine the effectiveness of the mechanisms of planning in Costa Rica, it is necessary to analyze the last four publications of the National Development Plans (NDP). This is a key source of information as it contemplates thoroughly various economic and social aspects of Costa Rica.

3.4. Main Costa Rican Agricultural Policy

Since 1984 Costa Rica has tried to improve its performance in the agricultural sector. Some of the programs that it has carried out are included in the annual reports, published by the Ministry of Agriculture. Direct subsidy, for instance, is prohibited by the World Trade Organization (WTO). Some of these agricultural policies have succeeded thanks to the collaboration of the University of Costa Rica, the Ministry of Agriculture and Animal Husbandry (MAG), and the private sector. These policies usually involve training programs for staff members, producers, as well as research projects, like laboratory analyses and phytosanitary services

3.4.1. Training Programs for Companies and Producers[8]

These programs, which are supported by the public and private sector, have proved to be the most successful agricultural policy in Costa Rica. They aim to teach personal staff from

[8] This information was taken from Ministry of Agriculture:

private companies and local producers on subjects like export logistics and safe production daily practices.

Main Goal

Training programs are aimed to teach small and medium-sized producers high quality standard practices to improve the competitiveness of their products.

Focus Area

This section refers to the strategies planned to increase productivity.

The strategic actions[9] are the following:

- The implementation of a national program that provided food security and greater nutritional practice supported by the Ministry of Public Health and other institutions contributed to the increase of the production of goods. It also diversified the population's diet.
- A plan to motivate people to make healthier eating choices, by diversifying their diets and buying the local products.
- An assessment plan, supported by the MAG (Ministry of Agriculture), MEIC (Ministry of Industry and Commerce) and the private sector included periodical evaluations of the value of goods. This process helped to reduce the prices of chemicals, while increasing productivity rates.
- Revision of impact of the General Law of the National Sanitary Service - Animal Health (SENASA), supported by the National Advisory Council for Animal Health.

9

- The study of the effects of the law related to organic agriculture practices. It showed an increase in production and marketing rates.
- Development of a national banking system. Its enforcement led to the creation of the fund, *AVA*, which encouraged women, young producers, small and medium enterprises to produce by offering more financial support with lower interest rates.
- Discussion established upon the restore of credits for producers and agricultural unions.
- the establishment of programs, from the public sector that directly supported the small and medium- producer by giving them access to information and funding opportunities, sponsored by MEIC or Micitt (Ministry of Technology).
- Design and implementation of an optional low-cost risk care insurance for producers involved in agricultural and fishing practices with a low cost.
- A plan for the integration of national commissions, which included members from public and private institutions. This enabled them to unify their efforts and address mutual goals such as the reduction of production costs, the use of new technologies, the development of irrigation infrastructure, the improvements in i- genetic, and others.
- Implementation of a program for training and technical assistance that strengthen the overall management capacities of businesses and organizations that supported environmental care and culture. It helped to increase the number of entrepreneurs and medium-sized business.
- Coordination with the MEIC, for the support of agricultural unions, by the introduction of different services such as soft loans.

3.4.2. Laboratory analysis:[10]

Since quality has been an important issue for demand of agricultural products, the Costa Rican government carried out several laboratory analyses of the quality of products with the purpose of complying with the health standards and regulations. The Agronomy School, from the University of Costa Rica, collaborated with the examination of the products.

These kinds of analyses belonged to an agricultural policy, in which upon request, local products have to undergo an examination to determine their quality. This policy represented an effort to stimulate research and growth of the agricultural sector.

It is important to remark how these analyses are done just when a product is found with certain type of anomaly. Accordingly, this is the second step where the first one is to practice a visual analysis of agricultural products, and then if any issue is found, it would be necessary to apply this kind of laboratory analysis. In light of this, the less test is done the higher the quality of the products would be.

This is not a test to approve international standards. These analyses are done to corroborate general sanitary and phytosanitary conditions to be consumed by humans. For this reason, just suspicious products need this test (more suspicious products represent more laboratory analysis) no matter if it is a product of export or internal consumption.

Laboratory analysis is just the quantitative part of this policy. However, it represents a small part of some research and developed effort in agricultural policy-making, there are some research centers created to improve agricultural products in Costa Rica.

[10] This information was taken from University of Costa Rica:

Research and its Link with the Industrial Development

Since 1984 the Ministry of Agriculture has tried to enhance the communication between producers and academicians in order to establish the most ideal practices for the agricultural industry, including the procedures that encompass a phytosanitary test. Through this, farmers have been producing seeds of higher quality and natural insecticides. So far, the Ministry of Agriculture has established the following centers for research and social assistance.

The Agronomic Research Center (ARC)

It is a unit where professionals from different areas within the Agronomy School investigate issues related to the fertility of soils and plants, organic processes in the soil and postharvest technology; advancements in agricultural biotechnology, biochemistry; and the study of natural resources.

This research center consists of six laboratories. It provides a variety of services such as analyses of soil samples, plant tissues, fertilizers, manure and other organic materials. It has also worked as a facility to provide business-consulting services.

The Grains and Seeds Research Center (GSRC)

This center is dedicated to the scientific and technological development of the agricultural and agro-industrial sectors. It focuses on subjects, like technology, postharvest of seeds and grains, genetic improvement, biotechnology, micro toxins and quality analysis of grains and seeds. This center develops research, training and social

action programs. The GSRC is a research unit that belongs to the Vice-Rector's Institute for Research and Agricultural Research (ARI) of the University of Costa Rica.

The Crop Protection Research Center (CPRC)

This center also belongs to the School of Agronomy, at the University of Costa Rica. Its work focuses on fields such as Acarology, Agro-Ecology, Entomology, Plant Pathology, Nematology, Vertebrate Pest and Molecular Techniques. Its team of specialists works for the early detection of diseases, weeds or pests in crops. In addition, it provides information regarding the prevention of health care problems.

The Animal Nutrition Research Center (ANRC)

This center controls the quality of food for animal consumption. It seeks to strengthen the livestock sector and sustain the care of public health through the development of training programs that help professionals to be up to date on subjects like, animal nutrition and the industrialization of food.

3.4.3. Projects with specific population

Most agricultural producers (not exporters) in Costa Rica are small and medium producers due to the government's help. Other populations such as women and indigenous people attend to educational programs related to agricultural business administration and green production techniques. For example, Appendix 5 shows the results of each program since 1984. These results clearly demonstrate an overall unsteady tendency.

3.4.4. Impact of this policy in some specific products

The following section is a review of the impact of this policy in some specific exported products:

Mellon

According to Appendix 1, this product entered the program in 2002. It shows that improvements in its quality affected the exports for four years. After that period, the improvements are not evident in the number of exports.

Pineapples: According to Appendix 2, after the years 1988 and 1989, the entrance of the producer and exporter to this program represented a successful policy. The growth was constant, except for the years 1994 and 1995.

Bananas

According to Appendix 3, even though this product is one of the most popular exports in Costa Rica, it does not produce a significant improvement in export rates. In fact, multiple companies export this product, and some of those show a slight increase of growth since 2005.

Mushrooms and Truffles

According to Appendix 4, this export product was recently introduced in Costa Rica in 2006. Main companies, such as *Hongos de Costa Rica* and *Verdongo*, participated in the training program. Since then there has been an increasing growth, except during the 2008 economic crisis.

3.5. The National Development Plan (NDP) 1994-1998

The National Development Plan lays out a general action plan to boost the national trade performance. Its goal is to give more access to markets, to appeal more foreign

competition and to give more support programs to the export sector. It is important to note that the NDP mentions any specific trading partners. Hence, data such as results and statistics are not available.

Foreign trade policies should be addressed to fulfill specific objectives. They should guarantee a safe access of Costa Rican exports in the international markets, to promote a more active and systematic involvement of the country in multilateral foreign trade forums, particularly in the newly created World Trade Organization (WTO) which will "position Costa Rica in the global economic map and eliminate all barriers that hinder Costa Rica's competitiveness in the international market." (NDP 1994-1998)

Based on that brief description, it can determine that the goals of the Costa Rican government were to reach more international access, as well as to enhance its competitiveness. Indeed, the government achieved one of its goals. The 1994 Free Trade Agreement between the Government of the Republic of Costa Rica and the Government of the United Mexican States by Law No. 7474 helped to increase the country's participation in international trade. Costa Rica surpassed its expectations with an increasing exports of US$9,04 billion in 2010 to US$ 10,22 billion in 2011 (Statistical Portal, Ministry of Foreign Trade, 2014).

Regarding to export rates, the Ministry of Foreign Commerce of Costa Rica (MCEC) indicates that Costa Rica experienced a significant increase in this area of over 200%. In 2001, Costa Rica received US$ 4,7 billion and US$ 10,22 billion in 2011(MCEC, 2012).

3.6. National Development Plan 2002-2006

The main goal of trade, contemplated in the NPD is to increase Costa Rica's trade integration in the world economy, by establishing fair regulations to ensure competitive

leverage in the global market. Other important goals that the NDP aims to reach are (a) the negotiation and review of trade agreements, (b) the promotion of regional integration within Central American and other continents, (c) the institutional strengthening and improvement of the relationships between public institutions and the private sector, (d) the active and constructive participation within the Multilateral Trade System, (e) the promotion of a higher involvement of small and medium-sized enterprises (SMES) in foreign trade, strengthening their exporting capacities, (f) the improvement of competitiveness at an international scale and (g) the promotion of programs that seek to increase the appeal of FDIs.

3.7. National Development Plan 2006-2010

Compared to previous NDP's plans, this one included clearer goals and more positive results. This plan became evident by the achievement of US$13.5 billion in 2010 in exports, an increase in appeal of foreign direct investment with a value of US$ 1.8billion in 2010, and the enhancement of the export service levels, which resulted in US$6.5billion in 2010. (NDP, 2011)

One of the remarkable aspects of this NDP was its successful strategic process of planning that helped to achieve those results before mentioned. The introduction of a Free Trade Agreement between the Dominican Republic, Central America and the United States, the important negotiation of an agreement between the Central American Association and the European Union, and the negotiation of a Free Trade Agreement with Panama, Colombia and the Republic of China represented some of the most influential actions that improved Costa Rica's economic performance from the years 2006 to 2010.

This strategy meets with the general goal of creating more favorable trade opportunities, and this attempt of negotiating bilateral and multilateral agreements has remained constant since the 1990s.

Along with the idea that planning strategies had improved during this administration, the NPD's 2006-2010 report included valuable information that allowed a greater comprehension of results. This issue included content such as strategic planning approaches, action taking plans, short and long-term goals, indicators, baselines, and the budget available that eased the interpretation of results for assessment purposes.

3.8. Trade policies during 2008 Economic Crisis

During the second half of 2008, the most severe financial and economic crisis since the Great Depression in 1929 unfolded when the United States mortgage market collapsed. This was largely due to the mortgage debts owed by many financial institutions (Kindleberger, 1991). Even though the economic crises are not far a new phenomenon in history, the impact of the widespread 2008 US crisis brought to light the weaknesses of an interdependent global market. For example, the reduction of traditional means of credit and the lack of financing means affected the daily operations of many companies.

The financial crisis also influenced political changes in the global market. For instance, China's strong economy promised a steady and powerful growth. With China now leading the world economy, the global market experienced a harsh period of stagnation. In fact, Costa Rica's exports decreased in November and December 2008.

Many reasons caused this financial crisis. Apart from the US mortgage debts, the economic historian, C. Kindleberger, explains that the crisis is attributed to the American culture of consumerism and the overuse of credit mainly stimulated by the offer of low interest rates (Kindleberger, 1991). The consequences of these practices affected the real estate market as well. For example, buyers would acquire a property with speculative purposes regardless of the buyers' limitations to pay. This state of affairs led to the rise of the mortgage crisis of 2008, whereby housing prices fell dramatically. In fact, the assets of families decreased, as well as their possibilities to purchasing.

3.9. Impact of the 2008 Economic Crisis in the Trade Relations of Costa Rica

Imports

The world economic crisis affected the imports, with a drop of 25% in 2008 and 2009 (TradeMap, 2016). A reduction of this percentage represents negative consequences at an international scale.

Exports

Appendix 6 shows an astonishing capacity for the export products to sustain a steady pace despite the struggle during the economic crisis. This rate dropped only by 9% between 2008 and 2009 (Trade Map, 2016). I.e., in 2009, the trade balance suffered just a slight reduction in its deficit, in comparison to previous years.

Another reason why the exports did not drop as dramatically as the imports is because the prices of products remained low.

3.10. National Development Plan 2010-2014

Although the Costa Rica's market strived to overcome the limitations of economic opening, its government sought to fulfill the needs of the global market, by incorporating a series of programs, designed to generate high quality job opportunities and appealing high value FDIs. In order to do so, these policies consisted of a comprehensive action plan that improved the social sector which increased the percentage of educated human resource.

A more productive human capital was intended to expand, strengthen and utilize the existing trading platform, which translates into the negotiation of new trade agreements and the strengthening of existing ones. In this administration, Costa Rica accomplished a free trade agreement with China and Singapore and the Association Agreement with the European Union.

The report indicates a plan to increase the volume and pace of growth in exports. By the end of the administration, Costa Rica expected to reach $12,000 million in goods and $5,000 million in exports of services a year. (NDP, 2015)

3.11. **Other Costa Rican trade strategies*:***

The positioning of the country as an attractive destination for foreign investment is the result of a 25-year old policy (Govaere, 2011). However, 2010 was a turning point year for the Costa Rican market as the negotiations with China closed, and an agreement with Singapore was completed in May of that same year along with three years of negotiations with the European Union.

The commercial opening practices of Costa Rica have been characterized by its pragmatism. As an active member of the WTO, the country had joined Central America in regional negotiations with the United States and Europe. Moreover, it was successful in negotiating bilateral agreements with strategic countries such as Chile, Canada, Panama, and especially with China.

“Diversification has been crucial, and for that reason, the foreign commercial policy can be considered as one of the most complex in the Latin American region" (Govaere, 2011). Definitely, the diversification of markets and open trade policy has led the country - and the Central American region- to face the international crisis with greater resilience. In fact, the Western Hemisphere Advisors of the International Monetary Fund (IMF) indicate that the region benefited from its foreign policy, giving the fact that many neighbor countries faced a serious decline of 6.3% in their exports in 2009 (IMF, 2010). Central American countries improved with positive changes, ranging the 4% and 10% in exports, according to the data from the Economic Commission for Latin America (ECLAC] (*La Nación*, 2010).

In relation to Costa Rica’s particular scenario, these results confirm that trade opening had deepened in the past 25 years. Nicolas Eyzaguirre, regional IMF Director, stated,

Panama and Costa Rica are the most advanced nations in Central America, thanks to their developing model of diversification, which proved to enhance foreign investments, gain more security and establish long-term and short-term goals. In this context, it is clear that these countries’ strategy is the reason of their economic growth, since tourism and revenues from remittances decreased (La Nación, 2010).

Based on Costa Rica's economic growth, it has pursued a successful approach, based on trade opening, diversification of goods and attraction of high value foreign investments. Only in 2014, Costa Rica managed to participate in 12 different trade agreements. According to Ocampo, (2010), our country had in operation the free trade agreements that ensured a 60% of our exports. These agreements ran under a predictable, clear and transparent legislation.

The Free Trade Agreements between China, Singapore, the European Union, Costa Rica and other 42 preferential trading partners increased the percentage of exports with preferential access to 92% (COMEX, 2012). As a result of a policy of long-term commercial opening, Costa Rica's exports have grown significantly. "In 2010 we exported to more than 135 countries, with approximately 4116 different products. This represented a profit of almost $9 billion" (Ocampo, 2010).

Costa Rica experienced a small reduction of their exports during the global crisis in 2009. In fact, according to a study from COMEX in 2010, "Costa Rica's FDI has grown in average 12% each year since 1990 to 2009." Contrary to previous years, exports reached only US $9.47 billion in 2010 before the impact of the financial crisis. This shows, according to a 2010 report from the Ministry of Foreign Trade, that Costa Rica earned US$4 billion more than the expected amount in 2009 (COMEX, 2011). In this regard, Anabel Gonzalez, minister of Foreign Trade stated,

The year 2010 represented a time of slow recovery in exports, after the 2008 financial crisis. However, the results show that Costa Rica has kept its market in operation thanks to a set of actions, including the signing of the Dominican Republic- Central American

Free Trade Agreement (CAFTA- DR), which resulted beneficial with an increase in exports of 24.1% (COMEX, 2011).

In regard to other commercial dealings, it is important to point out the declarations of the Ministry of Foreign Trade: "The great Republic of China has shown a surprising rapid development. For the Latin American countries, it is evident the necessity to adapt our political realities to meet the incoming trade and economic demands. By doing so, we will appeal foreign direct investment. Today, China is the third largest economy in the world, with a population of more than 1,300 million inhabitants and with an average growth of 9% out of the GDP since 1980" (COMEX, 2011).

In 2006, the Republic of China ranked as Costa Rica's second largest export market. It later became the third largest, since the moment the European Union became a significant market as well. The negotiations between Costa Rica, China and Singapore took place during the first quarter of 2010 (WTO, 2013).

The Republic of China also brought technological input to our country since the trade agreement in 2006. It contributed with technological advancements such as computer processors, drivers, and hardware. This technological input represented 96% of Costa Rican exports to China (PROCOMER, 2012).

3.12. Free Trade Agreements signed by Costa Rica during the period 1999-2014

The number of FTAs is equivalent to the level of a country's opening to favor the reduction of national tariffs, in exchange of a greater participation in the international market. Regarding the legislation of foreign trade policies, the 1962 Central American Agreement of Association unifies the member regions, by establishing a code of customs, valuation and joint classification.

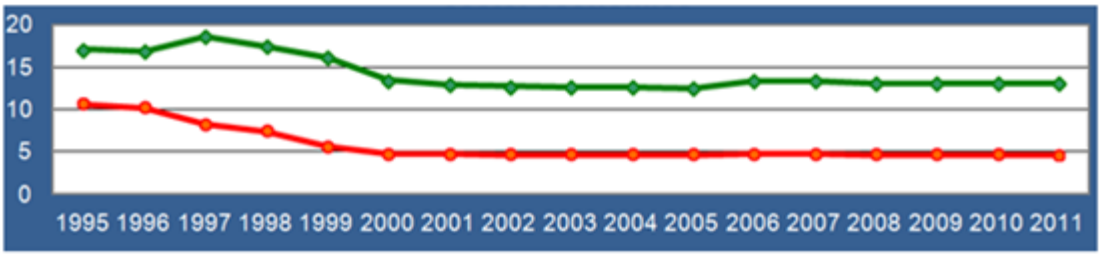
According to Appendix 7, 12 trade agreements over a period of 20 years is a healthy indicator of the level of trade opening in Costa Rica.

3.13. Analysis of the average tariff imposed by Costa Rica to imports

In any commercial relationship, the levy of taxes and tariffs play an important role. For instance, favorable tariffs encourage the production sector, while high tariffs make trades expensive, especially for small producers. (CR Trade Ministry, 2010)

Graph N1 depicts the evolution of tariffs in Costa Rica from 1995 to 2011. It shows a gradual decline in the agricultural and industrial sectors from 1997 to 2000. This panorama would explain the increase in trade flows of the period in question.

Graph N 1: Costa Rica: average tariff by sector. 1995-2011



Green: agricultural sector Red: industrial sector

Source: Chart built by data of annual reports of Costa Rican Ministry of Agriculture: http://www.mag.go.cr/bibliotecavirtual/boletines-indice.html

According to some data from customs authority different tariffs may apply upon the agreement of a bilateral and multilateral trade. For example, a reduction of more than 100% in import tariffs applies to the industrial sector and approximately 50% to the agricultural sector. Despite a 50% decrease in receipts from imports, the agricultural sector has been

able to sustain its economy, and in 1996 and 1997, the agricultural sector grew by almost 2%. (DGA, 2002).

3.14. Non-Tariff Regulations

At a global level, most imports, especially of food are required to meet a standard of quality. According to data from the Foreign Trade Promotions Agency of Costa Rica, in 2011, 12% of total exports of goods came from the sector of processed food sector, and 32% from the agricultural sector (PROCOMER, 2012). Most of these products were raw materials for the food industry.

According to the Ministry of Health, to meet these safety standards in Costa Rica, products such as chemicals, pharmaceuticals, cosmetics, insecticides, pesticides require phytosanitary certificates. In the case of importing toxic substances a permission of imports is required (Ministry of Health 2012).

According to the DGA, Costa Rica keeps a record of the sanitary standards of products, phytosanitary measures (SPS) and technical regulations. From January 2001 to December 2006, Costa Rica submitted 30 SPS notifications to the WTO. From the technical regulations adopted, the vast majority was in relation to technical characteristics of products, including some unprocessed agricultural products. The review of technical regulations, carried out by Costa Rica, ensures the proper functioning of trade, not having to deal with unjustified obstacles to export (World Trade Organization, 2011).

In the same way, products such as cosmetics, chemicals, toxic substances, pesticides, agrochemicals and insecticides require a free sale certificate (CLV) label from the country of origin. This label, after being certified by the Costa Rican Embassy, should include pertinent information about the ingredients to be on sale. In addition, the Ministry of Health must assess the components of drugs, pharmaceuticals and cosmetics every five

years. In the case of manufacturers and importers, they must register their products at the Ministry of Agriculture and at the Animal Husbandry.

3.15. Costa Rica's Labeling Regulations for Agricultural Products

Labeling applies only to products for human consumption and chemical substances. According to law, food, fertilizers, pesticides, hormones, veterinary preparations, vaccines, mouthwashes and pharmacists require Spanish labels (MEIC, 1997).

These requirements include the name of the product, the list of ingredients, net contents, name and address of the importer, country of origin, allotment identification, date of expiration, instructions for the conservation, and instructions for its use. Some additional mandatory requirements include, quantitative labeling of the ingredients and permissions from the Ministry of Health.

3.16. Prohibited Imports in Costa Rica:

Most kinds of ammunitions require a license from the Ministry of Security to be imported. The government, however, allows the imports of fuel, alcohol and tire rims. Ethyl alcohol is allowed with an authorization from the Ministry of Health and the Ministry of Economy, prior to its import (Ministry of Economy, 2012).

4. QUANTITATIVE ANALYSIS: DATA AND MODEL SPECIFICATION

4.1. Variables

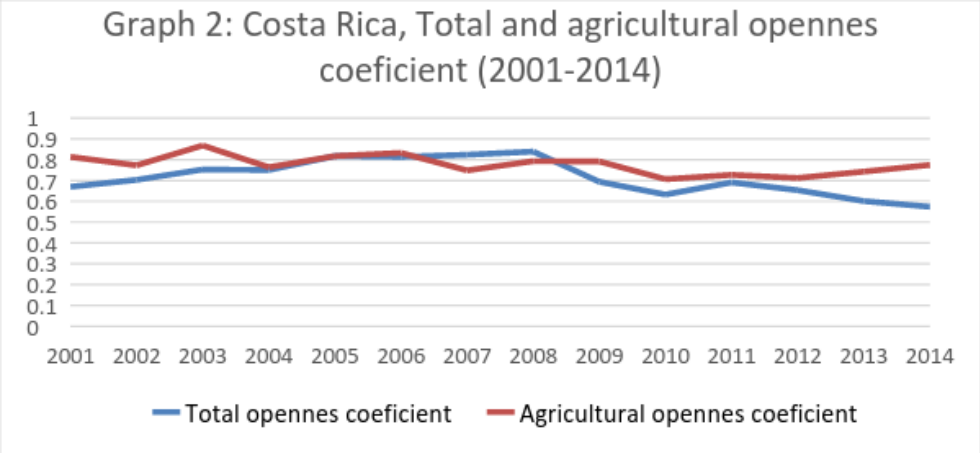
4.1.1. Dependent variable: Agricultural Openness Coefficient.

((I+E)/GDP *(agricultural import and export products and GDP of agricultural sector)

Agricultural opening coefficient shows a degree of agricultural opening in a country according to its overall agricultural activity. Agricultural opening coefficient is chosen as a dependent variable because it shows an inclination for international trade investments.

An open market is the most ideal approach, especially for a small economy. However, it is necessary to conduct a study to determine the impact of international agricultural policy in agricultural opening.

According to Graph 2, the agricultural opening coefficient in Costa Rica had an average of 0.78 from 2001 to 2014; whereas 14 years ago, the total opening coefficient was 0.72.



Source: date taken from World Bank data base: http://data.worldbank.org/

Appendix 6 shows an increase of exports, this information matches with the 2016 index of economic freedom. This appendix shows that Costa Rica had a good performance in terms of economic freedom (67.4) and average of opening coefficient (72.0). It also indicates how the agricultural sector had a slight improvement in comparison to other sectors (78.0 in average). The agricultural sector proved to be strong, as well as the government's strategy to attract foreign investment.

4.1.2. Independent Variables:

4.1.3. Control Variables

A control variable is an important mechanism to calculate the value of the independent variables. Appendix 10 shows the corresponding results for each variable.

Agricultural Land (Percentage of land area)

This topic refers to the share of land area that is arable for the growth of permanent crops. According to the Food and Agricultural Organization (FAO), “arable land is the one for temporary crops, meadows, lands for mowing or for pasture, land for markets or kitchen gardens, and fallow land. Abandoned lands that are a result of cultivation shifts are excluded.” (FAO, 2010)

Employment in Agriculture (Percentage of Total Employment)

“People who work for a public or private employer and receive remuneration in the form of wages, salaries, commissions, tips, piece rates, or pay in kind.” (FAO, 2010)

4.2. Model

$Y=B_0 + B_1 X_1 + B_2X_2 + B_3X_3$

Where:

Y=Opening index / B_0 = Constant / B_1 = Coefficient of Training programs / B_2 = Coefficient of Laboratory analysis / B_3 = Coefficient of Projects with specific population / X_1 = Training programs / X_2 = Laboratory analysis/ X_3 = Projects with specific population.

4.3. Hypothesis Test

Are the training programs correlated with opening coefficient?

In this case the null hypothesis is the not positive correlation between the three policies* and the opening index, and the alternative hypothesis is the positive correlation between those variables.

* Not positive correlation between the Laboratory Analysis and the opening index.

* Not positive correlation between the Training Programs and the opening index.

* Not positive correlation between the projects with Specific Populations and the opening index.

5. EMPIRICAL RESULT: REGRESSION ANALYSIS

5.1 Results from the Laboratory Analyses, Training Programs, Projects for Specific Populations and the Openness Coefficient.

The regression analysis was conducted based on the coefficients showed in the table above. In the case of the projects for specific populations, the results make it difficult to reject yet the null hypothesis. In the case of the laboratory analyses and training programs, it shows a clear series of valid parameters to reject the null hypothesis and to accept the correlation between the opening coefficient and these variables.

Table Number 1: The Regression Analysis, dependent and independent variables

Variable	Beta	Stand. Error	R-squared	T value	P>t
Laboratory analysis	-.0004412	.0000775	0.6382	-5.69	0.000*
Training programs	.0003831	.0001203		3.19	0.004*
Projects with specific population	.0004033	.0010143		0.40	0.694

Source: Stata Results

Project with Specific Population:

Data shows a non-statistical correlation between this policy and agricultural opening index. As it has been previously detailed, before this policy is oriented to help specific

population as indigenous, women, and other vulnerable conditions and it is totally acceptable a non-relation with international trade because most of production goes to local market only.

About Laboratory Analysis:

Table number 1 shows a negative T value between this policy and opening index that means a negative correlation between them. According to the director of Agronomic Research Center of University of Costa Rica it is totally reasonable since "this is not a test for exportation or international qualifications, this a test for general sanitary and phytosanitary conditions and it is not done for all products: it is the second step after a general revision when a product shows problems it goes to laboratory analysis" (Navarro, 2016).

According to the explanation above, laboratory analysis is done just when a product shows some kind of problem that means a higher quality of products that represent less necessity of analysis and that is why a negative correlation is seen; bigger necessity of analysis is related with less quality of products and a lower result in opening index.

Training Programs: This is not a policy to improve export capacity. Training programs try to improve business skills especially to small and middle size companies. It shows a positive correlation and a statistical correlation with agricultural opening coefficient which means that this is a successful policy to improve free trade without violation of WTO rules because it is just a general service of training. This is an important result to encourage this kind of training programs not just in agricultural sector but all other sectors.

5.2.Results from the Laboratory Analyses, Training Programs, and Agricultural Openness Coefficient

Table number 2 shows a correlation between these agricultural policies and the levels of opening. This data shows the changes of 63% in agricultural opening coefficient, in training programs and laboratory analyses.

Table Number 2: The Regression Analysis, dependent and independent variables

Variable	Beta	Stand. Error	R-squared	T value	P>t
Laboratory analysis	-.0004428	.0000762	0.6361	-5.81	0.000*
Training programs	.0004071	.0001025		3.97	0.000*

Source: Stata results

This table shows how these two variables have a strong statistical correlation with opening coefficient in some way more training programs and less necessity of laboratory analysis produce better levels of trade opening.

5.3.Results from the Dependent Variables, Control Variables and Openness Index

The 66% of change in opening index was due to the independent and control variables. It is important to point out how the confident level of laboratory analysis decreases from 99% to 95% after taking into account the control variables.

Table number 3: Results from the Dependent Variables, Control Variables

and Openness Index

Variable	Beta	Stand. Error	R-squared	T value	P>t
Laboratory analyses	-.0003173	.000124	0.6640	-2.56	.017**
Training programs	.0003591	.0001075		3.34	.003*
Agricultural Land	-.000692	.0016501		-0.42	.678
Employment	-.0043142	.0038592		-1.12	.274

Source: Stata results

Taking control variables in count is important to see consistency of independent variable. We can see how variables changed from 2 to 4 but coefficient just changed from 63% to 66% that means a real importance of independent variables and how Training Programs is becoming the most important variable and an important output to making decision process.

5.4.Multicollinearity

Multicollinearity is a common problem found in regression analyses. It occurs when independent variables are correlated. By default, if the correlation between two independent variables is between -0.70 and 0.70, the multicollinearity level is low. In this

case, the correlation between dependent variables is almost 0 (.0002) showing that multicollinearity does not seriously alter the results of a multiple regression model.

Table number 4: Multicollinearity analysis of independent variables

Variable	Beta	Stand. Error	R-squared	T value	P>t
Training programs and laboratory analyses	.009743	.1379	0.0002	0.07	.944

Source: Stata results

6. CONCLUSIONS, RECOMMENDATIONS AND FUTURE EXPECTATIONS

6.1. Conclusions

After reviewing the most important agricultural policies in Costa Rica, it is important to point out how producers, governmental and educational institutions work together to collect the most updated information to design an effective action plan.

Despite the 2008 economic crisis, the agricultural sector did not show any significant change. This is the result of the successful implementation of national policies in favor of the industrial sector. The outcomes were evident based on the positive correlation with the

opening coefficient. Due to the public management that favored an open market model, today, Costa Rica is a middle high-income country.

Although this paper could benefit future decision-making analysis, it is important to consider its limitations, which are the lack of a strong statistical evidence or the lack of a causality analysis, as well as the fact that only three agricultural policies were examined.

During 1984 to 2014, Costa Rica implemented a large variety of agricultural policies, especially after the publication of National Development Plans reports. However, just three industrial policies have been applied the training programs, phytosanitary tests, and projects for a specific population. In the case of phytosanitary tests, they correspond to advancements in research and development, as evident with the creation of the Agronomic Research Center and others.

This paper assumes free trade as the ideal attempt to increase the demand of a small market. For this reason, opening index is used as a successful indicator. As explained before, the quantitative analyses, training programs and phytosanitary tests showed a correlation.

The phytosanitary tests also showed a strong coefficient of determination indicating the importance of research and development for the access and productivity of a market. On the other hand, projects for a specific population did not show correlation with the opening index. This was due to the characteristics of the target population, which were small and middle size companies. This is a population that does not focus on exports. Therefore, it does not have a significant impact in the opening index.

In conclusion, Costa Rica has showed how some policies, especially the ones oriented to research and development, lead to a chain of socio-economic benefits such as more international trade opportunities[11] and higher welfare.

6.1. Recommendations

As a general recommendation this paper propose to make more emphasis and invest more resources in training programs; this is the stronger variable to affect opening coefficient and in effect it has positive impact in international trade and in economic development. Another recommendation would be to implement more evaluation programs of public policy to quantify impact and determine the level of success in each one.

After analyses the general characteristics of some Costa Rican agricultural policies demonstrate the existence of correlation with agricultural trade. The opening coefficient is important to give some recommendation on how to improve actual conditions and continue with free trade and opening, especially to find better developed conditions for a small population, like the case of Costa Rica. For this reason, I suggest the following improvement:

1. **Implement a Policy Evaluation System**

It is important to know the consequence of policies implemented in this case opening index was a way to measure it, and to determine whether the policy has or not an impact.

2. **Improve Research and Development**

[11] According to 2015 index of economic freedom, Costa Rica has an overall free economy.

The government and University of Costa Rica have tried a few plans of research in agriculture. Now, this paper is a proof of how it already has had an impact in trade and opening been the only way of subsidy allow by the World Trade Organization (WTO) indirectly.

3. Continue Training Programs

The main result of this paper is about how teaching producers how to increment efficiency is the best way to get better results in trade taking advantage of comparative advantage.

4. Continue with the Opening Market Policy

Trade is especially necessary for small market countries as Costa Rica. For this reason, it is important to continue with open market policies and reducing barriers.

5. Provide Public Information Sources

During this research was difficult to find some data. For this reason, it is advisable to provide some official Internet sources of policies information.

6.2. Future expectations

The Ministry of Agriculture (MAG) announced in November 2015 a new agricultural policy that resulted from a first assessment stage of the performance of public, private and academic institutions. The documents assessed, included previous policies and data, provided from different sources such as the National Chamber of Agriculture and Agribusiness, UPANACIONAL (Union of Small and Medium Size Producers), CAC

(Central American Agricultural Council), OIRSA (International Regional Organization for Agricultural Health), and others. (MAG, 2015)

A second assessment stage took place and ended in December 31st, 2015. During this stage, all sectors participated with the purpose of collecting more accurate data than the one from the first stage. According to the MAG, this process of policymaking should be considered as a continuous process. The policy consists of three main pillars:

Training programs for companies and producers: The goal is to increase the level of competitiveness of the Costa Rican agricultural sector. There are several issues involved such as safety of the agricultural sector, financing and insurance, information and communication systems, efficiency in management of markets, infrastructure and support.

Laboratory analysis and certificates: This pillar gives priority to the generation and transfer of technology. Technological innovation covers all aspects of life. Thus, technological input should influence scientific, technological and socio-economic research. The use of technology should also alleviate certain social issues, like environmental conservation, mitigation and adaptation to the effects of climate change.

Projects for a specific population: The goal is to invest in socio-economic programs for rural communities and the conservation of the natural resources, by fostering the active participation of the community's members. These projects pay careful attention to the improvement in production quality, through the increasing use of technology, organizational and business management skills; access to financing resources; ecological agribusiness opportunities; increase of clean productions; and sustainable management of land and other resources.

During the presentation of the plan, agricultural groups, former ministers and members of the School of Agriculture from the University of Costa Rica participated in the discussion. A major concern was the lack of guidelines to carry out the plan.

Some of the policy instruments of interest include, effective management of free trade agreements, simplification of bureaucratic procedures, use of digital instruments, modernization of quarantine stations at ports and airports, and improvement of procedures such as inspections, certifications, surveillance and pest and disease control. Additionally, the policy includes, permission to use biotechnology products for animal feeding; use of bilateral protocols and sanitary agreements to increase the market access; access to an information center, consumption of biotechnology products; and the increase of public and private alliances for the development of biotechnology projects, among others.

REFERENCES

Azzawi, Shireen. 2013. Did Trade Liberalization Benefit Female Workers? Evidence on Evidence on Wage and Employment Effects from Egypt. The Economic Research Forum, Working Paper 787. Giza, Egypt. accessed on 13 June 2014.

Bussolo Maurizio, Mizala Alejandra, and Pilar Romaguera.2002.Beyond Heckscher– Ohlin: trade and labour market interactions in a case study for Chile. *Journal of Policy Modeling* 24(2002): 639-666.

Coe, Daniels. 1995. “A Economic new theory”. Endex editorial of Economics. Fith editidion. P86-152.

Comex. 2012. Official data from Costa Rica. Online version. Available in: www.comex.go.cr. Reviewed March 2016.

Contessi, Silvio, Francesa De Nicole, and Li Li. 2013. International Trade, Female Labor, and Entrepreneurship in MENA Countries. Federal Reserve Bank of St. Louis Review

De Cordoba, Santiago, Sam Laird, Jean-Christophe Maur, and Jose Maria Serena. 2005. *Trade liberalization and adjustment costs*, Trade Analysis Branch. UNCTAD, Geneva.

Deardorff's' glossary of international economics. “Openness index”. Online version. Available in . Reviewed November 2015.

Franklin, David L., M.W. Harrell and J.B. Leonard. 1987. Income Effects of Donated Commodities in Rural Panama. *American Journal of Agricultural Economics*. Vol. 69, No. 1. pp 115-122.

Govaere, Delia. 2011. “Ajustes econonomicos modernos: Comercio de Mercancias”. Editorial UNED. San Jose, Costa Rica. Available in . Reviewed January 2016.

Gutierrez, Max. 2012. “Desarrollo Economico y social”. Editorial UNED. San Jose, Costa Rica.

Immink, Maarten D.C and Jorge A. Alarcon. 1993. Household Income, Food Availability and Commercial Crop Production by Smallholder Farms in the Western Highlands of Guatemala. *Economic Development.*

International Monetary Fund. 2010. “Word Data and Economic Conditions. Online version. Available in: . Reviewed March 2015.

*Journal of Agricultural Economic*s. Vol. 58. No. 2 pp 131-142. Praveen, John. 1994. The Short-Run Trade-Off Between Food Subsidies and Agricultural Production.

Kindleberger, Charles. 1991. “Economic Crisis and Development”. Editorial of Columbia University. Second edition.

Milman, Anna., E. Frongillo, M. de Onis and J. Hwang. 2005. Differential Improvement among Countries in Child Stunting is Associated with Long-Term Development and Specific Interventions. *Journal of Nutrition.*

Morgan, Lynn M. 1989. The Importance of the State in Primary Health Care Initiatives. *Medical Anthropology Quarterly*, New Series Vol. 3, No. 3 pp 227-231.

National Development Plan. Annual publication. Ministry of Planning. Government of Costa Rica. Available in . Reviewed November 2015.

Pinstrup-Andersen, Per, N. Ruiz de Londono and E. Hoover. 1976. The Impact of Increasing Food Supply on Human Nutrition: Implications for Commodity Priorities in

Agricultural Research and Policy.

Ricardo, David. 1821. “Principles of political economy and taxation”. Batoche books. Third edition. Online version: . Reviewed march 2015.

Schiff, Maurice and Alberto Valdes.1999. Poverty, Food Intake and Malnutrition: Implications of Food Security in Developing Countries. *American Journal of Agricultural Economics*. Vol. 72, No. 5 pp 1318-1322.

Schiff, Maurice and Alberto Valdes.1999. Poverty, Food Intake and Malnutrition: Implications of Food Security in Developing Countries. *American Journal of Agricultural Economics*. Vol. 72, No. 5 pp 1318-1322.

Smith, Adam. 1976. “wealth of nations”. Editorial: Thomas Candell. Fith edition. P130-205.

Statistical Portal, Ministry of Foreign Trade, 2014. “Trade Statistics”. Available in: Reviewed January 2016.

Torno, Juaquin. 2010. “Normas arancelarias en Costa Rica: Aplicacion practica”. Editorial UCR. San Jose. Costa Rica. Vol. 135, No. 6. pp 1415-1422.

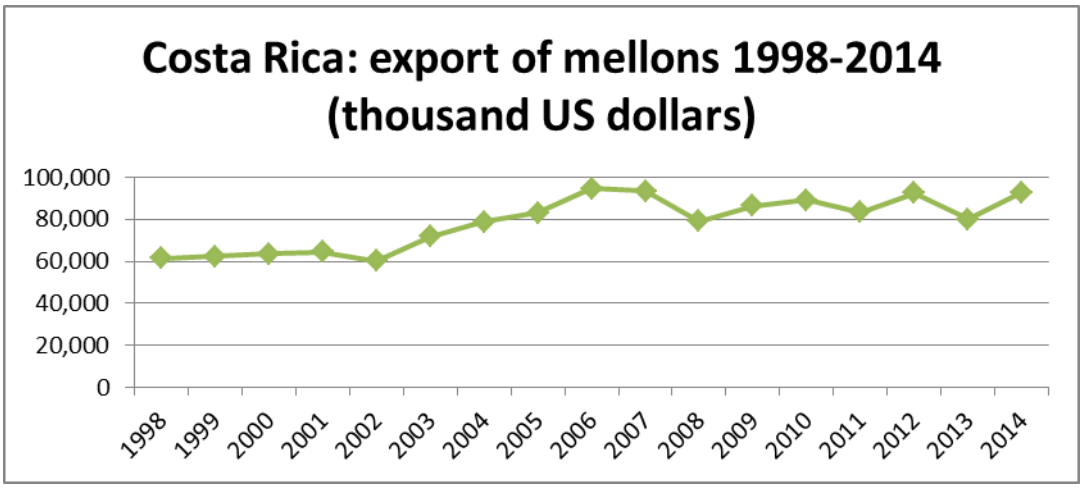
TradeMap. 2013. Statistical Portal. “Imports and exports statistics”. Available in: . Reviewed March 2015.

Working Paper No. 2012-053C. United States. accessed on 17 August 2015.

World Trade Organization (2013). World Trade Report 2013. Factors shaping the future of worldtrade.http://www.wto.org/english/res_e/booksp_e/world_trade_report13_e.pdfh ttp://www.wto.org/e nglish/res_e/booksp_e/world_trade_report13_e.pdf. accessed on 13 September 2015. World Trade Organization. accessed on 30 June 2015.

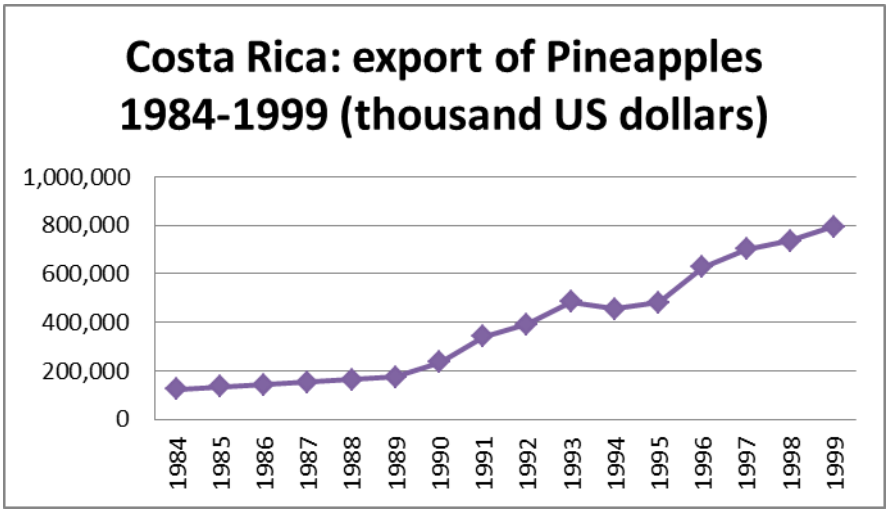
APPENDICES

Appendix 1: Mellon export



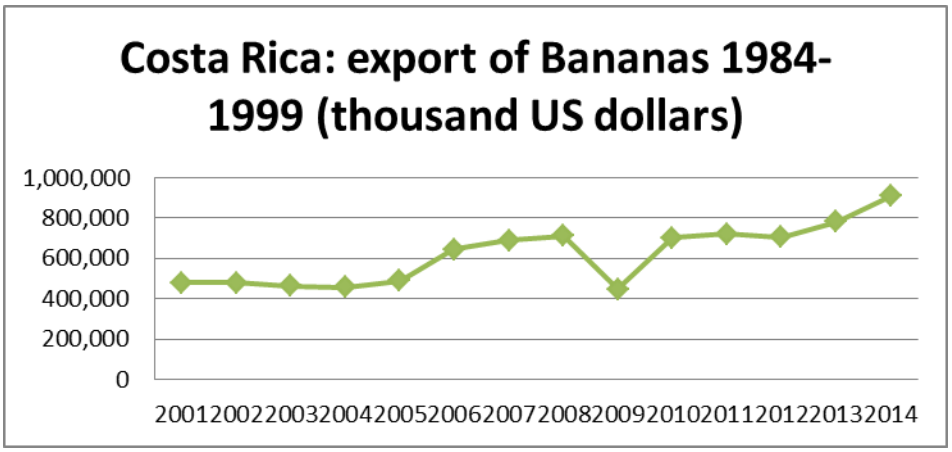
Source: trademap.com

Appendix 2: Pineapples export



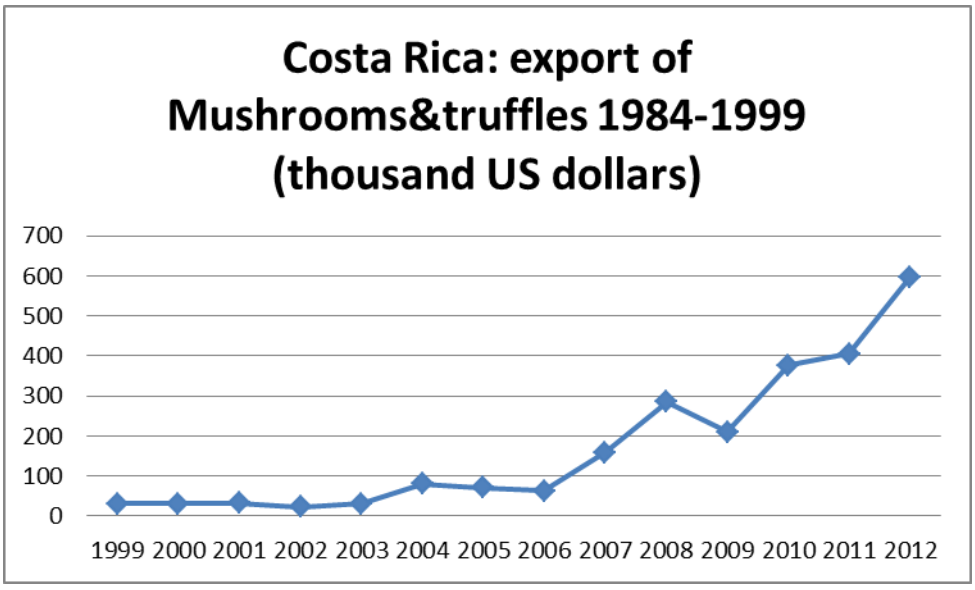
Source: trademap.com

Appendix 3: Bananas export



Source: trade data base: www.trademap.org

Appendix 4: exports of mushrooms and truffles

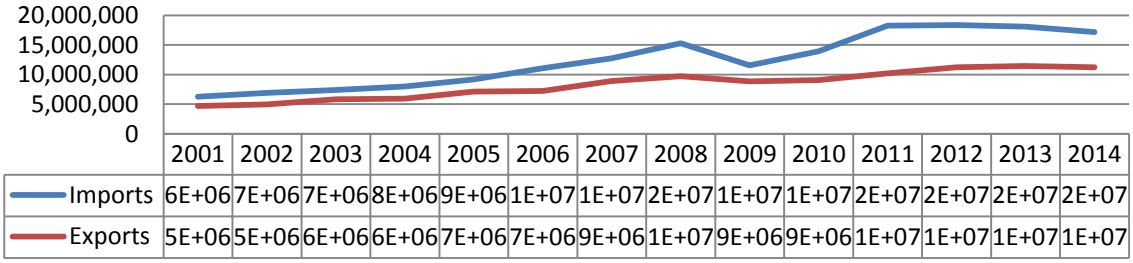


Source: trade data base: www.trademap.org

Year	Training programs for companies and producers	Laboratory analysis and certificates to verify the quality of international standards	Projects with specific population (rural women and youth, indigenous people, areas with low social development index and others)
1984	327	1,210	0
1985	526	1,261	10
1986	626	1,399	50
1987	399	1,431	36
1988	327	1,378	21
1989	455	1,314	44
1990	392	1,304	60
1991	502	1,420	46
1992	677	1,410	46
1993	506	1,378	38
1994	188	1,420	34
1995	573	1,452	36
1996	669	1,357	45
1997	639	1,378	43
1998	554	1,357	44
1999	638	1,113	44
2000	470	1,007	34
2001	448	933	36
2002	450	1,071	31
2003	536	1,096	42
2004	405	1,084	27
2005	470	1,134	29
2006	625	1,121	38
2007	470	1,071	38
2008	394	979	41
2009	379	1,080	41
2010	448	1,051	45
2011	461	998	41
2012	644	1,074	41
2013	670	1,042	54
2014	700	1,100	87

Source: Chart built by data of annual reports of Costa Rican Ministry of Agriculture: http://www.mag.go.cr/bibliotecavirtual/boletines-indice.html

Appendix 6:
Costa Rican Total Exports and Imports 2001-2014 (thousand US dollars)



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Imports	6E+06	7E+06	7E+06	8E+06	9E+06	1E+07	1E+07	2E+07	1E+07	1E+07	2E+07	2E+07	2E+07	2E+07
Exports	5E+06	5E+06	6E+06	6E+06	7E+06	7E+06	9E+06	1E+07	9E+06	9E+06	1E+07	1E+07	1E+07	1E+07

Source: Graph built by data of Costa Rican Central Bank (CRCB) www.bccr.go.cr

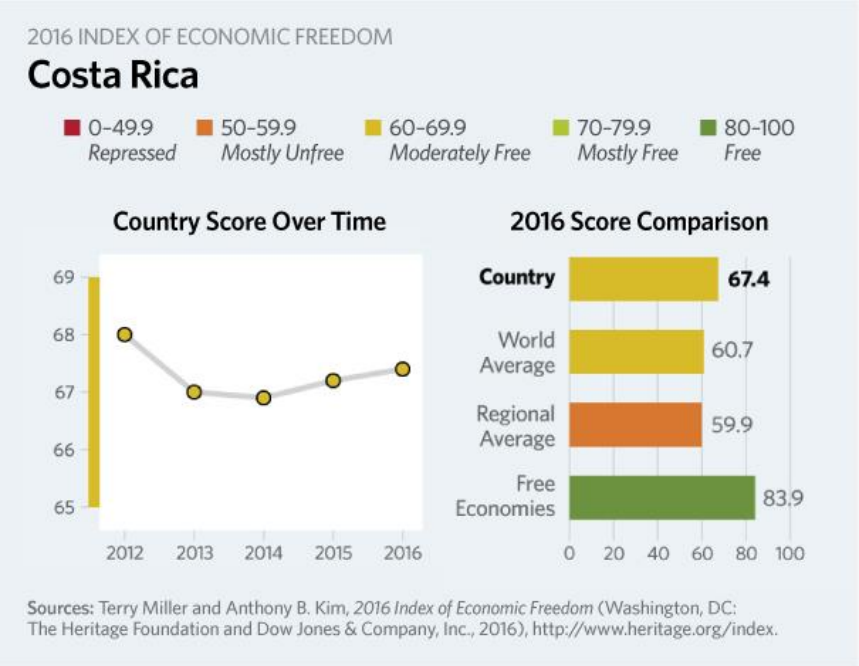
Appendix 7: Costa Rican Free Trade Agreements since 1999 to 2013	
Parts	Date
Costa Rica- Dominican Republic	July 08- 1999
Costa Rica – México	January 01- - 1995
Dominican Republic – Central America	October 04-oct-2001
Chile - Central America	August 01 -2011
Canada - Costa Rica	November 01-nov-1994
Costa Rica- Caribbean Community	October 7 2005
Dominican Republic – Central America United Estates (CAFTA-DR)	March 01 2006
Panamá - Costa Rica (Panamá - Centroamérica)	November 23-2008
China - Costa Rica	August 01-ago-11
Singapore – Costa Rica	April 22 - 2013
Costa Rica – Peru	April 24 - 2013
Costa Rica – European Union	July 11 - 2013
Source: http://www.comex.go.cr/tratados/index.aspx	

Appendix 8: Costa Rica. Agricultural Openness coefficient. Agricultural sector 1984-2014 (*thousand US dollars)

Year	Imports	Exports	GDP	openness coefficient
1984	12,055	280,696	610,989.90	0.479142
1985	26,653	354,630	570,798.73	0.667981
1986	38,740	515,453	723,082.14	0.76643
1987	27,629	367,611	788,552.96	0.501222
1988	27,846	370,507	788,288.67	0.505339
1989	41,937	558,001	851,433.85	0.704621
1990	33,998	452,365	910,625.21	0.534098
1991	41,773	555,809	959,781.30	0.622622
1992	59,451	791,034	1,140,290.26	0.74585
1993	56,212	747,925	1,252,977.96	0.641781
1994	54,301	722,495	1,414,709.15	0.549085
1995	61,907	823,696	1,605,962.91	0.551447
1996	73,966	984,155	1,515,933.31	0.697999
1997	80,123	1,066,069	1,667,766.88	0.687261
1998	80,301	1,068,437	1,805,024.51	0.636411
1999	103,009	1,370,583	1,658,639.54	0.888434
2000	82,017	1,091,280	1,514,912.09	0.774498
2001	82,109	1,092,497	1,443,517.06	0.813711
2002	77,352	1,029,223	1,431,772.22	0.772871
2003	92,510	1,230,907	1,524,025.63	0.868369
2004	85,398	1,136,272	1,599,287.48	0.763884
2005	102,685	1,366,281	1,796,843.34	0.817526
2006	131,377	1,538,039	2,004,855.30	0.832686
2007	131,756	1,543,072	2,237,370.00	0.74857
2008	169,907	1,533,922	2,148,328.51	0.793095
2009	171,364	1,550,065	2,174,319.43	0.791709
2010	181,691	1,664,588	2,613,479.62	0.706445
2011	194,543	1,724,505	2,639,186.82	0.727136
2012	213,681	1,754,253	2,763,340.87	0.712157
2013	221,738	1,826,312	2,757,255.76	0.742786
2014	249,089	1,901,278	2,774,944.54	0.774922

Source: own construction with data of World Bank

Appendix 9


2016 INDEX OF ECONOMIC FREEDOM
Costa Rica
0–49.9 Repressed
50–59.9 Mostly Unfree
60–69.9 Moderately Free
70–79.9 Mostly Free
80–100 Free
Country Score Over Time
69
68
67
66
65
2012
2013
2014
2015
2016
2016 Score Comparison
Country
67.4
World Average
60.7
Regional Average
59.9
Free Economies
83.9
0
20
40
60
80
100
Sources: Terry Miller and Anthony B. Kim, 2016 Index of Economic Freedom (Washington, DC: The Heritage Foundation and Dow Jones & Company, Inc., 2016), http://www.heritage.org/index.
heritage.org

Appendix 10

Costa Rica: Result of main agricultural trade policy (1984-2014)			
Year	Training programs for companies and producers	Laboratory analysis and certificates to verify the quality of international standards	Projects with specific population (rural women and youth, indigenous people, areas with low social development index and others)
1984	327	1,210	0
1985	526	1,261	10
1986	626	1,399	50
1987	399	1,431	36
1988	327	1,378	21
1989	455	1,314	44
1990	392	1,304	60
1991	502	1,420	46
1992	677	1,410	46
1993	506	1,378	38
1994	188	1,420	34
1995	573	1,452	36
1996	669	1,357	45
1997	639	1,378	43
1998	554	1,357	44
1999	638	1,113	44
2000	470	1,007	34
2001	448	933	36
2002	450	1,071	31
2003	536	1,096	42
2004	405	1,084	27
2005	470	1,134	29
2006	625	1,121	38
2007	470	1,071	38
2008	394	979	41
2009	379	1,080	41
2010	448	1,051	45
2011	461	998	41
2012	644	1,074	41
2013	670	1,042	54
2014	700	1,100	87
Source: Chart built by data of annual reports of Costa Rican Ministry of Agriculture: http://www.mag.go.cr/bibliotecavirtual/boletines-indice.html			

Appendix 11

Costa Rica: Other agricultural factors 1984-2014

Year	Agricultural land	Employment in agriculture
1984	53.8	31
1985	52.5	27
1986	51.2	27
1987	49.7	28
1988	48.2	28
1989	46.6	26
1990	45.1	26
1991	3.8	26
1992	42.3	24
1993	41.4	23
1994	41	21
1995	40.1	22
1996	39.1	22
1997	38.2	21
1998	37.5	20
1999	37	20
2000	36	20
2001	35.9	16
2002	35.8	16
2003	35.8	15
2004	35.7	15
2005	35.4	15
2006	35.5	14
2007	35.3	13
2008	35.1	12
2009	35.6	12
2010	35.6	15
2011	35.6	14
2012	35.5	13
2013	35.6	13
2014	35.6	12

Source: World Bank data base