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The successes and shortcoming of Costa Rica exports diversification policies

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The successes and shortcoming of Costa Rica exports diversification policies

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Acronyms

ANAPROBAN	Chamber of Independent Banana Producers
ASBANA	Association of Banana Producers
BCCR	Central Bank Of Costa Rica
CAB	Banana Environmental Commission
CACM	Central American Common Market
CANABACR	National Chamber of Banana Producers
CANAPEP	National Chamber of Producers and Exporters of Pineapple
CAT	*Certificado de Abono Tributario*
CBI	Caribbean Basin Initiative
CIB	Banana Institutional Council
CINDE	Costa Rica Investment Promotion Agency
COBAL	*Compañía Bananera Atlántica Limitada*
CODESA	Costa Rican Development Corporation
COMEX	Ministry of Foreign Trade
COMTRADE	United Nations International Trade Statistics Database
CORBANA	Banana Development Corporation
ECLAC	Economic Commission for Latin America and the Caribbean
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investments
FOB	Free On Board
FTA	Free Trade Agreement
FTZ	Free Trade Zones
GDP	Gross Domestic Products
ICA	International Coffee Agreement
ICAFE	Coffee Institute of Costa Rica
ICEX	Spanish Institute for Foreign Trade
ICO	International Coffee Organization
IMF	International Monetary Fund
ISI	Import Substitution Industrialization
MAG	Ministry of Agriculture and Livestock
MIDEPLAN	Ministry of National Planning and Economic Policy
MINEX	Ministry of Exports
NIC	National Investment Council
NPP	National Pineapple Program
OPEC	Organization of the Petroleum Exporting Countries
PINDECO	Pineapple Development Company – Del Monte
PROCOMER	Costa Rica Agency for International Trade Promotion
SEPSA	Executive Secretariat for Agricultural Planning
SITC	Standard International Trade Classification
TAR	temporal admission regime

TOT	Terms of trade
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
WDI	World Development Indicators

Abstract

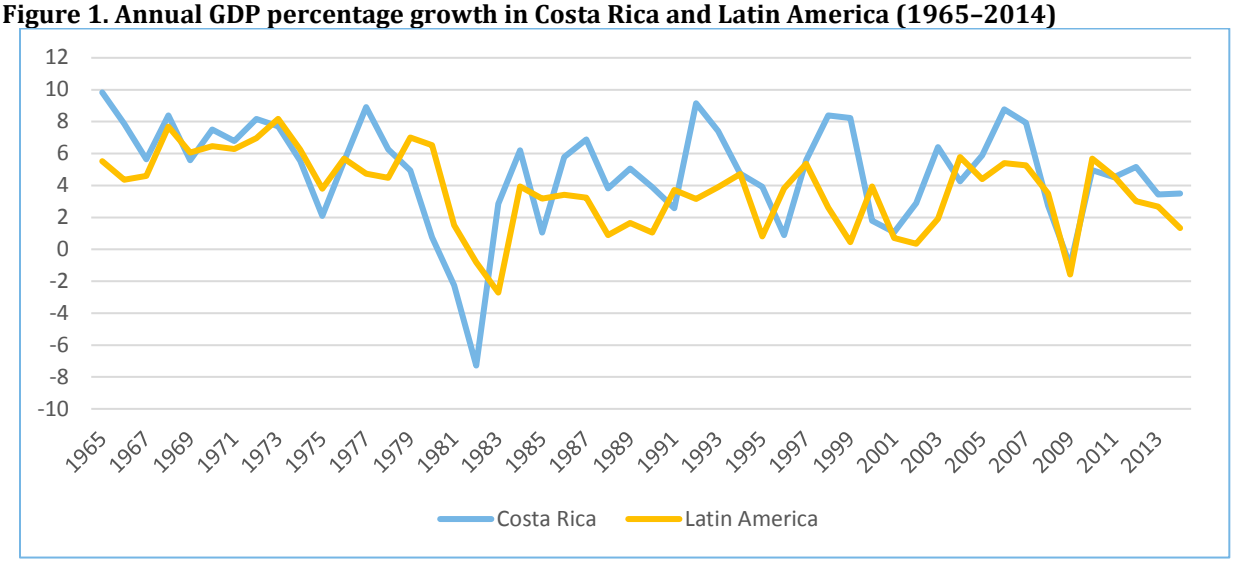
Costa Rica is often cited as an example of a small and open economy that is lauded for its relative economic stability and a long democratic tradition. In the wake of a severe economic crisis in the 1980s, Costa Rica abandoned a development model based on import substitution industrialization, and started implementing new policies fomenting export growth, export diversification and the attraction of foreign direct investment. The results of this economic transformation were quite visible in the industrial sector, with major international investments from capital–intensive firms (e.g. Intel), and the significant increase of the share of the manufactured goods exports to total exports. There were also very visible changes in the agricultural sector, namely the loss of economic importance of traditional export commodities (e.g. coffee and bananas), and the emergence of the pineapple and food processing industries. This new export–oriented economic development model has resulted in economic development and increases in the average income of the overall population; however, while there was a reduction in poverty for the past decades, income inequality has persisted. The latter fact may be an indicator that future export fomenting policies need to be more inclusive and take into account the distribution of future economic prosperity.

I. Background and context

a. Costa Rica economic structure and export diversification

A careful analysis of the Costa Rican socio–economic context of the past decades reveals the change from a model oriented towards the internal market, to a model aimed at integrating the country into the world market. In this context, export activities have been strongly promoted by government, including export of "non–traditional" agricultural products. Costa Rica has also been widely cited by the economic development literature as an example of a small and open economy that is lauded for its relative economic stability and a long democratic tradition. Its population of little over four million people has an income per capita that is above the Latin American's average. In terms of economic performance, from 1960 to 2014, Costa Rica has consistently outperformed Latin America. During this period of time, the economy of Costa Rica has expanded at an average annual rate of 4.8 percent in comparison to a 3.7 percent average growth rate in Latin America (Figure 1). During the debt crisis that affected the region in the early 1980s, Costa Rica's economy suffered a more severe contraction than the average of Latin America[1]. In the wake of this economic crisis, Costa Rica abandoned a development model based on import substitution and started implementing new policies fomenting export growth, export diversification and the attraction of foreign direct investment.

Figure 1. Annual GDP percentage growth in Costa Rica and Latin America (1965–2014)



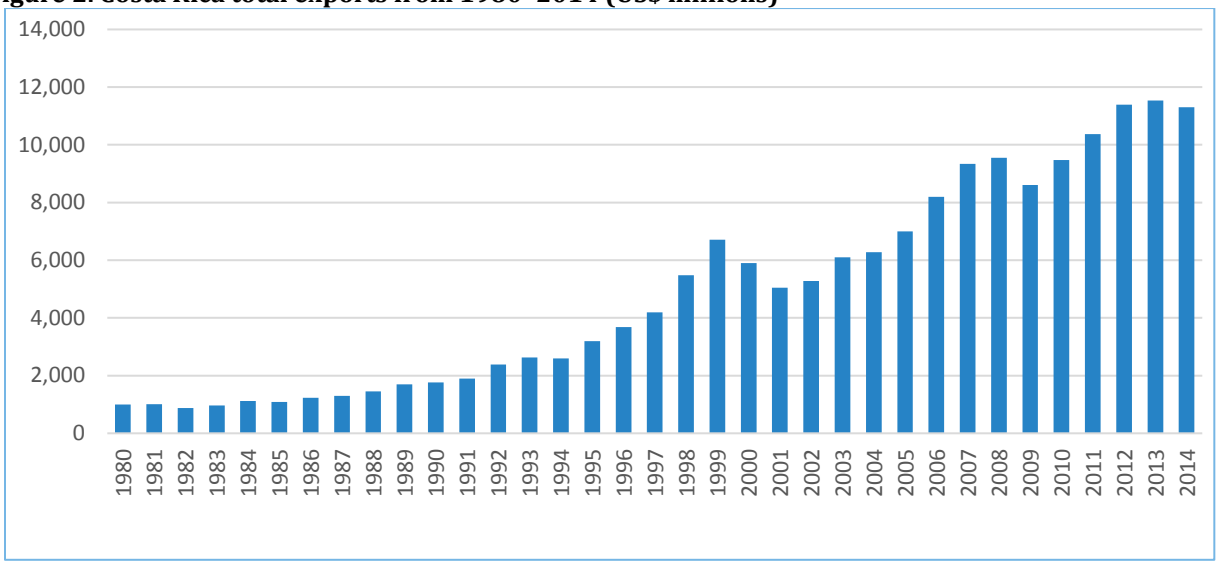
Source: World Bank, (World Development Indicators, 2015)

Costa Rica created export processing zones that successfully attracted foreign capital investments from sectors with high technological content throughout the 1990s and 2000s. As a result of these policies, Costa Rica's exports have experienced important and almost uninterrupted growth from 1980 to 2014 – with the exceptions of years in where there was

[1] In the most recent recession, starting in 2008, Costa Rica and the entire Latin American region experienced a similar economic downturn.

a global economic recession (Figure 2). It is important to note that the growth in exports accelerated in the mid–1990s, which coincides with the beginning of Intel operations in Costa Rica in 1997.

Figure 2. Costa Rica total exports from 1980–2014 (US$ millions)



Source: COMEX based on figures from PROCOMER.

Costa Rica's export supply also experienced recent and important changes in its structure. This nation went from being highly reliant on exports of a few primary goods (e.g. coffee, bananas, etc.) to having flourishing high–tech and medical equipment manufacturing exporting industries. The agricultural and service sectors also experienced a significant diversification over time. Looking at the breakdown of Costa Rica's exports by sectors and sub–sectors, in 2014, agricultural and food exports together accounted for over 35 percent of the value of total exports. Specifically, fruits and vegetables, legumes and roots represented over 80 percent of total agricultural exports, whereas dairy products accounted for almost 40 percent of exports from livestock and fishing subsectors (Table 1). In the industrial sector, electrical and electronic products represented almost a quarter of total exports, whereas medical and precision equipment accounted for 16 percent of total exports.

Table 1: Costa Rica's export composition by sectors and sub–sectors (2014)

SECTOR	Thousands US$	Share
Agricultural	2 574 430	22.77%
Food	1 441 860	12.75%
Electrical y electronic	2 608 407	23.07%
Medical and precision equipment	1 815 450	16.06%
Chemicals	580 996	5.14%
Metal–mechanic	408 758	3.62%
Plastic	399 843	3.54%
Livestock and fishing	366 498	3.24%
Rubber	247 085	2.19%
Textiles, leather and footwear	173 106	1.53%
Others	145 383	1.29%
Non–metallic mineral products	127 476	1.13%

Paper and cardboard	126 742	1.12%
Timber	70 273	0.62%
Transportation materials	67 740	0.60%
Jewelry	64 294	0.57%
Mineral products	45 623	0.40%
Furniture and lighting fixtures	40 291	0.36%
Musical instruments and parts	160	0.00%
Grand Total	11 304 415	100.00%

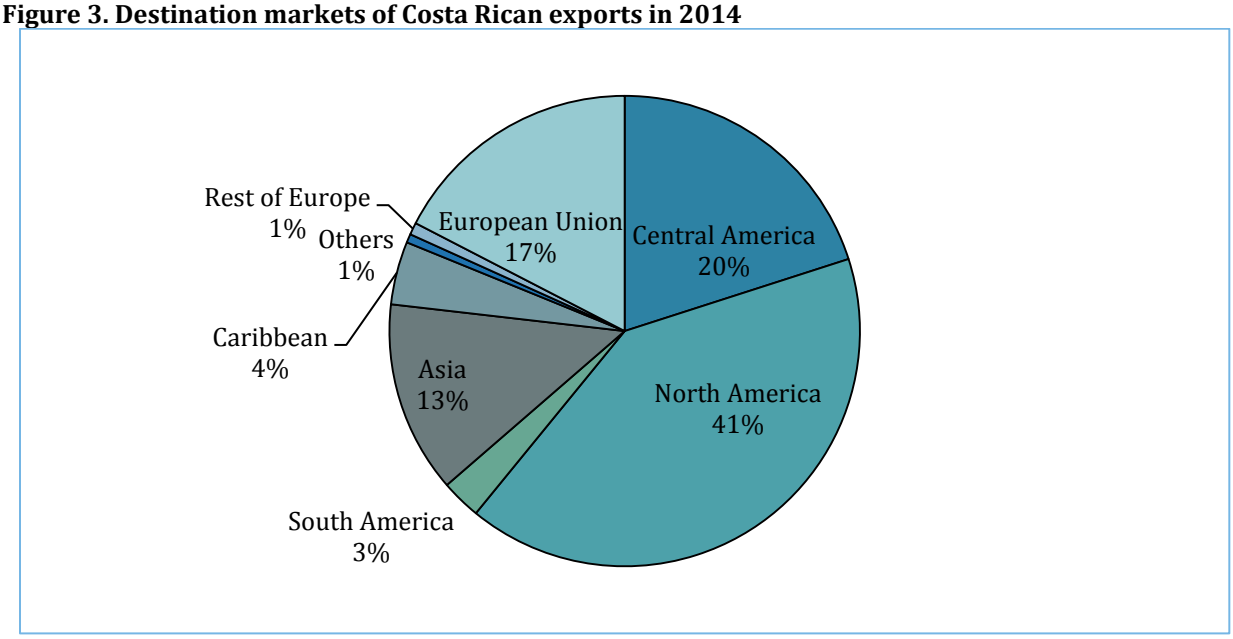
Agricultural Subsectors	**Thousands US$**	**Share**
Fruits and vegetables, legumes & roots	2 081 424	80.85%
Coffee, tea, yerba mate and spices	288 973	11.22%
Plants, flowers and foliage	154 090.46	5.99%
Other agricultural products	49 942.78	1.94%

Livestock and Fishing Subsectors	**Thousands US$**	**Share**
Dairy	145 003	39.56%
Fisheries	113 650	31.01%
Meats	85 770	23.40%
Other livestock and fishing products	22 075	6.02%

Source: PROCOMER.

Despite the clear advances in product export diversification, Costa Rica's exports remain geographically concentrated and heavily dependent on a few destination markets. In 2014, Central America and North America together accounted for 61 percent of the export market (Figure 3).

Figure 3. Destination markets of Costa Rican exports in 2014



Source: PROCOMER.

b. Costa Rica's Agriculture

Costa Rica has a long tradition of agricultural production. With an initial focus on direct sales and little to no processing, a new Costa Rican agricultural sector has evolved and gone through a modernization process. In 2011, Costa Rica's agriculture accounted for 6.6 percent of the GDP and employed 15 percent of the population. Furthermore, this economic sector has continued to grow in recent years as response to a growing demand from domestic food processors (i.e. concentrated, juices, soy oil, etc.) and from the tourism sector, and it includes now multiple subsectors (Table 2).

Table 2. Subsectors of Costa Rica food sector by valued added generated (2006).

Subsector	Share (%)
Animal feed	3
Sweets and candy	1
Sugar	3
Coffee	3
Canned food	4
Seafood	5
Milling	7
Baking (bread)	7
Oils	8
Dairy	13
Meats	13
Beverages & tobacco	23
Others	9

Source: Montero, M. (2007) using Costa Rica Central Bank data.

Food processors in Costa Rica represent 25 percent of the country's total manufacturing sector with over 1 300 firms[2]. The food industry is also responsible for 35 percent of total manufacturing jobs, 4.5 percent of total employment, and 7 percent of the country's GDP. This sector has been characterized for its dynamism and is comprised mainly of small and medium sized companies that are typically owned by national capital or are part of a family business model. In 2006, close to 67 percent of these firms employed less than ten employees (Nuchera *et al.*, 2009).

Costa Rica has achieved an agricultural trade surplus that amounted to US$2 390 million in 2012, and its two main agricultural exports were bananas (US$812 million) and pineapples (US$787 millions) (Nuchera *et al.*, 2009; ICEX, 2013). Together these two products represented 78 percent of Costa Rica's total agricultural exports, over 16 percent of Costa Rica total exports and US$1.77 billion in value. On the other hand, coffee exports ranked 7 as the most important export product and accounted for 2.4 percent of total exports with over US$275 million in value (Table 3).

[2] The main food processors operating in Costa Rica include: Nestlé Costa Rica, Coca Cola FEMSA and La Florida distributor in beverage sector; Compania Nacional de Chocolates DCR for chocolates and bakery goods; Alimento Heinz de C.R.; Derivados de Maiz Alimenticio in the grain sector; Productores de Monteverde, Dos Pinos and Sigma Alimentos in the dairy industry; Grupo Industrial El Angel and Unilever Central America for a variety of products.

Table 3. Ranking of Costa Rica main agricultural exports (2014)

Ranking in comparison to Costa Rica's main exports	Code	Product Description	Value (US$)	Share of Costa Rica Main Exports (%)
2	080390	Bananas, fresh or dry	905 066 376	8.0
3	080430	Tropical pineapples, fresh or dry	868 391 356	7.7
7	090111	Coffee – not roasted or decaffeinated	275 885 667	2.4
13	151110	Bulk palm oil	102 078 769	0.9
17	080719	Fresh cantaloupes	70 884 222	0.6
18	200941	Tropical pineapple juice, with a Brix value equal or less than 20	70 278 570	0.6
20	071410	Yuca roots, fresh, refrigerated, frozen or dry	69 355 294	0.6
21	210390	Other sauces	69 267 151	0.6
22	200899	Other fruits and edible plant parts, processed and preserved in other ways	66 908 202	0.6
24	170114	Sugar cane	64 254 331	0.6
25	081190	Other fruits, uncooked or boiled with water or steam, frozen	60 855 549	0.5

Source: COMEX based on figures from PROCOMER.

The United States is the main market for Costa Rica agricultural exports with a total of US$ 1 487 million in 2012 – 35 percent of the total export market. Other important agricultural export markets include Holland (US$341 millions), the United Kingdom (US$236 million) and Belgium (US$226 million) (ICEX, 2013).

From a historical perspective, labor productivity in the agricultural sector was relatively low in 1950s. Agriculture employed 55 percent of the labor force, agricultural output was 41 percent of total GDP, and both coffee and bananas represented 97 percent of total exports (Gonzalez–Vega and Cespedes, 1993). During the earlier 1950s, the coffee and banana industries were strong economic drivers due to high coffee prices. The Figueres administration (1953–1958) promoted the diversification of agricultural output and the increase in coffee production by encouraging the use of fertilizers, new varieties, better technologies, and credit supply. There was also an increase of income tax rates for banana companies (from 15 percent to 30 percent), and negotiations for higher wages for plantation workers (Gonzalez–Vega and Cespedes, 1993). Despite these policies, the share of coffee and bananas in total exports decreased from 97 to 72 percent over the period 1950–1963, while the share of beef and sugar in total exports increased to 11 percent. During the early 1970s, the economy was more diversified, population and income per capita doubled, and agriculture was no longer the most important sector of the economy. By then, coffee and bananas accounted for 50 percent of total exports (Gonzalez–Vega and Cespedes, 1993).

The economic crisis that affected Costa Rica during the 1980s was highly influenced by the decrease in exports earnings due to the fall in coffee prices. In addition, From 1983 to the early–1990s, "non–traditional" exports promotion programs were started, and included products such as textiles, fresh and frozen fish and shrimp, flowers, ornamental plants and foliage, and fresh pineapple (Clark, 1995; Clark 2001), but excluded bananas, coffee, and sugar (PROCOMER, 2009).

i. Importance of bananas, coffee and pineapples to the Costa Rican economy

Because of their economic importance, bananas, coffee and pineapples sectors deserve a more detailed discussion.

Banana

Costa Rica is the second largest banana exporter in the World, only second to Ecuador. In 2012, banana exports generated US$819 million in foreign currency and accounted for 40.4 percent of total agricultural exports. Banana production also represented 2.1 percent of Costa Rica's overall GDP and 32.8 percent of the agricultural GDP. The production of bananas in Costa Rica is conducted in large plantations owned by independent producers and multinational companies. In 2013, total harvested area was 42 842.5 hectares of which multinational companies' harvested area was 55 percent, while the remaining share was harvested by independent producers[3]. In 2013, 1 898 609.1 tonnes of bananas were exported, and 71.5 percent of these exports (US$603) derived from three banana trading companies: Corp. Des. Agricola Del Monte S.A., Standard Fruit Company, and Compañía Bananera Atlántica Ltda. Moreover, 55 percent of export revenues (US$ 463.8) derived from marketing companies, whereas the remaining share comes from independent producers (Table 4). The banana industry is characterized by being highly concentrated under three firms and dominated by trading companies that have their own farms. The main markets for Costa Rica's banana exports are the United States, Germany, Belgium and Italy – together they account for 98 percent of the export markets (ICEX, 2013).

Table 4. Banana companies' export shares (2013)

Company	Total[1]				Banana Companies[2]			
	Tonnes	%[3]	Dollar[3]	%[4]	Tonnes	%[3]	Dollar[3]	%[4]
Corp. Des. Agricola Del Monte S.A.	568 036.5	29.9	252.3	29.9	508 425.9	48.7	225.8	48.7
Standard Fruit Company	380 324.9	20.0	168.9	20.0	239 553.1	22.9	106.4	22.9
Compañía Bananera Atlántica Ltda	410 342.0	21.6	182.3	21.6	219 441.4	21.0	97.5	21.0
Tropicalrica Internacional, S.A.	93 922.1	4.9	41.7	4.9				
Comercializadora Bananeros De Costa Rica	69 016.5	3.6	30.7	3.6	69 016.5	6.6	30.7	6.6
Fyffes International	87 666.5	4.6	38.9	4.6				
Comercializadora De Servicios – Cosefruta	12 246.2	0.6	5.4	0.6	377.0	0.0	0.2	0.0
Palmitos De La Rita Ltda	34 886.9	1.8	15.5	1.8	348.3	0.0	0.2	0.0
Tropical Fruits Trading Company Inc	91 452.7	4.8	40.6	4.8				
Arjust, S,A,	60 733.5	3.2	27.0	3.2				
Otros	89 981.2	4.7	40.0	4.7	7 041.4	0.7	3.1	0.7
Total	1 898 609	100	843.3	100	1 044 203	100	463.8	100

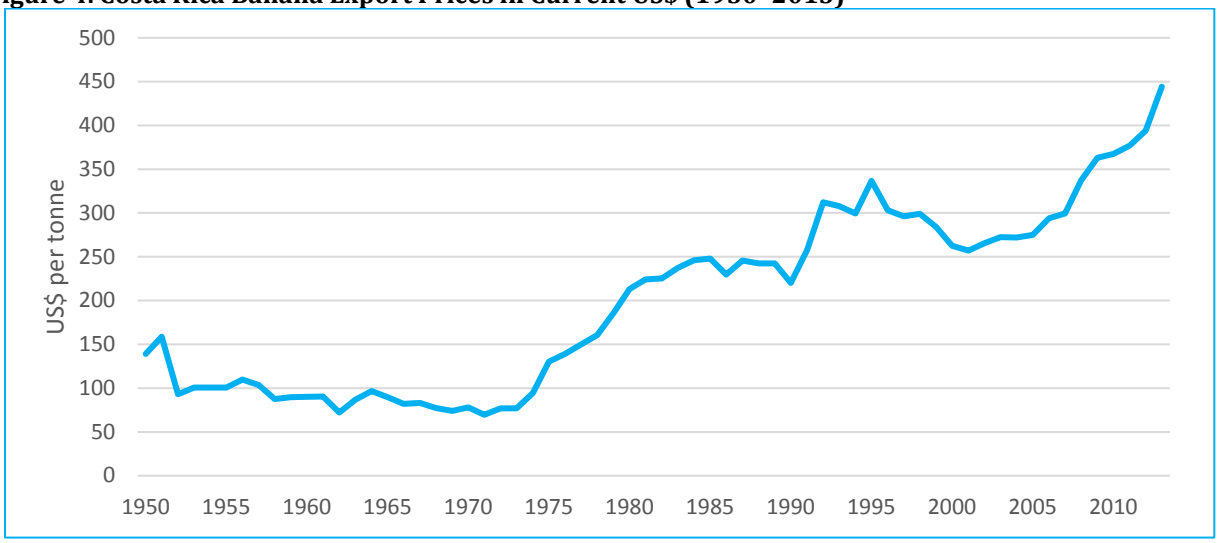
Sources: Author's elaboration with data from CANABACR (http://www.canabacr.com/companias_propio_ind.html)
Notes: 1. Includes banana export sales from both marketing companies' own farms and independent producers' own farms. 2. Export sales from marketing companies' own farms. 3. Millions of US$. 3. Refers to tonnes. 4. Refers to dollars.

[3] Author's calculations using data from CANABACR, 2015 (available at: http://www.canabacr.com/companias_propio_ind.html).

Banana exports started in 1880 with the first shipment to the United States, initiating the development of one of the most important industries in the country. In 1884, Costa Rica had 35 banana farms that represented 4 000 acres and 570 000 banana plants producing 420 000 banana bunches (CANABACR, 2015). Banana production is mostly located in the region of Limon, also with plantations in the Central Pacific and South Pacific areas. Costa Rica has one of the highest productivity ratios[4] of banana in the world thanks to technical advances and research in this sector. In 2014, the banana productivity ratio reached 46.5 million tonnes per harvested area, which was slightly superior to the 2013 ratio.

The price of a tonne of bananas experienced a slow downward trend during from the 1950s to the early 1970s, and it remained in the US$100–60 per tonne price range. Afterwards, bananas prices have increased significantly for over the past three decades – only briefly interrupted in the early 1990s and 2000s. By 2013, Costa Rica banana export prices approached the US$450 per tonne mark (Figure 4).

Figure 4. Costa Rica Banana Export Prices in Current US$ (1950–2013)



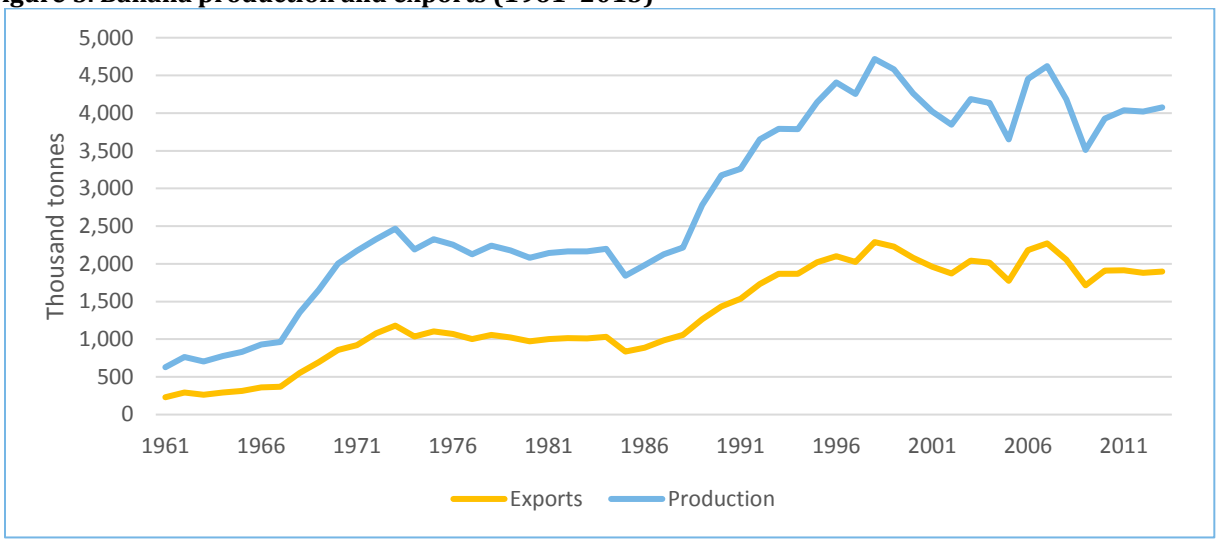
Source: ECLAC: Economic Commission for Latin America and the Caribbean (Statistics Year Book, several years, available at: http://www.eclac.cl/ .

For the period 1950–1963, the share of agricultural output in total Costa Rica's GDP declined from 41 to 26 percent, and the percentage of the labor force employed in agriculture fell from 55 to 50 percent (Gonzalez–Vega and Cespedes, 1993). The Echandi administration (1958–1962) was interested in revamping agriculture after the decline in both coffee prices and banana export revenues, and it promoted subsidized credit for agriculture (Gonzalez–Vega and Cespedes, 1993). Perhaps as a result of these new policies and Costa Rica joining the Central American Common Market (CACM) in 1963, banana production and exports increased from 1961 to 1973 (Figure 5). Furthermore, banana exports as share of total goods and services also increased from 1961 to 1975 (Figure 6). It is important to note that the Banana Development Corporation (CORBANA) and COBAL entered the industry in 1965 to

[4] Costa Rican banana productivity ratio: volume of exports (t) /harvest area (ha).

join United Fruit Company, which had control on banana production until 1956 and was also joined by Standard Fruit Company in 1956. In addition, domestic producers contributed to increasing banana production by signing long–term contracts with multinationals, and represented 41 percent of banana exports in 1975. New banana producers received subsidized credit up to 90 percent of their investment from the domestic banking system and were affiliated with the Association of Banana Producers (ASBANA). This organization received a strong support from the state (Gonzalez–Vega and Cespedes, 1993).

Figure 5. Banana production and exports (1961–2013)

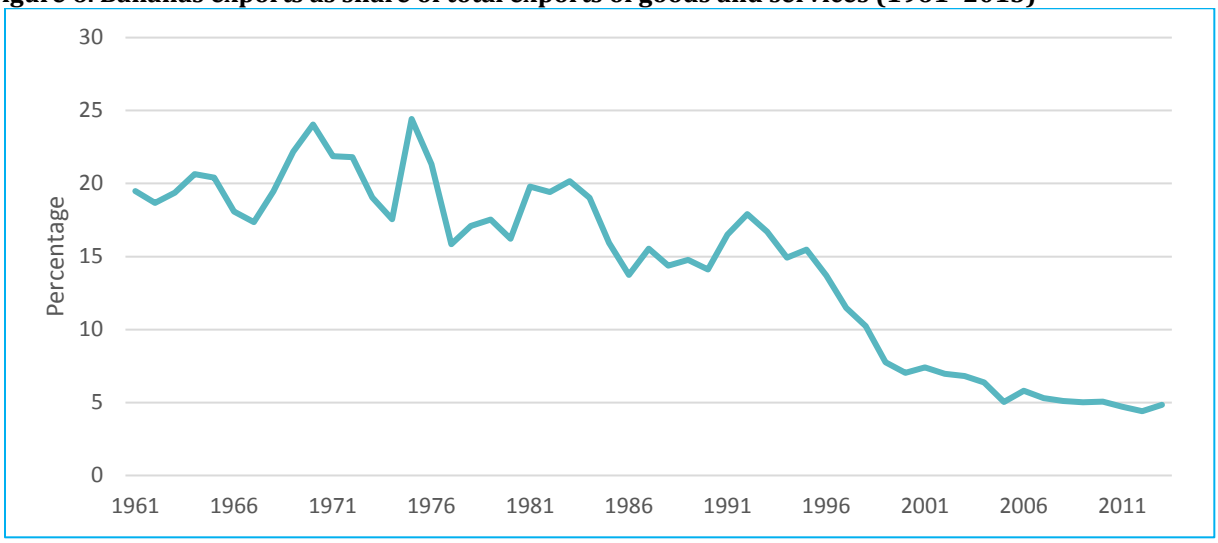


Source: FAOSTAT, FAO.

Banana production and exports decreased from 1973 to 1974 and remained stable until 1988 (Figure 5). Banana exports as share of total goods and services also decreased from 1970 to 1986 (Figure 6). Some other factors that could have contributed to the decrease in banana production are the oil shocks of 1973–1974 due to OPEC oil embargo, of 1978–1979 due to Iranian revolution, and the Iran–Iraq war that started in the 1980s[5]. The economic downturn in the 1980s may have also restricted financing for the banana industry. These factors, coupled with the policies targeting non–traditional exports explain why banana production and exports remained low over the period 1974–1988 (Figure 5).

[5] It is reported that banana export revenues were heavily affected by high oil prices in 2005 due to increasing production such as the plastic bags to cover banana bunches and nylon ropes to hold banana trees (BCCR, 2006).

Figure 6. Bananas exports as share of total exports of goods and services (1961–2013)



Sources: Prices: World Bank, (World Development Indicators, 2015)

Following the economic downturn, banana production and exports began to increase in the late 1980s (Figure 5). These increases were coupled with increases in prices during the 1980s and first half of the 1990s as well as during the 2000s (Figure 4). There was also an increase in planted area at an annual rate of 11 percent over the period 1985–1995. This was the result of a program aimed at increasing the size of the banana industry that was supported by a bill promoting the banana sector (*Ley de Fomento Bananero*) (FAO, 2003). Another piece of regulation, bill No. 30841–H–MAG, was passed in 2002 in order to allow banana producers receiving government subsidies (Russo and Prado, 2006). Decreases in production and exports during the second half of the 1990s are associated with a drop in prices (Figure 4), as well as with the negative effect of black sigatoka disease (FAO, 2003). Banana production continued to decrease in the early 2000s due to unfavorable weather conditions that caused a flood in the Atlantic region of the country – this region represented 97.5 percent of the national banana production in 2014[6] (BCCR, 2006). The more recent increases in banana production and exports are associated with higher prices and with the free trade agreement (FTA) between the European Union and Central American countries signed on June 2012. This agreement eliminated 91 percent of tariffs on Central American exports including banana exports (Agritrade, 2014). Despite this recent positive outlook, banana exports as share of total goods and services have decreased from 24.04 percent in 1970 to 4.83 percent in 2013. Such decline has been more pronounced since 1992 (Figure 6). This downward trend follows the behavior of exports of primary products as share of total exports of goods and services, which decreased from 64.29 percent in 1970–1979 to 26.27 percent in 2011.

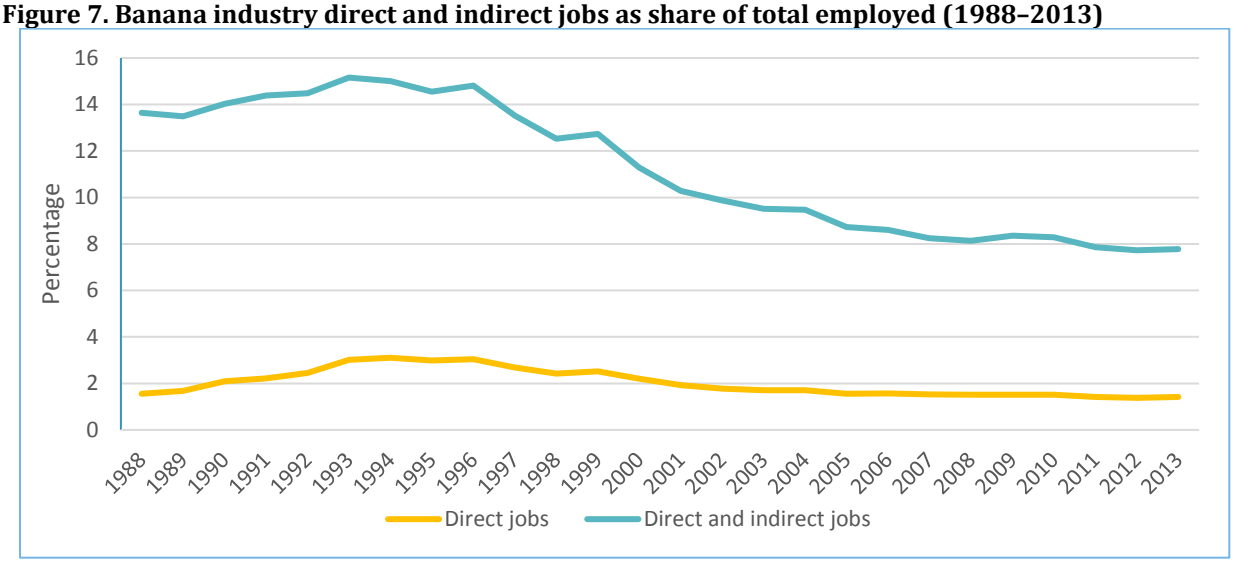
There are two organizations that currently represent the majority of banana producers in Costa Rica. The first one is the Chamber of Independent Banana Producers (*Cámara de Productores Bananeros Independientes* or ANAPROBAN), and it represents independent producers that use Costa Rican capital. The National Chamber of Banana

[6] Author's calculations using data from CANABACR, 2015.

Producers (*Cámara Nacional de Bananeros* or CANABACR) represents banana producers that use both domestic and foreign capital and it includes farms that are owned by large banana marketing firms (CORBANA, 2015). In recent years, this sector has improved its situation with the support and oversight of the National Banana Production Corporation (*Corporación Bananera Nacional* or CORBANA), which embodies 100 percent of exported banana production. In addition, the Banana Institutional Council (CIB), which is affiliated with CORBANA, represents ANAPROBAN, CANABACR, as well as banana marketing firms such as Dole, Chiquita Brands, and Del Monte (CORBANA, 2015). Another organization that is related to this sector is the Banana Environmental Commission (CAB), which was created in 1992 to promote an environmentally friendly banana production (CORBANA, 2015).

The banana industry is an important employer in Costa Rica. While there is no reliable data on the number of jobs created by the banana industry, it is estimated that about 0.67 workers are needed per hectare (Russo and Prado, 2006). It is also estimated that this industry created 40 000 direct jobs and employed 6.6 percent of the total employed in 2014, and that it creates, on average, 100 000 indirect jobs (CORBANA, 2015; Fernández and Zúñiga, 2004). Given these estimates, we generated a series for direct employment in the banana sector for the period 1988–2013 (Figure 7), which is in line with estimates reported in the literature (Russo and Prado, 2006; FAO, 2003). The shares of both direct and indirect jobs in the total number of employed increased from 1988 to 1993, then decreased from 1993 and 2007, and remained stable at around 8 percent onwards (Figure 7).

Figure 7. Banana industry direct and indirect jobs as share of total employed (1988–2013)



Sources: Author's calculations using data on total employed from SEPSA, *Boletín Estadístico Agropecuario*, various issues; data on area harvested from FAOSTAT; and the ratio 0.67 worker per hectare from Russo and Prado (2006).

In summary, Costa Rica banana sector has experienced recent and significant increases in prices, production and exports; however, this sector has lost ground and economic importance (measured by the share of total export of goods and services). This is because Costa Rica's agricultural exports are now more diversified and less dependent on traditional commodities such as bananas and coffee.

Coffee

Coffee has been a major traditional agricultural sector in Costa Rica; however, this industry has lost some of its importance in recent years. Furthermore, this commodity has been historically dependent on the export market and subject to its volatility. Nowadays, close to 40 percent of Costa Rica's coffee exports are classified as high quality coffee beans that sell at 40 percent premium when compared to traditional Arabica. The coffee sector has an important impact on the Costa Rican economy and its labor market. A total of 32 000 coffee producers account for 261 000 acres and employ close to 200 000 workers, 50 000 producing households, and it employed 8 percent of the total working population in 2009 (National Institute of Statistics and the Census cited in ICAFE, 2015). Costa Rica exports 90 percent of its coffee production, and export revenues account for 15 percent of total exports (ICAFE, 2015). Furthermore, this sector has been an important source of foreign exchange for Costa Rica, with coffee exports generating US$275.9 million in 2014 – an 8,6 percent decrease when compared to the US$301.2 million exported in 2013 (ICEX, 2013).

There are eight production areas in the country with unique characteristics due to Costa Rica's diverse climate. The commercialization of coffee is the hands of the private sector, although the Costa Rica's Coffee State agency (*Instituto del Café de Costa Rica* or ICAFE) controls and supervises this industry. Moreover, coffee production is structured in four highly regulated sectors that guarantee a fair participation of each one:

1. The producer is any person with the right to exploit a coffee farm and delivers the fruity coffee to the *beneficiador*.
2. The *beneficiadores* receive, make, finance and sell the coffee. They receive the raw material and transform it to golden coffee.
3. The roasters are responsible for the grinding and roasting or any other coffee bean processing operations. They also deal with national commercialization.
4. The exporters prepare and supply coffee for importers and/or roasting companies in the final destination markets.

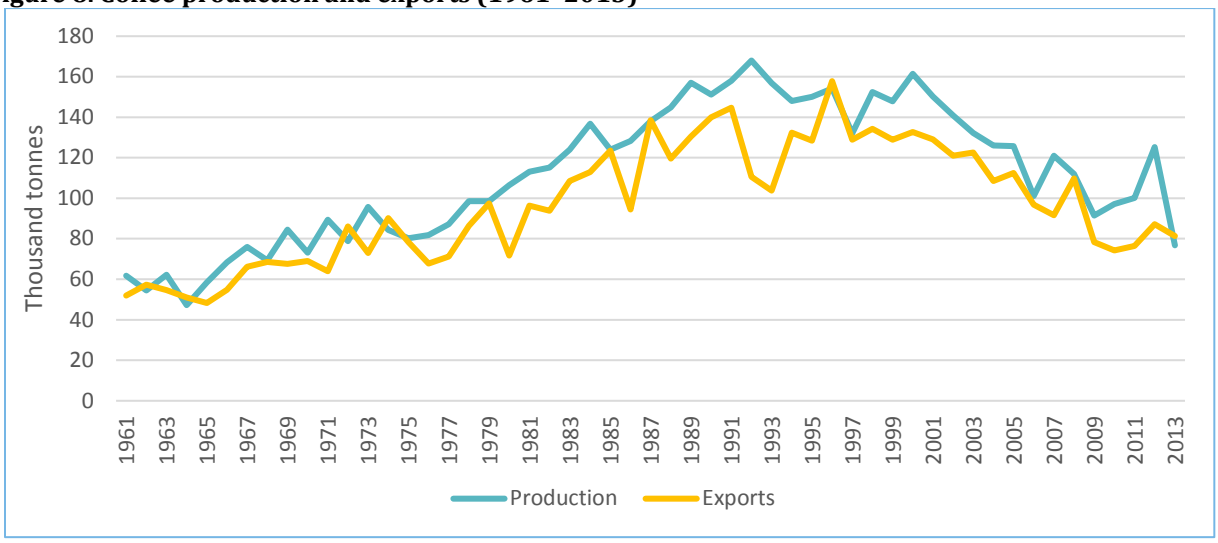
Regarding coffee producers, about 92 percent of them have a planted area of less than 5 hectares, and represent 44 percent of the total planted area. On the other hand, 6 percent of producers have between 5 and 20 hectares of planted area, and represent 21 percent of the total planted area. The other 2 percent have planted areas greater than 20 hectares and own the remaining 36 percent of the total planted area (ICAFE, 2015).

The raw coffee bean processors have at least one processing plant (*beneficio*), and they receive the raw beans, finance, and sell the processed coffee beans (golden beans). In Costa Rica there are 94 raw coffee bean processors, their profits are 9 percent of their sales which are determined by law, and they are also suppliers of inputs, credit and technical assistance to producers (ICAFE, 2015). Exporters are the connection with foreign markets and supply importers with their desired quantities. There are about 60 exporting firms that are affiliated with ICAFE and their profits are regulated by law to be at most 2.5 percent when the exporter takes the risk associated with market fluctuations and 1.5 percent when the exporter is an intermediary (ICAFE, 2015). Finished coffee bean processors

(*torrefactores*) roast and grind coffee beans, and market ground coffee in the domestic and international markets. These processors have been operating since 1920, and there are currently 73 of them (ICAFE, 2015). In summary, there is a relationship among these four sectors. That is, producers supply the harvested beans to the raw bean processors who remove the bean peel to transform the beans into golden beans. Raw bean processors supply the golden beans to exporters for sale in the international markets and to coffee bean processors to roast and grind coffee beans to produce ground coffee for sale in the domestic and international markets.

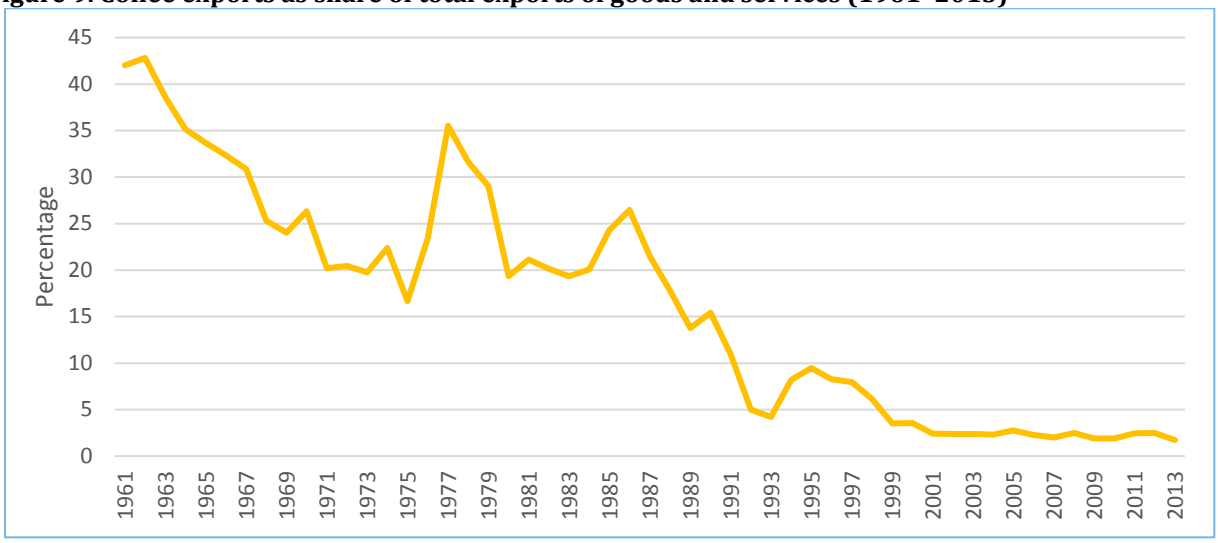
The coffee industry started in the late seventeenth century when the first seeds of the variety *Coffea Arabica* were planted in Costa Rica (ICAFE, 2015). Local governments promoted the development of this commodity after independence, in 1821, by giving coffee plants and land to people. There were 17 000 coffee producing trees in Costa Rica by 1821, and the first wet *beneficio* was built in 1830 in the Molino farm (ICAFE, 2015). Coffee production and exports increased from the 1960s until the early 1990s (Figure 8). Afterwards, coffee production and exports have been decreasing. Specifically, coffee production decreased from 161 135 tonnes in 2000 to 76 819 tonnes in 2013, whereas exports decreased from 157 816 tonnes in 1996 to 81 279 tonnes in 2013 (Figure 8). Coffee exports as share of total exports of goods and services decreased from 15.44 percent in 1990 to 1.73 percent in 2013 (Figure 9).

Figure 8. Coffee production and exports (1961–2013)



Source: FAOSTAT, FAO.

Figure 9. Coffee exports as share of total exports of goods and services (1961–2013)

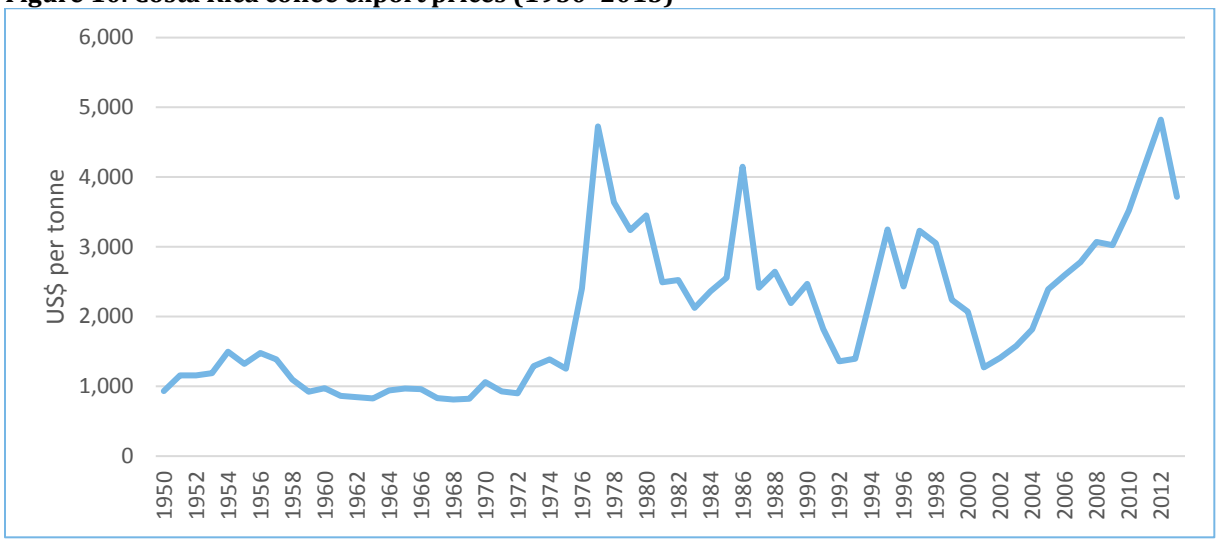


Sources: World Bank, (World Development Indicators, 2015)

It is important to highlight that, during the period 2000–2009, roasters in importing countries increased their preference for the better quality Arabica variety, which replaced the variety Robusta and caused a large reduction in production in Mexico, Central America and the Caribbean over this period (Babin, 2012). Consequently, in this region, Arabica variety represented 99.2 percent of the coffee production in 2009, while the Robusta variety only represented 0.8 percent (ICO, 2011). Furthermore, the roya disease affected 60 percent of Costa Rican coffee farms in 2013 and coffee production decreased by 19 percent (BCCR, 2014).

Coffee prices in Costa Rica remained fairly stable (around the US$1000 per tonne) during the 1950s, 1960s, and until the first half of the 1970s. Following this initial period of low but stable prices, the coffee sector began to experience large price fluctuations (Figure 10). Babin (2012) reports that the International Coffee Agreement (ICA) failed in July 1989. This not only led to the disappearance of the ICA's defined target price system associated with export quotas, but also to the emergence of Nestle and Phillips Morris as an oligopoly in control of 50 percent of the roasting and retailing coffee business (Ponte, 2002; Babin, 2012). The failure of ICA coupled with production surpluses inevitably led to decreases in coffee prices. The five–year average price of the International Coffee Organization (ICO) fell from US$1.34 per pound for the five–year period before ICA's failure to US$0.77 a pound over the period 1990–1994 (Daviron and Ponte cited in Babin, 2012). Nevertheless, coffee prices have rebounded since 2001, and approached the US$5000 per tonne mark in 2012 (Figure 10).

Figure 10. Costa Rica coffee export prices (1950–2013)



Source: ECLAC: Economic Commission for Latin America and the Caribbean – Statistics Year Book, several years – http://www.eclac.cl/

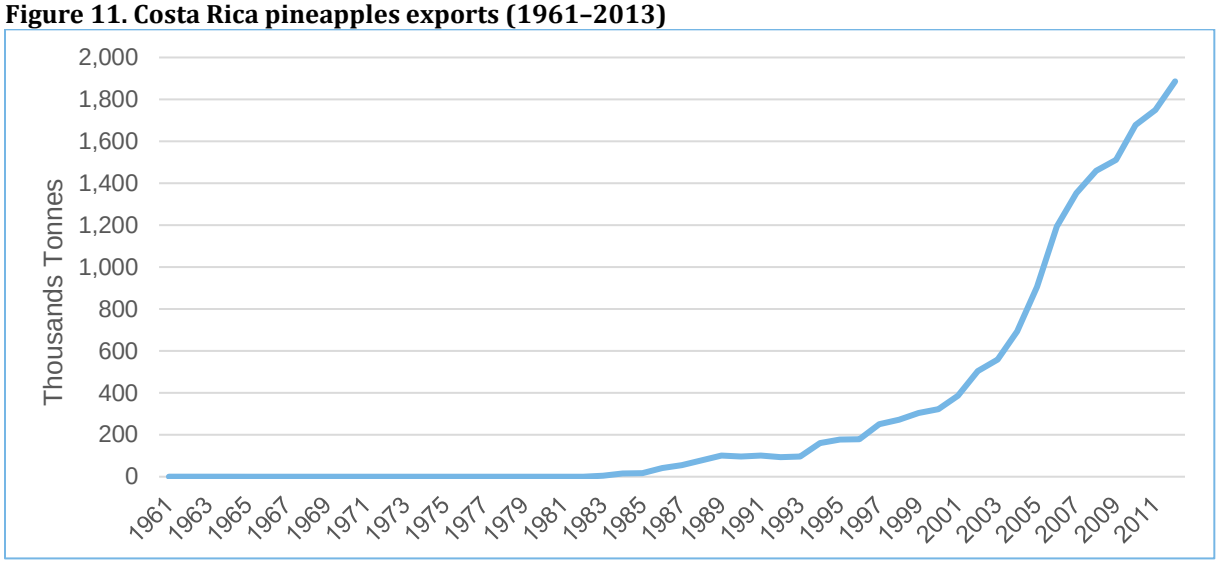
Overall, Costa Rica coffee industry saw its production and exports increase from the 1960s to the mid–1990s; however, both have been decreasing for the past two decades. Coffee prices remained stable but low from 1950 to 1974. Afterwards, this sector has experienced great price volatility. It terms of the relatively importance of this commodity, the share of coffee exports to total exports has undoubtedly decreased in the past five decades, and has remained at around 2 percent since 2000. Thus, and contrarily to the banana sector, coffee production and trade has been decreasing in absolute and relative terms in Costa Rica.

Pineapple

In recent decades, the world's pineapple market experienced accelerated growth due to the increase in demand for tropical fruits products (e.g. fresh, in cans, in juices, dried, and processed) in large markets such as the United States and Europe (González, 2004). Pineapple has been produced in Costa Rica for more than 50 years and can be now found in almost all parts of the country – especially in the south Pacific region and the Atlantic region. In its early stages, pineapple production was primarily for local consumption and to a lesser degree for some processing (e.g. pulp, canning and marmalades). It was in 1986 that pineapples began to be exported following the introduction of the Cayenna Lisa varietal and later the Champaca (Figure 11). During this time, a single company named Pineapple Development Company – Del Monte (PINDECO) quickly became Costa Rica's primary pineapple producer, and its technological innovations were pivotal to the expansion of pineapple exports. Furthermore, other contributions of PINDECO included the development of a highly efficient production system, proper treatment of the fruit in the packing plants,

efficient transportation, and its connections to international markets[7]. Another important producer is Dole, which began its operations in Costa Rica during the 1990s as a buyer and exporter in the northern region and the central Pacific region (González, 2004). Other independent investors (national and foreign) were also attracted to this industry in the early 1990s, which led to unprecedented growth in terms of area planted and total production.

Figure 11. Costa Rica pineapples exports (1961–2013)



Source: FAOSTAT, FAO.

Pineapple production in Costa Rica grew from 850 000 metric tonnes (MT) in 1998 to 1 980 000 MT in 2003 – a 133 percent growth in a five–year period (González, 2004). In 2000, there were over 27 000 acres of pineapple plantations distributed throughout the country, and today the production area has increased to almost 104 000 acres[8]. A large percentage of national pineapple production is in the hands of companies with domestic capital (Monge, 1996). Furthermore, 35 percent of the cultivated area is owned by commercial producers while the remaining 65 percent is owned by independent producers. The latter group includes cooperatives and small and medium size producer associations. More specifically, there are currently 1 330 pineapple producers, from which 1 200 are small, 95 are medium–sized, and 35 are considered large operations.

This significant expansion in pineapple production came at the expenses of the area used for cultivation of other agricultural commodities such as corn, rice, and beans (La República, 2002). During this period, there were important investments in the development of large plantations, packing and storage facilities, and even transportation networks. Often times, corporations allow smaller–scale operations to access their packing, storage, and export infrastructure so that they may get their products to foreign markets. The large

[7] It must be noted that, while this company introduced the basic technology to the country, such improvements were not widespread and were available only to some producers associated with PINDECO (Quijandría, Berrocal and Pratt, 1997).

[8] Production is geographically distributed throughout the following areas: 53 312 acres in North (51 percent of the cultivated area); 28 850 acres in the Atlantic area (28 percent of the cultivated area); and 21 621 acres in the Pacific (21 percent of the cultivated area).

agribusinesses have also built and maintained transportation infrastructure (roads and bridges) for the benefit of nearby rural communities (Árvai *et al.*, 2014). Pineapple production requires a large workforce, and this sector is responsible for 26 600 direct jobs, 170 export–related jobs, and 72 in the packing plants (CANAPEP, 2015; Quijandria, Berrocal and Pratt, 1997). When it comes to the established gender labor division, men typically work in the fields (i.e. cutting, collecting, and transporting), whereas women work in packaging operations such as selecting, wrapping, and packing the fruit in boxes, among other duties (CANAPEP, 2015; González, 2004).

Costa Rica became the world's leading exporter of pineapples in 2012 (ICEX, 2013), and in 2014, its two major export markets were Europe (US$450 million, 52 percent) and the United States (US$415 million, 48 percent). Moreover, Costa Rica is the main pineapple supplier in the United States given that Hawaii is considered a national producer. Despite the importance of these two markets, there has been a growing geographic diversification of these exports, and in 2012, Costa Rica exported pineapples to 42 countries – in comparison to 32 countries in 2006, and 16 countries in 2000.

This sector has also capitalized on the rising demand for sustainably farmed agricultural goods with the production and export of Fair Trade and organic certified pineapples (CANAPEP, 2015; González, 2004). Costa had 15 Fair Trade certified pineapple producers who had benefitted from higher premium and selling prices. For instance, in 2013, in a European market one kilogram of conventionally produced Costa Rican pineapple would sell for US$4.5 in comparison to US$7.25 for a Fair Trade certified pineapple (CANAPEP, 2015). In comparison to other pineapple producing countries, for the past twenty years, Costa Rica producers have also benefited from growing and significantly higher selling prices (Figure 14).

Costa Rica pineapple producers have been benefiting from the support of various institutions and set of incentives. Starting in the 1990s, the Ministry of Agriculture and Livestock (*Ministerio de Agricultura y Ganadeira*, or MAG) – established the National Pineapple Program (NPP) to promote pineapple production in the country. The NPP included the development of technology packages used as a guide for those who want to produce pineapple, and research programs aimed at improving productivity. The NPP also manages technical aspects (e.g. technical assistance, research, financing, etc.), market information, and other aspects of the product, and it is primarily designed for small and medium–sized producers (González, 2004). The Costa Rica Investment Promotion Agency (*Coalición Costarricense de Iniciativas de Dessarollo*, or CINDE) also played an important role as it managed to attract the investment from PINDECO. Moreover, in 1990s, CINDE supported the creation of marketing consortia that facilitated the export of agricultural and industrial products from small and medium–sized companies, including food processors (Quijandría, Berrocal, Pratt; 1997). The National Chamber of Pineapple Producers and Exporters (*Cámara Nacional de Productores y Exportadores de Piña*, or CANAPEP) was established in 2003, and its major goals are: to promote sustainable pineapple production; to implement best agricultural practices; and to foster producer associations (CANAPEP, 2015). The two major incentives used by the pineapple sector have been export contracts (at the production stage) and free trade zones (at the processing stage) – these two incentives

are discussed in more detail later in this paper. Lastly, the Costa Rica National Bank also supported this sector by providing credit (González, 2004).

Despite the recognized benefits emerging from this sector, there have been a series of concerns regarding labor conditions and environmental impacts. More specifically, there is a growing perception among people living in nearby communities in the Atlantic region that, the pineapple industry had brought some of the problems that had been associated with the banana production (e.g. monoculture farming, uncontrolled expansion, environmental damage, etc.). Large–scale pineapple producers must comply with multiple phytosanitary requirements at the export markets. Consequently, this crop requires the application of significant amounts of pesticides and herbicides, which in turn has resulted in the buildup of agrochemicals in groundwater near some large pineapple plantations. This has raised health concerns among many residents of communities adjacent to plantations. Furthermore, some producers have failed to implement appropriate soil conservation techniques, which has resulted in severe erosion problems (Árvai, 2014). There are also reported cases of poor labor conditions in the pineapple industry such as long working hours (an average of 12 hours), low wages, and a mounting pressure to increase productivity. Other problems associated with this industry include: expensive and not easily transferable production technology, lack of knowledge about product commercialization, poor relationships between large firms and small producers, and lack of access to credit by small farmers (González, 2004).

In summary, Costa Rica became the first exporter of fresh pineapple on a global scale, and continues to be the world's leading exporter. With a large share of pineapple production area owned by independent producers, this sector has contributed to rural development in areas where production is established. Pineapple production is year–round and responsible for the development of a series of supporting industries that include juices, purees, decorations for exotic drinks, and canned fruit. Also important have been the high selling prices that have benefit producers. Nevertheless, farmers and other residents living on lands adjacent to pineapple farms may have failed to fully benefit from these growing pineapple operations. Moreover, these same communities might be carrying an unequal share of the costs associated with large scale pineapple production. As a response, there has been an ongoing national discussion about new policies needed to address these challenges. Such policies include more stringent regulation and monitoring of the existing pineapple industry, and possible limits on the scale of production that would be allowed in the country (Árvai *et al.*, 2014). Multinational pineapple producers will likely need to be involved in this process in order to mitigate their negative externalities and increase the sustainability of their operations.

ii. The relevance of Costa Rica's experience to other countries

Lessons from the Costa Rica's development experience are likely applicable to other economies in Central America that have also been dependent on agricultural exports for foreign exchange. Gabrielle (1994) conducted a study on price elasticities of Central American agricultural exports and reports that, on average, the contribution of bananas, coffee, cotton, and sugar to total exports was 53.5 percent over the period 1970–1991. For the sub–period 1980–1989, these commodity contributions to total exports were 52 percent from Costa Rica, 66 percent from El Salvador, 52 percent from Guatemala, 61 percent from Honduras, and 65 percent from Nicaragua. These values confirm the dependency of these economies on traditional agricultural exports as source of foreign exchange; however, Costa Rica was less dependent comparatively to its neighbours.

Exports of bananas, coffee, and sugar as percentage of total exports for the five Central American countries over the period 1970–2011 is shown below (Table 5). In the case of bananas exports, Costa Rica shows a decreasing trend, so its exports decreased from 19.16 percent in 1970–1989 to 4.92 percent in 2011. Honduras also experienced a decrease in banana exports. In the case of Nicaragua, a decrease in banana exports is also evident, but this commodity is not as important as it is in the neighbouring economies. On the other hand, in Guatemala, banana exports are still significant. In the case of coffee, exports have been decreasing for the five countries. Note that the largest reduction of coffee exports in 2011 was experienced by Costa Rica. However, coffee exports remain an important source of foreign exchange for the other Central American economies. Regarding sugar, only Costa Rica and El Salvador show a defined decreasing trend. Sugar exports are less important for Honduras, but they remain an important source of foreign exchange for Guatemala and Nicaragua. In summary, thus, Costa Rica exports of these three agricultural commodities have been decreasing over time.

Table 5. Exports of bananas, coffee, and sugar as percentage of total exports of goods and services (1970–2011)

	1970–79	1980–89	1990–99	2000–09	2010	2011
Bananas						
Costa Rica	19.16	17.01	13.98	6.10	5.10	4.92
El Salvador	–––––	–––––	–––	–––––	–––––	–––––
Guatemala	2.30	5.16	5.11	4.06	3.56	4.03
Honduras	24.07	28.23	16.48	4.38	4.63	4.38
Nicaragua	0.86	3.37	3.68	0.88	0.40	0.24
Coffee						
Costa Rica	25.74	20.34	8.22	2.34	1.86	2.07
El Salvador	42.81	51.45	17.33	4.04	3.84	7.17
Guatemala	30.05	30.37	16.88	6.82	6.69	9.25
Honduras	21.27	20.79	14.79	6.77	9.97	15.17
Nicaragua	19.58	27.00	16.09	9.83	10.16	10.30
Sugar						
Costa Rica	3.59	1.73	0.85	0.36	0.58	0.45
El Salvador	4.27	2.53	2.38	1.38	2.30	2.05
Guatemala	6.25	5.25	7.94	4.14	6.81	5.11
Honduras	0.97	2.54	0.53	0.39	0.61	0.45
Nicaragua	4.85	5.02	6.22	3.13	3.77	3.75

Source: Economic Commission for Latin America and the Caribbean (Statistics Year Book, several years, available at: http://www.eclac.cl/).

One possible explanation for the decrease in exports of these commodities as percentage of total exports for Costa Rica is that manufactures exports have been increasing relative to exports of primary products. Information on the behaviour of primary products and manufactures exports as percentage of total exports for the five countries in Central America is shown below (Table 6). Note that during the period 1970–1979, Costa Rica was the third largest exporter among the five countries; however, it became the lead exporter during the period 1980–1989 and has kept this position since then. Regarding, exports of primary products as percentage of total exports, these exports have been decreasing for the five countries.

Exports of manufactures as percentage of total exports present a different scenario. Costa Rica was the third largest exporter of manufactures during the periods 1970–1979 and 1980–1989, but it became the lead exporter of manufactures in the period 1990–1999 and has kept this position ever since. It is likely that exports of manufactures and pineapples have contributed to the decrease in exports of bananas, coffee, and sugar as percentage of total exports for Costa Rica. Furthermore, during the period 1970–2011, El Salvador switched from being in the first exporter of manufactures to the second position, while Guatemala moved from the second position to the third position. For Honduras and Nicaragua manufactures exports as percentage of total exports remain modest. It is also important to mention that the entire Central American region experienced the economic crisis during the 1980s, which could be one of the factors contributing to the reduction of exports during the period 1980–1989. Note that primary products exports and manufactures as percentage of total exports decreased in all countries but Guatemala (Table 6).

Table 6. Total exports and exports of primary products and manufactures as percentage of total exports of goods and services (1970–2011)

	1970–79	1980–89	1990–99	2000–09	2010	2011
Total exports (millions of dollars)						
Costa Rica	630.05	1 430.97	4 401.31	9 802.61	13 855.16	15 345.09
El Salvador	671.35	833.91	1 891.86	4 417.52	5 552.60	6 474.30
Guatemala	819.02	1 307.90	2 530.92	6 854.56	10 667.55	12 688.24
Honduras	420.78	930.81	1 624.04	5 254.87	7 247.91	9 077.90
Nicaragua	464.19	453.24	579.32	1625.37	3 360.95	4 167.70
Primary products (percentages)						
Costa Rica	64.29	55.24	42.25	26.54	25.46	26.27
El Salvador	58.12	49.52	27.42	17.11	23.00	26.23
Guatemala	61.91	64.42	49.17	34.50	45.43	48.47
Honduras	77.18	70.50	46.82	21.67	30.24	28.93
Nicaragua	75.23	65.96	62.85	47.42	44.91	43.27
Manufactures (percentages)						
Costa Rica	17.92	18.72	23.52	43.46	39.60	40.07
El Salvador	22.55	20.21	20.57	21.18	37.60	37.22
Guatemala	20.02	20.04	21.09	25.98	33.83	31.43
Honduras	6.90	5.70	9.64	8.38	10.23	7.69
Nicaragua	14.47	8.23	11.40	6.00	3.45	2.72

Sources: World Bank, World Development Indicators (2015)

The above discussion confirms the outcome of policies and strategies that Costa Rica implemented that resulted in increases of its manufacture exports and export diversification. Such policies could represent important lessons for the other economies in the region, or any other economies depending on exports of primary products as source of foreign exchange. For example, as part of the adjustments to its new development model, Costa Rica adopted some strategies that include the establishment of the Exports and Investments Promotion Centre, tax exemption grants to promote exports of non–traditional products outside Central America, export incentives, and the establishment of the Development Corporation of Costa Rica, which were intended to diversify the production structure and to promote the use of domestic raw material (Villasuso, 1987). As a result of the export diversification strategies adopted in the 1990s, Costa Rica's export structure changed from a 67.5 percent dependency on natural resources in 1985 to 56.5 percent dependency on non–resource based manufactures in 2001 (ECLAC, 2004). For the first time, exports from the Free Trade Zones (FTZ) surpassed coffee and bananas exports in 1996–1997, and in 1998–1999 exports of capital goods became the nation's most important generator of foreign exchange (Sánchez–Ancochea, 2006; World Bank, 2006).

These trade liberalization and export promotion policies are discussed in more detail and in a chronologically manner later in this paper. Overall, Costa Rica's experience followed a different path relatively other countries in Central America that focused mainly on primary products and low technology/labor intensive exports.

iii. Institutional and policy environment

Costa Rica is an interesting case study in economic development not only because of its long democratic tradition and relative economic stability, but also because the economy of this small nation has evolved from being heavily reliant on exports of coffee and bananas to becoming the largest software exporter per capita in Latin America. As the World Bank states ''it has evolved from the production of the ''golden bean'' (high quality coffee beans) to the ''Golden chip" (World Bank, 2006).

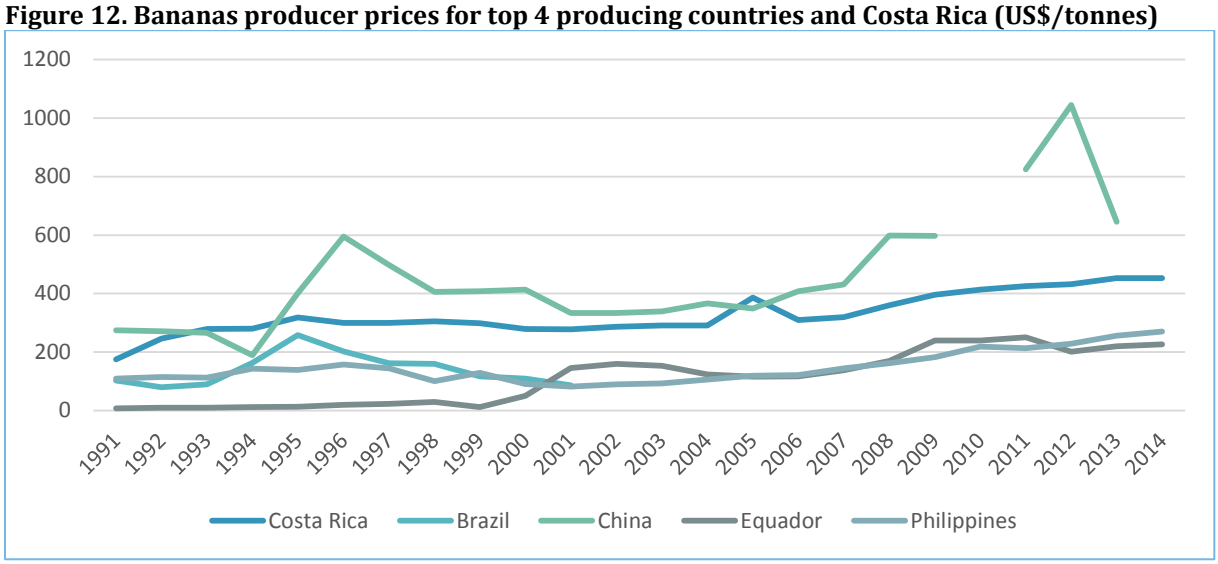
Another important economic characteristic of Costa Rica is the small size of its domestic market. This limits the capability of sustained growth in its GDP and reduces the chances of producing certain goods that are subject to economies of scale. Export growth and export diversification has been identified by Costa Rica as the solution to these constraints, and a possible explanation of why international trade has played such an important role in this country's economy. Furthermore, Costa Rica's currency – Colón – gained its value again while the United States dollar and the Euro has remained fairly constant overtime (around 500 Colones per US$). Such currency stability has been conducive of trade (ICEX, 2013).

II. Coffee and banana prices and their relation to growth and development in Costa Rica

a. Global fluctuations of coffee and banana prices and their transmission to producer prices in Costa Rica

As explained in previous sections, coffee, bananas and pineapples have been Costa Rica's most important agricultural exports. Prices received by Costa Rican producers relatively to those in other major producing countries have varied throughout time and by commodity. In the case of bananas, Costa Rica has received stable and high prices from 1991 to 2014 – only seconded by banana producer prices in China (Figure 12).

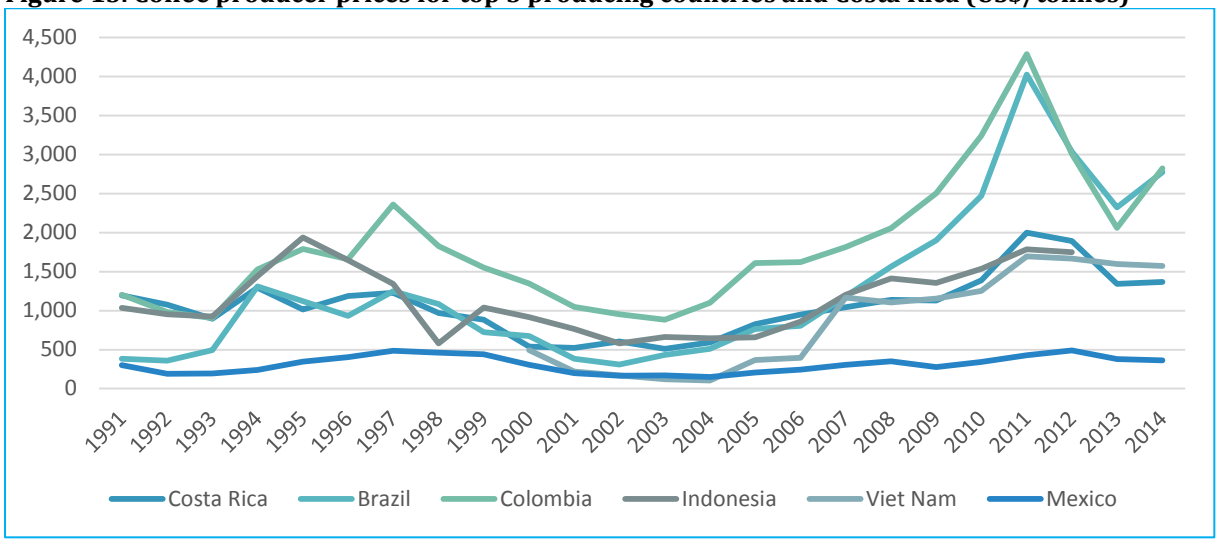
Figure 12. Bananas producer prices for top 4 producing countries and Costa Rica (US$/tonnes)



Source: FAOSTAT, FAO.

On the other hand, coffee producers in Costa Rica have been dealing with a much more volatile market; however, Costa Rica coffee prices have followed the same market dynamics of other major coffee producing countries. From a global perspective, and in terms of prices, Costa Rica coffee producer prices rank in the middle (under Colombia, and more recently, Brazil) and have followed closely Indonesian coffee prices (Figure 13).

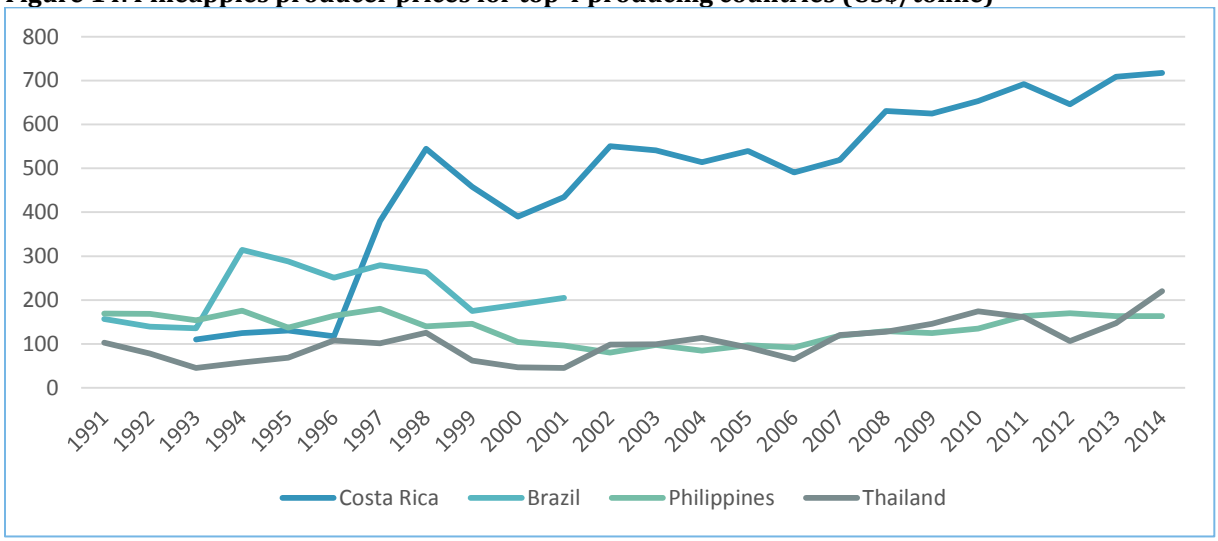
Figure 13. Coffee producer prices for top 5 producing countries and Costa Rica (US$/tonnes)



Source: FAOSTAT, FAO.

Lastly, as previously stated, Costa Rica is now the world's largest pineapple producer. Since 1996, Costa Rican pineapple producers have received much higher prices than those in other major producing countries: Philippines and Thailand. Furthermore, there has been an upward trend in pineapples price that appears to be unique to Costa Rica, which may explain the dynamism of this industry (Figure 14).

Figure 14. Pineapples producer prices for top 4 producing countries (US$/tonne)



Source: FAOSTAT, FAO.

b. Costa Rica's export diversification within the agricultural sector and into new export sectors

This section examines the export diversification experience in Costa Rica and divides it into three different sub–periods of time. The first sub–period began in the 1960s and ended in the late 1970s, and was marked by two major events: the adoption of the import substitution industrialization (ISI) development model; and the entry of Costa Rica into the Central American Common Market (CACM)[9]. The second period was characterized by an important economic crisis in the early 1980s, which lead to the abandonment of the ISI model and to the implementation of important structural economic reforms. The last period goes from the mid–1980s until present, and has been characterized by export diversification process and large increases in foreign direct investment (FDI).

Period 1: Import substitution industrialization (1960 – 1979)

After Second World War, Costa Rica was an agro–exporting economy highly dependent on traditional exports of agricultural products. Coffee and bananas alone accounted for almost 90 percent of the value of total exports, and drove economic growth through the 1960s (Mesa–Lago *et al.*, 2000). Recognizing the vulnerability of this economic model to external shocks, Costa Rican authorities began to plan and implement a new development model that would transform the country's economy during the 1960s and 1970s. This new strategy was based on industrialization through import substitution, in particular of consumer goods, and was implemented through high tariff rates for consumer goods, low import taxes for intermediates and capital goods, and the application of export taxes to goods in which Costa Rica had a strong comparative advantage (Cattaneo, Hinojosa–Ojeda and Robinson, 1999).

Officially, this industrialization began with the enactment of the Industrial Protection and Development Law in 1959. This law stimulated investment in the domestic industry, and resulted in years of high average annual growth rates in the industrial sector – above 9 percent between 1965 and 1973 (Villasuso, 1999). In 1963, Costa Rica joined the Central American Common Market (CACM) along with Guatemala, El Salvador, Honduras and Nicaragua. The CACM was a timely opportunity for Costa Rica's infant industrial sector, and it became the main destination market for its manufactured consumer products. The adoption of the ISI model and Costa Rica joining the CACM resulted in the creation of new industries and the increase of the share of manufactured goods to the country's exports. Textiles and shoes produced by the *maquiladoras* were amongst Costa Rica's first non–traditional manufacturing exports (Barham *et al.*, 1992). However, despite these early advances in horizontal export diversification, 75 percent of the manufactured goods exported from Costa Rica to other CACM countries were produced by foreign owned firms, or by joint ventures between foreigners and Costa Rican investors (Clark, 2001). This was the first indication that export diversification in Costa Rica was not driven by domestic producers, but rather by foreign firms operating in the country.

[9] The CACM is an economic trade organization established on December 13 of 1960 and it includes Guatemala, El Salvador, Honduras, Nicaragua and later Costa Rica.

The Figueres (1970–1974) and the Oduber administrations (1974–1978) began to distance themselves from the ISI model. Instead, they supported export promotion and diversification with a new set of policies that encouraged the use of local inputs, and the creation of new industries sufficiently competitive to export onto world markets. As part of these efforts, a new economic and social development plan was designed, for the 1972–1978 period, seeking further reduction of the nation's dependence on primary commodities, and the expansion of manufactured exports to other countries outside the CACM. In 1972, the Export Promotion Act was enacted to promote "non–traditional" exports through several fiscal incentives, and Costa Rica's central bank financed a new public agency, the Costa Rican Development Corporation (CODESA). CODESA operated as a government holding company and entered into joint ventures as a majority shareholder with private firms in order to develop important sectors of the economy (Mitchell and Pentzer, 2008). CODESA was also in charge of supporting new productive activities and the diversification of Costa Rican exports. While new policies were implemented, and new institutions created, Costa Rica managed to build a relatively good transportation infrastructure (i.e. airports, roads and ports) that facilitated trade and the integration of its economy in world markets (Villasuso, 1999).

Although the ISI model was designed to gradually replace the agricultural exporting model throughout the 1960s and early 1970s, Costa Rica's agricultural sector responded promptly to increasing competition in international markets by diversifying its production away from its traditional mainstays. Along with Guatemala, Costa Rica had been a forerunner in the Caribbean Basin in the promotion of "non–traditional" agricultural exports, and its early "non–traditional" agricultural exports included asparagus, strawberries, melons, broccoli, tomatoes, and flowers (Barham *et al.*, 1992). Interestingly, Mesa–Lago *et al.* (2000) argued that during the late 1970s and early 1980s there was a shift from the ISI model to a new model based on the promotion of "non–traditional" agricultural goods. In the authors' view, this explains why the share of industrial goods in total production failed to experience significant increases during this period of time.

During this period, Costa Rica experienced high rates of economic growth with real benefits for its population in terms of education, health and economic prosperity. Initially, the ISI created a national industrial sector oriented toward the domestic and Central American markets. In the 1970s, the most representative industrial goods were fertilizers, pharmaceutical goods, clothing products, fungicides and insecticides, plastic goods, galvanized metal sheets, tires, leader products and synthetic fabrics (ECLAC, 1977; Colburn and Patiño, 1988). During the second half of this period, Costa Rican authorities began to gradually shift to a more export oriented growth strategy. With the exception of the agricultural sector, progress in export diversification was rather slow during this period. It was not until the mid–1980s, and as a reaction to the economic crisis affecting the country, that export–promotion policies were successfully implemented.

Period 2: Debt crisis and the structural reforms (1980–1983)

After years of uninterrupted economic prosperity, Costa Rica experienced one of its worst economic crises in the early 1980s. This crisis was the result of unsustainable foreign borrowing, rising oil prices and real interest rates, and unfavorable international prices (Weeks, 1985; Buttari, 1992; Gutiérrez de Piñeres and Ferrantino, 2000). National production was greatly reduced in the agricultural, industrial and construction sectors, and between 1980 and 1982, the nation's GDP contracted by almost 10 percent. This contraction of Costa Rica's economy was more severe than of that for Latin America in general (Figure 1). The unemployment rate reached almost 10 percent, while the inflation rate reached 90 percent by 1982 (Mitchell and Pentzer, 2008). This crisis exposed some of the weaknesses that undermined the ISI model, namely the dependence of the domestic industrial sector on imported inputs, the relatively small size of the domestic and Central American markets, and the unsustainable levels of public debt. As a reaction to this economic downturn, the World Bank, the International Monetary Fund (IMF), and the United States Agency for International Development (USAID) began to pressure Costa Rican authorities to implement a series of structural adjustment programs. The main goal was to push for a gradual opening of the economy, further diversification of production and exports, and the reduction of government expenditures (Cattaneo, Hinojosa Ojeda, Robinson, 1999). It is important to note that, in the 1980s, the USAID regarded Costa Rica as the testing grounds for its export promotion programs that were later to be applied in other countries (Clark, 1995). In the domestic front, a national political consensus was reached over a sustained economic recovery via export promotion and increase of inflows of foreign capital – in particular in "non–traditional" export products. Subsequently, in 1982, the newly elected administration began the implementation of an economic stabilization package.

The years of 1984 and 1985 were arguably the takeoff point of a new development model because of the numerous economic measures implemented during those years. In 1984, a cabinet–level Ministry of Exports (MINEX) was created to promote Costa Rican exports to new markets, simplify trade procedures, coordinate policies from other export promotion agencies, and reduce or eliminate export taxes, fees and streamlining procedures for exporting. Also in 1984, the Caribbean Basin Initiative (CBI) came into effect and was designed to spur economic revitalization in the region by giving all Central American and Caribbean countries (with the exception of Nicaragua) duty–free access to the United States market for most of their products. This trade measure gave comparative advantages and stimulated exports from Costa Rican agribusinesses and assembly and light manufacturing sectors. In 1985, Costa Rica government began a gradual and comprehensive structural adjustment program that included measures to improve the financial environment, the launch of a trade reform program, and the creation of several new governmental agencies. At the same time, the USAID supported and financed the creation of CINDE. One of the main goals of this non–governmental agency was to attract foreign firms from the electronic, medical equipment, and service sectors. Furthermore, this institution pushed legislation to create new export incentives and provide technical assistance to producers of "non–traditional" agricultural exports. Also in 1985, another public agency, the National Investment Council (NIC), was created to assist Costa Rican firms wanting to export their products. In 1986, the structural reforms gained momentum and a new president was elected. President Arias Sánchez's declared that one of his administration's main objectives

was to consolidate the economic recovery through an increase and diversification of the nation's exports (Villasuso, 1999).

In the wake of a severe economic crisis, it became clear to policy makers that the ISI model was no longer a viable development strategy for Costa Rica. With the assistance and guidance from various international economic and financial organizations, important economic structural reforms were implemented. Such reforms laid the foundations of a new economic model based on export diversification, and on the attraction of FDI in high–tech sectors. Some of its positive outcomes would be felt throughout the 1990s and 2000s. The "non–traditional" export drive sought to compensate the anti–export bias that guided the nation's commercial policy during the import substitution era.

Period 3: Foreign direct investment and export diversification (1984–2014)

From 1983 to the early–1990s, "non–traditional" export promotion programs took off with heavy economic assistance from the United States. The leading products were textile products, fresh and frozen fish and shrimp, flowers, ornamental plants and foliage, and fresh pineapple (Clark, 1995; Clark, 2001). Following the structural reforms, "non–traditional" exports grew faster than traditional ones, and in 1989 the former outperformed the latter for the first time in the nation's history (Table 7).

Table 7. Costa Rica economic and exports performance in the years after the structural reforms, 1983–1990

	1983	1984	1985	1986	1987	1988	1989	1990
Annual growth rate in real GDP (%)	2.9	8	0.7	5.5	7.9	3.5	5.6	3.5
Annual growth in exports (%)	–1	14	–3.5	15.8	2	7	12.8	4.5
Exports	852	971	937	1 085	1 107	1 184	1 336	1 396
Traditional exports* (US$ million)	526	597	591	690	641	604	621	593
Non–traditional exports (US$ million)	326	374	346	395	466	580	715	803

Source: USAID based on official statistics.
* Coffee, bananas, beef and sugar

During the first half of this period, several important milestones were achieved in terms of export diversification. First, "non–traditional" exports went from 37 percent of total exports in 1981 to 60 percent in 1993. For the first time, exports from the FTZ surpassed coffee and bananas exports in 1996–1997, and in 1998–1999 exports of capital goods became the nation's most important generator of foreign exchange (Sánchez–Ancochea, 2006; World Bank, 2006). This transformation took place during a time in which exporters had a strong domestic political backing and benefited from a favorable policy environment. New policies were implemented and further *stimuli* granted to "non–traditional" exporters (e.g. exchange–rate reforms, export tax reduction, and government subsidies). Furthermore, three regulatory frameworks were designed to help "non–traditional" exporters: 1. export contracts; 2. the temporal admission regime (TAR); 3. the FTZ regime[10]. These three regimes

[10] The Law for Financial Equilibrium in the Public sector was approved by the government in 1984. Among other things, this law consolidated regulations seeking to enhance export performance.

were considered cornerstones of the export diversification strategy and consequently deserve a more detailed discussion.

Through export contracts, firms would receive a subsidy equivalent to a certain percentage of the value of their exports. The most important export subsidy was the so–called *Certificado de Abono Tributario* (CAT) – a tax redemption certificate negotiable on the national stock exchange. CATs were granted to non–traditional exporters for a value ranging from 15 to 30 percent of the export FOB value, provided that their local value added amounted to 35 percent or more. Although CATs were originally established by the Law of Industry Promotion of 1972 to help infant industries pay taxes, its use only became widespread after 1983. Almost all agricultural and agribusinesses exports, and a large number of manufactures were covered by these subsidies (Clark, 1985). Initially, the CAT program was credited as being a real help to Costa Rican exporters, with each dollar spent on them producing an increase in exports equivalent to US$ 1.35 (Hoffmaister, 1991); however, the CAT program was publicly criticized for increasing total government expenditures to unsustainable levels, for also benefiting a narrow number of large firms, and for allegedly being misused in favor of fraudulent export operations (Alonso, 1997). As these problems became more apparent, CATs were phased–out throughout the 1990s and gradually replaced by a new set of public policies fomenting the expansion of the FTZs to attract foreign high–tech firms. The elimination of the CAT program and the diminishing institutional support for "non–traditional" exporters in the mid–1990s did not appear to disrupt the momentum of the export diversification process[11].

The other instituted regime was the Regime of Temporal Admission (RTA). Created in 1972, it was only firmly established in 1984, and its initial goal was to facilitate the establishment of *maquiladora* firms in the apparel sector (ECLAC, 2000). Under these regime, firms could operate anywhere in the country without having to pay import tariffs. However, this regime would not include income tax exceptions.

The creation of the FTZ regime in 1981 was arguably the most important step toward the attraction of foreign firms and the promotion of new exports. According to Sánchez–Ancochea (2006), the promotion of news exports via FTZs has been a key policy goal in Costa Rica since the 1980s, making this nation a forerunner in their use to increase the exported amount of "non–traditional" goods. This regime is based on a series of incentives granted to companies that invest in areas specifically assigned by the government and export at least 75 percent of their output (Sánchez–Ancochea, 2005). The fiscal benefits included full income tax exemptions and duty–free imports of raw materials and intermediate goods for an eight years period, and a 12 years extension with a 50 percent exemption. Finally, a ten years full exemption was granted on sales and municipal taxes. Between the 1980s and early 1990s, the production and exports from the apparel sector was a key factor in the expansion of the FTZs. Nevertheless, the apparel sector failed to generate important linkages with the rest of the economy, and gradually lost its competitiveness against other developing economies. To overcome the decline of the apparel sector, in the mid–1990s CINDE began

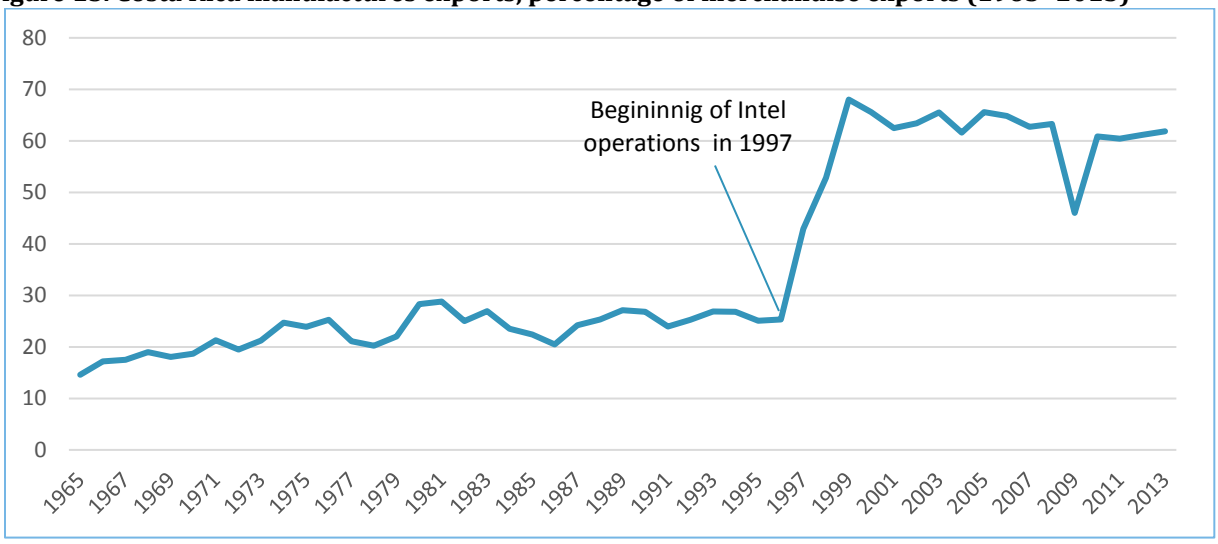
[11] A look at the measures of export diversification and concentration shows that a short–lived deterioration around 1983 was followed by further progress.

shifting its efforts towards attracting foreign firms in the electronics, medical equipment, and service sectors. This resulted in new foreign firms establishing their operations in the FTZ, and new "non–traditional" exports became the nation's top exports (e.g. electronic products, computer parts and medical devices). Ultimately, the export sector became the main contributor to economic growth in Costa Rica during the 1990s.

To this date, the US$300 million investment in a microprocessor plant in 1997 by Intel has been the largest investment of foreign capital in Costa Rica. This investment has been important to Costa Rica not only because of its size, but also because its indisputable impact on the nation's economy and export supply[12]. At the macroeconomic level, Intel lead to higher rates of economic growth, helped to reverse the drop in the Costa Rica's terms of trade due to low world prices of its most traditional exports, and was responsible for surplus in Costa Rica's trade balance – the first surpluses in 50 years (World Bank, 2006). Intel has also been, directly and indirectly, responsible for the shift in Costa Rica's top exports from coffee and bananas to electric and electronic products. Given its sheer production capacity, Intel impacted the volume and composition of Costa Rican exports, and in 2000, computer parts alone accounted for almost 40 percent of total value of exports. Secondly, the size of this investment had a subsequent "signaling" effect on other potential investors. CINDE used this "stamp of approval" to launch an aggressive campaign to attract other electronic manufacturers (Rodríguez–Clare, 2001). Following the beginning of Intel operations in 1997, the share of manufactures exports to total exports increased substantially (Figure 15). More specifically, from 1965 to 1996 the average share of manufactures exports was 23 percent. When computed for the 1997–2013 period, that average value increased to 60.5 percent. This is particularly important as other empirical studies have used this metric as a proxy for vertical export diversification (Herzer and Nowak–Lehnmann, 2006; Ferreira and Harrison, 2012). It is important to emphasize that, as previously mentioned, there is an important portion of manufacturing that is agricultural–based and the food industry accounts for 35 percent of total manufacturing jobs.

[12] For excellent discussions about the effect that Intel has had on Costa Rica's economy see Larrain *et al.* (2000) and the World Bank (2006).

Figure 15. Costa Rica manufactures exports, percentage of merchandise exports (1965–2013)



Source: World Bank, World Development Indicators (2014)

The already incipient Costa Rican electronic sector continued its expansion in the wake of Intel arrival, and today the electronic cluster consists mainly of foreign firms and is the nation's largest export sector. Intel also contributed to the diversification of Costa Rica trade patterns by expanding the array of nations with which it trades as well as the number of goods being traded. Finally, Intel has had a positive impact on education through improvements in local human capital and training externalities (Larrain *et al.*, 2000).

The export diversification effort continued throughout the second half of this period with the implementation of further measures and the creation of new institutions. In 1996, the Costa Rica Agency for International Trade Promotion (*Promotora del Comercio Exterior de Costa Rica* or PROCOMER) was created to assist local firms wanting to export their products. PROCOMER has provided several services that include the participation in international fairs, the organization of business and trade missions, the maintenance of the "Market Place Costa Rica" website, etc. (Martínez, Padilla and Schatan, 2008). Also in 1996, the export contracts and the TAR were replaced by two new regimes: the *Régimen Devolutivo de Derechos and the Régimen de Perfeccionamiento Activo*. These two new regimes granted firms tax exemption without the issuing of redemption certificates (ECLAC, 2000). Since 1997, the Ministry of Foreign Trade (COMEX) has been working closely with CINDE for FDI attraction and with PROCOMER for export promotion.

Despite the fact that the most visible progress in export diversification have been in the manufacturing sector, Costa Rican agriculture also went through major changes during the last two decades. The diversification and vertical integration of Costa Rica's agricultural sector was heavily subsidized by the CAT program, and it was symbolized by an increase of the numbers of high–tech agricultural producers that created new competitive advantages in "non–traditional" goods such as pineapples and palm hearts (Horkan, 1996). New local agribusiness began to produce higher value exports, and a study of the agro–export services in Central America revealed that, in 1998 Costa Rica was the country with the most advanced private agricultural services (Pomareda and Villasuso, 1998). Example of these new

industries were peeling, drying and roasting–vacuum packed coffee, packing of fruits and vegetables, seafood, the milling of rice and sugar cane, orange juice concentrated, slaughtering of cattle, and the processing of poultry.

The service sector in Costa Rica also went through a major transformation with the number of service companies in FTZ steadily increasing from 15 in 1997 to 44 in 2005, and several international corporations locating their call centers in Costa Rica. Later, these firms would account for 26 percent of all companies located in FTZ and hire 29 percent of all workers employed there. Finally, the exports from the service sector increased from US$75 million in 1997 to US$171 million in 2005 (Martínez, Padilla and Schatan, 2008). In summary, Costa Rica main exports portfolio has gone through some important changes, with a major shift from primary goods to manufacturing exports. Furthermore, within the agricultural sector, a series products have recently emerged as important foreign exchange generators (e.g. pineapples) while others have lost some of their prominence (e.g. coffee) (Table 8).

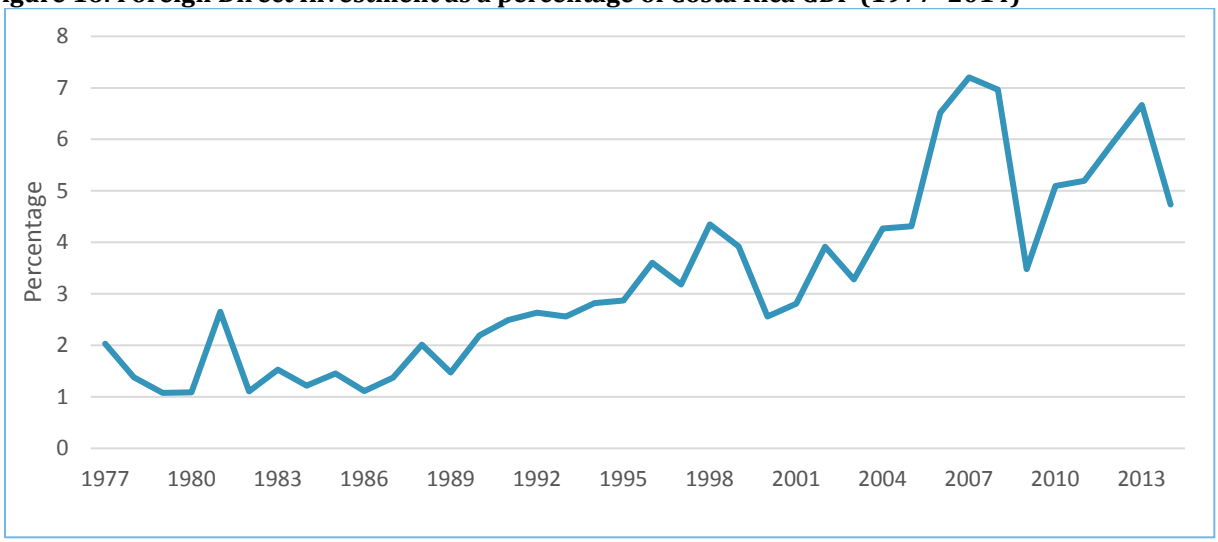
Table 8. Costa Rica top export products in 1994 and 2010

1994 Top 10 Export Products		**2010 Top 10 Export Products**	
Product	*Share*	*Product*	*Share*
Bananas	22%	Computer microchips	10%
Coffee	12%	Computer parts	9%
Pineapple	2%	Bananas	8%
Jewelry	2%	Pineapple	7%
Cotton panties	2%	Serum infusion and transfusion equipment	5%
Hair dryers	2%	Medical prosthesis	3%
Melons	1%	Pharmaceuticals	3%
Boned beef	1%	Food preparations	3%
Shrimp	1%	Coffee	3%
Ornamental plants	1%	Textiles and apparel	2%
Other	53%	Other	46%

Source: COMEX, using data from BCCR and PROCOMER.

In summary, a series of well–designed public policies coupled with the increase in FDI resulted in export growth and export diversification for the past two decades. It also became apparent that export diversification in Costa Rica has been dependent on the establishment of foreign firms in the FTZ. Today, multinational firms operating in the FTZs are the nation's main exporters surpassing Costa Rican firms, which remain more oriented toward the domestic and Central American markets. The ratio of FDI to Costa Rica's GDP and a steady increase of this measure can be observed since the structural reforms applied in the 1980s (Figure 16). This increase was only interrupted during economic recessions affecting the United States and other major industrialized nations. However, in recent years FDI has shown signs of stagnation and even decreases and remains to be seen in Costa Rica will be continue to attract foreign investment in the future.

Figure 16: Foreign Direct Investment as a percentage of Costa Rica GDP (1977–2014)



Source: World Bank, World Development Indicators (2014)

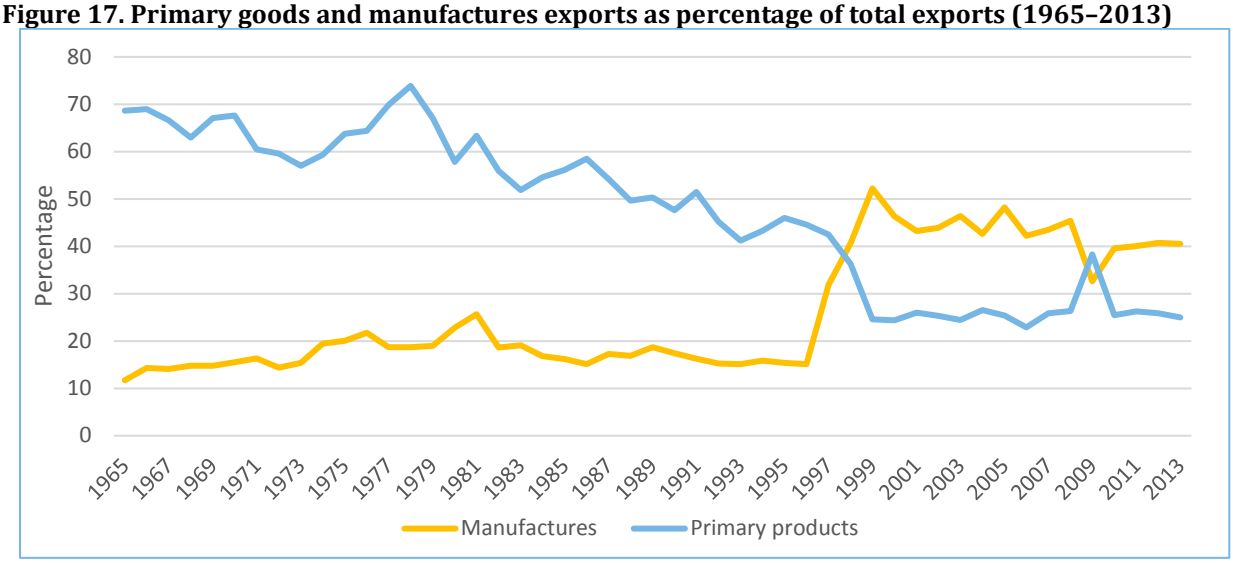
c. Decreasing Costa Rica's terms of trade volatility through diversification

The structure of exports is one factor that affects terms of trade (TOT) volatility. This is related to the weight that primary products (commodity) and manufactures exports have in total exports, as well as the volatility of prices associated with these types of exports. Jacks, O'Rourke, and Williamson (2009) report that primary products have experienced higher price volatility than manufactures over the past three centuries. UNCTAD (2008) reports that price volatility for manufactures was less than that of non–fuel commodities and crude petroleum for the period 1970–2008. In geographical terms and over the period 1960–2000, average TOT volatility was 3.2 percent for industrialized countries (manufactures exporters), 5.4 percent for East Asia and the Pacific, 9.8 percent for Latin America and the Caribbean, 8.3 percent for the Middle East and North, 12.2 percent for South Asia, and 12.1 percent for Sub–Saharan Africa (Jacks, O'Rourke and Williamson, 2009). Further, UNCTAD (2008) reports that there were 113 developing and transition economies for which exports of primary products represented more than 50 percent of total exports for the period 2002–2006. This is important because, economies more reliant on exports of primary products are likely to experience higher negative impacts from external shocks due to price fluctuations in international primary product markets (Cashin and McDermott, 2002; Cashin, McDermott and Scott, 1999).

Regarding the structure and behaviour of exports of Costa Rica during the period 1965–2013, the share of exports of primary products in total exports decreased from 68.62 percent in 1965 to 24.98 percent in 2013. On the other hand, the share of manufactures exports increased from 11.71 percent in 1965 to 40.52 percent in 2013 (Figure 17)[13]. Thus, Costa Rica has diversified its export basket and has been reducing its dependency on primary products since the late 1990s.

[13] Primary products had a larger share of total exports for the sub period 1965–1997, whereas manufactures exports have had a larger share of total exports for the period 1998–2013.

Figure 17. Primary goods and manufactures exports as percentage of total exports (1965–2013)



Sources: Export values for primary products and manufactures are from ECLAC, (Statistics Year Book, several years, available at: http://www.eclac.cl/); and total export of goods and services are from World Bank, World Development Indicators (2014).

Volatility of Costa Rica's TOT fluctuated between 18 percent and 2 percent over the period 1951–2013 (Table 9). During the 1950s TOT volatility was high (over 10 percent), as well as banana and coffee price volatilities– 31 percent and 12 percent, respectively. The 1960s show a significant decrease in TOT volatility. The banana volatilities increased to 15 percent in the early 1960s, but decreased again to 4 percent in the second half of that decade. On the other hand, coffee price volatility had a more stable behaviour during this decade. This decrease in TOT volatility is likely the result of a series of policies implemented during the Figueres administration (1953–1958) that promoted the diversification of agricultural output. Consequently, the share of coffee and bananas in total exports decreased from 97 to 72 percent over the period 1950–1963, while the share of beef and sugar in total exports increased to 11 percent (Gonzalez–Vega and Cespedes, 1993).

During the 1970s TOT, banana and coffee volatilities experienced important increases (Table 9)[14]. The sources of such instability were likely the two oil crises that happened in this decade. In addition, price of coffee increased from US$1254.2 per tonne in 1975 to US$4727.4 per tonne in 1977. This increase in price was due to a freeze in Brazil in 1975 (Gonzalez–Vega and Cespedes, 1993). Furthermore, during the late 1970s, Costa Rica's currency was overvalued and contributed to reducing exports, and foreign borrowing increased in order to sustain the exchange rate (Gonzalez–Vega and Cespedes, 1993).

[14] The sub period 1975–1979 shows the second largest value for TOT volatility and the largest value for price of coffee volatility.

Table 9. Terms of trade volatility (Standard Deviation), horizontal and vertical export diversification (1980–2013)

	Terms of trade Volatility[1]	Banana price volatility	Coffee price volatility	Horizontal Export diversification[2]	Vertical Export diversification[3]
1951–54	0.10	0.31	0.12	–	–
1955–59	0.12	0.10	0.13	–	–
1960–64	0.04	0.15	0.09	–	–
1965–69	0.03	0.04	0.07	125.00	17.26
1970–74	0.08	0.12	0.20	130.60	21.07
1975–79	0.15	0.11	0.46	135.00	22.49
1980–84	0.08	0.05	0.18	136.40	26.51
1985–89	0.18	0.05	0.38	147.80	23.91
1990–94	0.09	0.13	0.34	153.40	25.95
1995–99	0.05	0.08	0.31	158.40	42.84
2000–04	0.02	0.04	0.26	162.60	63.72
2005–09	0.03	0.04	0.10	163.60	60.47
2010–13	0.02	0.05	0.21	165.50	61.08

Sources: Terms of trade are from Banco Central de Costa Rica (1986); and World Bank, World Development Indicators (2005). Data on prices of bananas and coffee from ECLAC: Economic Commission for Latin America and the Caribbean (Statistics Year Book, several years, available at http://www.eclac.cl/). Manufactures as percent of merchandise exports data is from World Bank, World Development Indicators (2015). The data used to build horizontal export diversification are from COMTRADE.
Notes: 1. Volatility is computed as the standard deviation of the first difference of the natural log of the net barter terms of trade index (2005=100). 2. It is the average number of exporting sectors. 3. It is the average of manufactures exports as percentage of total merchandise exports.

Costa Rica's economy experienced a severe economic downturn in the early 1980s. This economics crisis and its impacts where likely emboldened by the oil shock during the Iran–Iraq war in the 1980s. Not surprisingly, the 1980s show highest value for TOT volatility, while banana and coffee price volatilities were 5 percent and 18 percent, respectively (Table 7). During 1980–1984, price of coffee decreased from US$3452.6 per tonne in 1980 to US$2123.6 per tonne in 1983 (Figure 10). The lower coffee prices and an overvalued currency due to a fixed exchange that was associated with a protectionist strategy and import substitution could have contributed to higher TOT volatility. The significant variability in coffee prices during this time is likely attributed to failure of the International Coffee Agreement (ICA) in 1989 as previously discussed.

The 1990s exhibit the beginning of a decreasing trend for TOT. During this same time period banana and coffee prices experienced some instability. For instance, price of coffee decreased from US$2469.9 per tonne in 1990 to US$1394.1 per tonne in 1993 – a 77 percent decrease. Once again, such change in prices is associated with the disappearance of ICA price system. Nevertheless, it is important to note that the high volatility of coffee price did not have a strong effect in TOT volatility as it did in the 1975–1979 and 1985–1989 sub–periods. Also, the share of primary products in total exports of goods and services decreased from 45.99 percent in 1995 to 24.56 percent in 1999, while that of manufacturing increased from 15.14 percent in 1996 to 52.23 percent in 1999 (Figure 17). The sub–period 1995–1999 also includes the US$300 million investment in a microprocessor plant in 1997 by Intel, which favored the TOT by offsetting the effect of the high volatility of the price of coffee. Furthermore, the establishment of the Intel plant contributed to increasing the high technology product export share in total exports from 3.3 percent in 1985 to 28.1 percent in

2001 (ECLAC, 2004). It is important to note that this was the first time Costa Rica had a trade surplus since 1950s (World Bank, 2006).

The 2000s show lower levels of TOT volatility (around 2 percent). The same was true for banana and coffee prices (Table 7). In 2000, the shares of primary products and manufacturing in total exports of goods and services were 24.35 percent and 46.36 percent, respectively, and there was little change throughout that decade (Figure 17). These shares remained fairly constant during this decade. Lastly, during the 2000 the relatively higher volatility levels of the price of coffee did not have strong effects on TOT volatility, which is likely the result of structural changes in the composition of Costa Rica exports.

This section has shown that the price of coffee has been more volatile than that of bananas, so it had a stronger effect on TOT volatility. Nevertheless, increases in the share of manufactures in total exports and decreases in the share of primary products in total exports have contributed to lower levels of TOT volatility. In addition, export diversification in Costa Rica has mitigated the effects of high price volatility of traditional agricultural export commodities (i.e. bananas and coffee) on TOT volatility.

Export diversification

Horizontal diversification and vertical diversification are commonly used measures of export diversification (Ferreira and Harrison, 2012; Herzer and Nowak–Lehnmann, 2006). To quantify the horizontal export diversification, the number of export sectors classified by the Standard International Trade Classification (SITC Revision 1) at the three–digit level is used. This measure is computed for the period of 1965 to 2013 using the United Nations dataset (COMTRADE). The selected measure for vertical export diversification is the ratio of manufactured exports to total exports also for the period 1965–2014 (see figure 15). This data is collected from the World Development Indicators (2015). Increases in horizontal export diversification mean that exports is comprised of a larger number of exporting sectors. This will reduce a country's dependency on exports of a small number of primary products; characterized with higher price and volume fluctuations. On the other hand, vertical export diversification means a shift in exports from primary products into manufactures, which also contributes to reducing terms of trade volatility.

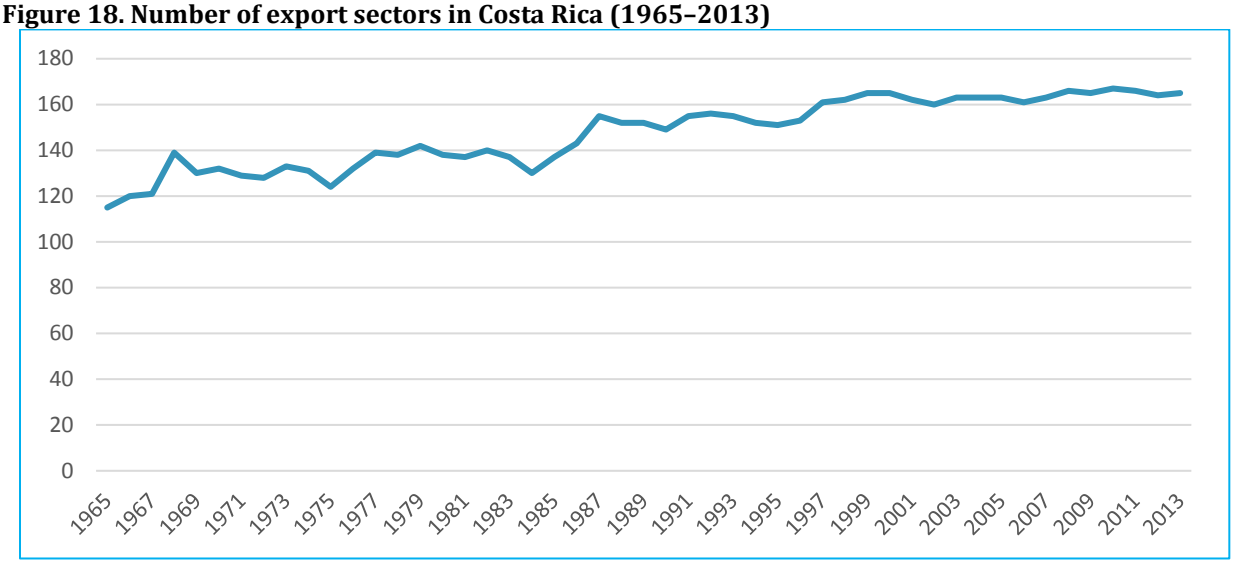
In terms of horizontal diversification in Costa Rica, from 1965 to 2013 there has been an upward trend (Table 10); although the mid–1970s and mid–1980s saw temporary reductions in the number of Costa Rica export sectors (Figure 18). Overall, the number of export sectors increased from 125 for the period 1965–1969 to 165.5 for the period 2010–2013, which represents a 32.4 percent increase. Nevertheless, data shows little progress in horizontal export diversification since the early 2000s to date.

Vertical diversification was previously discussed and was greatly influenced by Intel investment in 1997 (Figure 15). In summary, the share of manufactures exports to total exports can be divided in two periods: prior to Intel investment (1965–1997); and after Intel began its operations (1998–present). In the first sub–period, vertical export diversification remained stable and within a range of 20 percent. In the second sub–period, manufactured

exports accounted for over 60 percent of total exports – with the exception in2009 (Figure 15). Overall, the share of manufactures exports in total merchandise exports increased from 17.26 percent for the period 1965–1969 to 61.08 percent for the period 2010–13, which is an increase of 43.82 percentage points.

As the measure of vertical export diversification almost doubled between the periods 1990–1999 and 2000–2009, it appears that export diversification has been contributing to the reduction in terms of trade volatility that Costa Rica has experienced since 2000 (Table 9).

Figure 18. Number of export sectors in Costa Rica (1965–2013)



Source: COMTRADE (SITC Revision 1).

Table 10. Horizontal and vertical export diversification

Year	Horizontal export diversification	Vertical export diversification
1965–69	125.0	17.26
1970–79	132.8	21.78
1980–89	142.1	25.21
1990–99	155.9	34.39
2000–09	163.1	62.10
2010–13	165.5	61.08

Source: Author's calculations using data from World Bank, World Development Indicators (2015).
a. It is the average number of exporting sectors. b. It is the average of manufactures exports as percentage of total merchandise exports.

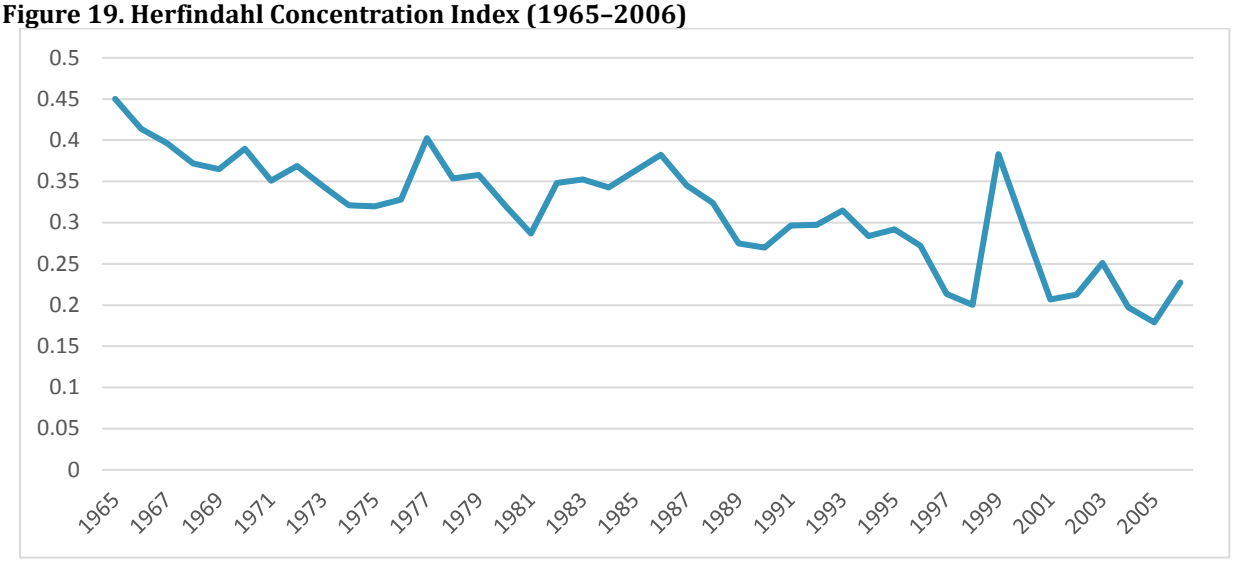
Another common measure of export concentration is the Herfindahl Export Concentration Index, and it is presented to be contrasted with the two measures of export diversification. This index is computed as follows:

$$H_t = \frac{\sqrt{\sum_{i=1}^{n}\left(\frac{x_{it}}{X_t}\right)^2} - \sqrt{1/n}}{1 - \sqrt{1/n}} \qquad (1)$$

where H_t is the concentration index in year t, x_{it} is the value of exports from sector i in year t, n is number of export sectors , and $X_t = \sum_{i=1}^{n} x_{it}$.

This measure is based on the Herfindahl Index often applied to measure industry concentration. When the index value approaches one, it means that a country has a greater reliance on a limited group of exports, while a value closer to zero represents a higher degree of export diversification. Three–digit SITC export data from the United Nations database (COMTRADE) is again used to construct this index. While there was little progress in the manufacturing sector from 1965 to 1997, there was also a steady decrease in the Herfindahl Export Concentration Index during that same time period (Figure 19). This may be evidence of decrease of concentration of Costa Rican exports caused by an increase of "non–traditional" agricultural exports, rather than by an increase in the exports of manufactured goods.

Figure 19. Herfindahl Concentration Index (1965–2006)



Source: COMTRADE.

d. Economic growth, diversification and inclusiveness in Costa Rica

Increasing exports promotes economic growth and Costa Rica has been fairly successful in the expansion of its exports base. Thus, it is important to understand how exports have been affecting the growth of the Costa Rican economy, which in turn has had an impact on its' people welfare (changes in poverty and income inequality).

Since the second half of the 1980s, Costa Rica's economy has been growing above 3.84 percent – as measured by the annual growth rate of total GDP. Thus, it is important to understand the linkages between exports, economic growth, poverty, and income inequality. To explain these relations, we use indicators for extreme poverty, moderate poverty, and inequality developed by Acosta, Calderon, Fajnzylber and Lopez (2008); and Adams and

Page (2005). These two poverty lines were determined using 2005 international prices (Table 11). The poverty-head count indices measure the percentage of the population that lives below these two poverty lines. The poverty gap represents the mean difference between poor people's expenses and the poverty line as percentage – it also measures the depth of poverty and its incidence. The square poverty gap measures the severity of poverty. Inequality is proxied by the Gini Index that represents the level of deviation of people's income distribution from a perfect equal distribution. In summary, the smaller the value of the Gini Index, the lower it is the level of inequality in a country.

Table 11. Poverty measures

Extreme poverty proxies
Poverty headcount index at the $1.25 per person a day
Poverty gap headcount index at the $1.25 per person a day
The squared poverty gap headcount index at the $1.25 per person a day.
Moderate poverty proxies
Poverty headcount index at the $2.00 per person a day
Poverty gap headcount index at the $2.00 per person a day
The squared poverty gap headcount index at the $2.00 per person a day.

Source: Acosta, Calderon, Fajnzylber and Lopez (2008); Adams and Page (2005).

As previously mentioned, Costa Rica has been successful in promoting exports, so it is important to understand how exports have been affecting economic growth, as well as the effect of the export structure on poverty and inequality. Overall, periods of economic growth coincide with robust growth in exports. Furthermore, continuous economic growth has resulted in important increases in Costa Rica average GDP per capita. On the other hand, unemployment rates have oscillated between 5 and 9 percent – higher unemployment rates are clearly associated to periods of economic downturn such as the 1980s crisis, and the economic recession in 2010 (Table 9).

For a historical perspective, about 50 percent of the population was poor in the early 1960s (Pifiera cited in Gonzalez–Vega and Cespedes, 1993), and inequality (Gini coefficient) was 52 in 1961 (Gonzalez–Vega and Cespedes, 1993). Nevertheless, poverty decreased during the 1960s, and about 25 percent of the population was considered poor in the mid–1970s (Cespedes and others; Fields; Pifiera; and Trejos cited in Gonzalez–Vega and Cespedes, 1993). Inequality also decreased in the 1970s; however, such improvements came to a halt in the late 1970s, and during the economic crisis of the earlier 1980s. This crisis had a severe impact on most of the country's population with real wages and consumption per capita falling by 40 percent and by 27 percent, respectively. From 1980 to 1982, poverty increased to 30 percent of the population (Gonzalez–Vega and Cespedes, 1993). The manufacturing sector and its exports also suffered during the crisis and manufactures share to total exports decreased from 20.61 percent in 1980–1984 to 16.83 percent in 1985–1989. After the initial negative impacts of this crisis, the economy began to recover which resulted in the growth of exports and average per capita GDP, and improved unemployment (Table 12).

Table 12. Growth rates of GDP and exports, average GDP per capita, and unemployment rate (1960–2012)

Period	GDP	Exports	Average GDP per capita	Unemployment rate
1960–64	4.47	6.26	1836.02	6.90[1]
1965–69	6.89	16.05	2157.72	–
1970–74	7.23	10.38	2669.45	7.30[2]
1975–79	6.63	7.13	3120.64	5.05[3]
1980–84	–0.67	1.97	2967.44	8.18
1985–89	5.37	13.05	3004.61	5.58
1990–94	6.40	9.26	3396.54	4.50
1995–99	5.98	15.88	3840.16	5.74
2000–04	3.84	4.12	4240.28	6.18
2005–09	4.68	2.98	5062.18	6.10
2010–12	4.84	7.37	5533.13	9.19

Sources: total GDP, GDP per capita, and total exports are from World Development Indicators, World Bank 2015; unemployment rate for the period 1963–1983 is from Source: Gonzalez–Vega and Cespedes (1993), Costa Rica, *Dirección General de Estadistica y Censos, and Ministerio de Trabajo y Seguridad Social*, various years, and for the period 1984–2013 is from World Bank, World Development Indicators (2015).
Notes: 1. Value for 1963. 2. Value for 1973. 3. Value covers subperiod 1976–79. Growth rates are computed by using the least squares method and constant US 2005 dollars. GDP per capita averages are in constant US$ 2005 dollars.

The 1985–1989 period was characterized by high poverty numbers, which was a direct result of the economic crisis (Table 13). Despite the recovery from the economic crisis, the second half of the 1980s shows the largest values for the measures of both extreme poverty and moderate poverty. MIDEPLAN cited in ECLAC (1987) reports that the percentage of poor wage earners in the urban sector increased from 41.7 percent in 1980 to 56.4 percent in 1981 and to 70.7 percent in 1982, while the percentage of poor families in the rural sector increased from 57.7 percent in 1980 to 72.1 percent in 1981 and to 82.3 percent in 1982. Thus, it appears that, despite the ongoing efforts for agricultural diversification, rural areas were impacted more individually by the economic crisis.

Table 13. Poverty and inequality averages (1986–2012)

Period	Extreme poverty	Extreme poverty depth	Extreme poverty severity	Moderate poverty	Moderate poverty depth	Moderate poverty severity	Gini coefficient
1986–89	11.50	7.05	49.65	18.79	10.04	100.84	44.33
1990–94	7.78	4.28	18.32	14.46	6.80	46.24	46.08
1995–99	5.60	2.91	8.44	10.51	4.79	22.98	46.24
2000–04	5.36	2.94	8.67	9.71	4.63	21.44	49.66
2005–09	2.90	1.57	2.45	5.72	2.56	6.53	49.34
2010–12	1.33	0.59	0.35	3.07	1.18	1.38	48.44

Source: World Bank, World Development Indicators (2015).
Note: The poverty measures are in terms of 2005 international prices.

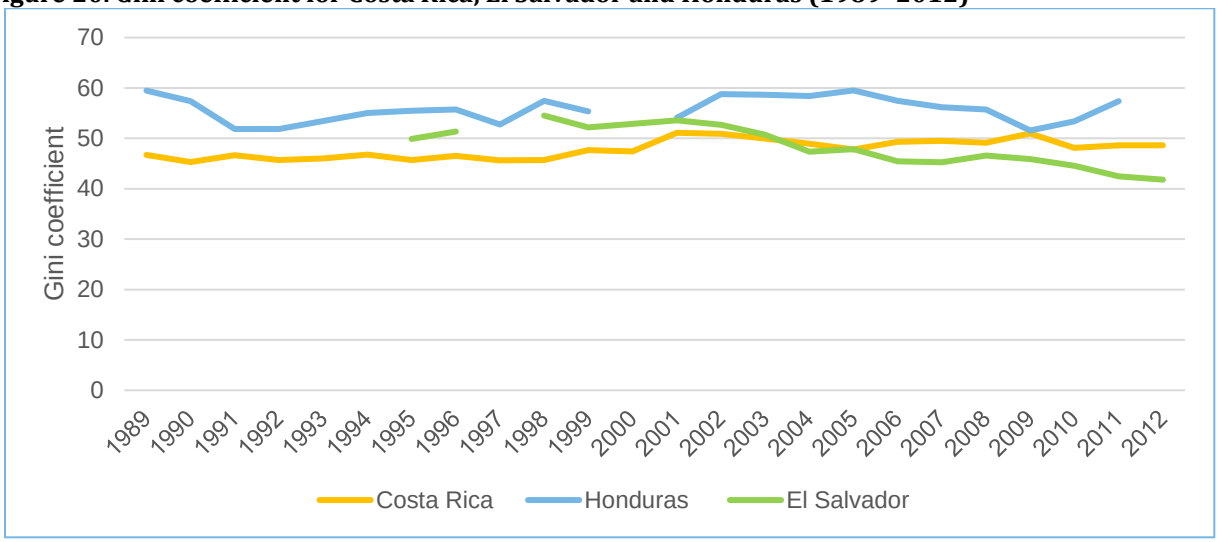
Following the economic downturn in the 1980s, Costa Rica's economy resumed growth and exports experienced a rapid expansion. Furthermore, average per capita GDP increased modestly, but so did the unemployment rate increased. Interestingly, during this decade, manufactures share in total exports increased and primary product share decreased. At the same time all poverty metrics decreased during this period (i.e. extreme poverty, extreme poverty depth, moderate poverty and moderate poverty depth). Nevertheless, inequality marginally increased from 46.08 in 1990–1994 to 46.24 in 1995–1999 (Table 13).

The rate of economic growth slowed down during the 2000s comparatively to the previous decade; however, exports continued to grow, but also at a slower rate. Average per capita GDP continued to improve during this decade, but despite this positive economic outlook, the unemployment rate only decreased from 6.18 percent in 2000–2004 to 6.10 percent in 2005–2009 (Table 12). For the first time in decades, manufactures share in total exports actually decreased while primary product share in total exports increased. During the 2000s, Costa Rica continued to make progress in the reduction of poverty, but failed to reduce inequality – which was higher during this decade relatively to the 1990s. Lastly, during the sub period 2010–2012, GDP and exports continued to grow, the average per capita GDP increased to US$5533.13, and the unemployment rate was 9.19 percent (Table 12). All measures of extreme and moderated poverty experienced decrease, and so did inequality (Table 13).

This section has shown that primary products are no longer the most important components of exports for Costa Rica. That is because manufacturers have dominated exports since the second half of the 1990s. Additionally, increased manufactures exports has proved to be the engine of the growth which has contributed to increasing GDP per capita, reducing poverty, and decreasing inequality. The sub periods 1965–1969 and 1995–1999 show the highest export growth rates, and a positive correlation between the growth rate of exports and growth rate of GDP is apparent. Poverty decreased from the earlier 1960s until the second half of the 1970s, increased during the 1980s, and has decreased from the second half of the 1980s onwards. Inequality was reduced between the earlier 1960s and the earlier 1970s, but then increased in the 1980s until the first half of the 2000s, only to be reduced again be the first half of the 2000s onwards. It is important to note that the growth rate of GDP increased from 3.84 percent in 2000–2004 to 4.84 percent in 2010–2012, GDP per capita increased from US$ 4240.28 in 2000–2004 to US$5533.13 in 2010–2012 (Table 12); manufactures as share of total exports have shown dominance over primary products as share of total exports from 2000–2004 to 2010–2012. These figures reveal some dependence of Costa Rica's economy and exports on manufactures rather than on commodities. Severe poverty, moderate poverty and inequality have all decreased from 2000 to 2012 – note that inequality values are still high relatively to that same figure in the early 1970s. In summary, during recent years there has been a positive correlation between the dominant share of manufactures in total exports and economic growth. The same has been true for poverty and inequality reduction.

Despite large social investments in public health care and education, decades of robust economic growth, and a growing middle class, income inequality remains a reality in Costa Rica. This suggests that the benefits from economic growth are being allocated to a small number of beneficiaries and that some sectors of the population have not recovered yet from the negative effects of the economic crisis of the 1980s. Costa Rica not only ranks 21 globally in terms of high income inequality, but it also shows fairly similar levels of income inequality, measured by the Gini coefficient, relatively to its neighboring Central American countries (Figure 20). This is relevant because these other countries have significantly lower GDP per capital levels.

Figure 20. Gini coefficient for Costa Rica, El Salvador and Honduras (1989–2012)



Source: World Bank, World Development Indicators (2015).

III. Policy implications and conclusions

Since the early sixties there has been a long–run trend toward export diversification in Latin America that was encouraged by the Economic Commission on Latin America (ECLA). The ECLA has promoted diversification into manufacturing exports based on the premise that manufactured goods have more stable demand and supply conditions comparatively to primary commodities. Nevertheless, many export diversification experiences in Latin America were characterized by export diversification among primary goods exports rather than by increases in the share of manufactures exports (Gutiérrez–de–Piñeres and Ferrantino, 2000). Chile is often seen as an example of a successful export diversification experience based on the growth of new agricultural exports, which in turn fostered economic growth (Gutiérrez–de–Piñeres and Ferrantino, 1997; Herzer and Nowak–Lehnmann, 2006).

For almost two decades, the ISI in Costa Rica created a domestic industrial sector, and the country experienced a period of high rates of economic growth. However, this inward model of development proved to be inadequate to overcome the challenges posed by a severe economic crisis in the early 1980s. Consequently, a national consensus was reached that the country should foster exports of high–value added manufactured goods and gain competitive advantages in the industrial sector in order to achieve again sustainable long–term growth. Today, Costa Rica's major source of export income is technology based, however Cattaneo *et al.* (1999) argue that the results of the structural reforms were rather ambivalent. Despite the diversification of production and export activities and the improvements in the national financial system, overall economic growth never reached the levels of the ISI years. The average rate of economic growth was higher during the ISI period than in the recent decades (Table 14). According to Vos *et al.* (2006), once the production from the export–processing regimes is excluded, a more modest economic performance is revealed, and the authors explain that this is in part due to the low levels of linkages between the export clusters and the rest of the economy. The empirical findings from Ferreira and Harrison (2012) show that export diversification (both vertical and horizontal) have no impact on economic growth. Findings from the current study show that unemployment rates have fluctuated over the past decades, and income inequality has actually increased in recent years.

Table 14. Average rate of economic growth and volatility of the economic growth rate in Costa Rica

Average growth			Volatility (standard deviation)		
1965–1979	*1980–1983*	*1984–2014*	*1965–1979*	*1980–1983*	*1984–2014*
6.72	–1.48	4.71	1.93	1.29	2.54

Sources: Author's calculation and World Bank.

Another key challenge that Costa Rican policy makers need to address is the nation historical dependence on the United States. Several studies have shown that overall economic growth in Costa Rica is significantly dependent on the economic performance of the United States. This dependence is even more evident in the export sector given that, the United States has been historically the leading market of Costa Rican exports (both agricultural and manufacture), and that a large number of multinational firms operating in

the FTZ are from the United States. Despite these issues, Costa Rican families' purchase power continues to increase[15], and poverty was greatly reduced. As an evidence of improving economic conditions, demand for imported goods and *gourmet* products has increased in recent years – the imports from the agribusiness sector (e.g. processed food products) have increased by 40 percent (PROCOMER, 2014).

After decades of dominance of coffee and banana production, Costa Rica began to promote "non–traditional" agricultural in the late 1970s and early 1980s. While its traditional commodities lost some of their economic importance, Costa Rica is now the leading pineapple producer and exporter, and has a mature food processing industry. Because of the relatively small size of its firms, Costa Rica agricultural and food sector will have to overcome the challenges of operating and competing in a more global market.

In summary, Costa Rica has been successful in moving its economy away from its commodity dependence and shifted away from its import substitution economic model. Costa Rican export supply went through most important changes, and today it is exporting goods and services significantly more sophisticated and knowledge–intensive (De Ferranti *et al.*, 2001). However, the adopted FDI–based export diversification strategy has had its own shortcomings, namely the weak linkages between multinational corporations operating in FTZs and the rest of the Costa Rica's economy. Furthermore, even though Costa Rica produces and exports a much larger array of products today than it did decades ago, this economy continues to depend heavily on one destination market, the United States. If Costa Rica is to remain competitive in a globalized economy, new economic policies are necessary to fully reap the benefits from the presence of high–tech firms in the country. Thus, Costa Rican authorities should continue its export–oriented economic policies, but at the same time provide additional support to the creation of small and medium domestic export–oriented firms, and improve the access of Costa Rican exports to new markets.

[15] Costa Rica's GDP per capita has doubled in the past 10 years.

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