

6. FOREIGN TRADE AND AGRICULTURAL EMPLOYMENT IN GUATEMALA

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6.1 INTRODUCTION

Agriculture is the prime source of employment in Guatemala with one of every three workers being employed in the sector. The effect of trade policy on agricultural employment is therefore likely to be an important determinant of the socio-economic consequences of trade in Guatemala.

In this chapter several aspects of the relationship between trade and agricultural employment in Guatemala are discussed. This includes a description of the situation of agricultural employment; an analysis of trade in agricultural products; a description of changes in trade policy including the ratification of recent trade agreements; a quantitative analysis of the effects of trade on agricultural employment and a description of legal and institutional aspects relevant for employment in the sector.

When characterizing employment in the agricultural sector, a comparison is made with workers in other sectors. Income and education levels among agricultural workers are discussed and so is the role of female employment in the sector. Importantly, the use of data from the Instituto Guatemalteco de Seguridad Social (IGSS) allows us to provide a picture of the role of social security coverage in the agricultural sector.

The analysis of trade data pays specific attention to the evolution of traditional export products like bananas, coffee and sugar. The recent increase in non-traditional manufacturing exports is also analysed and a separate analysis is undertaken of the evolution of Guatemala's export concentration both in terms of product and in terms of geographical concentration.

¹The authors, who are staff members of the Asociación de Investigación y Estudios Sociales (ASIES), would like to acknowledge the collaboration of Orlando Monzón and Rubén Darío Narciso on this study.

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Last but not least, labour regulation relevant for agricultural workers is described in a section that looks at both the national and international legal framework. Different stakeholders are discussed with a particular focus on the role of unions in the sector.

6.2 AGRICULTURAL EMPLOYMENT IN GUATEMALA

6.2.1 *Characterization of the agricultural worker*

Agriculture is the prime source of employment in Guatemala, as shown in table 6.1. Data from the 2006 National Living Conditions Survey² (Encuesta Nacional de Condiciones de Vida, or ENCOVI) show that one of every three workers is employed in agriculture. Despite this, the agriculture sector, at 12 percent, is not the biggest contributor to the Gross Domestic Product (GDP),³ reflecting the fact that the average productivity of the agricultural sector in Guatemala is low.

Table 6.1: Percentage distribution of workers by economic sector (both sexes), Guatemala, 2006

| Economic sector | Percentage |
|---|-------------------|
| Agricultural | 33.8 |
| Mining and quarrying | 0.1 |
| Industrial | 15.8 |
| Electricity and water | 0.2 |
| Construction | 6.5 |
| Retail | 22.7 |
| Transport and communications | 2.9 |
| Financial services | 3.2 |
| Public administration and national defence | 2.1 |
| Education | 4.0 |
| Health and social services | 8.4 |
| Organizations and extraterritorial entities | 0.2 |

Source: Authors' calculation from ENCOVI 2006 data.

Most agricultural workers are male, while in activities such as retail, education, and social services, female participation is greater than male, as shown in table 6.2.

² Carried out by the National Institute of Statistics (Instituto Nacional de Estadísticas, or INE) (INE, 2006). This database was provided free of charge to the research centres of Guatemala once the results of the survey were presented.

³ The contribution of agriculture to the GDP was obtained from the World Bank's World Development Indicators for the year 2006. According to information from the Banco de Guatemala, the greatest contributor to GDP during 2001–2006 was the manufacturing sector, which was responsible for 18.8% of GDP.

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Table 6.2: Percentage of female workers by economic sector, Guatemala, 2006

| Economic sector | Percentage |
|---|-------------------|
| Agricultural | 18 |
| Mining and quarrying | 3 |
| Industrial | 49 |
| Electricity and water | 11 |
| Construction | 2 |
| Retail | 57 |
| Transport and communications | 9 |
| Financial services | 27 |
| Public administration and national defence | 24 |
| Education | 67 |
| Health and social services | 77 |
| Organizations and extraterritorial entities | 39 |

Source: Authors' calculation from ENCOVI 2006 data.

Other notable characteristics of the agricultural work force, shown in tables 6.3 and 6.4, respectively, are that one third consists of smallholders. Two-thirds of the agricultural work force are employees and one-third of them are less than 20 years old. On average, agricultural workers work six hours a day.

Table 6.3: Number and percentage distribution of people by occupation in the agricultural sector, Guatemala, 2006

| Occupation | Number of people | Percentage |
|-------------------|-------------------------|-------------------|
| Employee | 1,229,212 | 67 |
| Smallholder | 576,626 | 32 |
| Employer | 20,892 | 1 |
| Total | 1,826,730 | 100 |

Source: Authors' calculation from ENCOVI 2006 data.

Table 6.4: Percentage distribution of agricultural workers by age group, Guatemala, 2006

| Age range | Percentage |
|------------------|-------------------|
| 10 to 20 | 34 |
| 21 to 40 | 32 |
| 41 to 60 | 23 |
| 61 or more | 11 |

Source: Authors' calculation from ENCOVI 2006 data.

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ENCOVI 2006 reported that there were 996,361 boys, girls, and teenagers (niños, niñas, y adolescentes, or NNA) working: This was approximately 21% of the total population aged 5 to 18. Of the NNA workers 67% lived in rural areas and 55% were occupied in agriculture and related activities. Some 64% of NNAs employed in agriculture were unpaid family workers. ENCOVI 2006 also reports that 11% of NNAs were illiterate.

Guatemala is a country with important socio-economic difficulties, as various indicators, such as the Human Development Index (HDI), report. One reason for this is the large number of people living in poverty. Since agriculture is the main source of employment generation and plays an important role in the country's economic activity, it is important to know the conditions of poverty that agricultural workers endure.

As table 6.5 shows, three of every four workers in the agricultural sector live in poverty, and one of every four lives in extreme poverty. This shows that in Guatemala agriculture generates low incomes and in most cases does not provide the means to satisfy basic needs. Responding to an ENCOVI question, 95 per cent of agricultural workers said that they would take an additional job if available – a testament to the low incomes that they now earn.

Table 6.5: Percentage distribution of agricultural workers by level of poverty,⁴ Guatemala, 2006

| Level of poverty | Percentage |
|------------------------|------------|
| Extreme poverty | 26 |
| Poverty | 49 |
| Above the poverty line | 25 |

Source: Authors' calculation from ENCOVI 2006 data.

Table 6.6: Percentage distribution of agricultural workers by income range, Guatemala, 2006

| Range of monthly income | | |
|-------------------------------|------------------|------------|
| In Guatemalan Quetzales (GTQ) | In US\$ | Percentage |
| 0 to 1,523.80 (minimum wage) | 0 to 211.35 | 92.9 |
| 1,523.81 to 3,047.60 | 211.36 to 422.69 | 5.8 |
| 3,047.61 to 4,571.40 | 328.96 to 492.42 | 0.5 |
| 4,571.40 or more | 492.43 or more | 0.9 |

Source: Authors' calculation from ENCOVI 2006 data.

⁴ The per capita values for the poverty line in 2006 were as follows: extreme poverty, Guatemalan Quetzales (GTQ) 3,206.00 (approximately US\$ 421); poverty, GTQ6,574.00 (approximately US\$ 865).

Table 6.7: Percentage distribution of agricultural workers by educational level,⁵ Guatemala, 2006

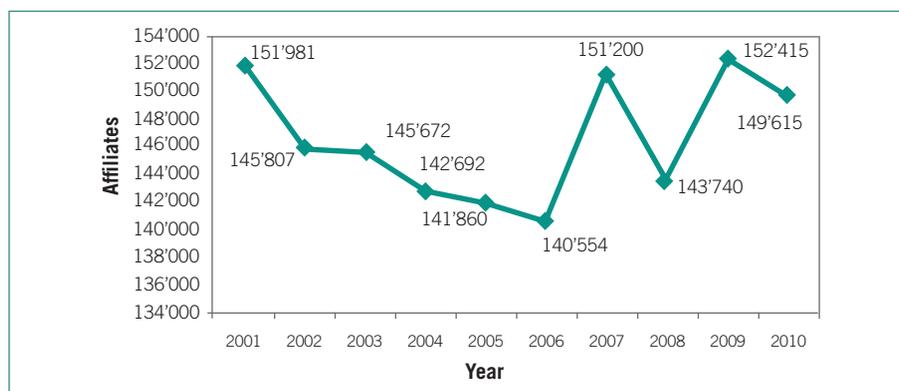
| Educational level | Percentage |
|-------------------|------------|
| None | 38.3 |
| Primary | 53.9 |
| Basic | 4.9 |
| Diversified | 1.6 |
| Bachelor | 0.4 |
| Postgraduate | 0.0 |

Source: Authors' calculation from ENCOVI 2006 data.

One indication that agricultural workers lack sufficient income to satisfy their own and their families' basic needs is that many earn less than the minimum wage.⁶ In 2006, for example, 93 per cent of agricultural workers earned less than the minimum wage. In addition, as table 6.7 shows, the great majority of agricultural workers have no education or low levels of schooling, which is the main obstacle to moving to better employment.

With respect to social protection, figure 6.1 shows the number of agricultural workers affiliated to the Guatemalan Institute of Social Security (Instituto Guatemalteco de Seguridad Social, or IGSS) over the first decade of the century.

Figure 6.1: Number of agricultural workers affiliated to the IGSS, 2001–2010



Source: Authors' calculation from IGSS data.

⁵ In Guatemala primary education lasts for six years (usually between 7- to 12-year-olds); middle, or secondary education is comprised of two levels, the basic level of three years (usually 13- to 15-year-olds); and the diversified level, of two or three years (usually 16- to 18-year-olds).

⁶ The minimum wage for agricultural workers for 2006, in accordance with Governmental Agreement No. 640-2005, was established at GTQ 1,523.80 (US\$ 200.50) per month.

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Table 6.8: Comparison of numbers affiliated to social insurance as reported by ENCOVI 2006 and IGSS, 2006

| | ENCOVI | IGSS | Difference (%) |
|---------------------------------|---------|-----------|----------------|
| IGSS agricultural affiliates | 93,759 | 140,554 | 33 |
| Total IGSS affiliates | 981,539 | 1,026,405 | 7 |
| Mean wage (US\$) in agriculture | 203.30 | 185.02 | 9 |

Source: Authors' calculation from IGSS and ENCOVI 2006 data.

All workers affiliated to the IGSS are deemed to be in the formal sector. In 2006 the number of agricultural workers affiliated to the IGSS was 140,544, while the total number of employees, both formal and informal, in the agricultural sector was 1,229,212. Thus, only 11.4 per cent of Guatemala's agricultural workers were in the formal sector.

The number of agricultural workers affiliated to the IGSS generally decreased over the 10-year period, particularly in the earlier years, followed by fluctuation in the later years. With the information available, it cannot be determined if the decrease between 2001 and 2006 reflects an exodus from the agricultural sector to other sectors of the economy, or if there was a shift from the formal to the informal agricultural sector. From 2001 to 2006 the contribution of agriculture to GDP declined from 15% to 11%.⁷

Since ENCOVI asked about IGSS affiliation, it is possible to compare the results of this question with the records of the social insurance agency, as is done in table 6.8 for 2006.

The sizeable difference in numbers for the agricultural sector may be due to the inclusion in the IGSS statistics but not in the ENCOVI statistics, of agribusiness workers (sugar mills, coffee mills, and other similar activities), one of the main economic activities of Guatemala. Additionally, ENCOVI 2006 was carried out in June, while the IGSS data reflect the yearly pattern of affiliations.

According to ENCOVI 2006 data, only 5.2 per cent of agricultural workers – employees and smallholders – were affiliated to the IGSS. The lack of periodic employment surveys rules out observation of the behaviour of the entire agricultural sector; only agricultural workers with access to the social insurance system can be tracked.

According to ENCOVI 2006 data, only 7.7 per cent of agricultural workers have a contract, while 82 per cent receive neither *bono catorce* nor *aguinaldo*.⁸ Receipt of these bonuses contributes to defining the formality of the employer–employee relationship.

⁷ <http://data.worldbank.org/indicator> (accessed 03/05/12).

⁸ *Bono catorce* and *Aguinaldo* are two types of bonuses, equivalent to the normal monthly wage of the worker, under decrees numbers 42–92 and 76–78, respectively.

6.2.2 Characterization of the agricultural employer

Employers in the primary sector include owners and stockholders of companies, regardless of their size; the definition excludes both non-owning managers of these companies and smallholders. In contrast to the agricultural workers, only one of every five employers lives in poverty. This disparity can be attributed to the gap between the incomes of agricultural employers and employees.⁹

Specifically, ENCOVI 2006 found that the mean monthly wage of an agricultural worker is GTQ890.00 (US\$117.11), while the mean monthly profit that an employer receives is GTQ5,310.00 (US\$698.68). In other words, employers earn six times as much as employees.

According to ENCOVI 2006 approximately nine of every ten agricultural employers are male. Most are 41 years or older.

6.2.3 Governmental and non-governmental entities that support agro-export activities

Among the governmental entities that support firms seeking to expand into international markets are the Ministry of Agriculture, Animal Husbandry and Alimentation (MAGA by its acronym in Spanish), and the Ministry of Economy of Guatemala (MINECO by its acronym in Spanish). Since 2006 MINECO, through its Business Centre (Centro de Negocios):

*supports the micro, small and medium firms in Guatemala with the promotion, marketing and access to information to firms seeking to internationalize, expand and achieve significant business links, including to export their products and/or services outside of Guatemala.*¹⁰

AGEXPORT is a private trade entity that groups and supports agro-export firms in Guatemala by promoting the growth of exports based on competitiveness. For example, Cuatro Pinos Cooperative, which has specialized in the export of fresh vegetables such as snow peas, string beans, and zucchini, among others, is a member of AGEXPORT.¹¹ The cooperative has around 580 members, of which the majority are smallholders. Its objective is to:

⁹ For the employed population ENCOVI 2006 employs the following categories: employees (who are divided into private and public), employers (agricultural and non-agricultural), independent workers (agricultural and non-agricultural), and unpaid workers. The main difference between employers and independent workers is that the latter do not have employees under their supervision.

¹⁰ From the Ministerio de Economía (MINECO) website, at: <http://www.mineco.gob.gt/Espanol/Centro+de+Informacion+y+Expo-Negocios> (accessed 03/05/12).

¹¹ Cooperatives are nonprofit organizations of people (not of capital) seeking the social and economic betterment of its members through common effort. In Guatemala they are governed by the legislation contained in Decree No. 82-78.

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...organize the production of vegetables for export, provide field-level extension, input supply, and assist in the harvesting, sorting and storage of products. It has also been carrying out its own exports to European and US markets. (Santacoloma and Suarez, 2005)

6.3 FOREIGN TRADE OF AGRICULTURAL PRODUCTS

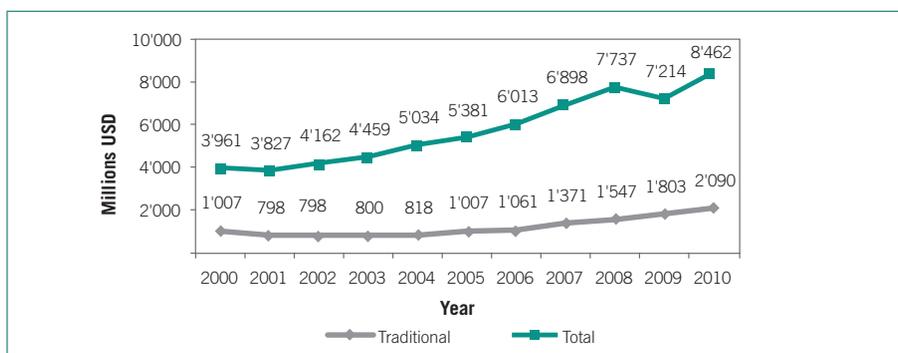
6.3.1 Evolution of traditional exports

Traditional exports – coffee, sugar, bananas, and cardamom¹² – accounted for 20.5 per cent on average of total exports from 2000 to 2010, according to information from the Banco de Guatemala. However, during the first half of the period, the overall share of traditional products decreased to a minimum of 16.2 per cent in 2004, as reflected in figure 6.2. During the second half of the decade traditional agriculture’s share in total exports increased because of the rise in the international prices of agricultural products, especially coffee.

Among traditional export products, coffee is Guatemala’s biggest export, followed by sugar and bananas. In 2000 coffee accounted for 14.5 per cent of Guatemalan exports. This was a peak, however. Over the decade 2000–2010 coffee accounted for 8.0 per cent of Guatemalan exports, as illustrated in figure 6.3.

Sugar represented on average 5.3 per cent of all Guatemalan export over the period 2000–2010, with sugar exports being higher than average in 2009 and 2010. Banana exports averaged a share of 4.9 per cent over the decade, while cardamom exports had a share of 2.3 per cent.

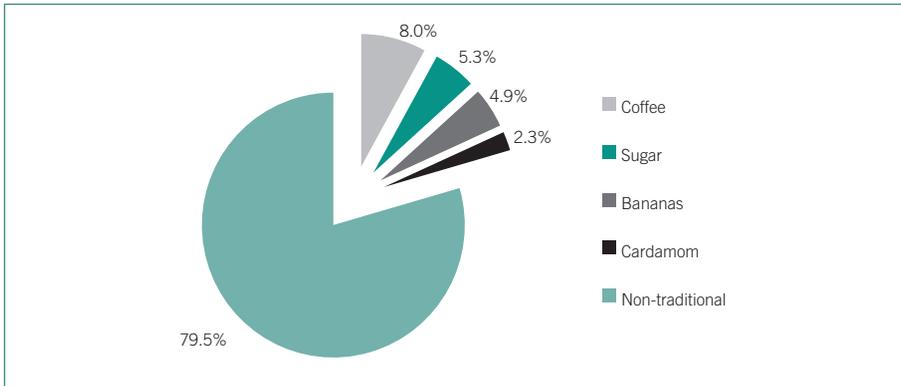
Figure 6.2: Trends in traditional agricultural exports and total exports, Guatemala, 2000–2010



Source: Authors' calculation from Banco de Guatemala data.

¹² Coffee, sugar, bananas, and cardamom are deemed the traditional export products. The remaining exports are considered non-traditional, and they include both agricultural and non-agricultural products. Examples of non-traditional agricultural products are rubber, snow peas, broccoli, zucchini, cantaloupe, mango, and peppers.

Figure 6.3: Average annual shares of exports, Guatemala, 2000–2010



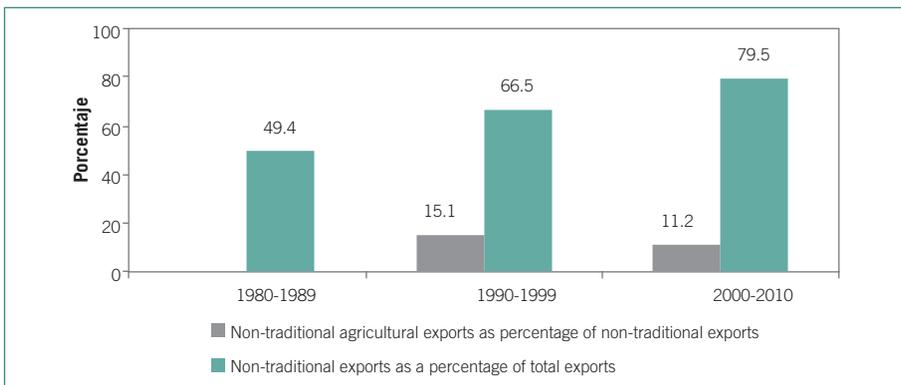
Source: Authors' calculation using Banco de Guatemala data.

6.3.2 Evolution of non-traditional exports

The share of non-traditional products in total exports has been increasing over the past three decades. Figure 6.4 shows that in the 1980s non-traditional products accounted for 49 per cent of all exports. During the 1990s they grew to nearly 67 per cent. During the last decade non-traditional products represented 79 per cent of total exports, thus demonstrating sustained growth for the last three decades.

While as a whole non-traditional exports are accounting for an increasing share of total exports, non-traditional agricultural products are becoming less important. Between the last two decades, the share of non-traditional agricultural products as a percentage of total non-traditional exports decreased from 15.1 per cent to 11.2 per cent. This can be explained by the increase in exports of textiles and apparel, boosted by government incentives.

Figure 6.4: The role of non-traditional exports, Guatemala, 1980–2010



Note: No data was available for 1980-1989 for non-traditional agricultural exports as a percentage of exports.

Source: Authors' calculation using Banco de Guatemala data.

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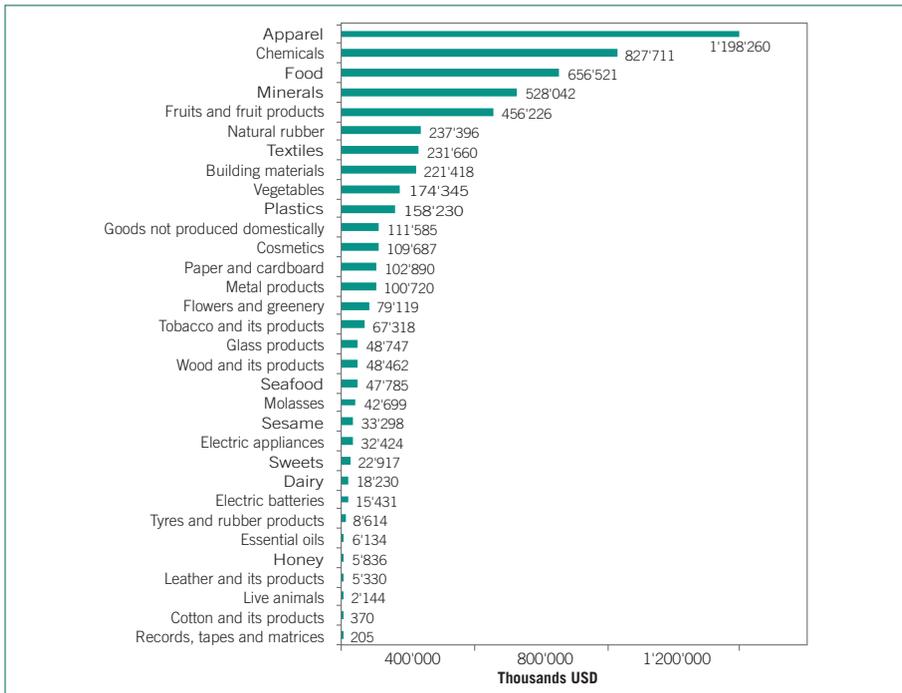
Growth of non-traditional products as a share of total exports could be attributable to the commercial openness of the recent years, which has allowed more transactions involving new products sent to other countries. Other reasons may be that this growth reflects an increase in world demand, the reduction of tariffs in importing countries, and Guatemala's increasing ability to satisfy this demand. This last explanation receives support from the increase in the literacy rate in Guatemala, which has provided the labour market with workers who produce better quality non-traditional exports.

Speaking of flower exports in Latin America, the Economic Commission for Latin America and the Caribbean (ECLAC) states:

The factors with the most influence on the international trade of fresh flowers are production costs, tariffs, phytosanitary controls in the importing countries, and technological advances, especially in transport and preservation, as well as the cultivation of new varieties. (Kouzmine, 2000, p.22)

In addition, the growth of non-traditional exports can be attributed to public policies encouraging the diversification of markets and products and fostering domestic and foreign investment. Amongst these policies it is worth mentioning the Export and Maquila Promotion Act (Decree No. 29-89) and the Free Zone Act (Decree No. 65-89). Figure 6.5 shows the export values for non-traditional products in 2010.

Figure 6.5: FOB value of non-traditional exports, Guatemala, 2010



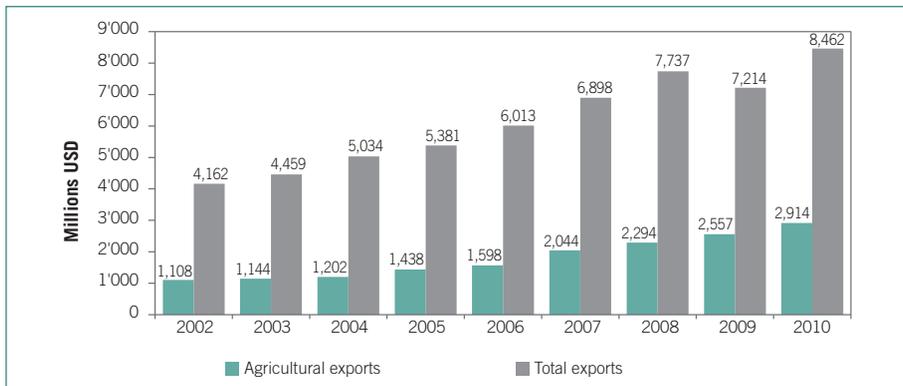
Source: Banco de Guatemala.

6.3.3 Agricultural exports

Guatemala's agricultural exports are mainly its traditional export products (i.e. coffee, sugar, bananas, and cardamom) but also include non-traditional agricultural products. From 2002 to 2010 Guatemala's agricultural exports grew from US\$1,108 million to US\$2,914 million – an average yearly growth rate of 13%, as shown in figure 6.6.

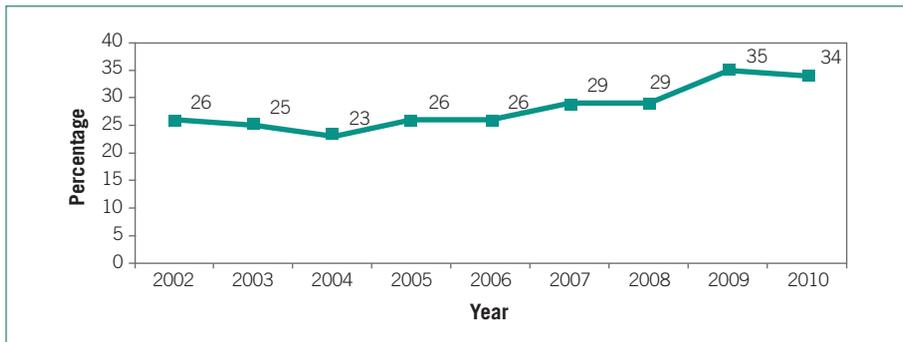
On average, one of every three dollars in Guatemalan exports comes from agricultural products, as shown in figure 6.7. In 2009 there was a spike in the share of agricultural exports. In that year the total value of exports decreased due to the international economic crisis, while agricultural exports slightly increased their export value.

Figure 6.6: Evolution of agricultural exports and of total exports, Guatemala, 2002–2010



Source: Authors' calculation using Banco de Guatemala data.

Figure 6.7: Agricultural exports as a percentage of total exports, Guatemala, 2002–2010



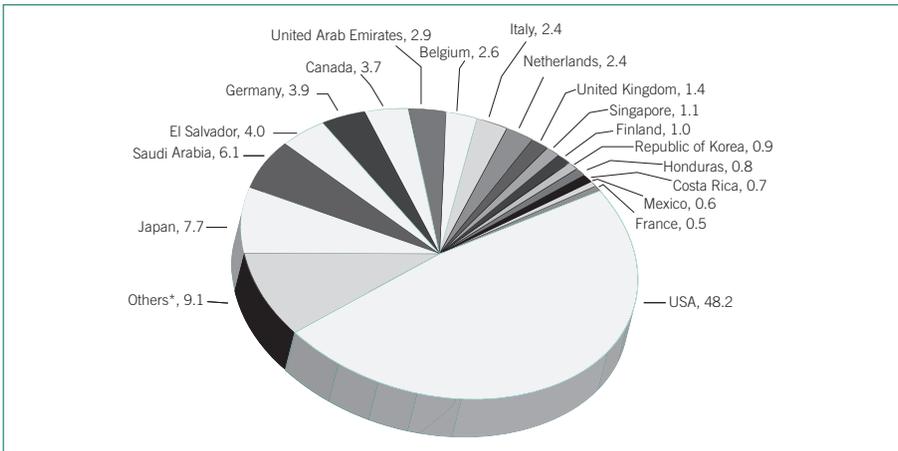
Source: Authors' calculation using Banco de Guatemala data.

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6.3.4 Main destinations for agricultural exports

Figure 6.8 shows the main destinations for Guatemalan agricultural exports, ordered from highest to lowest shares.

Figure 6.8: Main destinations for Guatemalan agricultural exports (in percentages), 2010



*Includes countries with shares of less than 0.5% each.

Source: Authors' calculation using Banco de Guatemala data.

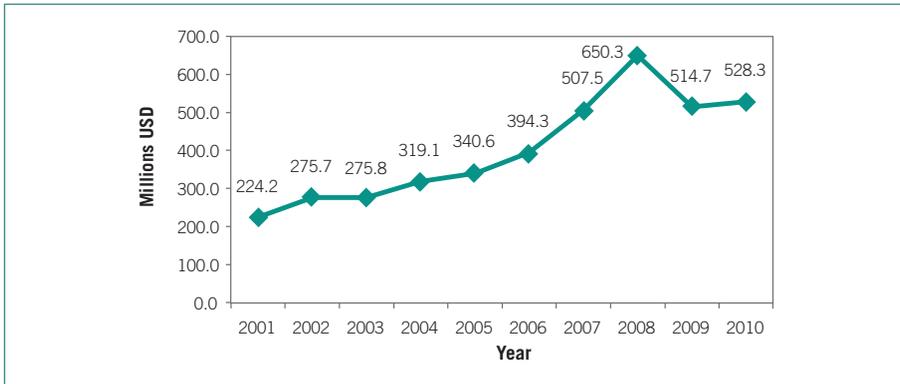
In this context, it is important to highlight the importance of the United States as a destination market for Guatemalan agricultural exports. The dependence on U.S. demand should probably be considered a weakness, in particular taking into account that the role of other export markets is significantly smaller. Central America, for instance, only absorbs 5.8 per cent of Guatemalan agricultural exports according to information from the Banco de Guatemala. This indicates that it would be important for Guatemala to diversify its exports in terms of destination markets.

6.3.5 Evolution of agricultural imports

Agricultural imports into Guatemala have grown in the previous decade, as figure 6.9 highlights, although they experienced a decrease in 2009, caused by the world crisis that emerged from the USA. However, imports appear to have returned to their normal trend and now continue to grow. This slight increase in imports has coincided with an improvement in economic conditions worldwide, accompanied by an overall increase in production.

All of Guatemala's agricultural imports come from the USA, Mexico, and Central America. In 2010 these imports amounted to 4.5% of total imports.

Figure 6.9: Trend in agricultural imports, Guatemala, 2001–2010



Source: Authors' calculation using Banco de Guatemala data.

6.4 TRADE AGREEMENTS SIGNED BY GUATEMALA THAT INCLUDE RULES ON AGRICULTURAL PRODUCTS

6.4.1 *The policy of trade liberalization*

Beginning in the mid-1990s Guatemala signed trade agreements with several countries and regions. This policy incrementally pursued wider market access for Guatemalan products, as well as promoting the export of products that traditionally had not been exported. These objectives were in line with the trade liberalization that the international markets were experiencing. For Guatemala trade liberalization has led to a larger role for non-traditional export as a share of total exports.

Trade liberalization has been consistent and has endured throughout various administrations. For example, negotiations for the Dominican Republic–Central America–United States Free Trade Agreement (DR–CAFTA) began under the government of President Alfonso Portillo (2000–2004), and its subscription and ratification took place under the administration of President Oscar Berger (2004–2008).

6.4.2 *Dominican Republic–Central America–United States Free Trade Agreement*

The DR–CAFTA, ratified in 2006, is one of the most important trade agreements for Guatemala, as trade between Central America and the USA accounts for nearly 70 per cent of the region's total international trade.

The objectives of the treaty, established in Chapter 1, are the following:

- (a) *encourage expansion and diversification of trade between the Parties;*
- (b) *eliminate barriers to trade in, and facilitate the cross-border movement of goods and services between the territories of the Parties;*
- (c) *promote conditions of fair competition in the free trade area;*

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- (d) *substantially increase investment opportunities in the territories of the Parties;*
- (e) *provide adequate and effective protection and enforcement of intellectual property rights in each Party's territory;*
- (f) *create effective procedures for the implementation and application of this Agreement, for its joint administration, and for the resolution of disputes; and*
- (g) *establish a framework for further bilateral, regional, and multilateral cooperation to expand and enhance the benefits of this Agreement.*

Although the negotiation, subscription, and ratification of this treaty generated much controversy, five years after its entry into force only few studies exist that analyse its effects on Guatemala's economy and, specifically, its effects on employment.

Surveys carried out by the Asociación de Investigación y Estudios Sociales (ASIES) of the textile and apparel industries reveal that DR-CAFTA's impact has not been homogenous. The textile industry says that it is benefiting from the agreement, while the apparel industry has a different perception, considering the agreement not as beneficial as expected. The opinion survey states:

When differentiating by industry, the textile industry is the greatest beneficiary. This can be explained by the rule of origin negotiated for some inputs. 86% of the sample said that the impact has been positive, while only 47% of the apparel industry believes it has been beneficial. (ASIES, 2006)

Chapter III of the Agreement, National Treatment and Market Access for Goods, has several sections: a) National treatment; b) Tariff elimination; c) Special regimes; d) Non-tariff measures; e) Other measures; f) Agriculture; g) Textiles and apparel; and h) Institutional provisions. The section on agriculture includes the administration and implementation of tariff-rate quotas, agricultural safeguard measures, sugar compensation mechanisms, consultations on trade in chicken, the agriculture review commission, the committee on agricultural trade, and subsidies to agricultural exports.¹³

According to research carried out by ASIES (2006) on DR-CAFTA's tariff elimination schedule,

DR-CAFTA seeks to consolidate the benefits granted under the Caribbean Basin Initiative (CBI): some benefits were expanded and relatively long tariff reduction periods were given to sensitive products – staple grains, beef and dairy: non-linear reductions with a period of grace for those products, the establishment of tariff-rate quotas for sensitive products, the establishment of an agricultural safeguard for some of these products and the exclusion of a reduced group of products like sugar from the USA and white maize for Guatemala.

¹³ This last section indicates that the parties share the common objective of the multilateral elimination of export subsidies for agricultural goods and work together towards an agreement in the WTO to eliminate those subsidies and prevent their reintroduction in any form.

Agricultural products account for the biggest share of trade with the USA. DR-CAFTA grants most Central American agricultural and agro-industrial products immediate access to the USA. This access may be beneficial for Guatemalan fresh, chilled, and frozen fruits and vegetables, seeds, spices and grains that may have potential niche markets (ASIES, 2006).

However, some Guatemalan agricultural products will not have immediate access to the US market, among them beef, cotton, tobacco, and peanuts, which will eventually enter the market through a tariff-rate quota in 15 to 20 years (ASIES, 2006).

As for the agricultural products most consumed by Guatemalans – maize, beans, and rice – these were subject to different treatment in the negotiation of the agreement. This is, for instance, the case for maize that represents the main component of the Guatemalan population's diet (Pingali, 2001). Yellow maize is mainly used as an industrial input and was allocated a liberalization period of ten years. White maize, instead, is mainly used for human consumption and was pretty much left out of the agreement as it was allocated a tariff-rate quota of 20,000 metric tons (MT), with an annual growth of 2% (ASIES, 2006).¹⁴

Some agricultural products, such as sugar, cheese, ice cream, milk, fluid cream, sour cream, and other dairy products, are subject to tariff-rate quotas when exported under DR-CAFTA. In the case of sugar, Guatemala negotiated quotas starting with 32,000 MT duty-free in year 1, reaching 49,820 MT in year 15, and, starting from the 15th year, the quota increases by 940 MT per year.¹⁵

Cheese exported from Guatemala to the USA is exempt from duty as long as the specified amounts are not surpassed. For the first year there is a 500 MT tariff-rate quota; as of the 10th year, there will be a 776 MT tariff-rate quota, and from year 20 the amount is unlimited. The same is true for other dairy products, starting with 250 TM in the first year and no limit from 20 years on.

As for imports, tariff-rate quotas were negotiated for agricultural products that come to Guatemala from the USA, such as beef, pork, cheese, powdered milk, ice cream, butter, other dairy products, yellow corn, maize, paddy and milled rice, and chicken quarters.

It should be noted that agricultural safeguard measures were included. This provision allows one of the parties to modify preferences temporarily for products of national interest by raising the tariff of the tariff-rate quotas. By the 14th year of the treaty, a Commission of Agricultural Revision will be established to assess the effects of trade liberalization and the possible extension of these safeguards.

¹⁴ Tariff-rate quotas are set at a specific quantity of an import that is fully or partially exempt from paying customs duties for a certain period.

¹⁵ With regards to sugar in other treaties, the free trade agreement (FTA) with Mexico, for example, Chapter IV, covers the agricultural sector, and in Annex 4-11 it deals specifically with trade in sugar between Guatemala and Mexico. Preferential conditions for sugar will be granted by the Sugar Analysis Committee that sets preferential conditions each year, on a case-by-case basis, upon request of one of the parties. If a party has been an exporter in a given year, that party is not eligible for the same preference in the following year.

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More generally, DR-CAFTA establishes the possibility that, and sets out the conditions under which, some of the parties can use the special agricultural safeguard (SAE by its acronym in Spanish), which is automatic and lasts for one calendar year. This safeguard allows each country to limit temporarily the imports of an agricultural product, if these have increased to an amount that would threaten or damage domestic production, in accordance with what has been established by the WTO. Among the products eligible for this measure are chicken, fluid milk, cheese, powdered milk, butter, ice cream, other dairies, pork, milled and paddy rice, whole beans, vegetable oil, peppers, tomatoes, fresh potatoes, high fructose corn syrup, and onions.

The agreement clearly calls for the elimination of any agricultural export subsidy and establishes the endeavours that both parties will pursue to eliminate the subsidies on a multilateral level. However, no reference is made to domestic production subsidies and other policies to support agricultural production. As a result, production subsidies and other sectoral policies in support of agriculture, have a tendency to create asymmetries between the parties (Rodrigues, 2006).

With regards to investment, the Agreement in Chapter X specifically sets out rules to increase legal security. Likewise, it has a section relating to settling disputes between the investor and the State.

6.4.3 Other trade agreements signed by Guatemala

The Central American General Treaty of Economic Integration was signed in 1960 by El Salvador, Guatemala, Honduras, and Nicaragua. Costa Rica subscribed in June 1962. This treaty may be the most important commercial agreement for Guatemala since it is part of a bigger project of social, economic, and political integration, the System of Central American Integration (Sistema de Integración Centroamericana, or SICA).¹⁶ The General Treaty was modified by the Guatemala Protocol to The Central American General Treaty of Economic Integration, of 1993, which adapted the treaty to the international context and the institutions created by the Tegucigalpa Protocol.

Another important step in the integration process was the approval, in June 2004, of the General Framework for the Negotiation of the Central American Customs Union. In January 2000, El Salvador and Guatemala approved the Convention Framework for the Establishment of a Customs Union between El Salvador and Guatemala, given the options granted under the Guatemala Protocol.

As for the achievements of the integration process, on the commercial side there has been a growth of intraregional trade. As shown in table 6.9, intraregional trade has grown considerably since the signing of the General Treaty of Integration in 1960. This growth stopped in the early 1980s because of the economic crisis known

¹⁶ SICA was established by the Tegucigalpa Protocol to the Constitution of the Organization of Central American States (Organización de Estados Centroamericanos, or ODECA) on 13 December 1991. The original constitution of ODECA was signed on 14 October 1951 by Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

Table 6.9: Central American trade- intraregional and with the rest of the world (RoW), 1960-2010 (in millions of US\$)

| Year | Intraregional | RoW |
|------|---------------|--------|
| 1960 | 30 | 409 |
| 1970 | 286 | 812 |
| 1980 | 1 129 | 3 315 |
| 1986 | 413 | 3 460 |
| 1993 | 1 160 | 3 979 |
| 2000 | 2 617 | 8 895 |
| 2010 | 5 902 | 16 241 |

Source: SIECA, 2012. http://www.sieca.int/Publico/CA_en_cifras/CA_EVOLUCION_DEL_COMERCIO/Evolucion_1960-2010/CA_Evolucion_1960-2010.htm (accessed 16/08/12).

as the “lost decade”, which was aggravated by the armed conflicts that hit El Salvador, Guatemala, and Nicaragua. Since the 1990s there has been a reactivation of intraregional trade, coinciding with the democratization process and the signing of the Guatemala and Tegucigalpa Protocols (Guerra Borges, 1997).

It is worth noting that the export statistics from the Secretaría de Integración Económica Centroamericana (SIECA), shown in table 6.9, do not include textile exports from the *maquilas* (free-trade zones where products are processed or manufactured from materials imported duty-free). Given that *maquila* exports play a more important role in trade with the rest of the world than in intraregional trade, the weight of intraregional exports in total exports is likely to be overvalued in Table 6.9. The Central American Common Market is nevertheless of great importance for all its parties, and its share of trade has been increasing. In 2010, it represented 11.2 per cent of Costa Rican exports, 35.5 per cent for El Salvador, 28.2 per cent for Guatemala, 22.7 per cent for Honduras, and 14.5 per cent for Nicaragua (Urrutia, 2011).

To mark its 50th anniversary in 2010, the Central American Bank of Economic Integration (Banco Centroamericano de Integración Económica, or BCIE) evaluated the economic integration process, highlighting among its achievements its endurance in the face of diversity and adversity. It also pointed out that the region is strategically located, with a common language, and has no ideological adversaries and that it has expanded its scope and geographical presence.¹⁷ In addition, the report pointed out that it is the most successful process of integration in the developing world, for it is a completely free trade area, except for sugar and coffee. Moreover, the process is supported by both governments and civil society (BCIE, 2010).

Additionally, Guatemala has preferential trade agreements signed and in force with Chile, Colombia, the Dominican Republic, Mexico, Panama, and Taiwan;

¹⁷ The geographical expansion refers to the incorporation into one or several spheres of the integration process of Belize, Panama, and the Dominican Republic.

and partial preferential agreements with Belize, Cuba, and Venezuela. Additionally, it is eligible for the Canadian and European Generalized System of Preference (GSP).

In the majority of these agreements, Guatemala has negotiated the reduction or elimination of tariffs for agricultural products. This is important because agricultural products are the ones that Guatemala exports the most. An example of this is the 2005 FTA with Taiwan, where tariff reductions were negotiated for coffee, sugar, cardamom, asparagus, capers, vegetable seeds, and other agricultural goods. Under the FTA with Chile, coffee, mangoes, and other tropical fruits enter Chilean territory duty-free.

6.4.4 Association Agreement between the European Union and Central America

On 29 June 2012 in Tegucigalpa, Honduras, a document was signed that formalizes the Association Agreement between the European Union (EU) and Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. The signing of this document is the last administrative step that the governments must take; it finalizes the negotiating phase, which started in 2007. However, for the Agreement to enter into force, the Central American and European parliaments need to ratify it. It is expected that the Guatemalan parliament will do so by 2013.

This is the first region-to-region agreement negotiated by the EU, and its content is based on three pillars: political dialogue, cooperation, and free trade. The agreement gives Central America the possibility of exporting with preferential access the following products, among others, to the EU: coffee, ethyl alcohol, cane sugar, cardamom, tobacco, ornamental greens, bananas, and molasses. In turn, Central America provides preferential access to European fertilizers, machinery and industrial equipment, cars, medicines, and petroleum products, among others. The EU grants immediate access to 60 per cent of the tariff headings, access in up to 10 years to an additional 17 per cent, and to 5.23 per cent under tariff-rate quotas. Central America grants immediate access to 34 per cent of the tariff headings, access in up to 15 years to an additional 36 per cent, access through tariff-rate quotas to 2.37 per cent, and no preferential access to 27.18 per cent.

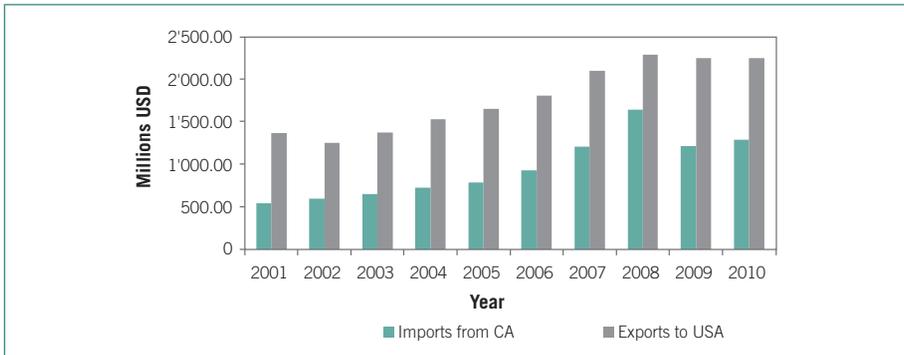
The Agreement also includes provisions on trademark and other intellectual property rights (e.g. geographical indications, industrial designs, patents, and plant varieties) and provisions to safeguard these rights.

6.4.5 Trade of agricultural goods between Central America and the USA

The balance of trade between Central America and the USA for agricultural products is in favour of Central America, as figure 6.10 shows. According to SIECA data, in 2010 the total value of Central American agricultural imports from the USA was US\$ 1,282.71 million, while the total value of Central American agricultural exports to the USA was US\$ 2,249.06 million.

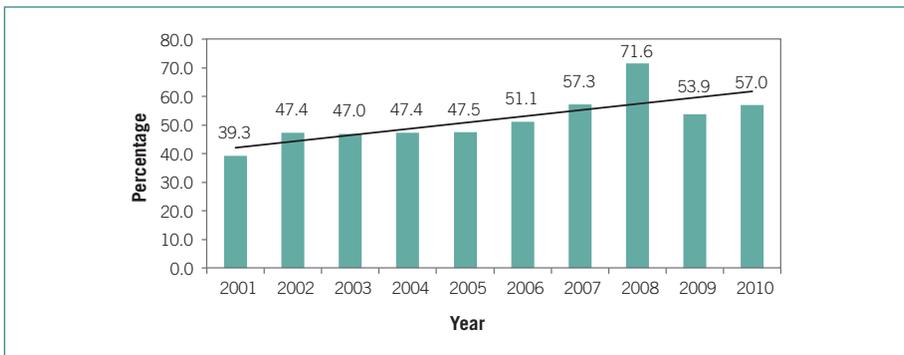
6: Foreign trade and agricultural employment in Guatemala

Figure 6.10: Trend in foreign trade of agricultural products between Central America (CA) and the USA, 2001–2010



Source: Authors' calculation using data from Consejo Monetario Centroamericano.

Figure 6.11: Ratio of Central American agricultural imports from the USA to Central American agricultural exports to the USA, 2001–2010

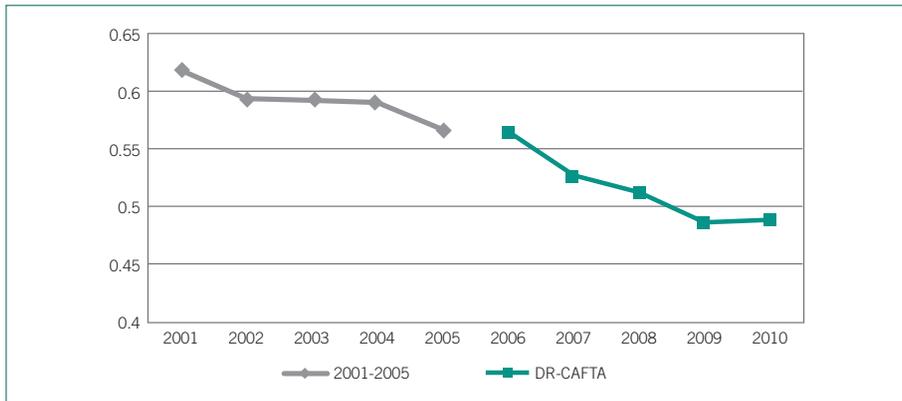


Source: Authors' calculation using data from Consejo Monetario Centroamericano.

The case of agricultural products is unique, for generally the balance of trade favours the USA. For example, SIECA data show that, for metal products and manufactures, Central America imports from the USA five times more than it exports to the USA. However, the trends in agricultural trade between the two regions show that Central America's imports are growing faster than its exports. Central America is demanding more agricultural products from the USA, not only in value but in share as well.

Agricultural products from the USA account for 6 per cent of the agricultural import market in Guatemala. In the period prior to the signing of the Agreement, the share was around 5.5 per cent; in the years after the ratification of DR–CAFTA in 2006 the share averaged 6.3 per cent.

Figure 6.12: Exports – Herfindahl Index, Guatemala, 2001–2010



Source: Authors' calculation using Banco de Guatemala data.

As figure 6.12 shows, Guatemala's exports became less concentrated in terms of products in the first decade of the 21st century. In 2001 the Herfindahl Index stood at 0.62, while in 2010 it had decreased to 0.49.¹⁸ While the concentration of exports decreased throughout the decade, the decrease accelerated after DR-CAFTA came into force in 2006.

6.5 EFFECTS OF PREFERENTIAL TRADE AGREEMENTS ON AGRICULTURAL EMPLOYMENT IN GUATEMALA

6.5.1 Econometric model

6.5.1.1 Data

Guatemala has serious deficiencies regarding employment statistics. For example, information regarding the labour market in the past decade comes only from household surveys in 2004 and 2006. Furthermore, the findings of these two surveys are not comparable; the 2004 survey was an employment survey, whereas the 2006 survey was a survey of living conditions.

The lack of periodic statistical information makes it extremely difficult to construct a consistent historical series. This in turn hinders development of solid statistical models that would yield relevant results.

Due to the lack of more comprehensive information, the number of agricultural workers contributing to IGSS is used as the dependent variable and, as independent variables, the values of exports of traditional goods are used to determine the effects of foreign trade on agricultural employment. The data used for the dependent variable are those shown in figure 6.1.

¹⁸ The Herfindahl Index measures concentration. It is used here to determine export concentration. It was calculated by grouping products as follows: agricultural, livestock, mining, manufactures, and electricity. The grouping allowed calculation of the relative shares in total exports.

With the available information univariate¹⁹ and bivariate²⁰ econometric models were constructed. They provide useful information on the effect of trade liberalization on formal agricultural employment and allow for analysis of the relationship between trade and employment before DR-CAFTA (2001–2005) and since (2006–2010).

6.5.1.2 Some results

The first model, the bivariate, assesses the change in the trend of formal agricultural employment after the entry into force of DR-CAFTA. The justification for looking only at this agreement is that, as noted (see specifically figure 6.8), trade in agricultural products between the USA and Central America accounts for more than 52 per cent of what Guatemala exports.

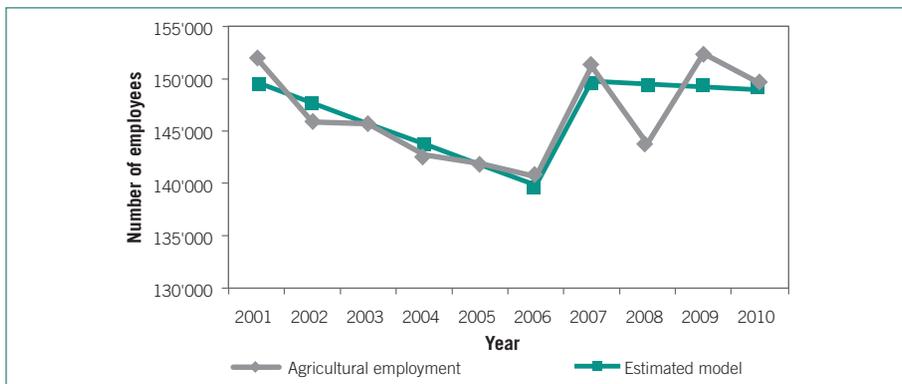
Specifically, the following model was run to determine if there is a change in the trend:

$$E_t = \beta_0 + \beta_1 t + \beta_2 Dt$$

Where E_t is the number of formal agricultural employees (according to IGSS data); t is time, and D is a dummy variable that takes the value of 1 for the years when DR-CAFTA was in force and 0 for the preceding years. The betas are the coefficients to be estimated.

The results of the model suggest that there was a change in the trend starting in 2006,²¹ as seen in figure 6.13. Formal agricultural employment continued to decrease (except for the substantial increase between 2006 and 2007), but the slope of the decline was less steep than before DR-CAFTA (that is, the green line has a steeper negative slope for 2001–2006 than for 2007–2010).

Figure 6.13: Agricultural members of IGSS and modelled estimate of formal agricultural employment, Guatemala, 2001–2010



Source: Authors' calculation from IGSS data.

¹⁹ Models with only one independent variable.

²⁰ Models with two independent variables.

²¹ The results of the regressions can be found in the Annex.

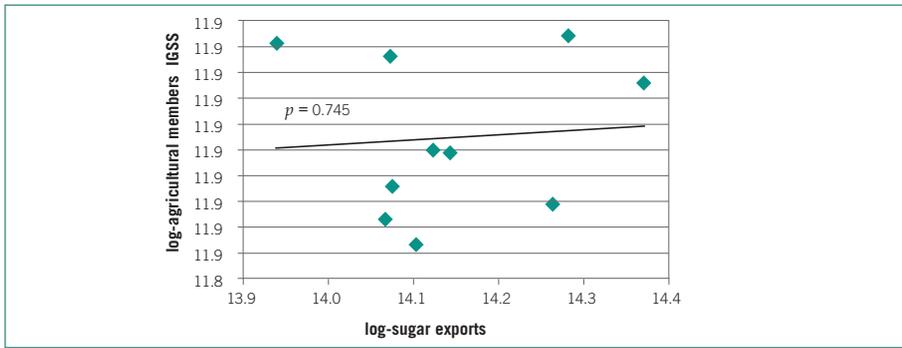
Shared Harvests: Agriculture, Trade and Employment

Next, we examined the relationship between formal agricultural employment and the volumes of traditional exports. Specifically, for each product (coffee, bananas, sugar, and cardamom), the following model was estimated:

$$\ln E_t = \beta_0 + \beta_1 \ln X_t,$$

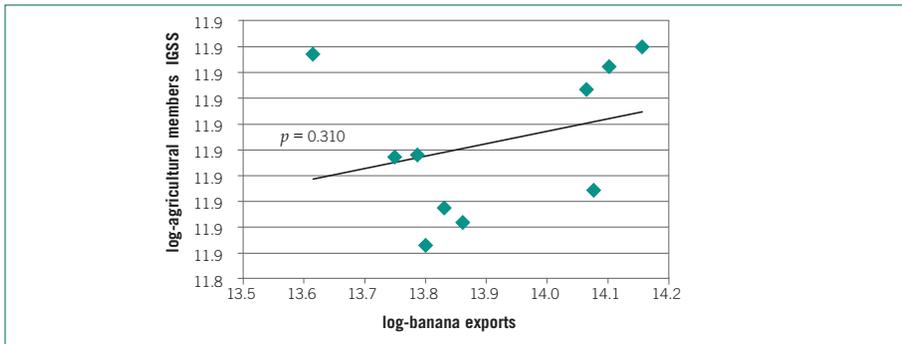
where E_t is the number of formal agricultural employees; X_t is the export volume for each product; and the betas are the coefficients to be determined. Natural logarithms were used to measure the elasticity of agricultural employment with the exports of each of the products. Figures 6.14 through 6.17 present scatter diagrams of these relationships (all the variables in logarithms) along with their respective statistical value of p .²²

Figure 6.14: Relationship between membership of the IGSS in agriculture and sugar exports, Guatemala, 2001–2010, scatter diagram in logarithms



Source: Authors' calculation.

Figure 6.15: Relationship between membership of the IGSS in agriculture and banana exports, Guatemala, 2001–2010, scatter diagram in logarithms

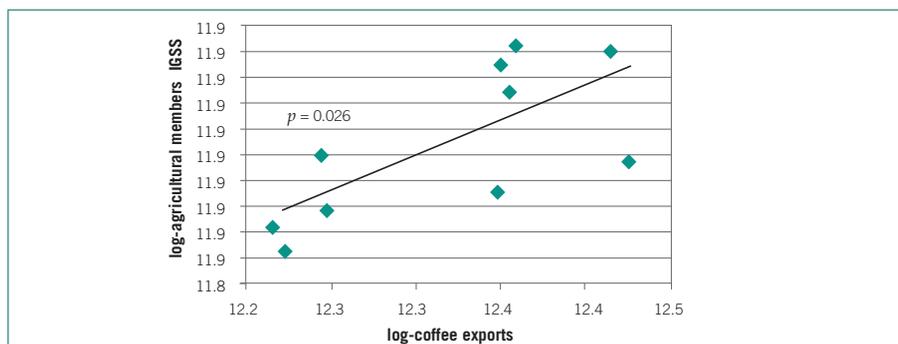


Source: Authors' calculation.

²² A p-value above 10 per cent indicates that there is a probability above 10 per cent that the observed relationship between trade and employment is due to chance alone.

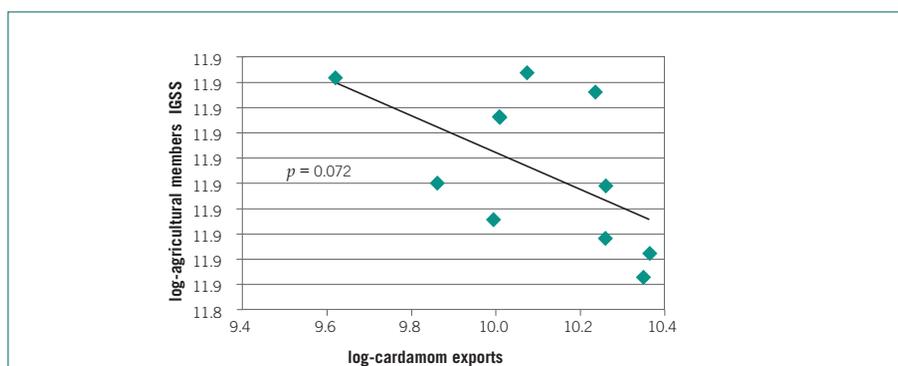
6: Foreign trade and agricultural employment in Guatemala

Figure 6.16: Relationship between membership of the IGSS in agriculture and coffee exports, Guatemala, 2001–2010, scatter diagram in logarithms



Source: Authors' calculation.

Figure 6.17: Relationship between membership of the IGSS in agriculture and cardamom exports, Guatemala, 2001–2010, scatter diagram in logarithms



Source: Authors' calculation.

From the estimates it can be inferred that formal agricultural employment is sensitive only to coffee exports and cardamom exports if a cut off rate of 10 per cent is used. The relationship is positive in the case of coffee and negative in the case of cardamom. For the other two variables, no relationship could be established. The results of the estimations provide the following scenario: The signing of DR–CAFTA improved formal employment by moderating the negative trend that this variable had exhibited during the first half of the decade. The agricultural export that most contributed to job creation was coffee.

6.5.2 Social Accounting Matrix

A social accounting matrix (SAM) is a broad framework of economic data that represents the economy of a nation. It is set out like a square matrix whose value lies in double entry bookkeeping; debits in any account are reflected along a row, while the credits for the same account are reflected in a column.

For the different national accounts, a SAM reports information on production, local and international demand, and the components of value added (i.e., wages, capital return). It includes households as an important component of the economy.

Because of their versatility, these types of matrices are used to determine the possible economic effects of public policies and external shocks. Additionally, the matrices are essential for the calibration of a computable general equilibrium (CGE) model, a tool that is increasingly being used for macroeconomic simulations.²³

Constructing a SAM for a developing country is not an easy task; sufficient information must exist about production and consumption of goods and services, government income and its expenditure, balance of payments, and household incomes (all this with a high level of disaggregation). Furthermore, the availability of this information is not sufficient for the construction of a SAM; also, the information must be consistent, or else it is impossible to construct a balanced matrix.

6.5.2.1 Social Accounting Matrix Used

For this study a macroeconomic SAM and a microeconomic SAM were constructed, using the matrices developed by Cabrera et al. (2009) from the Instituto Centroamericano de Estudios Fiscales (ICEFI). However, to satisfy the objectives of the study, several changes were made to the SAMs published by the ICEFI. The main modification was to value transactions within the rows and columns of activities and products using 'basic prices'. This modification allows for a homogeneous valuation of intermediate and final demand for domestic products, as Pyatt and Thorbecke (1976) recommend. The formula for basic prices used is as follows:

$$\text{Basic price} = \text{buyer's price} - \text{product taxes with subsidies deducted} - \text{commercialization margins} - \text{transport margins} - \text{public service (electricity, water, gas) margins}.$$

Table 6.10 presents the macroeconomic matrix used in this analysis.

²³ According to the document *Computable General Equilibrium: Description of the methodology (Equilibrio General Computado: Descripción de la metodología)* (Cicowicz and Di Gresia, 2008):

A general equilibrium model captures the interrelationships between different sectors of an economy, allowing for the analysis of direct and indirect effects because of an exogenous change in policy. This makes it an ideal tool to identify winners and losers after a policy change. In a general equilibrium analysis the entire economy is modeled, while in a partial equilibrium analysis only the situation of a particular market, assuming constant conditions in other markets of the economy, is analysed.

Table 6.10: Macroeconomic Social Accounting Matrix, Guatemala, in millions of Guatemalan Quetzales (GTQ), 2006

| SAM | Activity primary sector | Activity industrial sector | Activity services sector | Commodity primary sector | Commodity industrial sector | Commodity services sector | Factor labour | Factor capital | Households | Firms | Government | Social services | Savings and investment | Change in inventory/stock | Taxes and soc. sec. contributions | Rest of the world | Total |
|-----------------------------------|-------------------------|----------------------------|--------------------------|--------------------------|-----------------------------|---------------------------|---------------|----------------|------------|----------|------------|-----------------|------------------------|---------------------------|-----------------------------------|-------------------|-----------|
| Activity primary sector | | | | 55458.40 | 0.0 | 128.2 | | | | | | | | | | | 55386.60 |
| Activity industrial sector | | | | 406.8 | 143952.80 | 2386.90 | | | | | | | | | | | 147256.50 |
| Activity services sector | | | | 166.3 | 642.2 | 272479.70 | | | | | | | | | | | 273288.20 |
| Commodity primary sector | 1183.93 | 15159.58 | 1903.36 | | | | | | 28174.70 | | | | 28.9 | 611.8 | | 12364.50 | 60026.80 |
| Commodity industrial sector | 7386.36 | 45188.44 | 34877.68 | | | | | | 98503.80 | 878.0 | 0.0 | | 24495.70 | 725.6 | | 34210.0 | 244146.50 |
| Commodity services sector | 17681.85 | 43338.13 | 96671.28 | | | | | | 76979.60 | 17158.90 | 1236.40 | | 21423.30 | 369.1 | | 9991.50 | 285350.10 |
| Factor labour | 19530.60 | 26885.90 | 72023.30 | | | | | | | | | | | | | 155.1 | 118604.90 |
| Factor capital | 9480.30 | 15422.0 | 64802.80 | | | | | | | | | | | | | | 89735.10 |
| Households | | | | | | | 118576.20 | | | 73661.10 | 5224.0 | 967.7 | | | | 30900.90 | 229729.90 |
| Firms | | | | | | | | 89699.80 | 3959.20 | 1303.40 | | | | | | 11848.50 | 96710.90 |
| Government | | | | | | | | 354 | 5352.60 | 3543.90 | | | | | 26474.60 | 1128.60 | 36535.10 |
| Social services | | | | | | | | | | | | | | | 4124.70 | | 4124.70 |
| Savings and investment | | | | | | | | | | | | | | | | | 47654.40 |
| Change in inventory/stock | | | | | | | | | | | | | 1706.50 | | | | 1706.50 |
| Taxes and soc. sec. contributions | 343.6 | 821.4 | 3008.70 | 432.2 | 13368.30 | 3361.90 | | | 6023.10 | 2938.0 | | | | | | | 30399.30 |
| Rest of the world | | | | | | | 28.7 | | 387.5 | 3402.50 | 2550.80 | | | | | | 102399.20 |
| Total | 55386.60 | 147256.50 | 272288.20 | 60026.80 | 244146.50 | 285350.10 | 118604.90 | 89735.10 | 229029.90 | 96710.90 | 36535.10 | 4124.70 | 47654.40 | 1706.50 | 30599.30 | 102399.20 | |

Shared Harvests: Agriculture, Trade and Employment

For the products analysed, the values of intermediate inputs and factors of production (i.e. labour and capital) can be found in the SAM shown in table 6.11.

In table 6.11 it can be observed, for example, that, for the generation of GTQ 16,200 million (US\$ 2,247 million) of agricultural products, GTQ 7 million (US\$1 million) of cereals, GTQ 102 million (US\$ 14 million) of sugar plants, and GTQ 75 million (US\$ 10 million) of non-traditional crops are used, while the qualified workers in the informal sector receive GTQ 303 million (US\$ 42 million) in wages and the

Table 6.11: Microeconomic Social Accounting Matrix, Guatemala, agriculture and Livestock Sector, in millions of Guatemalan Quetzales (GTQ), 2006

| SAM | Activity agriculture | Activity livestock | Activity bananas | Activity coffee |
|--------------------------------------|-----------------------------|---------------------------|-------------------------|------------------------|
| Commodity traditional crops | 0 | 0 | 0 | 0 |
| Commodity bananas | 0 | 0 | 0 | 0 |
| Commodity coffee | 0 | 0 | 0 | 0 |
| Commodity cereals | 7 | 3 | 0 | 0 |
| Commodity sugar cane | 102 | 0 | 0 | 0 |
| Commodity non traditional crops | 75 | 57 | 0 | 7 |
| Commodity livestock | 0 | 383 | 0 | 0 |
| Commodity petroleum | 0 | 0 | 0 | 0 |
| Commodity mining | 0 | 21 | 0 | 0 |
| Commodity food | 0 | 1'019 | 0 | 0 |
| Commodity sugar | 0 | 59 | 0 | 0 |
| Commodity textiles | 0 | 1 | 0 | 0 |
| Commodity petroleum products | 0 | 0 | 0 | 0 |
| Commodity other manufactures | 1'057 | 347 | 179 | 148 |
| Commodity construction | 0 | 238 | 12 | 0 |
| Commodity hotels | 0 | 0 | 0 | 0 |
| Commodity education | 0 | 0 | 0 | 0 |
| Commodity health | 0 | 0 | 0 | 0 |
| Commodity other services | 312 | 1'214 | 54 | 167 |
| Commodity public administration | 0 | 0 | 0 | 0 |
| Labour qualified informal male | 302.8 | 177.4 | 9.3 | 165.5 |
| Labour qualified formal male | 414.0 | 242.6 | 12.7 | 75.5 |
| Labour qualified informal female | 41.2 | 24.1 | 1.3 | 28.4 |
| Labour qualified formal female | 128.0 | 75.0 | 3.9 | 19.1 |
| Labour non-qualified informal male | 7'340.10 | 4'300.60 | 225.9 | 1'529.80 |
| Labour non-qualified formal male | 892.4 | 522.9 | 27.5 | 317.3 |
| Labour non-qualified informal female | 387.1 | 226.8 | 11.9 | 127.1 |
| Labour non-qualified formal female | 157.1 | 92.1 | 4.8 | 20.0 |
| Capital | 2'843.0 | 2'644.10 | 1'579.90 | 708.0 |
| Taxes production activity | 49.9 | 16.8 | 1.6 | 2.5 |
| Taxes value added | 0.0 | 0.7 | 0.0 | 0.0 |
| Taxes imports | 42.4 | 30.4 | 4.4 | 6.0 |
| Taxes commodity | 38.1 | 26.1 | 2.7 | 10.2 |
| Taxes direct | | | | |
| Social security contributions | 43.5 | 37.8 | 36.8 | 21.9 |
| Subsidies on commodities | 0.0 | 0.0 | 0.0 | 0.0 |
| Rest of the world | 1'967.30 | 927.1 | 222.5 | 323.4 |
| Total | 16'199.70 | 12'686.20 | 2'390.30 | 3'677.0 |

Source: Authors' calculation.

qualified workers in the formal sector receive GTQ 414 million (US\$ 57 million). Additionally, the employers receive GTQ 2,843 million (US\$ 394 million), and the government receives through indirect taxes GTQ 50 million (US\$7 million) and through import taxes GTQ 42 million (US\$6 million). GTQ 1,967 million (US\$ 134 million) in agricultural products is imported from the rest of the world.

6.5.2.2 Procedure for compiling the SAM

The starting point for compiling the SAM was assessing the structure and the information in the SAM produced by the ICEFI. The structure of the ICEFI SAM is based on National Accounts in the quadrants of economic information, with a focus on production and consumption.

The matrix consists of 13 activities, as listed in Table 6.12. For products the level of detail is greater; 20 products and services are included. In the quadrants of additional information, the matrix includes eight breakdowns of employment, i.e. reflecting payments to the factor labour, and one aggregate reflecting payment to the factor capital.

Additionally, the ICEFI SAM includes a quadrant for poverty analysis, breaking down households into six categories and government into two categories to allow for the analysis of social insurance. The matrix also has a quadrant for saving and investment, and, finally, it includes a quadrant broken down into taxes and employees' contributions to the social insurance programme. In summary, the ICEFI SAM is a matrix with a fiscal, poverty, and employment focus. This last characteristic favoured its use for the analysis, by means of a generalized Leontief model based on the SAM, of the impact that the DR-CAFTA has had on agricultural employment.

Table 6.12: Employment matrix, Guatemala, 2006

| Activity | Qualified | | | | Non-qualified | | | | Total employed |
|------------------------------------|---------------|---------|-----------------|---------|---------------|---------|-----------------|--------|----------------|
| | Formal sector | | Informal sector | | Formal sector | | Informal sector | | |
| | Male | Female | Male | Female | Male | Female | Male | Female | |
| Activity Agriculture and Livestock | 38'253 | 4'525 | 15'168 | 2'593 | 1'173'217 | 276'421 | 92'342 | 13'432 | 1'615'952 |
| Activity Coffee | 3'869 | 542 | 2'308 | 286 | 112'228 | 27'269 | 18'820 | 1'190 | 166'512 |
| Activity Mining | 193 | - | 2'753 | - | 2'743 | 196 | 1'561 | 28 | 7'474 |
| Activity Food | 10'080 | 12'367 | 27'677 | 8'479 | 36'547 | 107'366 | 44'035 | 11'431 | 257'983 |
| Activity Textiles | 8'004 | 11'147 | 19'720 | 19'892 | 53'667 | 124'221 | 73'086 | 60'579 | 370'315 |
| Activity Petroleum | 933 | 263 | 3'855 | 8'057 | 1'676 | 2'216 | 3'750 | 3'911 | 24'661 |
| Activity Other Manufactures | 26'582 | 3'030 | 26'187 | 3'338 | 64'935 | 28'293 | 37'446 | 8'486 | 198'297 |
| Activity Construction | 22'725 | 847 | 24'618 | 3'307 | 211'814 | 475 | 87'679 | 1'215 | 352'681 |
| Activity Hotels | 4'753 | 12'123 | 12'941 | 8'168 | 8'650 | 77'695 | 13'876 | 12'527 | 150'733 |
| Activity Education | 5'230 | 9'474 | 62'086 | 127'506 | 511 | 1'224 | 5'360 | 7'970 | 219'361 |
| Activity Health | 1'920 | 4'310 | 19'085 | 31'893 | 1'826 | 9'528 | 2'545 | 10'317 | 81'424 |
| Activity Other Services | 122'065 | 116'034 | 218'992 | 102'375 | 351'733 | 704'338 | 151'406 | 25'341 | 1'792'283 |
| Activity Public Administration | 143 | 618 | 59'889 | 27'429 | 135 | 44 | 35'115 | 4'775 | 128'148 |

Source: Instituto Centroamericano de Estudios Fiscales (ICEFI).

Shared Harvests: Agriculture, Trade and Employment

Based on the relationships between tables 6.11 and 6.12, the labour requirements, expressed as a technical coefficient, were established for each activity by dividing the number of workers in the activity by the millions of GTQ produced each year, resulting in an employment ratio for each activity. This ratio, multiplied by the vector resulting from the shock in the agricultural sector, yields the number of jobs created, if positive, or the number of jobs lost, if negative.

6.5.2.3 Exogenous vector

To calculate the exogenous vector, the average annual growth in agricultural export volumes before and after DF-CAFTA was used. The average annual growth rates in the export volumes of coffee, sugar, and bananas before and after the Agreement are shown in table 6.13.

Table 6.13: Growth rates in volume of agricultural exports

| Product | Average annual growth rate before DR-CAFTA (2000–2006) | Average annual growth rate after DR-CAFTA (2007–2011) |
|---------|---|--|
| Coffee | -5.1 | 0.3 |
| Sugar | 2.0 | 11.6 |
| Bananas | 5.4 | -0.2 |

Source: Authors' calculation from Banco de Guatemala data.

With this information the exogenous vector for exports was calculated, as shown in table 6.14:

Table 6.14: Exogenous vector for exports, Guatemala

| SAM | Impact vector | | | |
|---------------------------------|--------------------|--------------------|------------------|-------------------------|
| | Activity banana | Activity coffee | Activity food | Activity agriculture |
| Commodity traditional crops | - | - | - | - |
| Commodity bananas | -89 | - | - | - |
| Commodity coffee | - | 183 | - | - |
| Commodity cereals | - | - | - | - |
| Commodity sugar cane | - | - | - | - |
| Commodity non traditional crops | - | - | - | 234.40 |
| Commodity livestock | - | - | - | - |
| Commodity petroleum | - | - | - | - |
| Commodity mining | - | - | - | - |
| Commodity food | - | - | - | - |
| Commodity sugar | - | - | 208.81 | - |
| Commodity textiles | - | - | - | - |

Source: Authors' calculation

The information on imports shows that the impact vector is significant only for cereals, sugar, and non-traditional products. The behaviour of those imports was obtained using information from the Clasificación según Uso o Destino Económico (CUODE) specifically for the imports from the USA. The data reveal an average growth of 5.1 per cent for imports. The resulting impact of import growth was assumed to be negative on domestic production. The exogenous import vector was calculated and is shown in table 6.15.

Table 6.15: Exogenous vector for imports, Guatemala

| SAM | Impact vectors | | |
|---------------------------------|-------------------|---------------------------------|-----------------|
| | Commodity cereals | Commodity non traditional crops | Commodity sugar |
| Commodity traditional crops | - | - | - |
| Commodity bananas | - | - | - |
| Commodity coffee | - | - | - |
| Commodity cereals | -70.40 | - | - |
| Commodity sugar cane | - | - | - |
| Commodity non traditional crops | - | -38.20 | - |
| Commodity livestock | - | - | - |
| Commodity petroleum | - | - | - |
| Commodity mining | - | - | - |
| Commodity food | - | - | - |
| Commodity sugar | - | - | -0.67 |
| Commodity textiles | - | - | - |

Authors' calculation

6.5.2.4 Results of the SAM simulation

Taking into consideration, as shocks triggered by DR–CAFTA, the change in the growth of agricultural exports, the analysis finds that 25,900 agricultural jobs were created in 2006. This represents a 1.6 per cent growth in total agricultural employment. Also, 9,800 indirect jobs were created, which represents an increase of 0.3 per cent. On the other hand, according to the results of the simulation of the growth in agricultural imports, DR-CAFTA eliminated a total of 8,400 jobs annually, of which 6,900 were agricultural jobs and 1,500 were jobs in other sectors. Using results from both simulations and taking into consideration the unemployment rate of 3.5 per cent according to ENEI (2010), the overall impact of the Agreement on employment is still positive.

Relating the previous results to those from the econometric regression, it can be observed that DR–CAFTA improved formal agricultural employment in Guatemala. This is attributable partly to the increase in exports of coffee (the only product that had an effect on formal employment) and partly to other factors that indirectly affect agricultural employment that were not taken into consideration in this study, such as exports of non-traditional products.

As for impacts by sub-sector, the textile industry is one of the main beneficiaries of the Treaty; employment generated in this sector amounts to an increase in employment of 35.7 per cent. The services sector benefited from an even greater increase, of 37.5 per cent.

6.6 AGRICULTURAL LABOUR LEGISLATION AND TRADE UNIONS

6.6.1. Constitutional legislation

Guatemala has a well-developed labour legislation that regulates the relationship between employers and employees. In its discussion of the constitutions and labour codes of Central American countries, the so-called White Book (Libro Blanco) (Grupo de Trabajo, 2005) indicates that Guatemala's codes are fulfilling the fundamental obligations set out by the International Labour Organization (ILO).

Guatemalan labour legislation reflects the emphasis on protection of workers' rights that characterized Latin American labour legislation during the first decades of the 20th century. For Latin American labour law, the principle of protection or guardianship is basic and central. "Labour law must be protective or there is no reason for its existence," says a prominent Uruguayan labour lawyer (Ermida, 2011).

Starting in the 1970s, some reforms took place aiming to remove the rigidities that restrained competitiveness and job creation. These reforms, according to their promoters, made the legislation more flexible and reduced its protective nature.

However, a significant part of workers' rights law is found in the Constitution. Modifying the Constitution is difficult, and thus the protective nature has been preserved.

The 1985 Constitution, in Chapter II, "Social Rights", has a section devoted to labour (articles 101 to 106). Article 101, of the section on health, safety, and social assistance, has provisions relating to social insurance.

Article 102 lists 21 minimum social rights, on which labour legislation is based: free choice of employment; equal remuneration; regular adjustments of the minimum wage; limits on day, night, and mixed working hours; overtime compensation; paid weekly day off; annual bonus payment (13th month or Christmas wage); paid maternity leave of 85 days; minimum age for work; compensation of one month per year of service in the event of unjustified dismissal; and the right to organize unions, among others.

Other provisions in that section refer to the guardianship or protective character of labour laws; the right to employee strikes; the impossibility of renouncing rights granted by the law; the protection and encouragement of collective bargaining; and that the law will be interpreted *in dubio pro operario* (that is, in case of doubt, in a sense that favours the worker).

In addition, Article 4 of the individual rights chapter states that no person may be subjected to servitude. Article 69 is devoted to agricultural workers particularly, mandating that "jobs requiring the transfer of workers outside their communities should be protected by legislation to ensure the proper health, safety and welfare, to

prevent wage payment contrary to the law, the disintegration of these communities and generally all discriminatory treatment”.

Social insurance is recognized as a right and a public function, which is obligatory; financed jointly by the government, employers, and employees. Its application is the responsibility of the IGSS, an autonomous entity in whose management are representatives of both employers and employees.

6.6.2. *International legislation*

Domestic labour legislation is complemented and reinforced by the 72 international conventions on labour that Guatemala has ratified,²⁵ among them the eight conventions that the ILO considers fundamental (those relating to the elimination of forced labour, freedom to form unions and collective bargaining, elimination of discrimination, and the abolition of child labour) and four priority conventions (Convention 81 and 129 on labour inspection, 144 on tripartite consultation, and 122 on employment policy).

The following ratified conventions are particularly relevant for agricultural employment: C97 concerning migrant workers, C99 concerning the methods of determining the agricultural minimum wage, C101 concerning agricultural paid leave, C110 concerning plantations, and C141 concerning rural workers' organizations.

Another mechanism, derived from international agreements, that may contribute to better compliance with labour legislation is Chapter 16 (Labour) of DR-CAFTA. In Article 16.2 each party agrees not to “fail to effectively enforce its labour laws, through a sustained or recurring course of action or inaction, in a manner affecting trade between the Parties” and to recognize that “it is inappropriate to encourage trade or investment by weakening or reducing the protections afforded in domestic labour laws”.

For the application of Chapter 16, “labour legislation” is intended to refer to labour rights as recognized internationally: a) the right of association; b) the right to organize and negotiate collectively; c) prohibition of the use of any form of forced or compulsory labour; d) a minimum age for the employment of children and the prohibition and elimination of the worst forms of child labour, and e) acceptable conditions of work with respect to minimum wages, hours of work, and occupational safety and health.

6.6.3 *Labour Code*

Legislation relating to labour is found in the Labour Code (Decree No. 1441). The code was issued in 1961. It has since been the object of many reforms. The most

²⁵ Article 46 of the Constitution establishes that, concerning human rights, the treaties and conventions ratified by Guatemala have preeminence over domestic laws. However, the Constitutional Court has pointed out that these international instruments do not have preeminence over constitutional provisions (Judgement of 31/10/2000 and Resolution No. 18-05-95).

profound of these reforms came in 1992 and 2002, with the objective of addressing the observations made by the Commission of Experts in Application of Conventions and Recommendations of the ILO.

The laws contained in the code, applicable to any work relationship and thus to agricultural activities, include the provision that all employment contracts are indefinite unless otherwise stated (although fixed-term contracts should remain an exception). Also, the contract may be verbal in the case of farming or ranching. In the absence of a written contract the terms affirmed by the employee are taken as true, unless proven otherwise.

Regarding collective negotiations, a collective agreement on working conditions takes a legal character in that its provisions must apply to all contracts, individual or collective, to which the employer is a party. Any employer that has more than 25 per cent of its employees affiliated with a union must negotiate a collective agreement when requested. To establish itself, a union must have at least 20 members. The workers that form the union may not be dismissed from the moment that they notify the General Labour Inspectors and for a 60-day period after the registration of the union.

Wages can be set per unit of time or task or as profit-sharing, and all workers are entitled to earn a minimum wage. The normal working hours may not exceed 8 hours per day or 48 hours a week, and paid leave cannot be less than 15 working days annually.

There are also rules for work subject to special regimes, which may have a lower or higher level of protection. One of these concerns agricultural workers and farmers. Article 139 states that the work done with the consent of the employer by women or children, as helpers or complementing the work performed by the head of a household, gives them the character of workers and entitles them to be considered bound to the employer by an employment contract. This provision aims to support workers who move, accompanied by their families, for the harvest of certain crops, especially coffee.

There are also rules to regulate the activity of representatives of employers or intermediaries to recruit workers. Also, Article 145 states that agricultural workers are entitled to living accommodations that meet the conditions for hygiene and sanitation laid down in the regulations.

6.6.4 Compliance with labour legislation

The biggest problem with labour legislation is non-compliance. Non-compliance is probably more common with labour law than with most other legislation. “By acting as a correction to reality, employment law is more exposed than others to non-compliance and needs assurance mechanisms to ensure its effectiveness, such as labour inspection, justice and specialized process, collective self-protection and possibly an application of criminal law to situations of noncompliance” (Ermida, 2011).

The poor performance of these mechanisms in Guatemala today allows a high level of impunity for employers in areas such as payment of minimum wages, social

security coverage, health conditions and hygiene at work, the limit on hours of work, and, crucially, the right to freedom of association and collective negotiation.

According to 2010 data from ENEI, 74 per cent of rural employees and 96 per cent of labourers had a yearly income below the minimum wage for agriculture (GTQ 1930, or US\$ 240). Only one of every six employees had a written contract, and 88.3 per cent of the economically active population was not covered by social insurance (Linares, 2012).

The non-compliance problem is recognized in the White Book: “Some of the major concerns that have been expressed about the region refer to the degree of compliance with laws relating to formation of trade unions, freedom of association and labour relations”. The book adds that “closely linked with those concerns are aspects related to inspection and compliance” (Grupo de Trabajo, 2005).

After repeated complaints of non-compliance with the rights recognized in the Labour Chapter of DR-CAFTA, the Office of the United States Trade Representative requested in August 2011 the establishment of an arbitration panel, in accordance with the requirements set out in the Dispute Settlement chapter (Alvarez, 2011).

6.6.5 *Trade unions in the agricultural sector*

As mentioned before, the Constitution, the Labour Code, and international conventions grant the right to form unions and negotiate collectively. Unions may take the form of craft unions – made up of workers or employers in the same trade or profession – or of enterprise unions.

According to ENEI 2010 data, only 0.79 per cent of the economically active rural population and just 1.6 per cent of the entire economically active population belong to unions. The presence of trade unions in the agricultural sector is limited to the banana plantations in the department of Izabal, some coffee plantations in the departments of San Marcos and Quetzaltenango, and one sugar mill of the 12 that are active in the country. It can be assumed that the main reason for the low level of union membership are anti-union practices, open or subtle, that many companies use and the lack of effectiveness of the rules and institutions to guarantee the exercise of this fundamental right.

It is sometimes argued that many workers choose not to participate in unions because the institution itself is discredited. However, in a public opinion survey conducted by ASIES in the first half of 2012, 56 per cent of employees surveyed said that they considered unions to be good for workers, and 46 per cent said that they are good for society.

Due to the small number and size of unions, collective negotiation has limited coverage. For example, in 2008 the Ministry of Labour and Social Welfare approved 15 collective agreements, only three of which were in the agricultural sector (Linares, 2012).

The largest federations of agricultural unions are three. One is the Unión Guatemalteca de Trabajadores (UGT), which includes the Federación de Trabajadores Campesinos y Urbanos (FETRACUR), with five agricultural unions; the Central de

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Trabajadores del Campo, with five unions; and the Federación de Trabajadores de Alimentos, Agroindustria y Similares (FESTRAS), with an agribusiness union.

The second consists of the unions affiliated to the International Trade Union Confederation (ITUC) and the Confederación Sindical de Trabajadores y Trabajadoras de las Américas (CSA), including the Central General de Trabajadores de Guatemala (CGTG), founded in 1999, with three agricultural unions; the Confederación de Unidad Sindical de Guatemala (CUSG), with three, including the Sindicato de Trabajadores Bananeros de Izabal (SITRABI), which is probably the union with the largest membership in the private sector, and the Unión Sindical de Trabajadores de Guatemala (UNSITRAGUA), with eight members including the Sindicato de Trabajadores del Ingenio Palo Gordo.

The third block is composed of the Movimiento Sindical, Indígena y Campesino de Guatemala (MSICG), which includes trade unions and peasant and indigenous sector groups set up as civil associations.

Added to this are the rural organizations dedicated to ensuring access to land, requesting legislation to promote rural development, and opposing the establishment of mines and hydroelectric power plants. These organizations have a great capacity for mobilization. They frequently organize marches that converge on the capital from across the country.

The three most important rural organizations, because of their ability to apply political pressure by mobilizing large groups of peasants, in chronological order of their founding, are: the Comité de Unidad Campesina (CUC), founded in 1979 and a victim of repression as a result of the armed conflict from 1960 to 1996; the Coordinadora Nacional de Organizaciones Campesinas (CNOC), which was founded in 1992 by the CUC in order to bind together the other peasant organizations; and the Coordinadora Nacional Indígena y Campesina (CONIC), which arose in 1992 as a division of the CUC. The two coordinating organizations (CNOC and CONIC) are composed of numerous grassroots organizations and of second level coordinating and alliance organizations (Menchú and Gamazo, 2012).

6.7 CONCLUSIONS AND RECOMMENDATIONS

6.7.1 *Conclusions*

This study has noted that the productivity of the domestic agricultural sector is very low. This economic activity employs many workers but generates little value added. One reason for this low productivity may be that workers have little education, which also results in very low incomes and a high level of poverty. In contrast, the average employer in the agricultural sector is not poor. Employers' incomes far surpass those of workers.

Another relevant fact is that the importance of the export of non-traditional products has grown in the last 20 years. Some possible reasons for this phenomenon are trade liberalization, tariff reduction, and increases in national production. Overall, export concentration – as measured by the Herfindahl index, has decreased since the

signing of DR-CAFTA. Geographical concentration may have increased, though. More than half of agricultural exports go to the US and Central America, which could expose this sector to risks if sudden changes occurred in these markets. On the import side US agricultural products accounted for an average of 5.5 per cent of the Guatemalan market prior to the treaty and 6.3 per cent after its ratification.

Evidence suggests that the trend in agricultural formal employment changed after Guatemala ratified the DR-CAFTA in 2006. This change amounted to a reduction in the rate of decline in this type of employment compared with that experienced in the first half of the last decade. The volumes of exports of sugar, bananas, and cardamom were not related positively to the number of formal employees in the agricultural sector, and so the increase in employment in these sub-sectors must be due to factors other than the performance of these exports. In contrast, increases in coffee exports did appear to create greater formal agricultural employment.

Interestingly, although the volume of some agro-industry exports such as sugar increased significantly after implementation of DR-CAFTA, this improved performance has not translated into growth in formal agricultural employment in these sub-sectors. The growth in the volume of these exports could reflect the fact that these activities are intensive in the use of capital and not of labour.

Still, the signing of DR-CAFTA and its impact on the volume of traditional exports did generate jobs, mostly informal, leading to a net positive effect on overall employment in the simulations. The SAM methodology shows that exports of traditional products increased due to DR-CAFTA, and that this increase had a positive but not very significant effect on agricultural employment or employment in other sectors. Specifically, the increase in exports of traditional agricultural products following the ratification of DR-CAFTA created an estimated 25,900 or so new jobs.

At the same time, banana exports declined after DR-CAFTA came into force which, according to the SAM simulations, affected employment negatively in a number of agricultural sectors. Overall around 8,400 jobs were destroyed in agriculture which, taking into account the 25,900 jobs that were created, implies an estimated net increase of 17,500 jobs in the sector since Guatemala's entry into DR-CAFTA. Overall, therefore, the results of econometric modelling and of the SAM simulation are consistent in the sense that the effect of DR-CAFTA on agricultural employment has been modest.

Existing labour law covers the fundamental aspects of labour relations. Its main provisions are embodied in the Constitution. The laws are strongly protective of workers, consistent with the principles of Latin American labour law. Generally, the laws cover all workers, urban and rural, agricultural and in other sectors, and have provisions giving special protection to agricultural workers. Also, Guatemala has ratified many international labour conventions. Non-compliance with labour standards is widespread, however, in both the urban and rural sectors.

Trade union organization is weak due to the limited capacity of the authorities to ensure the effective respect of workers' rights to freedom of association and collective bargaining. Additionally, there is division among the unions, which hinders their ability to defend workers' rights and to influence public policy related to labour.

6.7.2 Recommendations

The limited statistical information on employment did not allow the construction of econometric models that would provide a clearer understanding of the relationship between trade and employment. It is recommended, therefore, to continue improving the national statistical system.

Information presented in this study shows that the number of workers affiliated to the social security system declined during the first decade of this century, despite population growth and substantial improvement in agribusiness exports. This decline shows how vulnerable this group of employees is. Well-directed actions need to improve monitoring and compliance with employers' obligation to enrol their employees in the social insurance programme.

Finally, due to DR-CAFTA's limited effects on formal agricultural employment, it may be desirable to implement other policies that promote the creation of decent jobs in agriculture. In this regard, the actions recommended in Chapter 3 of the Peace Accords (Acuerdo sobre Aspectos Socioeconómico y Situación Agraria de los Acuerdos de Paz) of 1996 could be useful.

ANNEX: RESULTS OF THE REGRESSIONS

Table 6.A.1: Change of trend model results

| | Coefficients | Standard error | <i>p</i> |
|--------------|---------------------|-----------------------|----------|
| Constant | 151 619.9 | 2 567.3 | 0.000 |
| Tendency | -1 978.2 | 662.9 | 0.020 |
| Cross effect | 1 709.9 | 450.8 | 0.007 |

Dependent variable: formal agricultural employment
Number of observations: 10
 $R^2 = 0.825$

Table 6.A.2: Agriculture employment – banana exports elasticities

| | Coefficients | Standard error | <i>p</i> |
|----------|---------------------|-----------------------|----------|
| Constant | 137 843.38 | 8 160.121 | 0.000 |
| Bananas | 0.008 | 0.007 | 0.310 |

Dependent variable: formal agricultural employment
Number of observations: 10
 $R^2 = 0.091$

Table 6.A.3: Agricultural employment – coffee exports elasticities

| | Coefficients | Standard error | <i>p</i> |
|----------|---------------------|-----------------------|----------|
| Constant | 107 634.92 | 14 317.729 | 0.000 |
| Coffee | 0.173 | 0.063 | 0.026 |

Dependent variable: formal agricultural employment
Number of observations: 10
 $R^2 = 0.499$

Table 6.A.4: Agricultural employment – cardamom exports elasticities

| | Coefficients | Standard error | <i>p</i> |
|----------|---------------------|-----------------------|----------|
| Constant | 158 551.88 | 5 912.435 | 0.000 |
| Cardamom | -0.480 | 0.231 | 0.072 |

Dependent variable: formal agricultural employment
Number of observations: 10
 $R^2 = 0.3282$

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Table 6.A.5: Agricultural employment – sugar exports elasticities

| | Coefficients | Standard error | <i>p</i> |
|----------|---------------------|-----------------------|----------|
| Constant | 142 510.97 | 12 116.687 | 0.000 |
| Sugar | 0.002 | 0.008 | 0.745 |

Dependent variable: formal agricultural employment
Number of observations: 10
 $R^2 = 0.0068$