

Institute for Advanced Development Studies



Development Research Working Paper Series

No. 06/2004

Regional Integration and Poverty: A Case-Study of Bolivia

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October 2004

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REGIONAL INTEGRATION AND POVERTY:

A case study of Bolivia*

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October 2004

Summary:

This paper investigates the impacts of regional integration processes on poverty in Bolivia. It first demonstrates that regional integration has stimulated a diversion of trade away from traditional US and EU markets towards countries of MERCOSUR and the Andean Community. At the same time, the composition of exports has changed from predominantly minerals towards slightly more elaborated goods, such as vegetable fats, food and beverages. The paper presents econometric analyses of the impact of imports, exports and FDI (by sector, and trade block) on individual labor incomes and household poverty status. The results show that higher exports generally tend to benefit the workers who work in the exporting sectors. However, this result only holds for export sectors that exploit some natural resource rents (mining, hydrocarbons, modern agriculture), and not for those which rely purely on low wages in order to be competitive (most manufacturing sectors). Imports typically have a negative effect on worker salaries, except the imports of capital goods, which do not compete with local production. This implies that the change towards more regional trade of goods with a smaller natural resource rent component is unlikely to contribute to a reduction in poverty. For exports and FDI to be helpful for reducing poverty, they would have to focus on sectors, which are labor intensive and at the same time exploit some natural resource rents. Sectors that might fulfill these criteria are modern agriculture and tourism.

* This paper was prepared for the EC-PREP project "Regional Integration and Poverty" at the Overseas Development Institute financed by DFID. We would like to thank Dirk Willem te Velde for many valuable comments and suggestions, and Paloma Aguilar, Fabian Soria and Oscar Molina for excellent research assistance. Comments are welcome and can be sent to onina@grupointegral.bo.

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List of Acronyms

ATPA	Andean Trade Preference Act
ATPDEA	Andean Trade Promotion and Drug Eradication Act
CAN	Andean Community
CIF	Cost, Insurance, and Freight
EU	European Union
FDI	Foreign Direct Investment
FOB	Free On Board
FTA	Free Trade Area
FTZ	Free Trade Zone
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
IBRD	International Bank for Reconstruction and Development
IMMPA	Integrated Macroeconomic Model for Poverty Analysis
ISIC	International Standard Industrial Classification
LAFTA	Latin American Free Trade Association
LAIA	Latin American Integration Association
MERCOSUR	The Common Market of South America
MIGA	Multilateral Investment Guarantee Agency
MOA	Market Opening Agreement
NALDISA	The Tariff System of LAIA
NEP	New Economic Policy
RI	Regional Integration
RIA	Regional Integration Agreement
RTP	Regional Trade Preference
SIRESE	The Sector Regulatory System in Bolivia
US	United States of America

1. INTRODUCTION

The growth of regional trade blocks has been one of the major developments in international relations in recent years. Regional agreements vary widely, but all have the objective of reducing barriers to trade between member countries and are expected to significantly contribute to economic growth, development and poverty reduction.

In Bolivia, regional integration started progressing rapidly once macroeconomic stability was achieved in 1986. During the 1990s, the fundamental components of the trade reform program were the severe reduction of the coverage of non-tariff barriers, reduction of the average level of import tariffs, elimination of export taxes and expansion of the export markets for Bolivian goods by signing trade agreements with the main trading partners. Moreover, the investment policies have sought to attract foreign investors to augment the country's asset base.

These policies promoting openness, especially the regional integration agreements, contributed to some changes in the exports and imports structures, but to date there is little empirical evidence on the impact of regional integration on economic growth and poverty reduction. Thus, the objective of the present study is to analyze how regional integration has affected poverty in Bolivia. The analysis will concentrate on the structure of the labor market, where it is possible to analyze the effects of regional integration on employment and income.

The remainder of the paper is organized as follow. Section 2 provides a description of the trade and investment provisions in the relevant regional trade agreements of Bolivia. Section 3 discusses how these provisions have affected the composition of trade and foreign direct investments. Section 4 discusses how such trade and investment has affected poverty. Section 5 concludes.

2. REGIONAL INTEGRATION IN BOLIVIA

The regional integration processes involving Bolivia started in 1960 with the Latin American Free Trade Association (LAFTA), which had the objective of promoting the integration of the region and create a common market¹. The members, however, lacked political commitment to make progress towards a free trade zone (Uculmana, 2003). In 1969, based on this bad experience, the Andean countries created the Andean Pact with the objective of promoting development of the member countries through social and economic integration. Moreover, in the beginning of the 1980s, the members of LAFTA created the Latin American Integration Association (LAIA) with the objectives of promoting bilateral and extra-regional agreements.

Between 1960 and 1990, Latin American countries, especially the Andeans, introduced protectionism and widespread regulations based on the theory of import-substitution. These

¹ Until 1966, the members were Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Mexico, Paraguay, Peru Uruguay and Venezuela.

heavy government interventions generated high external barriers that obstructed the regional integration process. However, during the 1990s, integration forces returned and the growth of regional trade blocks became one of the major developments in international relations. In Latin America, the majority of countries signed or revived regional trade agreements as part of their structural reforms intended to open their economies to trade and foreign direct investment. In 1991, for example, Andean countries revived the Andean Pact, and the Southern Cone countries that were not participating in any sub-regional agreements created the Common Market of the South (MERCOSUR).

Since 1992, Bolivia signed three partial integration agreements through LAIA: Chile (1993)², MERCOSUR (1997)³ and Cuba (2000)⁴, and one free trade agreement with Mexico (1995)⁵. Moreover, Bolivia is a beneficiary country of the Andean Trade Promotion and Drug Eradication Act (2002), which is a continuation of the Andean Trade Preference Act (1991)⁶, from the United States, and the Andean Generalized System of Preferences (1990) from the European Union. Both agreements granted preferential tariffs as support for the Andean Community's war on drugs under the principle of shared responsibility.

Of the above-mentioned agreements, the ones with Mexico and Cuba are insignificant in terms of trade volume and investment. The remaining agreements and drug related trade preferences are described in detail in the remainder of the section.

2.1. The Latin American Integration Association (LAIA)

The Latin American Integration Association (LAIA) is an intergovernmental organization, which continues the integration process started by the LAFTA (Latin American Free Trade Association). The 1980 Montevideo Treaty provides the legal framework that rules the LAIA⁷. The main objective of the organization is the establishment of a common market, in order to stimulate the economic and social development of the region. LAIA is the largest Latin-American integration group and has twelve member countries: Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

LAIA established the basic provisions for trade between member countries and promoted sub-regional agreements. Currently, the sub-regional agreements have advanced substantially further than the basic LAIA agreements, somewhat diluting the advantage of this mechanism (Uculmana, 2003). However, LAIA has good possibilities of contributing to the creation of a Free Trade Area (FTA) in South America by coordinating and combining the sub-regional integration agreements.

² “Acuerdo de Complementación Económica entre Bolivia y Chile.”

³ “Acuerdo de Complementación Económica No. 36 Celebrado entre los Gobiernos de los Estados Partes del MERCOSUR y el Gobierno de la República de Bolivia.”

⁴ “Acuerdo de Complementación Económica No. 47 Celebrado entre la República de Bolivia y la República de Cuba.”

⁵ “Acuerdo de Complementación Económica No. 31” entre el Gobierno de los Estados Unidos Mexicanos y el Gobierno de la República de Bolivia.

⁶ “Andean Trade Preference Act”. Pub.L.102-182, title II, sec. 202, Dec. 4, 1991.

⁷ The members of LAFTA signed this agreement on August 12, 1980.

Trade Provisions

The LAIA promotes the creation of an area of economic preferences in the region, aiming at a Latin-American common market, through three mechanisms: 1) regional tariff preference granted to products originating in the member countries; 2) regional scope agreements; and 3) partial scope agreements, between two or more countries of the area. Regional and/or partial scope agreements may cover tariff relief and trade promotion; economic complementation; agricultural trade; financial, fiscal, customs and health cooperation; environmental preservation; scientific and technological cooperation, tourism promotion; technical standards and many other fields.

A preference system consisting of market opening lists, special cooperation programs and countervailing measures on behalf of landlocked countries was granted to the Relatively Less Economically Developed Countries (Bolivia, Ecuador and Paraguay) to favor their full participation in the process of integration. There are four agreements signed by all member countries of the LAIA: Market-Opening Lists on behalf of Bolivia, Ecuador and Paraguay and the Regional Tariff Preference Agreement.

Market-Opening Agreements (MOAs) were signed April 30, 1983 granting Bolivia⁸, Ecuador and Paraguay effective preferential treatment as member countries opened their markets to a wide range of products, granting them, without reciprocity, the total lift of customs duties and other restrictions.

Bolivia currently has around 2000 products in the market opening list. Categorized by the Harmonized Commodity Coding System⁹, most of the main products are concentrated in: 1) Textile and textile articles (Section XI); 2) Live Animals and Animal Products (Section I); 3) Base Metals and Articles of Base Metals (Section XV); 4) Wood and Articles of Wood (Section IX); and 5) Vegetable Products (Section II). The number of products covered has been growing significantly during the last 20 years. By the beginning of the agreement, the number of products covered by MOAs was only 31 goods, which was concentrated in the section XV (Base metals and articles of base metals).

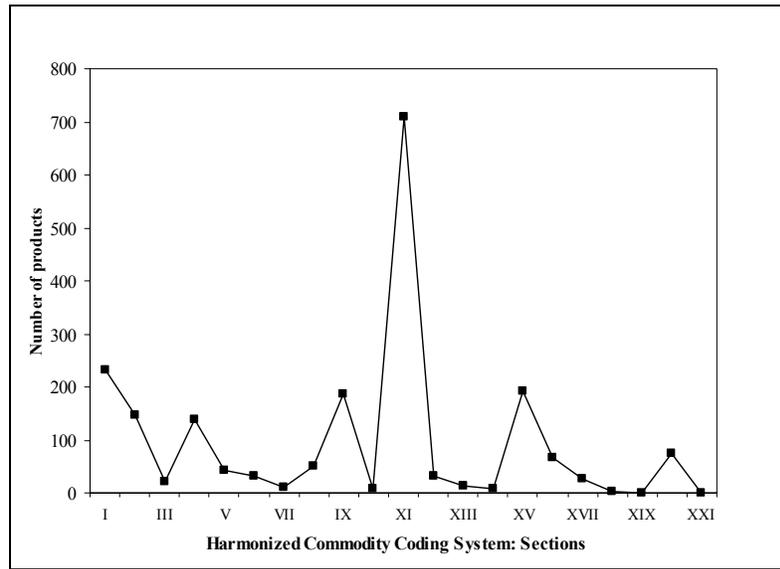
In compliance with the provisions of Article 5 of the 1980 Montevideo Treaty, all member countries grant, on a reciprocal basis, a reduction in the rate of duties levied on imports originating in the region.

The Regional Tariff Preference (RTP) differs according to the relative economic development of each country and applies to the entire tariff universe, except for a list of exempted products determined by each country. The current basic level of RTP is 20%. In the case of Bolivia, the tariffs levied on its export products are lower, and tariffs on imports are higher, due to its landlocked condition.

⁸ “Acuerdo Regional de Apertura de Mercados en Favor de Bolivia.”

⁹ See Annex 1 for description of the Harmonized Commodity Description and Coding Section.

Figure 1. Market Opening List: Bolivia, 2002



Source: LAIA.

In order to protect some strategic industries, each country is allowed to have a list of exceptions from the tariff system of the association (NALADISA). The lists of exceptions have maximum limits: 1920 products for Relatively Less Economically Developed Countries, 960 products to Medium Economically Developed Countries and 480 products for the rest.

In order to receive the preferential treatment established in the 1980 Montevideo Treaty, goods have to qualify as "originating", according to the General Regime of Origin of the Association.

The origin of the goods has the following main categories:

- 1) Products manufactured entirely from native material of any member country;
- 2) Products of the animal, vegetable, and mineral kingdoms that are extracted, harvested or collected in its territory or territorial water and exclusive economic zones;
- 3) Products that are the result of operations or processes performed in its territory and the materials are substantially transformed into new and different products;
- 4) Products manufactured with materials from other countries, which are not participating in the agreement, but are product of a process of transformation carried out in some of the participating countries and are new and different products that are classified in different sections with respect to materials in the NALADISA code system;
- 5) Products that are an outcome from assembly process, performed in any territory of the member country using native materials from the member and third

countries, when the value CIF port of destination or CIF maritime port of the native materials of third party countries do not exceed 50%¹⁰ of the value FOB of export of such merchandise.

These rules of origin have been applied to all sub-regional and partial scope agreements in Latin America, with some minor modifications, which will be mentioned below.

2.2. The Andean Community (CAN)

The Andean countries created the Andean Pact in 1969 through the Cartagena Agreement¹¹. The main objective was to increase the development of the members through social and economic integration. The first couple of decades, there was little progress towards regional integration, but global developments and structural reforms caused a renewed interest in the integration process. In 1991, the Caracas Letter implemented the Andean Free Trade Zone and renamed the agreement the Andean Community (CAN). Moreover, the members created the Andean Integration System, which are institutions that work closely in the pursuit of the same objectives: to intensify Andean sub-regional integration, promote its external projection, and reinforce the actions connected with the process. Currently, the members are Bolivia, Colombia, Ecuador, Peru and Venezuela¹².

Trade Provisions

In the beginning of the process, the Andean Pact implemented fundamental instruments of the integration process, such as the Liberalization Program and the Industrial Development Program. Nevertheless, these instruments did not help to promote regional integration because the prevailing import-substitution model, which had the objective of promoting industrialization, required high external trade barriers. According to Schiff and Winters (2003), in general, the countries with these characteristics were very protectionist and interventionist in the sense of trying to determine administratively which industries to have and where they should be located.

After the revival of the Andean Pact, the trade provisions became substantially more liberal, creating a Free Trade Area, which eliminated the tariffs and all other duties between CAN member countries.

Since 1993, products have been circulating freely within the bloc, but the Common External Tariff did not enter into force due to several disagreements between member countries. Recently, the members agreed to apply the tariff levels that are effective in each country until May 2005.

The rules of origin of LAFTA governed trade among the Andean countries until 1987, when the members approved their own provisions for determining the origin of products. Nevertheless, the rapid advances in trade integration, particularly the formation of a

¹⁰ 60 % for the Relatively Less Economically Developed Countries.

¹¹ “Acuerdo de Cartagena (Pacto Andino) Acuerdo de Integración Sub-Regional.”

¹² Chile was a founding member but left the organization in 1976. Peru was not member during the 1992-1994 period.

customs union, generated the need for updating of the rules in order to establish precise criteria of origin. In 1997, Decision 416 introduced amendments where the provisions specify the conditions products must meet in order to be sub-regional origin goods and thereby benefit from the enlarged market.

The amendments were more specific with respect to goods in whose manufacture non-native materials were used. The basic criterion used for this type of goods is that the materials of non-native origin must either have undergone processing, as reflected in the change in tariff heading, or the CIF value of non-native materials should not exceed 50 % of the FOB value of the final products in the cases of Colombia, Venezuela and Peru, and 60 % in those of Bolivia and Ecuador.

Between 1995 and 2001, the Andean Community approved provisions that removed unnecessary technical obstacles to trade. These provisions are the Andean System of Standardization, Accreditation, Testing, Certification, Technical Regulations and Metrology, the Andean Quality System, and the Andean Certificates of Products Marketed.

The Andean System of Standardization, Accreditation, Testing, Certification, Technical Regulations and Metrology has the objective to clear the way for trade by removing unnecessary technical obstacles and to bring about an improvement in the quality of the goods and services that are produced in the Andean sub-region. The Andean Quality System covers all elements of the quality infrastructure: standardization, accreditation, testing, certification, technical regulations, and metrology for all of the sub-region's products and services, except for those having to do with phytosanitary and zoosanitary matters¹³. Finally, the Andean Certificates of Products Marketed simplifies conformity evaluation activities by member countries and are aimed at establishing "Andean standards" for the products that are marketed in the sub-region by harmonizing the standards applied in each country or adopting international standards considered to be of interest to the sub-region.

The application of these Community provisions have the intention to shore up institutions in the member countries that are responsible for monitoring the fulfillment of the conformity evaluation provisions, technical regulations, and procedures of the World Trade Organization's Agreement (WTO) on Technical Obstacles to Trade.

Investment Provisions

The Andean Community provisions with regard to investment have two parts. The first part covers the general regime governing foreign investment and the second regulates the case of the Andean multinational enterprises. However, these requirements must be complemented by national laws and regulations, especially through bilateral arrangements or agreements that promote and protect investments signed by member countries with third countries and even among themselves.

The general regime for foreign investment contains the definitions of direct foreign investment and classifies investors and enterprises into national, mixed, and foreign. Even

¹³ Phyto- and zoosanitary regulation aims at protecting plants and animals from the spread of pests and diseases.

though the regime sets out the rights and obligations of foreign investors, it gives the Andean countries full freedom to regulate this field through their own national legislation.

The regulation with respect to the Andean multinational enterprises secure that these enterprises enjoy national treatment in regard to the public procurement of goods and services; the right to transfer abroad in freely convertible currency all of the dividends for distribution; tax matters; and the right to open up branches in other member countries. They also enjoy equality compared to domestic taxes; provisions to avoid double taxation of income and on the transfer of capital abroad; and facilities for the hiring of sub-regional personnel. The main condition to have these facilities is that at least 60% of the capital of the multinational company belongs to national investors from two or more member countries.

2.3. Common Market of the South (MERCOSUR)

Motivated by trade imbalances and a desire for energetic integration in South America, MERCOSUR countries signed a partial economic integration agreement with Bolivia in 1996. The main objectives were to establish the legal and institutional framework of economic and physical cooperation and integration that facilitate the free circulation of goods and services, to create a Free Trade Area in ten years, and to establish a normative framework for promoting and protecting intra-regional investments, without limiting trade negotiations with third parties. This agreement entered into force on March 2, 1997, and previous agreements between involved countries became invalid.

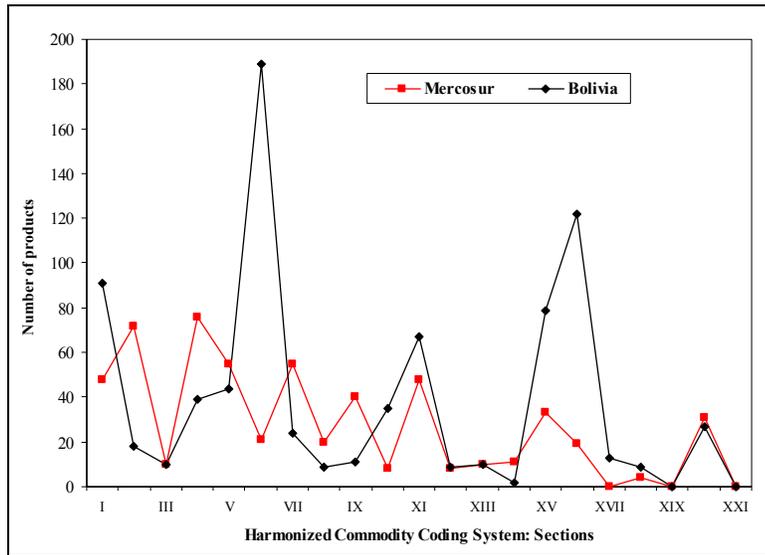
Trade Provisions

The trade relations between Bolivia and MERCOSUR members, before signing the agreement, were according to LAIA's rules. The new agreement included a Trade Liberalization Program consisting of immediate and progressive tariff reductions.

The Trade Liberalization Program has several tariff reductions categories, which depend on the sensitivity of the products. The first group that was deemed fully duty-free had around 570 products for Bolivia and 800 for MERCOSUR. In the case of Bolivia, the goods with no tariffs were concentrated in the following main categories: 1) Foods, Beverages, Spirit and Tobacco (Section IV); 2) Vegetal products (Section II); 3) Mineral products (Section V); and 4) Plastic and Rubber (Section VII).

On the other hand, Bolivia set zero import tariffs on goods that are very important for capital investment. According to Figure 2, the main categories are: 1) Products of the chemical or allied industries (Section VI); 2) Machinery and electrical equipment (XVI); 3) Live animals and animal products (Section I); and 4) Textile and textile articles (Section XI).

Figure 2. Products with immediate tariff reductions granted by MERCOSUR and Bolivia

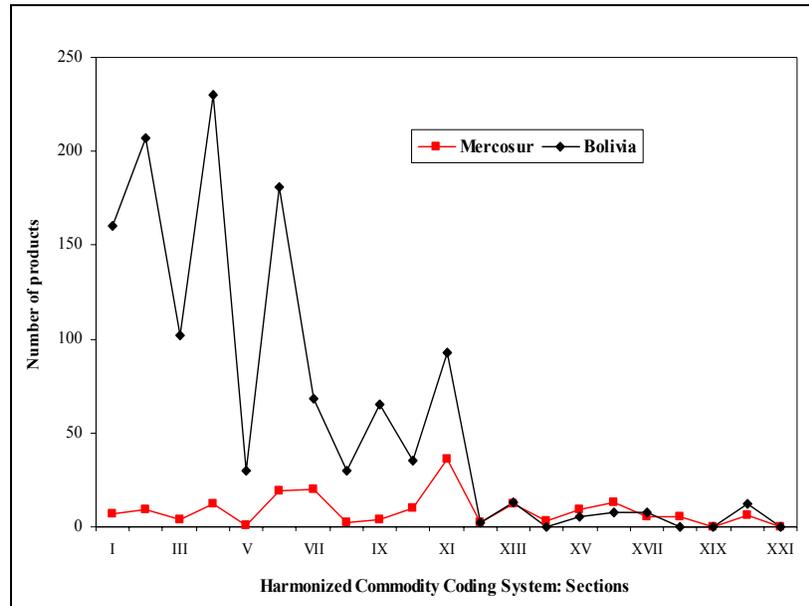


Source: LAIA.

The rules of origin from MERCOSUR have the same characteristics as the Andean Community and LAIA. The non-tariff barriers cover all elements of the standardization, accreditation, testing, certification, technical regulations, metrology and, phytosanitary and zoosanitary matters. In general, the members are governed by the rules of WTO. However, products that receive local export incentives, in the form of tariff refunds on temporarily imported inputs, are not included in the Trade Liberalization Program.

With respect to the progressive tariff reductions, Figure 3 shows that Bolivia gives more benefit to MERCOSUR, especially in the sections that are related to the agricultural sector. The progressive tariff reductions cover around 1428 goods: 74% of them will have zero tariffs within 10 years of signing the agreements, and the rest within 15 to 20 years. Moreover, goods not included in the abovementioned agreements, received an immediate 30% reduction in the tariff, increasing gradually to 100% by 2006.

Figure 3. Products with progressive tariff reductions granted by MERCOSUR and Bolivia



Source: LAIA.

Investment Provisions

The agreement did not have explicit rules on FDI or multinational enterprises. Some articles mention that members should try to stimulate reciprocal investments, with the objective of intensifying the bilateral flows of trade and technology. These initiatives will respect national legislations.

In addition, it gives the possibility to make agreements on Promotion and Reciprocal Protection of Investments, while all bilateral agreements subscribed before the agreement will maintain full validity. The members have agreed to examine the possibility of subscribing agreements to avoid double taxation.

2.4. Chile

After Chile had decided to leave the Andean Pact, the trade relations between Bolivia and Chile were limited. In order to increase trade and economic relations, Bolivia signed a partial integration agreement with Chile in April 1993.

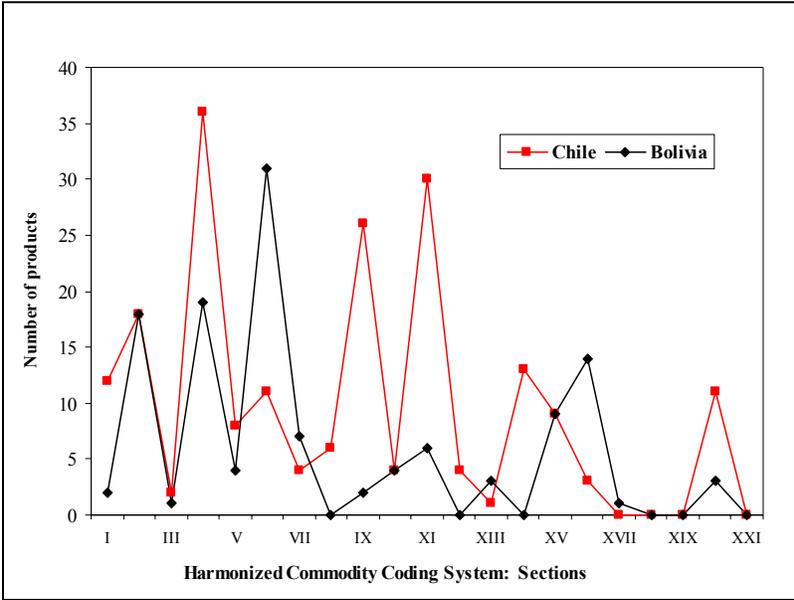
Trade Provisions

According to the agreement, the political liberalization was to come in three levels. The first level provides duty free access without reciprocity and volume constraints to Chilean markets to some Bolivian products. The second level provides duty free access for some

products with reciprocity. Finally, at the third level, each country grants a reduction on the rate of duties according to specific list of products.

Figure 2 shows that Bolivia was granted tariff reductions for the following products: 1) Food, Beverages, and Tobacco (Section IV); 2) Textile and textile articles (Section XI); 3) Wood and articles of wood (Section XI); and 4) Vegetable products (II). On the other hand, Chile was granted: 1) Products of the chemical or allied industries (Section VI); Food, Beverages and Tobacco (Section IV); 3) Vegetable products (II); and 4) Machinery and Electrical Equipment.

Figure 4. Products with immediate tariff reductions granted by Chile and Bolivia



Source: LAIA.

The benefits derived from the program of liberalization of the present agreement will apply exclusively to native products and products originating in the territories of the member countries, following the standard rules of LAIA.

Investment Provisions

In order to stimulate investment, the agreement recommends that the countries adopt the following principle with respect to investment: Capital originating in any of the signatory countries will enjoy, in the territory of the other signatory country, a no less favorable treatment than that that is granted to national capital or capital originating from any another country.

2.5. Andean Trade Promotion and Drug Eradication Act (ATPDEA)

The Andean Trade Preference Act (ATPA) was signed into law on December 4, 1991 providing for a 10-year period of duty-free or reduced-rate treatment of selected American imports from Bolivia, Colombia, Ecuador, and Peru. The ATPA improved access to US markets of such exports to encourage economic alternatives to illicit drug activity and drug-crop production in the Andean region.

The ATPA expired on December 4, 2001, but the Trade Act of 2002 renewed this program under the Andean Trade Promotion and Drug Eradication Act (ATPDEA) on February 15, 2002. In addition, the United States, under the Generalized System of Preferences (GSP), provides preferential duty-free entry to approximately 3,000 products. The purpose of this program is to encourage economic growth of beneficiary countries.

Trade Provisions

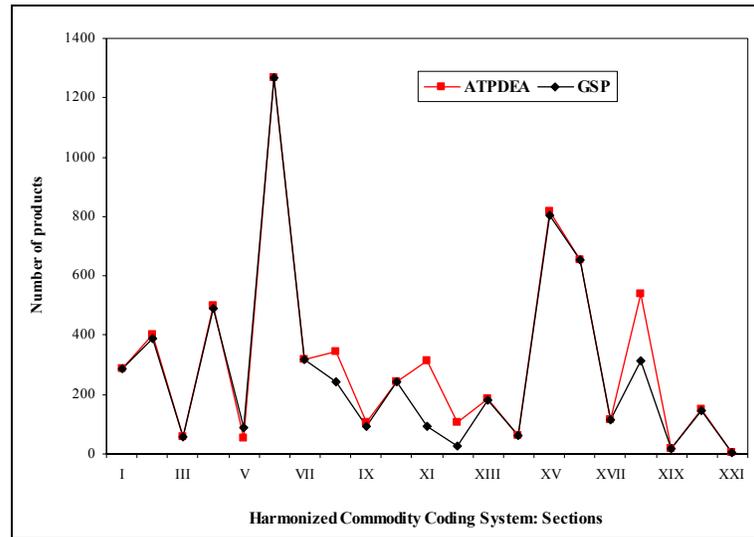
The ATPA provided duty-free access to US markets for some 5,600 products. The requirements to duty-free access of ATPDEA is similar as ATPA but some of the program's parameters were modified and extended to other Andean exports, such as textile articles, to broaden the program's effects. The ATPDEA extended new benefits to 700 additional products.

According to the Trade Act of 2002, duty-free treatment did not apply to the following products: rum and tafia; sugars, syrups, and sugar-containing products; and tuna. On the other hand, footwear; petroleum or any products derived from it; watches and their parts; and handbags, luggage, flat goods, work gloves, and leather wearing apparel may proclaim duty-free treatment if the President determines that such articles are not import-sensitive in the context of imports from ATPDEA beneficiary countries.

Moreover, ATPDEA provides duty-free access and free of any quantitative restrictions and limitations to apparel articles and certain textile articles. These products have to be: 1) manufactured or assembled from products of the United States or ATPDEA beneficiary countries; 2) assembled in one or more ATPDEA beneficiary countries from regional fabrics or regional components; or 3) hand loomed, handmade, and folklore articles. No article or material of a beneficiary country shall be eligible for such treatment by virtue of having merely undergone simple combining, packaging operations, or mere dilution that does not materially alter the characteristics of the article.

In 2002, the products that benefit from ATPDEA were around 6545 products, slightly more than the GSP (around 655 articles more). Figure 5 shows that the products are concentrated in the following categories: 1) Chemical or allied industries (Section VI); 2) Base metals and articles of base metal (Section XV); 3) Machinery and Electrical Equipment (Section XVI); and 4) Optical, photographic, medical or surgical instruments and apparatus (Section XVIII). In contrast to the GSP program, the ATPDEA provide duty-free access for more products from Section XVIII, Section XI (textiles and textiles articles) and Section VII (wood and articles of wood).

Figure 5. Products with duty free access to U.S. markets



Source:

In contrast to standard regional trade agreements, the ATPDEA requires that each country must meet all the following ATPDEA criteria to be a beneficiary country:

- 1) The beneficiary country should demonstrate a commitment to undertake its obligations under the WTO and participate in negotiations toward the completion of the FTAA or another free trade agreement.
- 2) The country should provide protection of intellectual property rights consistent with or greater than the protection afforded under the Agreement on Trade-Related Aspects of Intellectual Property Rights described in the Uruguay Round Agreements Act.
- 3) The country should provide internationally recognized worker rights and implement commitments to eliminate the worst forms of child labor.
- 4) The country should meet the counter-narcotics certification criteria set forth in the Foreign Assistance Act of 1961 for eligibility for United States assistance.
- 5) The country should have taken steps to become a party to and to implement the Inter-American Convention against Corruption. Moreover, it should apply transparent, nondiscriminatory, and competitive procedures in government procurement equivalent to those contained in the Agreement on Government Procurement of the Uruguay Round Agreements Act.
- 6) The country should support the efforts of the United States to combat terrorism.

Bolivia is currently deemed to satisfy these conditions.

2.6. Andean Generalized System of Preferences (Andean GSP)

The European Union granted tariff preferences to Andean countries by the creation of the Andean Generalized System of Preferences (Andean GSP), as support for the Andean Community's war on drugs, under the principle of shared responsibility. The scheme has been in effect since December 13, 1990.

In 2001, the EU Council approved the regulations for application of a generalized tariff preferences plan for the period 2002-2004. This scheme was extended to 2005 in December 2003. In principle, countries that grow so fast that they become a high-income country (by World Bank definitions) would graduate from the programme, in the sense that they would no longer qualify for this special treatment. However, the new regulation contains a provision that excludes, in a non-discriminatory way, all beneficiary countries accounting for less than 1% of GSP imports from graduation. Because of this, no Andean Community countries will see their products graduate anymore. They also consider the possible renewal of the Andean preferential system for the decade of 2005-2014, which will depend upon a general evaluation of the results to be conducted over the three-year period of 2002-2004.

The Andean GSP enjoyed special and privileged treatment as compared with the general GSP in the EU. Not only did this instrument permit the preferential entry of a broad range of Andean products with a zero tariff, but also it secured that these preferences could not be suspended according to general GSP provisions.

Trade Provisions

In order to benefit from the Andean GSP upon importation into the EU, three conditions must be fulfilled: 1) the goods must originate in a beneficiary country in accordance with the rules of origin; 2) the goods must be transported directly from the beneficiary country to the EU; and 3) valid proof of origin must be submitted.

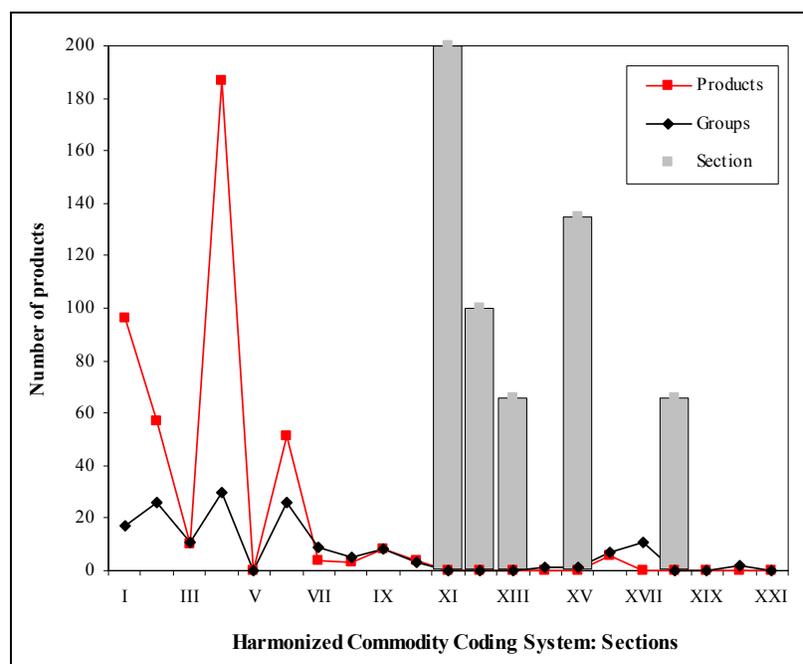
Tariffs differ between non-sensitive and sensitive products. Common Customs Tariff duties on products listed as non-sensitive products are entirely suspended, except for agricultural components. In respect to sensitive products, the Common Customs Tariff ad valorem duties are reduced by 3.5 %. For textile and textile articles (Section XI), the reduction is 20 % and for the specific duties 30%.

Moreover, there are special incentive arrangements that any country can receive if it meets the norms for the protection of labor rights and environment. In both cases, all Common Customs Tariff duties are reduced by another 5%.

The Andean Community has special and privileged treatment compared to the general GSP. According to the arrangements to combat drug production and trafficking, Common Customs Tariff ad valorem duties are entirely suspended on all products of Chapters 1 to 97, except those of Chapter 93 (watches and their parts).

According to Figure 6, which shows the number, group and sections of products included in the special arrangements to combat drug production and trafficking, there are many products that benefit from zero duty and they are the products that are in the sensitive products category. For instance, all textiles and textile articles (Section XI) benefit from this special arrangement.

Figure 6. Products with preference tariff to European Union



Source:

Similar to the other trade initiatives to encourage access to new markets, the benefits derived from the Andean GSP apply exclusively to the goods that originate in a beneficiary country in accordance with the following rules of origin: 1) They must be wholly obtained in that country; or 2) sufficiently processed there.

The list of products basically uses three methods, or combinations of these methods, to lay down what amount of processing can be considered as "sufficient" in each case: 1) the change of heading criterion¹⁴; 2) the value or ad valorem criterion, where the value of non-originating materials used may not exceed a given percentage of the post-processing price of the product; and 3) the specific process criterion, when certain operations or stages in a manufacturing process have to be carried out on any non-originating materials are used.

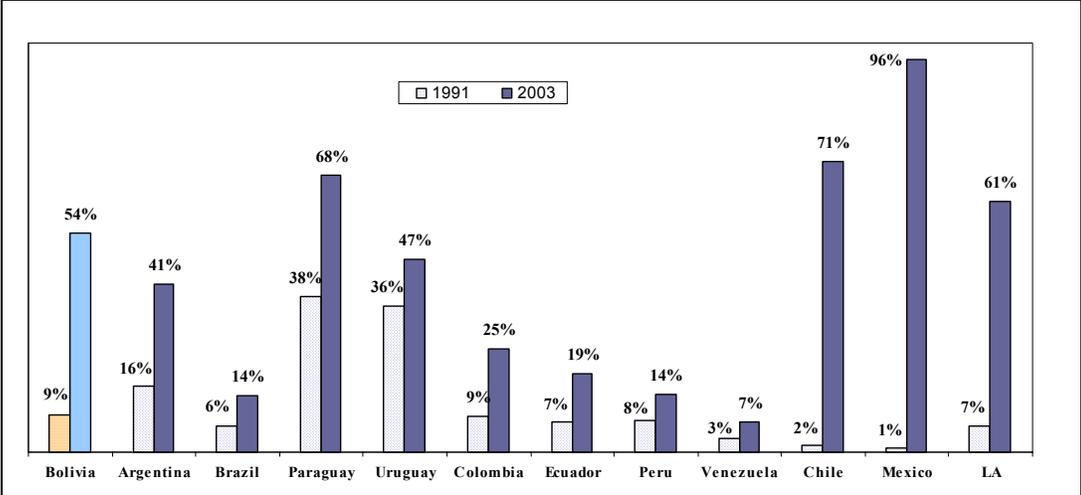
2.7. Conclusions

The review of trade agreements and drug related trade preferences, in general, demonstrates that a significant number of Bolivian goods has been granted preferential access to export markets, especially to US and CAN markets. Figure 7 indicates that Bolivia has been able to take advantage of these provisions, as the share of export value with preferential tariffs increased from just 9 percent in 1991 to 54 percent in 2003. This

¹⁴ This means that a product is considered to be sufficiently processed when the product obtained is classified in a 4-digit heading of the Harmonized Commodity Coding System, which is different from those in which all the non-originating materials used in its manufacture are classified.

trend towards more trade under preferential agreements applies to all countries in Latin America, underscoring the progress towards regional integration of goods markets.

Figure 7. Percentage of export value with preferential agreement



Source: Machinea (2004).

In the following section, we will analyze in more detail how trade and FDI patterns have changed in response to the implementation of the regional integration agreements discussed in this section.

3. REGIONAL INTEGRATION, TRADE AND FDI

It is difficult to disentangle the effects of regional integration from the effects of all the other major reforms that have taken place in Bolivia during the same period. Furthermore, it is virtually impossible to assign causal effects to the signing of any specific agreement or to the formulation of any specific provisions in these agreements. In this section we will review the changes in trade and FDI patterns that have followed the signing of the different integration agreements. We will then estimate a gravity model of trade, which can be used to formally test the impacts of these agreements on trade.

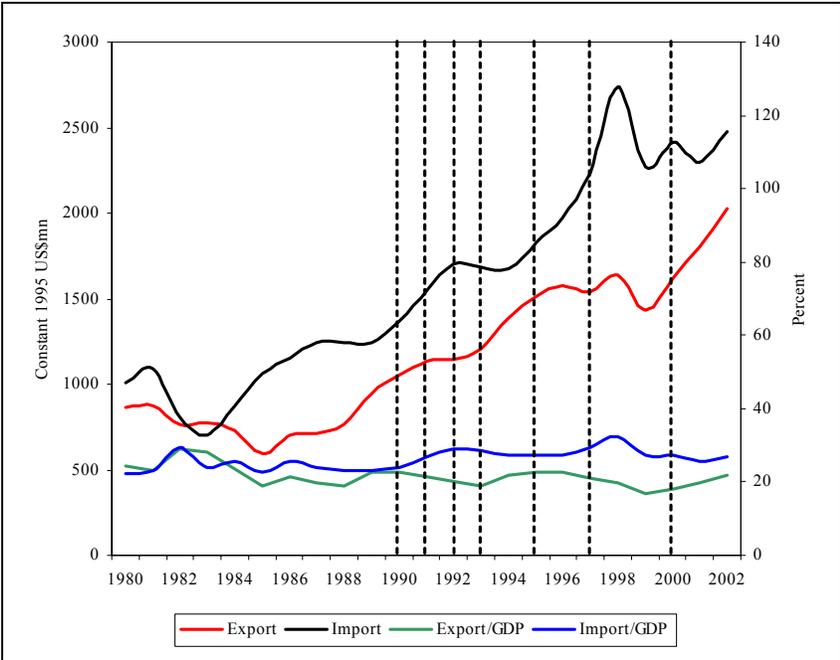
3.1. Trade

Trade policy during the last 18 years can be divided into three periods. The first period, 1986-1990, had the main objective of reversing the negative consequences of protectionism and its anti-export bias. The policies were characterized by four basic elements: 1) reduction in the average level of tariffs; 2) simplification of the tariff structure; 3) incentive mechanisms for exports; and 4) a unique¹⁵ and realistic exchange rate.

¹⁵ Meaning that the official exchange rate is identical to the black market exchange rate.

During this period, the tariffs decreased significantly, from an average of 30% to a single rate of 10% on all goods, except capital goods for which the tariff is only 5% (Peñaranda, 1993). These changes were based on the rules of GATT, of which Bolivia has been a member since 1990. In the case of exports, the government created the National Institute of Exports to facilitate an efficient legal framework and to reduce the bureaucracy associated with exporting. Figure 8 suggests that these policies may have helped reverting the negative trends in exports and GDP experienced during the early 1980s.

Figure 8. Official Exports and Imports, 1980 - 2002



Source: National Statistic Institute (INE).
 Note: Regional Agreements: Andean Community (1991-revived); Chile (1993); Mexico (1995); MERCOSUR (1997); and Cuba (2000). Preferential Trade: Andean GSP (1990); ATPA (1992); and ATPDEA (2002).

During the second period, 1991–1997, trade policies concentrated on expanding the export markets for Bolivian goods by signing trade agreements with main trading partners. Bolivia signed agreements with Chile, Mexico and MERCOSUR and became a member of the WTO in 1995. Figure 8 shows that both imports and exports grew strongly during the period of increased integration. For example, both imports and exports increased significantly right after signing the agreements with MERCOSUR in 1997.

A major accomplishment during this period was the approval of the Export Tax Law in 1993, which compiled and consolidated a range of previous rules regarding exports. The law stipulates: 1) free exports and imports without any license or permission, and 2) government guarantees for international export financing. Moreover, the government created six free trade zones (FTZs). Currently, FTZs exist in the three main cities and 3 cities on the borders of Brazil and Peru. They have not yet proven attractive to investors, though, because of the lack of roads and other basic infrastructure.

The performance of trade grew steadily until 1998, when the level of trade started decreasing due to external shocks and the implementation of the Customs Law in 1999. The latter had the objective of decreasing illegal imports and increasing the recollection of import tariffs.

The third period, 1998-2002, was characterized by economic recession, and the government implemented several temporary policies to try to revive the economy. Among these were tariff reductions on capital goods from 10% to 5% and tax exemptions for exporters.

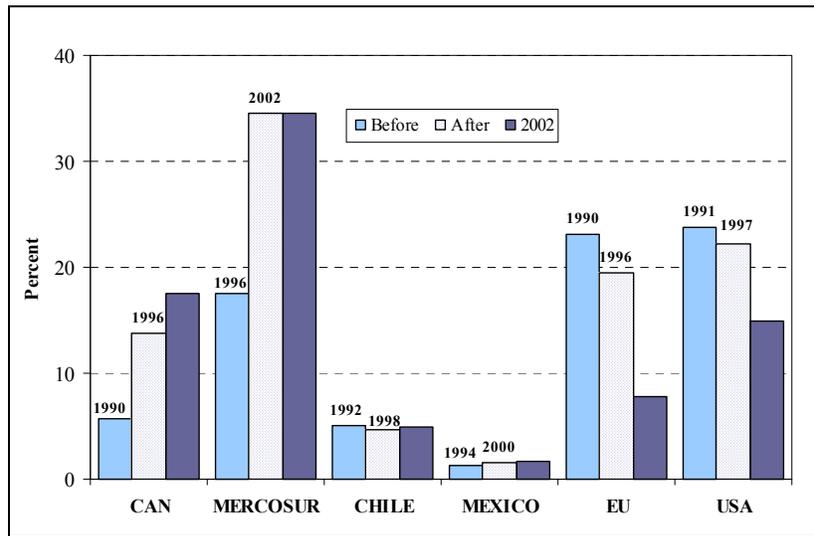
Although trade increased substantially in terms of value since the introduction of the NEP, trade as a share of GDP has remained roughly constant (see Figure 8). Thus, regional integration has apparently not made Bolivia a more open economy, but, as we will see below, it did affect what goods are exported and to whom they are exported.

The impact of regional integration on trade

The trade agreements apparently contributed to changes in the relative importance of each trade bloc. Figure 9 shows that trade with CAN and MERCOSUR has increased substantially at the expense of trade with the US and the European Union. For example, one year before the signing of the CAN agreement, only 6 percent of Bolivian trade occurred with this bloc. Five years later, this percentage had increased to 14 percent, and by 2002 it has reached 18 percent. In contrast, trade with the European Union accounted for 23 percent of all Bolivian trade 1 year before receiving the drug related preferential trade concession, and 5 years later it had dropped to 19 percent, and by 2002 it is only 8 percent.

Especially the MERCOSUR agreement appears to have had a very large trade diversion effect. Within five years, 20 percent of all trade had been diverted from EU and US partners to MERCOSUR.

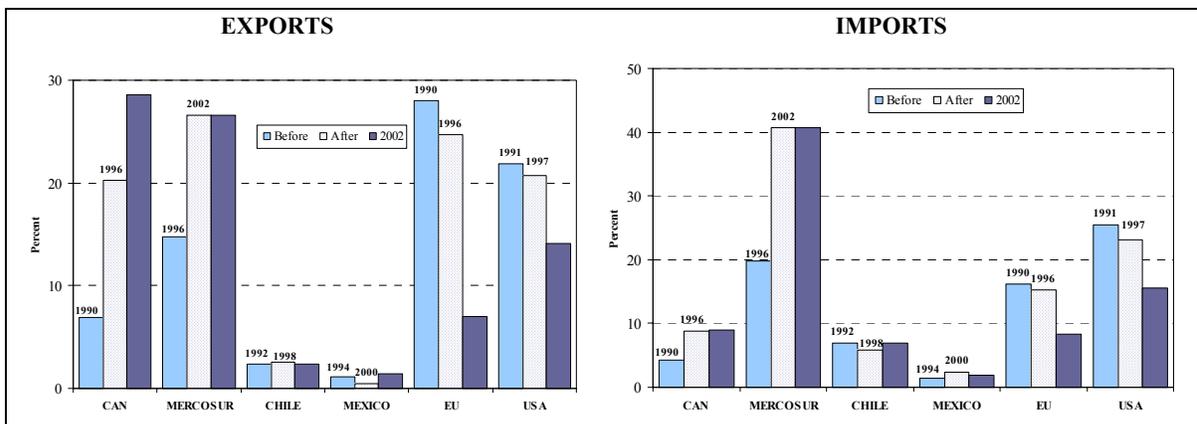
Figure 9. Share of Trade (Imports+Exports) from Partners One Year before and Five Years after Implementation of RIA



Source: National Statistic Institute (INE).

Figure 10 shows that the trade diversion effect is particularly large for exports, whereas imports were slightly more rigid. Still, imports from the European Union fell from 17 percent in 1990 to 8 percent in 2002, while imports from MERCOSUR doubled from 20 to 41 percent between 1996 and 2002.

Figure 10. Share of Exports and Imports from Partners One Year before and Five Years after Implementation of RIA



Source: National Statistic Institute (INE).

The trade diversion hypothesis can be formally tested in a classical gravitation model of the type that was first applied by Tinbergen (1962) and Pöyhönen (1963). The model stipulates that the amount of trade between two countries, T_{ij} , depend on the level of

income, Y_i , in each of the two countries, and the distance, D_{ij} , between the two countries. The model also allows for some other factors, X_{ij} , which are usually dummies indicating whether the two countries share a common border or a common language. Thus, the gravity model of trade can be written as follows:

$$\ln(T_{ij}) = \alpha + \beta_1 \ln(Y_i^*) + \beta_2 \ln(Y_j) + \beta_3 D_{ij} + \beta_4 X_{ij} + \varepsilon_{ij}.$$

The model is estimated for Bolivia and its 66 trade partners using annual data from 1990 to 2002. To test whether the agreements reviewed in Section 2 have had a significant impact on the volume of trade, we include six trade agreement dummies in the gravity model. The CAN dummy, for example, takes on the value 1 for the years when the agreement was in place for the countries involved, and is 0 for all other countries and years. If the estimated coefficient is positive, it indicates that the agreement had a positive effect of trade, even while controlling for other factors, such as distance and income levels.

Table 1 shows the regression results. Trade is defined as imports plus exports measured in fixed 1995 US-dollars. Distance is measured as the distance between countries' capitals measured in kilometers¹⁶. The panel was supposed to have 858 observations, but a few observations on imports were missing, implying a total number of observations of 853. As expected, the coefficient on both Bolivian GDP and trade partner's GDP comes out positive, while distance has a highly significant negative effect on trade. A common border between the two countries tends to increase trade. There appears to be a negative trend in Bolivian trade during the 1990-2002 period, although the estimated coefficient is only significant at the 10% level.

Table 1: Estimated Gravity Model of Trade, Bolivia, 1990-2002.

Dependent Variable: ln(Imports+Exports+1)				
Method: Pooled Least Squares				
Sample: 1990 2002				
Total panel (unbalanced) observations 853				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-49.24422	22.55099	-2.183684	0.0293
ln(GDP) (95\$)	1.365768	0.035496	38.47618	0.0000
ln(GDPBOL) (95\$)	4.974959	2.621218	1.897957	0.0580
CAN	2.543368	0.187035	13.59837	0.0000
MERCOSUR	1.290531	0.415018	3.109575	0.0019
MEXICO	0.598812	0.167401	3.577106	0.0004
CHILE	0.186356	0.225067	0.828000	0.4079
ATPA	-0.685342	0.227003	-3.019080	0.0026
EU	0.075713	0.151131	0.500979	0.6165
Trend	-0.170553	0.094085	-1.812763	0.0702
Distance (km)	-0.000196	1.55E-05	-12.63101	0.0000
Common border	1.690658	0.234863	7.198493	0.0000
R-squared	0.733066			

Source: Authors' estimation.

¹⁶ The results are robust to substituting distance in kilometers with the log of distance in kilometers, except that the dummy "Common border" becomes insignificant.

According to the regression results, the CAN agreement had a highly significant positive effect on trade between Bolivia and other members of the Andean Community. The coefficient is not only significant, but also very large. A coefficient of 2.5 implies approximately a twelve doubling of trade (measured in real terms) after the signing of the agreement compared to before the signing of the agreement.

The MERCOSUR agreement also had a statistically significant and positive impact on trade according to the estimated model. The coefficient of 1.29 suggests that trade between Bolivia and MERCOSUR countries more than tripled after signing the agreement.

The partial integration agreement with Mexico signed in 1995 also had a statistically significant positive effect on trade between Bolivia and Mexico. The coefficient of 0.60 suggests that trade between the two countries increased by 82% due to the signing the agreement.

In contrast, the Andean Trade Preference Act (ATPA) granted by the United States appear to have had a negative effect on trade between Bolivia and the US. A coefficient of -0.69 suggests that trade fell by 50% after the agreement was signed in 1991. It is unlikely that the signing of the ATPA *caused* this drop in trade. Indeed, the estimated model cannot prove causality, only indicate what happened with trade before and after signing the various agreements compared to what would be expected given the GDP levels and geographical locations of each country. We do not know what would have happened with Bolivian-US trade if no ATPA had been signed, but the regression results, as well as Figures 9 and 10 above suggest that the ATPA (followed by the ATPDEA) has not been successful in increasing trade between the two countries.

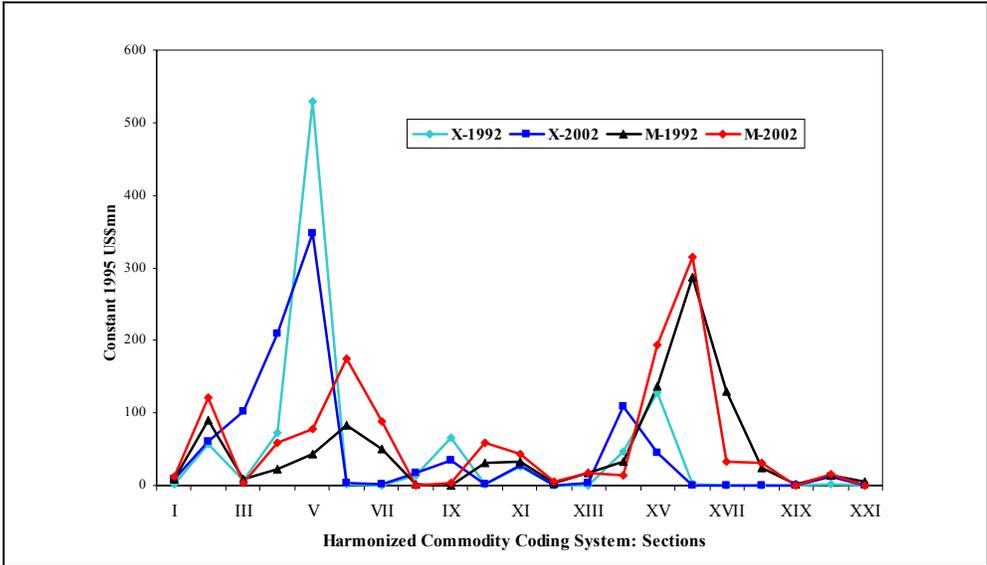
The Andean Generalized System of Preferences granted by the European Union did not have a positive effect on trade either. The estimated coefficient is positive, but not statistically significant. The same holds for the partial integration agreement signed with Chile in 1993.

The estimated gravity model of trade is consistent with the hypothesis of diversion of trade away from US and EU markets towards CAN and MERCOSUR markets. Although it is impossible to prove that this trade diversion was caused by the regional integration agreements, both empirical evidence and theory are at least consistent with that hypothesis. In the remainder of the paper, we will tentatively attribute all the changes that have been observed in trade patterns to the regional integration processes, thus getting an upper bound on the impact of regional integration on poverty.

Since we are interested in the impact of trade on poverty, it is also important to analyze the changes in the composition of trade. Figure 11 shows that, between 1992 and 2002, Bolivian exports have become significantly more diversified. In 1992, exports were highly concentrated in section V products (Mineral products), whereas by 2002, this category had lost importance, while section III products (Animal and vegetable fat), section IV products (Food, beverages, and tobacco), and section XV products (Base metals and products thereof) all had become significant. A large part of current section III exports consists of soybean exports to other Andean countries under very favorable conditions due to trade provisions in the CAN. Bolivian soybean producers cannot compete with the much more

efficient Brazilian soy bean producers, and the only reason Bolivia has a significant amount of soy bean exports, is the preferential access to Andean markets provided by the CAN agreement. Similarly, section IV exports also go mainly to CAN or MERCOSUR markets benefiting from favorable trade provisions.

Figure 11. Structure of Exports and Imports: 1992 and 2002 (Constant 1995 US\$mn)



Source: National Statistic Institute (INE).

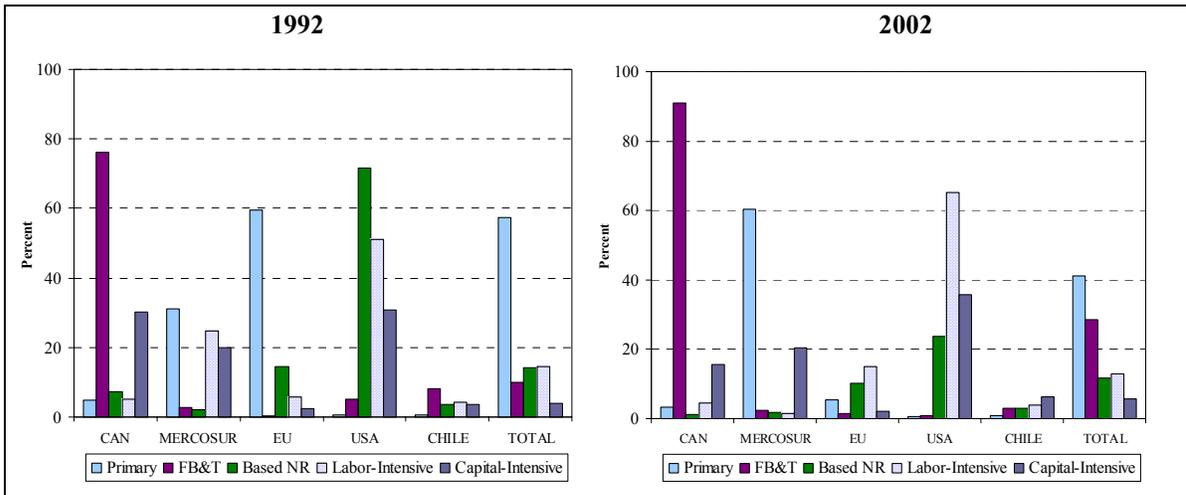
In contrast, in the case of Textiles and Textile Articles (Section XI), the reduction of tariff was gradual and zero tariff rates were only reached by the end of the period of analysis. Exports in this category had clearly not started to take off by 2002.

Figure 12 confirms that before signing the series of integration agreements, Bolivian exports were dominated by primary goods, mainly destined to the European Union, while MERCOSUR was relatively unimportant.

By 2002, primary goods are still the most important export category, but now the destination is almost exclusively MERCOSUR. Food, Beverages and Tobacco have also become very important, and the destination is CAN.

In terms of poverty, we would expect labor-intensive export products (Food, Beverages and Tobacco, Labor Intensive Industries) to have the most beneficial effects. Thus, it is likely that exports to CAN and the US will reduce poverty more than exports to other blocs. This hypothesis will be formally tested in Section 4 below.

Figure 12. Structure of Exports by Trade Blocs and Goods: 1992 and 2002



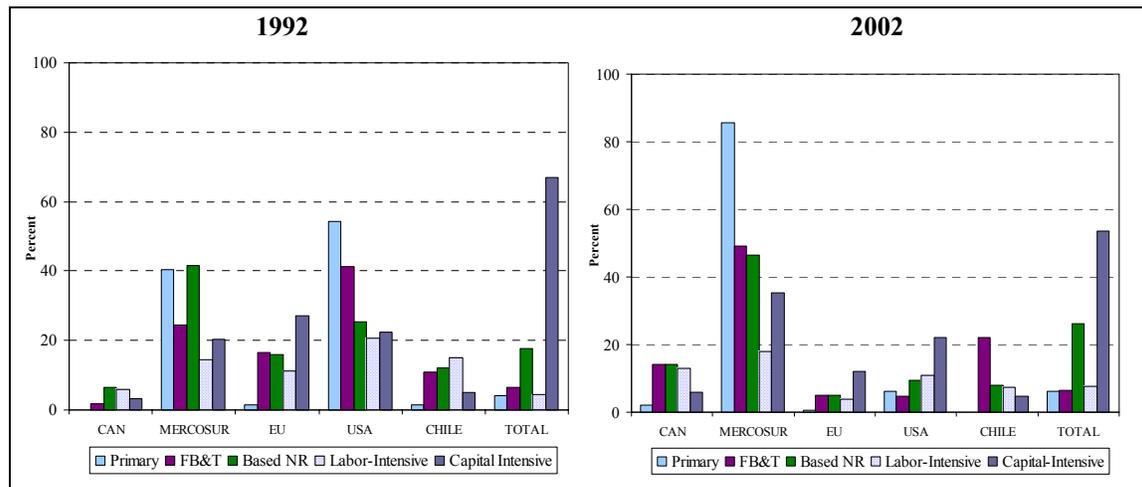
Source: UN Commodity Trade Statistics Database.
 Primary: ISIC 011, 012, 013, 014, 015, 020, 050, 101, 102, 103, 111, 112, 1210, 121, 132, 141, 142.
 Food, Beverages and Tobacco: ISIC 151, 152, 153, 154, 155, 160.
 Based Natural Resources: ISIC 210, 241, 243, 251, 252, 271, 272, 273.
 Labor Intensive: ISIC 171, 172, 173, 181, 182, 191, 192, 201, 202, 361, 369.

Trade integration not only promotes exports, however. Increased exports go hand in hand with increased imports as we saw in Figure 8.

Figure 13 shows that Bolivia’s main imports are capital goods. In 1992, these comprised 68 percent of all imports, and came mostly from the EU and the US. By 2002, the import share of capital goods had decreased to 58% and, more importantly, these imports came primarily from MERCOSUR.

Capital goods are essential for the Bolivian industry and do not compete with local production, as Bolivia has virtually no capital goods industry. In contrast, natural resource based products compete directly with Bolivian production, and the increase observed between 1992 and 2002 may thus have a detrimental effect on poverty. This is the backside of increased integration, and the problem is particularly big with MERCOSUR.

Figure 13. Structure of Imports by Trade Blocs and Goods: 1992 and 2002



Source: UN Commodity Trade Statistics Database.

Primary: ISIC 011, 012, 013, 014, 015, 020, 050, 101, 102, 103, 111, 112, 1210, 121, 132, 141, 142.

Food, Beverages and Tobacco: ISIC 151, 152, 153, 154, 155, 160.

Based Natural Resources: ISIC 210, 241, 243, 251, 252, 271, 272, 273.

Labor Intensive: ISIC 171, 172, 173, 181, 182, 191, 192, 201, 202, 361, 369.

3.2. Foreign Direct Investment

Once macroeconomic stability was achieved in 1986, investment policies have avidly sought to attract foreign investors to augment the country's asset base. During the first period, 1986-1990, the political instability and the uncertainty regarding the success of the stabilization program together with an inappropriate policy framework to promote investment can in part explain the slow growth of FDI (see Figure 14).

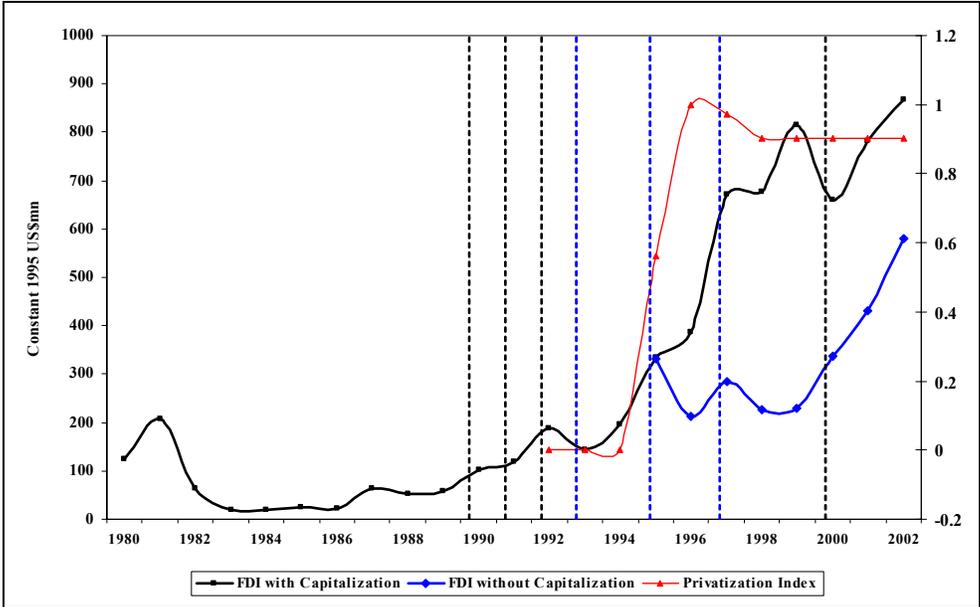
Clear rules for foreign investment were set out in the early 1990s, mainly through the Investment Law (1990) and Privatization Law (1992). The Investment Law guarantees that foreign investors will receive national treatment, have access to free currency conversion, enjoy unrestricted remittances, and have the right to international arbitration. These laws, together with a complete line of investment guarantees to foreign investors by IBRD's Multilateral Investment Guarantee Agency (MIGA), established favorable rules regarding market entry and foreign ownership. During this period, Bolivia also signed bilateral investment agreements with Argentina, Belgium/Luxembourg, China, France, Germany, Italy, Mexico, the Netherlands, Peru, Romania, Spain, Switzerland, the United Kingdom and the United States¹⁷.

During the second half of the 1990s, when the Second Generation Structural Reforms improved the economic policy framework, the Capitalization Law (1994) generated a large

¹⁷ See Annex 2.

infusion of foreign direct investment due to the opening up of strategic state monopolies to private investors (See Figure 14). Under the capitalization process, the six principal state-owned enterprises, YPFB (oil and gas), ENDE (electricity), ENFE (railways), ENTEL (telecommunications), LAB (aviation) and EMV (mining and smelting), were put up for sale by international tender and the winning bidders gained management control and a 50% stake in the enterprise, while the government retained the remaining 50% share.

Figure 14. FDI and Privatization Index



Source National Statistic Institute (INE).

This program, nevertheless, maintained five temporary monopolies, now under private control, in the hydrocarbons, transportation, telecommunication, and electricity sectors. The last of these monopoly contracts expired by the end of 2002, when the telecommunication sector was opened up to free competition.

The government created the Sector Regulatory System (SIRESE) to balance the potential market power of the natural monopolies. SIRESE is an autonomous regulatory body, which regulates many aspects of business in the telecommunications, electricity, transport, hydrocarbons and water sectors. Prices of most public utilities are reviewed and approved by SIRESE. Market forces largely set prices, but, where necessary, a regulated price is established through relatively transparent procedures and formulas. The exception to this is potable water and garbage collection, where municipalities set the local rates.

In general, the government, through time, has been entering into a series of bilateral and multilateral agreements and covenants to promote, protect and guarantee investments. Foreign ownership is allowed virtually throughout the economy, with no requirements to register foreign direct investment separately. The legal framework restricts investments by foreigners in operations along the border areas, unless the investment or project is declared of national interest. Foreign investment is neither screened nor treated in a discriminatory

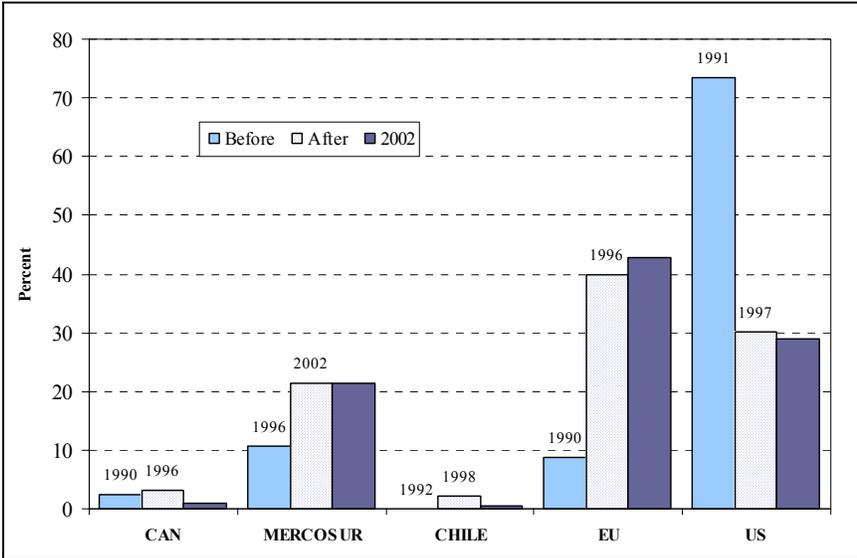
manner. There are no registration requirements for foreign direct investors in Bolivia or any special incentives for domestic or foreign investment. Finally, there are no restrictions on any kind of remittances or currency transfers.

The impact of regional integration on FDI

Figure 15 shows an increases in FDI after signing the regional integration agreement with MERCOSUR, but hardly any effect in the cases of CAN and Chile. The drug related concessions with the EU and the US did not directly address FDI issues, and the large increase observed in the case of the EU is due to bilateral investment agreements (see Annex 2), which promoted large investments, especially from Italy and Spain in telecommunications and financial intermediation.

As indicated in Figure 14, a large part of FDI during the period 1995-2002 is due to the capitalization process (Nina and te Velde, 2003). While the capital inflows from the capitalization process by nature were time limited, the figure indicates that other kinds of FDI keep increasing. It is likely that the integration process and the capitalization process have reinforced each other in attracting FDI to Bolivia.

**Figure 15. Share of FDI from Partners
One Year before and Five Years after Implementation of RIA**



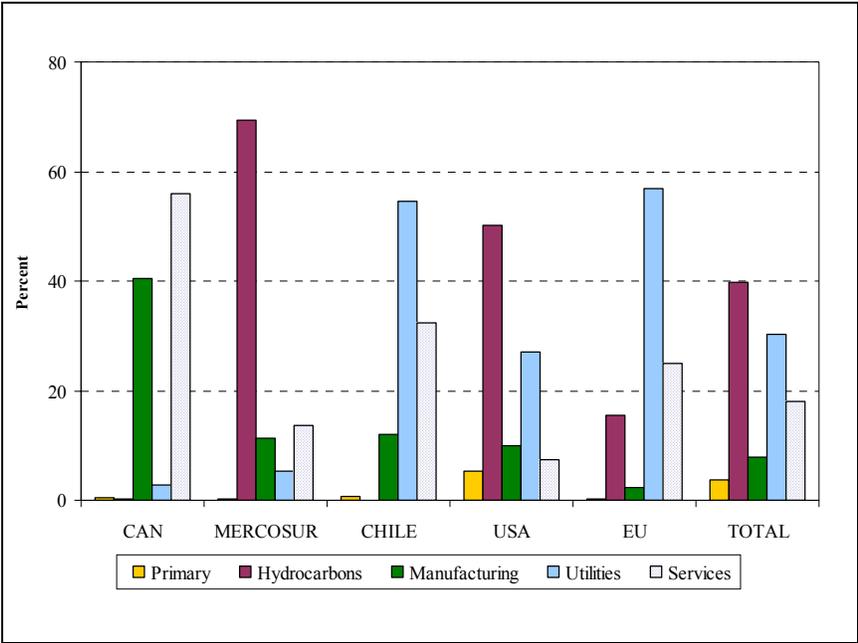
Source: National Statistic Institute (INE).

Figure 16 shows the distribution of cumulative foreign direct investment during 1996-2002, by economic activity and trade bloc. The hydrocarbon (oil and gas) sector attracted 40 percent of all FDI, with Brazil, Argentina, the US, and Spain being the main investors. Utilities and transportation attracted 30 percent of FDI, with Chile and Italy being main actors through their investment in railways and telecommunication, respectively. The CAN bloc accounts for most of the investment in the service sector, due to the large Peruvian investments in financial intermediation. The distribution of investment across source

countries is not related to regional investment provisions, as Bolivia is non-discriminatory with respect to the source of FDI.

Investment in the manufacturing and primary goods sectors accounted for only 12% of total FDI during the period. Since these two sectors are much more labor intensive than the other three groups, they would likely have had a more beneficial impact on poverty reduction in Bolivia. This issue will be investigated further in the following section.

Figure 16. Structure of FDI by Economic Blocs and Economic Activities Accumulated Stock, 1996-2002



Source: National Statistic Institute (INE).

3.3. Conclusions

While both distant (US, EU) and nearby (MERCOSUR, CAN) trading partners have provided free access for thousands of Bolivian products, the effect on trade has been most favorable for nearby markets. Indeed, it appears that regional integration processes have caused a diversion of trade away from US and EU markets towards MERCOSUR and CAN markets.

In addition, exports became considerably more diversified, possibly due to the different structure of demand in neighboring countries compared to EU and US markets. Whether these changes have a positive or negative impact on poverty, is the central question in the section that follows.

4. REGIONAL INTEGRATION AND POVERTY

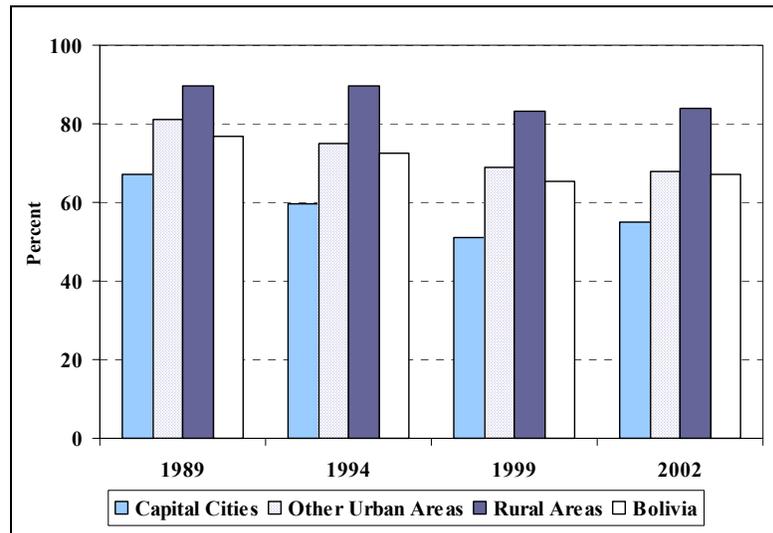
A study by Te Velde, Page and Morrissey (2004) examines the effects of regional integration on poverty and discusses the routes from RI to poverty on the basis of a simple mapping of a set of links describing how poverty in a country is affected by RI processes. The first set of links between RI and poverty is through trade. Regional Trade Agreements (RTAs) include certain provisions that may affect the volume, price and “poverty focus” of trade. The second set of links is through foreign direct investment. RTAs included certain provisions that may affect the volume, and “poverty focus” of investment. The third set of links can be termed “other” links and relate to non-trade and non-FDI issues in RTAs that may affect poverty. Finally, these links, in general, may in turn affect different characteristics of poverty intermediated through complementary conditions including public policies.

These sets of links will depend on the structure of the labor and goods markets. In the labor markets, for example, it is possible to analyze the RTA effects on employment and income when the RTA has resulted in a change in the relative importance of each sector. On the other hand, the RTA can lower import and domestic prices of products (goods and services) consumed directly by the poor or used in production processes that benefit the poor indirectly. Thus, it is also important to analyze the poverty effect of changes in the prices of goods and services induced by FDI.

4.1. Poverty

According to a recent study by Spatz, Bolivia experienced a reduction in the incidence of poverty between 1989 and 1999. However, during the late 1990s, the poverty trend reversed and the poverty in Bolivia started to increase again (see Figure 17). Moreover, the study shows that urban poverty is closely linked to macroeconomic performance, whereas rural poverty follows its own logic (more linked to weather conditions and the coca-economy).

Figure 17. Monetary Poverty¹ by Region: 1989-2002



Source: Spatz (2004)

The study concludes that rural areas in Bolivia are quite detached both from improvements and from deteriorations in the overall economic environment. Thus, it is reasonable to assume that the RI effect on poverty can mainly be observed in urban areas.

According to Table 2, urban poverty fell rapidly during the economic boom in 1992-1997, and much more slowly during the economic downturn in 1998-2002. There are large differences between sectors, however, and these differences can, to some extent, be explained by patterns in trade and FDI. For example, the table shows that poverty among workers in the hydrocarbon sector fell from 51% in 1992 to 0% in 2002, in capital cities. The same was the case for workers in the electricity, gas, and water sectors, and to a lesser extent for workers in the financial sector. These large reductions in poverty coincide with the sectors that attracted the main part of FDI. In contrast, the agricultural sector, which did not receive any FDI, experienced a much slower reduction in poverty.

The table also shows that the sectors that experienced rapid growth in exports (especially food, beverages and tobacco), saw faster decreases in poverty rates among workers. In contrast, the wood sector, which saw exports fall, experienced an increase in poverty. The mining sector, however, do not conform to this general idea, as poverty fell rapidly together with exports. Further below, formal models will be estimated linking exports, imports, and FDI to poverty, while controlling for changes in other factors.

Table 2. Monetary Poverty¹ by Economic Activities: 1992, 1997 and 2002

Economic Activity	Capital Cities			Bolivia		Annual Average Growth (%): 92-02	
	1992	1997	2002	1997	2002	Exports	Imports
Agriculture	62.5	52.8	57.5	78.7	78.8	-8.6	6.9
Hydrocarbons	50.5	19.9	0.0	23.0	2.9	5.6	60.4
Mining	82.5	64.2	41.5	63.3	57.5	-7.1	3.1
Manufacturing	78.6	55.9	61.8	59.3	63.2	4.9	2.1
Chemicals, Plastic and Refined Petroleum	57.1	26.6	20.4	26.7	22.2	23.4	8.6
Food, Beverages and Tobacco	82.2	52.4	53.9	57.4	55.1	12.9	2.5
Textiles, Leather and Wearing Apparels	82.7	63.8	59.4	66.1	65.6	3.9	8.2
Other Manufacturing industries	73.4	55.1	74.2	62.5	71.5	3.6	-6.1
Paper, Publishing and Printing	71.6	42.0	62.5	43.5	62.9	2.9	6.4
Machinery and Equipment	82.6	57.1	71.0	54.1	69.5	2.0	0.5
Basic metals and non metallic mineral	79.6	55.1	58.9	56.3	63.9	-0.5	4.4
Wood and Cork	74.9	55.1	100.0	59.5	79.9	-5.9	15.2
Electricity, Gas and Water Supply	70.1	18.5	0.0	26.1	29.4		
Construction	81.7	59.8	63.1	60.8	69.9		
Commerce	73.8	52.5	48.7	51.9	50.7		
Hotels and Restaurants	79.5	59.3	54.8	58.6	54.5		
Transport, Storage and Communications	67.1	44.0	39.2	45.7	43.1		
Financial Intermediation	42.8	17.3	33.7	23.8	35.3		
Other Services	55.5	41.9	31.6	45.7	38.9		
Total	67.2	49.7	44.3	62.2	56.9		

Source: Authors' estimations based on household surveys by the National Statistic Institute (INE).

Note: ¹ We use the official poverty classification of each household as determined by INE. The assignment to sectors is based on the work sector of the person in each household who has the highest labor income. Poverty is thus "blamed" on the main income earner, rather than on spouses' and children's failure to bring in enough supplementary income.

According to the economic literature, the effects of RI on poverty is best analyzed through a computable general equilibrium model, where it is possible to include certain provisions that may affect the volume, price and "poverty focus" of trade and FDI. This approach not only requires a complete social accounting matrix, but also a microeconomic component based on household surveys, like IMMPA (Integrated Macroeconomic Model for Poverty Analysis) developed by the World Bank.

The approach that is used in the present study to test the effects of RI on Poverty is similar to the one used in the Bolivian Poverty Report by the World Bank (2000); but includes variables on export, import and FDI at the individual level according to each individual's sector of work (down to four digits of the ISIC code). The analysis was done at the household level, using the work sector of the family member with the highest labor income¹⁸.

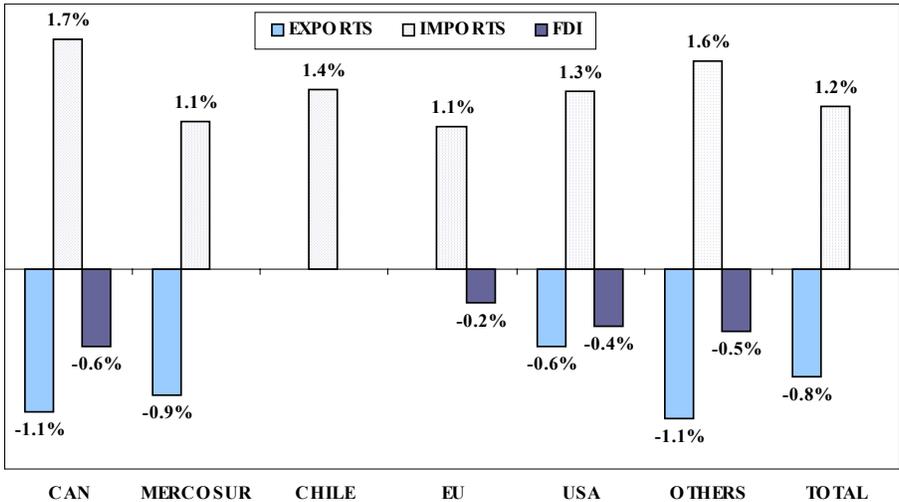
Figure 18 summarizes the results of this analysis, indicating that exports tend to reduce poverty, while imports tend to increase poverty. For example, a doubling of exports to CAN, would result in a reduction in poverty of 1.1 percentage points. Unfortunately, a

¹⁸ See Annex 3 for full results.

doubling of imports from CAN would more than cancel this benefit out, as this would cause an increase in poverty of 1.7 percentage points. For all trade blocs the negative effect of exports, but the difference is smallest in the case of MERCOSUR. This can be explained by the fact that imports from MERCOSUR are mainly capital goods, which do not compete with local production. In contrast, imports from CAN are concentrated in sectors that compete with Bolivian production (Food, Beverages, Tobacco; Natural Resource Based Manufacturing; and Labor Intensive Industries – see Figure 13).

At the aggregate level, FDI was not found to have a significant impact on poverty. However, when analyzed by trade bloc, some FDI was found to be more beneficial than others. For example, a doubling of FDI from CAN was estimated to cause a 0.6 percentage point decrease in poverty, whereas FDI from Chile and MERCOSUR did not have any beneficial impact. The reason for these differences is that FDI from Chile and MERCOSUR was concentrated in hydrocarbons and financial intermediation, which are both highly capital intensive and have very limited effects on employment, as we will see below. In contrast, the FDI that came from CAN targeted more labor-intensive industries.

Figure 18. Estimated impact of a doubling of exports/imports/FDI on the probability of being poor, 2002



Source: Author’s estimation. Full probit regression results in Table 3a and 3b in Appendix 3.
 Note: The impacts are calculated as the $dF/dX \cdot \ln(2)$, where dF/dX is the marginal effect evaluated at the mean of X (reported by Stata’s `dprobit` command) and $\ln(2)=0.691347$ is the change in $\ln X$ required to double X.

The relatively small impacts of trade on poverty are due to the structure of labor markets and trade in Bolivia, and especially due to the fact that most poor people are concentrated in traditional agriculture and non-tradable sectors, which have only very indirect links with trade.

In order to assess the total impact of regional integration on poverty, we would have to multiply the elasticities in Figure 18 with the total changes in imports, exports and FDI caused by regional integration. We do not know the latter for sure, but Figure 10 suggests that regional integration has caused exports to CAN and MERCOSUR to go up

significantly and exports to US and EU to go down significantly. The same figure suggests that imports from MERCOSUR have gone up and imports from EU and US have gone down. In the case of FDI, Table 15 suggests it has gone up for MERCOSUR and EU and down for US. We can thus construct the following table which allows us to assess at least the signs of the impacts on poverty.

Remember that a negative sign is desirable, as it means a reduction in poverty. For example, the increase in exports to CAN and MERCOSUR multiplied by the negative elasticity of exports on poverty, implies a negative (beneficial) effect on poverty. However, this is partially counterbalanced by reductions in exports to the US and by increases in imports which has a positive (adverse) effect on poverty.

In the case of FDI, there appear to be a beneficial effect from more FDI from the EU, but an adverse effect from less FDI from the US. For CAN and MERCOSUR there were no FDI impacts, in the first case because there was no quantity change and in the second because the poverty elasticity of FDI was estimated at zero. In total, there may have been a slightly beneficial effect of regional integration on poverty.

Table 3: Sign analysis of the poverty impact of regional integration

	change in quantity * elasticity = impact on poverty				
	CAN	MERCOSUR	US	EU	TOTAL
Exports	+ * ÷ = ÷	+ * ÷ = ÷	÷ * ÷ = +	÷ * 0 = 0	÷
Imports	+ * + = +	0 * + = 0	÷ * + = ÷	÷ * + = ÷	÷
FDI	0 * ÷ = 0	+ * 0 = 0	÷ * ÷ = +	+ * ÷ = ÷	0
Total	0	÷	+	÷	÷

This poverty analysis is obviously very crude, but it does give an overview of the rather mixed effects of regional integration. In the following, we will complement it with a more detailed analysis on the impact of trade and FDI on individual salaries and employment.

4.2. The Structure of Production, Exports and Imports

Although the overall division of economic activity between agriculture, manufacturing, and services hardly changed during the 10-year period from 1992 to 2002, there were still interesting developments to be observed. For example, Table 4 shows that exports from the manufacturing sector increased from 5.6 percent of GDP in 1992 to 9.9 percent in 2002. This is hardly due to FDI, of which the manufacturing sector received little, but may have been substantially influenced by trade policies, and especially by the integration agreements with CAN and MERCOSUR.

Table 4. Composition of Production, Export and Import by Economic Activity (% of GDP)

Economic Activity	Production			Export			Import		
	1992	1997	2002	1992	1997	2002	1992	1997	2002
Agriculture, Hunting, Forestry and Fishing	15.1	15.2	14.2	0.4	1.3	0.2	0.7	0.7	1.4
Hydrocarbons	4.1	4.4	5.1	2.2	1.2	4.2	0.0	0.0	0.0
Mining	5.8	5.3	4.3	4.9	3.5	2.6	0.0	0.2	0.0
Manufacturing	16.6	16.7	16.5	5.6	8.9	9.9	18.2	21.0	20.9
Food, Beverages and Tobacco				1.3	3.0	4.8	1.2	1.0	1.4
Basic metals and Non Metallic Mineral				1.8	2.7	1.9	2.3	2.0	3.3
Other Manufacturing Industries				0.8	1.1	1.2	4.7	5.8	2.3
Textiles, Leather and Wearing Apparel				0.4	0.6	0.7	0.6	0.5	1.2
Wood and Cork				0.9	1.1	0.5	0.0	0.0	0.0
Machinery and Equipment				0.3	0.1	0.4	6.3	7.1	6.2
Chemicals, Plastic and Refined Petroleum				0.0	0.2	0.3	2.6	3.6	5.6
Paper, Publishing and Printing				0.0	0.1	0.0	0.5	0.8	0.9
Services	58.4	58.4	59.9	0.0	0.0	0.0	0.3	0.0	0.0
Total	100.0	100.0	100.0	13.2	15.0	16.8	19.2	22.0	22.3

Source: National Statistic Institute (INE).

The manufacturing sector has become substantially more export oriented since 1992, when only 30 percent of production was destined for export. This share is now above 60 percent. However, the service sector accounts for almost 60% of total economic activity in Bolivia, explaining why trade is likely to have only a limited effect on poverty. Although manufacturing exports have increased impressively, they still only account for about 10% of GDP, and 11% of employment, as will be seen next.

4.3. Employment and Labor Income

The effects of trade and FDI on poverty depend mainly on the labor market. However, Table 5 shows that the composition of the labor market hardly changed at all between 1992 and 2002. The service sector still absorbs more than $\frac{3}{4}$ of the labor force in the main cities, while the share dedicated to manufacturing has remained constant just below 20 percent. At the national level, there were no significant changes, either.

Table 5. Labor Market Composition by Economic Activities: 1992, 1997, 2002 (Percent)

Economic Activity	Capital Cities			Bolivia		Average Annual Growth	
	1992	1997	2002	1997	2002	Cities	Bolivia
						92-02	97-02
Agriculture	2.1	1.9	3.0	43.2	42.4	8.5	1.0
Hydrocarbons	0.7	0.5	0.2	0.2	0.1	-8.9	-17.0
Mining	1.1	0.8	0.8	1.6	0.9	1.8	-8.2
Manufacturing	19.6	19.8	19.7	11.0	11.4	4.8	2.1
Textiles, Leather and Wearing Apparels	7.7	7.9	6.9	3.9	3.6	3.8	-0.2
Food, Beverages and Tobacco	4.0	3.1	5.0	2.5	3.3	7.1	7.1
Other Manufacturing Industries	3.0	3.9	2.9	2.0	1.5	4.3	-4.2
Machinery and Equipment	1.4	1.5	1.7	0.7	0.9	6.3	6.7
Basic Metals and Other non Metallic mineral	1.1	0.9	1.1	0.7	0.9	4.8	6.0
Paper, Publishing and Printing	1.1	1.4	1.0	0.5	0.4	4.4	-2.1
Chemicals, Plastic and Refined Petroleum	0.8	0.6	0.6	0.3	0.3	1.6	2.4
Wood and Cork	0.6	0.6	0.5	0.4	0.5	4.6	5.5
Services	76.5	77.0	76.4	44.0	45.1	4.8	1.9
Electricity, Gas and Water Supply	0.7	0.6	0.3	0.3	0.2	-4.0	-6.8
Construction	9.3	8.9	8.4	5.2	5.5	3.8	2.3
Commerce	25.2	24.4	24.7	14.2	14.4	4.6	1.7
Hotels and Restaurants	3.8	5.3	6.9	3.5	4.1	11.2	4.3
Transport, Storage and Communications	7.1	8.7	7.1	4.8	4.4	4.8	-0.1
Financial Intermediation	0.8	1.3	0.8	0.6	0.4	5.3	-3.7
Others Services	29.5	27.9	28.0	15.4	16.1	4.3	2.3
TOTAL (Millions)	1.0	1.3	1.6	3.6	3.8	4.8	1.4

Source: Authors' estimations based on household surveys by the National Statistic Institute (INE).

While FDI and regional integration apparently have not affected the structure of the labor market, Table 6 shows that it may have had significant impact on labor incomes in some of the sectors. For example, the average monthly salary in utilities more than doubled from \$251 in 1992 to \$587 in 2002, while the average in main cities remained constant at \$156. Salaries in the main FDI receiving sector, hydrocarbons, also increased substantially, from an already high level. In contrast, the average salary in manufacturing fell from \$132/month in 1992 to \$108 in 2002. There thus appear to be a positive relationship between FDI and salary growth¹⁹.

¹⁹ These numbers should only be taken as rough indications because the surveys used were not designed to be representative at this sector disaggregation.

**Table 6. Monthly Labor Income by Economic Activities: 1992, 1997, 2002
(Constant 1995 US\$)**

Economic Activity	Capital Cities			Bolivia		Average Annual Growth (%)	
	1992	1997	2002	1997	2002	Cities	Bolivia
						92-02	97-02
Agriculture	303	389	168	91	54	-5.7	-9.8
Hydrocarbons	359	456	513	445	448	3.6	0.1
Mining	152	214	115	149	118	-2.8	-4.5
Manufacturing	132	143	108	138	101	-1.9	-6.0
Food, Beverages and Tobacco	99	184	135	153	115	3.2	-5.4
Textiles, Leather and Wearing apparel	107	94	71	89	66	-4.0	-5.8
Wood and Cork	189	138	134	129	124	-3.4	-0.8
Paper, Publishing and Printing	179	131	131	134	138	-3.1	0.6
Chemicals, Plastic and Refined Petroleum	131	208	233	237	212	6.0	-2.2
Basic metals and other non metallic mineral	134	259	176	234	141	2.8	-9.6
Machinery and Equipment	159	172	97	188	98	-4.8	-12.3
Other Manufacturing industries	149	160	96	148	98	-4.3	-8.0
Electricity, Gas and Water Supply	251	483	587	401	447	8.9	2.2
Construction	157	172	129	154	118	-1.9	-5.1
Commerce	131	159	132	151	122	0.0	-4.1
Hotels and Restaurants	167	136	111	137	108	-4.0	-4.7
Transport, Storage and Communications	199	245	172	224	164	-1.5	-6.1
Financial Intermediation	338	352	440	321	391	2.7	4.0
Others Services	160	181	204	161	182	2.5	2.5
TOTAL	156	180	156	148	118	0.0	-4.4

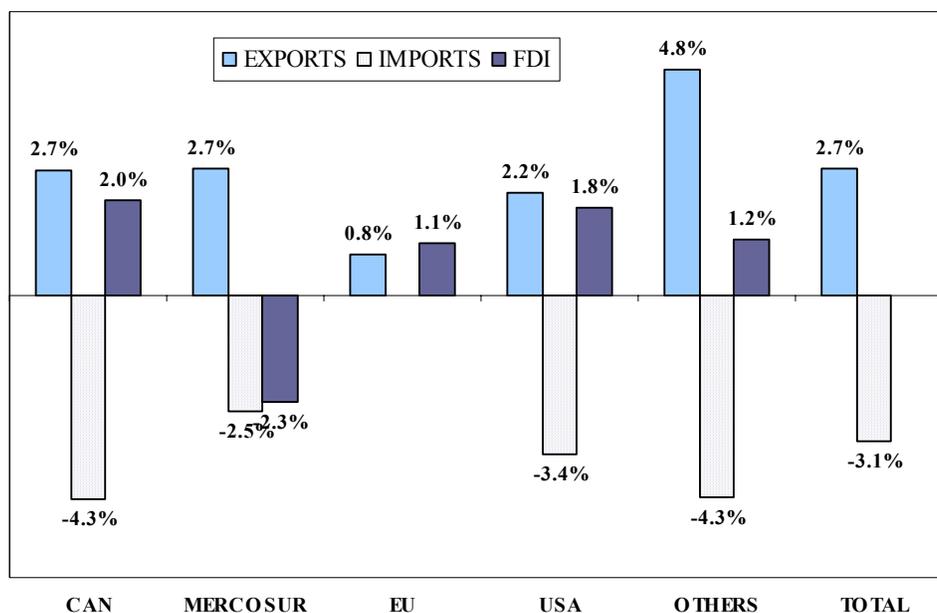
Source: Authors' estimations based on household surveys by the National Statistic Institute (INE).

A large part of the salary increases observed in the sectors receiving FDI appears to be made possible by efficiency gains (or lay-offs in less rosy words). While the average salary in the electricity, gas and water sector, for example, increased by 2.2% per year between 1997 and 2002, the number of people employed in the same sector fell by 6.8% per year. Salaries in the hydrocarbon sector also rose at the expense of rapidly falling employment. Indeed, the only sector that simultaneously managed to raise salaries and employment is "Other services", which mainly covers public services such as education and health.

Figure 19 shows the result from a micro-level analysis of exports, imports, and FDI on labor income²⁰. The analysis uses individual workers, in contrast to the poverty analysis in Figure 18, which used households as the unit of analysis. The present analysis thus captures a more direct effect of regional integration. In general, exports have a positive effect on salaries in the exporting sectors, while imports have a negative effect. The effect of FDI is ambiguous.

²⁰ See Annex 4 for full results.

Figure 19. Estimated impacts of a doubling of exports/imports/FDI on labor income, 2002



Source: Authors' estimation. See full regression results in Tables 4a-4d in Appendix 4.

Note: Impact is calculated as $\beta \cdot \ln(2)$, where $\ln(2)$ is the correction factor that should be used for a doubling of X.

While exports in general have a positive effect on salaries, the elasticity is biggest for the countries with which Bolivia does not have any agreements. This suggests that it is not necessarily an advantage to have trade agreements. It all depends on the type of exports.

Imports generally have a negative effect on the salaries in the sectors with which they compete. Imports from CAN and "Other countries" appear to compete more directly with Bolivian products, as the estimated elasticities are quite large. Imports from the EU, on the other hand, does not appear to have a negative effect on salaries, most likely because these imports are composed mainly of goods, which do not compete with Bolivian products.

FDI that went into monopolistic service sectors generally had a positive impact on salaries, but those salary increases were to a large extent made possible by lay-offs in the same sectors. In the case of MERCOSUR, the estimated effect of FDI on salaries is significantly negative. This is because the few employees who enjoyed high salary increases in the hydrocarbon sector were out-weighed by a large number of workers in labor-intensive sectors that also received FDI, but which use low salaries as a competitive advantage (manufacturing sectors).

The preceding analysis indicates that it would be very difficult to reduce poverty significantly through trade alone. Although, the sectors that have received more FDI and have increased exports faster, have also seen more rapid reduction in poverty, this has mainly been accomplished by laying off workers in these sectors.

5. CONCLUSIONS

The present analysis has shown that Bolivia enjoys relatively favorable conditions for access to export markets both in Latin America and in the United States and the European Union. In practice, however, Bolivia is mostly taking advantage of the regional markets, while exports to the US and EU have decreased during the last decade. Imports have also been diverted away from the traditional suppliers in the US and EU towards new suppliers in MERCOSUR. Thus, while the regional integration processes have contributed to increased trade within the region, overall trade, as a percentage of GDP, has not increased for Bolivia. Even if trade had increased substantially, the effect on poverty would likely have been negligible, since the positive effect of increased exports would be fully compensated by the negative effects of increased imports.

The change towards regional markets has also implied a change in the composition of exports. Manufacturing products now account for a larger share of exports, and primary goods for less. This change has an ambiguous effect on workers. The traditional export goods to Europe (minerals) had a high content of natural resource rents, which benefited workers. On the other hand, the manufacturing sector tends to use the low wage levels in Bolivia as a competitive advantage, which does not benefit the workers that much.

Foreign direct investment has concentrated in two main areas: 1) Hydrocarbons, to exploit the rapidly growing regional markets, and 2) Utilities, to exploit natural monopolies. Very little FDI has gone into manufacturing and agriculture, where most poor people are concentrated. Very few people benefited from the rapidly growing salaries in the hydrocarbon sector and in the utilities, implying that FDI had no impact on neither salaries nor poverty at the aggregate level.

For trade and FDI to have a beneficial effect on household incomes in Bolivia, it would have to concentrate on labor-intensive sectors that also exploit some natural resource rents. Natural resource rents that are extracted by very capital-intensive technologies will not benefit the population, while labor-intensive activities without any rents will keep workers at minimum salaries. Examples of sectors that exploit both would be modern agriculture and tourism.

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Annex 1

Harmonized Commodity Description and Coding

Sections	Categories
I	ANIMALS & ANIMAL PRODUCTS
II	VEGETABLE PRODUCTS
III	ANIMAL OR VEGETABLE FATS
IV	PREPARED FOODSTUFFS
V	MINERAL PRODUCTS
VI	CHEMICAL PRODUCTS
VII	PLASTICS & RUBBER
VIII	HIDES, SKINS, LEATHER AND FUR
IX	WOOD & WOOD PRODUCTS
X	WOOD PULP PRODUCTS
XI	TEXTILES & TEXTILE ARTICLES
XII	FOOTWEAR, HEADGEAR
XIII	ARTICLES OF STONE, PLASTER, CEMENT, CERAMIC, GLASS
XIV	PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, METALS
XV	BASE METALS & ARTICLES THEREOF
XVI	MACHINERY & MECHANICAL APPLIANCES
XVII	TRANSPORTATION EQUIPMENT
XVIII	INSTRUMENTS - MEASURING, MUSICAL
IXX	ARMS & AMMUNITION
XX	MISCELLANEOUS
XXI	WORKS OF ART

Annex 2
BILATERAL INVESTMENT TREATIES

COUNTRY	BILATERAL INVESTMENT TREATY	ENTRY INTO FORCE
United Kingdom	Covenant for the Promotion and Reciprocal Protection of Capital Investments, signed in La Paz on May 24, 1988.	February 16, 1990.
Germany	Treaty on Reciprocal Protection of Capital Investments, signed in La Paz on March 23, 1987	November 9, 1990
Switzerland	Agreement for the Promotion and Reciprocal Protection of Investments, signed in la Paz on November 06, 1987.	May 13, 1991
Italy	Agreement for the Promotion and Reciprocal Protection of Investments signed in Roma on April 30, 1990.	February 22, 1992
Spain	Agreement for the Promotion and Reciprocal Protection of Investments, signed in Roma on March 24, 1990.	May 12, 1992
Sweden	Covenant for the Promotion and Reciprocal Protection of Investments, signed in Stockholm on September 20, 1990.	July 3, 1992
Popular China	Covenant for the Promotion and Reciprocal Protection of Investments, signed in Beijing on May 08, 1992.	July 26, 1992
Netherlands	Agreement for the Promotion and Reciprocal Protection of Investments, signed in La Paz on March 10, 1992	November 1, 1994
Peru	Covenant for the Promotion and Reciprocal Protection of Investments signed in Ilo on July 30, 1993.	March 19, 1995
Argentina	Covenant for the Promotion and Reciprocal Protection of Investments, signed in Buenos Aires on March 17, 1994	May 1, 1995
France	Covenant for the Promotion and Reciprocal Protection of Investments, signed in Paris on October 25, 1989.	October 12, 1996
Rumania	Agreement for the Promotion and Reciprocal Protection of Investments, signed in Bucharest on October 09, 1995.	March 16, 1997.
Denmark	Agreement for the Promotion and Reciprocal Protection of Investments, signed in Copenhagen on March 12, 1995.	March 23, 1997
Korea	Covenant for the Promotion and Reciprocal Protection of Investments, signed on April 1, 1996.	June 4, 1997
Ecuador:	Covenant for the Promotion and Reciprocal Protection of Investments signed in Quito on May 25, 1995	August 15, 1997
Cuba	Covenant for the Promotion and Reciprocal Protection of Investments signed in La Havana on May 6, 1995.	August 23, 1998
U.S.A.	Covenant for the Promotion and Reciprocal Protection of Investments signed in Santiago de Chile on April 17, 1998.	July 7, 2001
Chile	Treaty on Promotion and Reciprocal Protection of Investments signed in La Paz on September 22, 1994.	May 5, 1999
Belgium - Luxemburg	Agreement for the Promotion and Reciprocal Protection of Investments, signed in Brussels on April 25, 1990.	The exchange of ratifications did not take place.
Austria	Agreement for the Promotion and Reciprocal Protection of Investments, signed in Viena on April 04, 1997.	The exchange of ratifications did not take place.
Spain	Agreement for the Promotion and Reciprocal Protection of Investments, signed in Madrid on October 29, 2001.	The exchange of ratifications did not take place.

Source: Ministry of Foreign Trade and Investment of Bolivia.

Annex 3: Probit regression results

Table 3a. Impact of Regional Integration on Poverty: 2002

Variable	(1)		(2)		(3)		(4)	
	Coefficient	Standard Deviation						
Constant	0.3939	0.2225	0.3418 *	0.2253	0.3587 *	0.2245	0.3564 *	0.2238
Number of children	0.3081	0.0171	0.3115	0.0172	0.3055	0.0171	0.3065	0.0171
Number of children squared	-0.0118	0.0011	-0.0120	0.0011	-0.0117	0.0011	-0.0118	0.0011
Female Head	-0.2802	0.0503	-0.2719	0.0504	-0.2691	0.0502	-0.2755	0.0501
Age of the head	-0.0110	0.0013	-0.0107	0.0013	-0.0111	0.0013	-0.0109	0.0013
No spouse for the head	0.6944	0.1996	0.7120	0.2026	0.7122	0.2021	0.7070	0.2015
Native	0.2536	0.0393	0.2513	0.0392	0.2410	0.0390	0.2461	0.0390
HEAD								
Education	-0.0694	0.0051	-0.0686	0.0051	-0.0686	0.0051	-0.0689	0.0051
Worker	-0.2170	0.0612	-0.1752	0.0625	-0.1918	0.0624	-0.2076	0.0609
Employee	-0.3429	0.0579	-0.3177	0.0588	-0.3258	0.0584	-0.3380	0.0577
Cooperative			0.4856	0.1895	0.4964	0.1920		
Family Worker	0.3371	0.1619	0.3300	0.1626	0.3348	0.1607	0.3310	0.1612
Second Activity	-0.3240	0.0566	-0.3235	0.0568	-0.3428	0.0561	-0.3343	0.0560
Size of firm								
1 to 4 workers	-0.1887	0.0506	-0.1952	0.0509	-0.1962	0.0503	-0.1998	0.0500
5 to 9 workers	-0.1849	0.0738	-0.2005	0.0738	-0.2007	0.0733	-0.2023	0.0730
10 to 14 workers	-0.2630	0.1090	-0.2796	0.1100	-0.2899	0.1087	-0.3089	0.1087
20 to 49 workers	-0.3777	0.0964	-0.3768	0.0958	-0.3883	0.0958	-0.4008	0.0964
50 to 99 workers	-0.4330	0.1496	-0.4375	0.1510	-0.4537	0.1500	-0.4502	0.1489
more than 99	-0.3666	0.1061	-0.4140	0.1151	-0.4146	0.1147	-0.3699	0.1058
SPOUSE								
Education	-0.0193	0.0054	-0.0193	0.0054	-0.0182	0.0054	-0.0187	0.0054
Employee	-0.3731	0.0816	-0.3680	0.0817	-0.3683	0.0818	-0.3658	0.0816
Family Worker	0.4007	0.0706	0.3951	0.0708	0.3876	0.0692	0.3927	0.0691
Size of firm								
1 to 4 workers	-0.1345	0.0503	-0.1363	0.0505	-0.1339	0.0503	-0.1343	0.0504
Rural	-0.0980	0.0489	-0.1034	0.0489				
Traditional Agriculture	0.5433	0.0739	0.5681	0.0741	0.4979	0.0698	0.4956	0.0695
Ln (Total Exports)	-0.0306	0.0116						
Ln (Total Imports)	0.0467	0.0113						
Ln (Exports to CAN)			-0.0408	0.0105				
Ln (Imports to CAN)			0.0661	0.0111				
Ln (Exports to MERCOSUR)					-0.0361	0.0121		
Ln (Imports from MERCOSUR)					0.0424	0.0093		
Ln (Exports to Chile)							-0.0069 *	0.0132
Ln (Imports from Chile)							0.0516	0.0130
Observations	5746		5746		5746		5746	
Pseudo R2	0.2450		0.2473		0.2451		0.2451	

Note: * Not Significant at 5%

Table 3b.

Impact of Regional Integration on Poverty: 2002

Variable	(5)		(6)		(7)		(8)	
	Coefficient	Standard Deviation						
Constant	0.3810	0.2234	0.3852	0.2225	0.3544 *	0.2241	0.3379 *	0.2243
Number of children	0.3082	0.0171	0.3051	0.0171	0.3090	0.0172	0.3087	0.0171
Number of children squared	-0.0117	0.0011	-0.0118	0.0011	-0.0120	0.0011	-0.0119	0.0011
Female Head	-0.2782	0.0502	-0.2771	0.0502	-0.2676	0.0502	-0.2757	0.0504
Age of the head	-0.0109	0.0013	-0.0111	0.0013	-0.0108	0.0013	-0.0109	0.0013
No spouse for the head	0.7005	0.2010	0.7047	0.2001	0.7020	0.2013	0.7044	0.1999
Native	0.2450	0.0389	0.2454	0.0390	0.2529	0.0393	0.2451	0.0392
HEAD								
Education	-0.0703	0.0051	-0.0696	0.0051	-0.0684	0.0051	-0.0692	0.0051
Worker	-0.2044	0.0610	-0.2159	0.0612	-0.1860	0.0620	-0.2131	0.0613
Employee	-0.3475	0.0577	-0.3441	0.0576	-0.3130	0.0584	-0.3327	0.0578
Cooperative					0.3964	0.1876		
Family Worker	0.3483	0.1619	0.3406	0.1608	0.3462	0.1627	0.3552	0.1627
Second Activity	-0.3277	0.0561	-0.3395	0.0560	-0.3298	0.0568	-0.3424	0.0560
Size of firm								
1 to 4 workers	-0.1870	0.0498	-0.1960	0.0501	-0.1879	0.0507	-0.1945	0.0502
5 to 9 workers	-0.1821	0.0730	-0.1891	0.0733	-0.1948	0.0737	-0.1918	0.0737
10 to 14 workers	-0.2769	0.1096	-0.2677	0.1084	-0.2861	0.1090	-0.2462	0.1092
20 to 49 workers	-0.3801	0.0968	-0.3810	0.0961	-0.3929	0.0961	-0.3805	0.0962
50 to 99 workers	-0.4271	0.1494	-0.4424	0.1490	-0.4589	0.1501	-0.4306	0.1504
more than 99	-0.3623	0.1083	-0.3506	0.1066	-0.4480	0.1150	-0.3552	0.1071
SPOUSE								
Education	-0.0189	0.0054	-0.0186	0.0054	-0.0195	0.0054	-0.0184	0.0054
Employee	-0.3711	0.0821	-0.3701	0.0817	-0.3680	0.0817	-0.3667	0.0818
Family Worker	0.4143	0.0686	0.3944	0.0689	0.3966	0.0707	0.3939	0.0694
Size of firm								
1 to 4 workers	-0.1388	0.0502	-0.1328	0.0502	-0.1299	0.0503	-0.1333	0.0502
Other Urban Areas							0.0856	0.0433
Rural					-0.1132	0.0489		
Traditional Agriculture	0.4552	0.0674	0.4798	0.0692	0.5713	0.0738	0.5043	0.0700
Ln (Exports to Mexico)	-0.0075 *	0.0109						
Ln (Imports from Mexico)	0.0820	0.0186						
Ln (Exports to Europe Union)			-0.0074 *	0.0087				
Ln (Imports from Europe Union)			0.0412	0.0121				
Ln (Exports to United States)					-0.0218	0.0110		
Ln (Imports from United States)					0.0511	0.0112		
Ln (Exports to Others)							-0.0425	0.0119
Ln (Imports from Others)							0.0598	0.0121
Observations	5746		5746		5746		5746	
Pseudo R2	0.2447		0.2438		0.2458		0.2456	

Note: * Not Significant at 5%

Table 3c.

Impact of Regional Integration on Poverty: 2002

Variable	(1)		(2)		(3)		(4)	
	Coefficient	Standard Deviation						
Constant	0.4878	0.2248	0.4050	0.2217	0.4569	0.2235	0.4597	0.2231
Number of children	0.3089	0.0172	0.3025	0.0168	0.3081	0.0171	0.3081	0.0171
Number of children squared	-0.0118	0.0011	-0.0116	0.0011	-0.0117	0.0011	-0.0117	0.0011
Female Head	-0.2911	0.0504	-0.2846	0.0502	-0.2856	0.0504	-0.2865	0.0502
Age of the head	-0.0112	0.0013	-0.0111	0.0013	-0.0111	0.0013	-0.0111	0.0013
No spouse for the head	0.6929	0.2009	0.7058	0.2013	0.6924	0.2005	0.6931	0.2005
Native	0.2556	0.0392	0.2515	0.0392	0.2540	0.0392	0.2542	0.0392
HEAD								
Education	-0.0723	0.0051	-0.0722	0.0051	-0.0715	0.0051	-0.0716	0.0051
Worker	-0.2067	0.0621	-0.2214	0.0609	-0.2224	0.0622	-0.2201	0.0615
Employee	-0.3544	0.0576	-0.3822	0.0549	-0.3483	0.0575	-0.3493	0.0573
Family Worker	0.3342	0.1620	0.2984	0.1611	0.3382	0.1624	0.3379	0.1624
Second Activity	-0.3267	0.0564	-0.3338	0.0562	-0.3271	0.0564	-0.3265	0.0564
Size of Firm								
1 to 4 workers	-0.1245	0.0514			-0.1309	0.0512	-0.1304	0.0511
5 to 9 workers	-0.1360	0.0736			-0.1447	0.0733	-0.1439	0.0732
10 to 14 workers	-0.2361	0.1083			-0.2466	0.1082	-0.2456	0.1081
20 to 49 workers	-0.3583	0.0957	-0.2545	0.0884	-0.3670	0.0956	-0.3664	0.0956
50 to 99 workers	-0.3981	0.1478	-0.2974	0.1431	-0.4113	0.1478	-0.4101	0.1476
more than 99	-0.3652	0.1026	-0.2950	0.0958	-0.3858	0.1009	-0.3867	0.1008
SPOUSE								
Education	-0.0180	0.0054	-0.0187	0.0054	-0.0182	0.0054	-0.0182	0.0054
Employee	-0.4019	0.0821	-0.4047	0.0825	-0.3980	0.0819	-0.3981	0.0819
Family Worker	0.4154	0.0701	0.3860	0.0693	0.4177	0.0702	0.4180	0.0702
Size of Firm								
1 to 4 workers	-0.1241	0.0505	-0.1202	0.0500	-0.1279	0.0506	-0.1277	0.0506
Rural	-0.1062	0.0492	-0.1416	0.0488	-0.1032	0.0492	-0.1029	0.0493
Traditional Agriculture	0.4062	0.0729	0.4052	0.0700	0.4347	0.0716	0.4313	0.0700
Trade & Commerce	-0.1508	0.0619	-0.1718	0.0596	-0.1275	0.0608	-0.1301	0.0597
Transport	-0.2182	0.0805	-0.2320	0.0790	-0.2056	0.0808	-0.2088	0.0798
Ln (Total FDI)	-0.0061 *	0.0046						
Ln (FDI CAN)			-0.0220	0.0095				
Ln (FDI MERCOSUR)					0.0013 *	0.0054		
Ln (FDI Chile)							0.0024 *	0.0165
Pseudo R2	0.2440		0.2431		0.2437		0.2437	
Observations	5746		5746		5746		5746	

Note: * Not Significant at 5%

FDI: Foreign Direct Investment

Table 3d.

Impact of Regional Integration on Poverty: 2002

Variable	(5)		(6)		(7)		(8)	
	Coefficient	Standard Deviation						
Constant	0.4592	0.2232	0.4252	0.2226	0.4834	0.2242	0.4294	0.2228
Number of children	0.3083	0.0171	0.3038	0.0169	0.3095	0.0172	0.3051	0.0169
Number of children square	-0.0117	0.0011	-0.0117	0.0011	-0.0118	0.0011	-0.0118	0.0011
Female Head	-0.2860	0.0502	-0.2828	0.0502	-0.2916	0.0504	-0.2864	0.0502
Age of the head	-0.0111	0.0013	-0.0112	0.0013	-0.0112	0.0013	-0.0112	0.0013
No spouse for the head	0.6934	0.2005	0.6972	0.2013	0.6940	0.2006	0.6976	0.2018
Native	0.2547	0.0392	0.2537	0.0392	0.2562	0.0393	0.2515	0.0393
HEAD								
Education	-0.0715	0.0051	-0.0721	0.0051	-0.0719	0.0051	-0.0723	0.0051
Worker	-0.2201	0.0615	-0.2296	0.0602	-0.2011	0.0621	-0.2074	0.0612
Employee	-0.3479	0.0574	-0.4036	0.0546	-0.3594	0.0579	-0.3945	0.0550
Family Worker	0.3366	0.1623	0.3098	0.1611	0.3301	0.1623		
Second Activity	-0.3269	0.0564	-0.3345	0.0561	-0.3252	0.0565	-0.3366	0.0563
Size of Firm								
1 to 4 workers	-0.1315	0.0511			-0.1261	0.0512		
5 to 9 workers	-0.1431	0.0733			-0.1364	0.0735		
10 to 14 workers	-0.2472	0.1081			-0.2359	0.1084		
20 to 49 workers	-0.3680	0.0956	-0.2240	0.0881	-0.3561	0.0957	-0.2470	0.0884
50 to 99 workers	-0.4114	0.1476			-0.3900	0.1478	-0.2991	0.1420
more than 99	-0.3884	0.1009	-0.2127	0.0972	-0.3613	0.1020	-0.2438	0.0960
SPOUSE								
Education	-0.0182	0.0054	-0.0187	0.0054	-0.0182	0.0054	-0.0182	0.0054
Employee	-0.3989	0.0819	-0.4121	0.0828	-0.4042	0.0822	-0.4149	0.0823
Family Worker	0.4176	0.0702	0.3786	0.0694	0.4081	0.0703	0.3775	0.0693
Size of Firm								
1 to 4 workers	-0.1274	0.0505	-0.1164	0.0500	-0.1223	0.0506	-0.1120	0.0497
Rural	-0.1035	0.0492	-0.1404	0.0488	-0.1109	0.0495	-0.1320	0.0485
Traditional Agriculture	0.4320	0.0700	0.3928	0.0704	0.4162	0.0707	0.3863	0.0708
Trade & Commerce	-0.1262	0.0599	-0.1842	0.0601	-0.1493	0.0609	-0.1855	0.0600
Transport	-0.2081	0.0798	-0.2621	0.0805	-0.2228	0.0809	-0.2471	0.0790
Ln (FDI Mexico)	-0.1132 *	0.1090						
Ln (FDI United States)			-0.0165	0.0056				
Ln (FDI Europe Union)					-0.0094	0.0052		
Ln (FDI Others)							-0.0179	0.0056
Pseudo R2	0.2438		0.2430		0.2442		0.2432	
Observations	5746		5746		5746		5746	

Note: * Not Significant at 5%

FDI: Foreign Direct Investment

Annex 4: Earnings Regression Results

Table 4a. Impact of Regional Integration on Labor Income: 2002

Variable	(1)		(2)		(3)		(4)	
	Coefficient	Standard Deviation						
Constant	4.7675	0.0950	4.8386	0.0908	4.7552	0.0878	4.7432	0.0890
Age	0.0803	0.0040	0.0798	0.0040	0.0802	0.0040	0.0812	0.0040
Age2	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000
Education	0.0529	0.0030	0.0533	0.0029	0.0529	0.0030	0.0536	0.0030
Gender	-0.4118	0.0272	-0.4058	0.0272	-0.4141	0.0272	-0.4136	0.0274
Public Institution	0.0907	0.0357	0.0912	0.0356	0.0918	0.0356	0.0917	0.0357
Self - Employed	-0.5571	0.0285	-0.5444	0.0286	-0.5532	0.0285	-0.5624	0.0285
Cooperative	-0.2591	0.1077	-0.4128	0.1123	-0.3969	0.1157		
Family Worker	-0.5570	0.1030	-0.5415	0.1028	-0.5545	0.1031	-0.5726	0.1033
Native	-0.2881	0.0216	-0.2822	0.0215	-0.2825	0.0215	-0.2834	0.0216
Other Urban Areas	-0.0778	0.0259	-0.0829	0.0259	-0.0769	0.0259	-0.0785	0.0258
Rural	-0.3078	0.0310	-0.3154	0.0310	-0.3142	0.0310	-0.3137	0.0316
Traditional Agriculture	-0.6443	0.0708	-0.7177	0.0634	-0.6316	0.0596	-0.6312	0.0608
Electricity	0.4732	0.1499	0.4263	0.1469	0.5145	0.1458	0.4986	0.1472
Construction	0.2699	0.0647	0.2006	0.0557	0.2804	0.0510	0.2732	0.0541
Trade & Commerce	0.3142	0.0667	0.2346	0.0589	0.3240	0.0532	0.3209	0.0583
Hotels & Restaurants	0.4783	0.0777	0.4008	0.0711	0.4898	0.0664	0.4856	0.0706
Transport	0.4632	0.0705	0.3912	0.0625	0.4729	0.0580	0.4657	0.0615
Banking	0.6036	0.1449	0.5327	0.1414	0.6168	0.1391	0.6025	0.1410
Services	0.1815	0.0643	0.1100	0.0563	0.1941	0.0505	0.1804	0.0562
Ln (Total Exports)	0.0386	0.0076						
Ln (Total Imports)	-0.0451	0.0087						
Ln (Exports to CAN)			0.0383	0.0072				
Ln (Imports to CAN)			-0.0628	0.0090				
Ln (Exports to MERCOSUR)					0.0383	0.0076		
Ln (Imports from MERCOSUR)					-0.0359	0.0068		
Ln (Exports to Chile)							-0.0124 *	0.0085
Ln (Imports from Chile)							-0.0132 *	0.0085
Observations	7941		7941		7941		7941	
F-statistic	249.33		250.96		248.15		259.97	
R-squared	0.4160		0.4184		0.4161		0.4139	

Note: * Not Significant at 5%

Table 4b.

Impact of Regional Integration on Labor Income: 2002

Variable	(5)		(6)		(7)		(8)	
	Coefficient	Standard Deviation						
Constant	4.6383	0.0840	4.6678	0.0894	4.7915	0.0893	4.7111	0.0869
Age	0.0803	0.0040	0.0805	0.0040	0.0805	0.0040	0.0794	0.0040
Age2	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000
Education	0.0525	0.0030	0.0532	0.0030	0.0526	0.0030	0.0532	0.0029
Gender	-0.4208	0.0271	-0.4141	0.0272	-0.4243	0.0271	-0.4066	0.0270
Public Institution	0.0932	0.0356	0.0949	0.0357	0.0908	0.0357	0.0962	0.0356
Self - Employed	-0.5548	0.0285	-0.5562	0.0286	-0.5519	0.0286	-0.5343	0.0285
Cooperative	-0.3424	0.1167			-0.3365	0.1105	-0.4077	0.1117
Family Worker	-0.5509	0.1032	-0.5621	0.1032	-0.5418	0.1030	-0.5349	0.1034
Native	-0.2870	0.0217	-0.2869	0.0216	-0.2863	0.0216	-0.2810	0.0216
Other Urban Areas	-0.0767	0.0261	-0.0814	0.0258	-0.0749	0.0259	-0.0872	0.0259
Rural	-0.2970	0.0321	-0.3083	0.0313	-0.2927	0.0310	-0.3241	0.0312
Traditional Agriculture	-0.5263	0.0516	-0.5480	0.0608	-0.6901	0.0621	-0.5808	0.0597
Electricity	0.6325	0.1442	0.5940	0.1470	0.4740	0.1474	0.5269	0.1441
Construction	0.3969	0.0438	0.3647	0.0538	0.2370	0.0538	0.3365	0.0520
Trade & Commerce	0.4465	0.0463	0.4104	0.0559	0.2873	0.0567	0.3662	0.0541
Hotels & Restaurants	0.6125	0.0611	0.5756	0.0685	0.4545	0.0692	0.5345	0.0670
Transport	0.5917	0.0519	0.5578	0.0607	0.4313	0.0607	0.5257	0.0589
Banking	0.7380	0.1370	0.6973	0.1402	0.5799	0.1404	0.6703	0.1397
Services	0.3132	0.0449	0.2732	0.0537	0.1577	0.0540	0.2467	0.0517
Ln (Exports to Mexico)	0.0379	0.0080						
Ln (Imports from Mexico)	-0.0151 *	0.0111						
Ln (Exports to Europe Union)			0.0120	0.0060				
Ln (Imports to Europe Union)			-0.0136 *	0.0085				
Ln (Exports to United States)					0.0313	0.0069		
Ln (Imports from United States)					-0.0491	0.0090		
Ln (Exports to Others)							0.0691	0.0079
Ln (Imports from Others)							-0.0618	0.0081
Observations	7941		7941		7941		7941	
F-statistic	247.87		259.68		248.23		251.19	
R-squared	0.4151		0.4139		0.4164		0.4199	

Note: * Not significant at 5%

Table 4c.

Impact of Regional Integration on Labor Income: 2002

Variable	(1)		(2)		(3)		(4)	
	Coefficient	Standard Deviation						
Constant	4.6627	0.0833	4.6425	0.0822	4.6953	0.0818	4.6553	0.0821
Age	0.0810	0.0040	0.0809	0.0040	0.0808	0.0039	0.0810	0.0040
Age2	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000
Education	0.0531	0.0030	0.0533	0.0030	0.0532	0.0030	0.0528	0.0030
Gender	-0.4188	0.0271	-0.4174	0.0270	-0.4243	0.0269	-0.4172	0.0270
Public Institution	0.0920	0.0357	0.0907	0.0357	0.1006	0.0358	0.0954	0.0357
Self - Employed	-0.5655	0.0291	-0.5570	0.0285	-0.5687	0.0284	-0.5624	0.0285
Family Worker	-0.5719	0.1032	-0.5652	0.1034	-0.5464	0.1031	-0.5695	0.1032
Native	-0.2846	0.0215	-0.2829	0.0216	-0.2816	0.0214	-0.2846	0.0215
Other Urban Areas	-0.0756	0.0256	-0.0745	0.0256	-0.0726	0.0256	-0.0739	0.0256
Rural	-0.3021	0.0309	-0.2969	0.0309	-0.2830	0.0310	-0.2980	0.0310
Traditional Agriculture	-0.5539	0.0503	-0.5452	0.0490	-0.6071	0.0490	-0.5498	0.0490
Electricity	0.5931	0.1444	0.6047	0.1420	0.7186	0.1408	0.5967	0.1423
Construction	0.3657	0.0491	0.2018	0.0564	0.6834	0.0701	0.3660	0.0377
Trade & Commerce	0.4110	0.0400	0.4180	0.0394	0.3866	0.0393	0.4143	0.0393
Hotels	0.5795	0.0577	0.5885	0.0563	0.5426	0.0564	0.5821	0.0563
Transport	0.5541	0.0462	0.5304	0.0458	0.5309	0.0460	0.5534	0.0461
Banking	0.6956	0.1345	0.5986	0.1362	0.7651	0.1373	0.6468	0.1355
Services	0.2698	0.0390	0.2852	0.0376	0.2499	0.0374	0.2761	0.0376
Ln (Total FDI)	-0.0007 *	0.0037						
Ln (FDI CAN)			0.0289	0.0076				
Ln (FDI MERCOSUR)					-0.0326	0.0056		
Ln (FDI Chile)							0.0149 *	0.0091
Observations	7941		7941		7941		7941	
F-statistic	273.16		273.97		274		273.53	
R-squared	0.4134		0.4142		0.4164		0.4136	

Note: * Not Significant at 5%

FDI: Foreign Direct Investment

Table 4d.

Impact of Regional Integration on Labor Income: 2002

Variable	(5)		(6)		(7)		(8)	
	Coefficient	Standard Deviation						
Constant	4.6599	0.0820	4.6569	0.0820	4.6409	0.0820	4.6406	0.0824
Age	0.0810	0.0040	0.0804	0.0040	0.0805	0.0040	0.0804	0.0040
Age2	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000	-0.0009	0.0000
Education	0.0531	0.0030	0.0526	0.0030	0.0522	0.0029	0.0529	0.0030
Gender	-0.4184	0.0270	-0.4155	0.0270	-0.4097	0.0271	-0.4132	0.0272
Public Institution	0.0923	0.0357	0.0994	0.0358	0.0978	0.0357	0.1022	0.0357
Self - Employed	-0.5641	0.0284	-0.5496	0.0289	-0.5449	0.0289	-0.5453	0.0289
Cooperative					-0.2892	0.1093		
Family Worker	-0.5714	0.1032	-0.5601	0.1032	-0.5566	0.1034	-0.5577	0.1034
Native	-0.2847	0.0215	-0.2876	0.0216	-0.2860	0.0216	-0.2861	0.0215
Other Urban Areas	-0.0756	0.0256	-0.0809	0.0257	-0.0748	0.0258	-0.0838	0.0258
Rural	-0.3021	0.0309	-0.3031	0.0309	-0.2998	0.0309	-0.3086	0.0310
Traditional Agriculture	-0.5515	0.0490	-0.5410	0.0491	-0.5372	0.0491	-0.5265	0.0495
Electricity	0.5891	0.1418	0.4478	0.1492	0.3728	0.1477	0.6243	0.1423
Construction	0.3604	0.0375	0.1937	0.0664	0.1367	0.0571	0.2203	0.0565
Trade & Commerce	0.4121	0.0395	0.4197	0.0394	0.4176	0.0395	0.4292	0.0395
Hotels	0.5775	0.0562	0.5439	0.0571	0.4253	0.0627	0.5871	0.0562
Transport	0.5551	0.0461	0.5580	0.0460	0.5555	0.0464	0.5559	0.0458
Banking	0.6956	0.1344	0.6453	0.1347	0.6353	0.1364	0.6616	0.1349
Services	0.2722	0.0373	0.2866	0.0378	0.2882	0.0378	0.2962	0.0381
Ln (FDI Mexico)	0.0210 *	0.0274						
Ln (FDI United States)			0.0157	0.0050				
Ln (FDI Europe Union)					0.0267	0.0050		
Ln (FDI Others)							0.0166	0.0049
Observations	7941		7941		7941		7941	
F-statistic	274.10		273.55		260.68		273.10	
R-squared	0.4134		0.4141		0.4154		0.4143	

Note: * Not Significant at 10%

FDI: Foreign Direct Investment