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This paper is from the
GTAP Annual Conference on Global Economic Analysis
https://www.gtap.agecon.purdue.edu/events/conferences/default.asp

The New Challenges of the Regional Trade Agenda for the Andean Countries[1]

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ABSTRACT

The Andean countries grouped in the Andean Community of Nations (CAN) have adopted a challenging trade negotiating agenda that, in a context of increasing global interdependence, should enable them to promote development and further their integration in the international economy. To that end, they must successfully modernize their economic and institutional structures and adapt them to the more competitive environment created by freer trade. The group is engaged in the negotiations for the Free Trade Area of the Americas (FTAA), as well as for bilateral agreements with the United States and Mercosur; these are the three broadest schedules under negotiation in the Western Hemisphere. All of these agreements offer the Andean countries gains in terms of trade and economic growth, but they also entail substantial structural changes. The latter have significant domestic economic and political implications, and it is important to anticipate those repercussions. This analysis is timely, since there are few studies on the trade negotiations' economic impact and the policy implications for the Andean countries.

In this paper we assess the economic impact of these three regional agreements: the FTAA, whereby the countries of the Western Hemisphere will eliminate all tariff barriers to intra-hemispheric trade; a free trade agreement (FTA) between the CAN and Mercosur; and individual FTAs between four Andean countries (Colombia, Ecuador, Peru and Bolivia) and the United States. We apply a multi-region, multi-sector, comparative, static computable general equilibrium (CGE) model, benchmarked in 1997. The policy variable is tariffs, including *ad valorem* equivalent estimations of specific and mixed tariffs, as well as TRQs.

Preliminary results show the impact of these agreements is positive for all the Andean countries. The sectoral impact is especially dynamic in the bilateral agreement with Mercosur, where tariffs are higher and current trade levels are modest. By comparing the economic impact on each CAN member of negotiating bilaterally with the United States, or as a group in the FTAA, we find that the gains from a broader free trade area clearly surpass those of securing access to the US market, because of the tariff preferences that the United States has already granted to four Andean countries. However, we also observe a significant decline in intra-regional flows in these agreements when tariffs are removed. In all three scenarios, all the Andean countries see a strengthening of their traditional comparative advantage in resource-oriented industries and labor-intensive sectors. Market opening alone, however, does not necessarily enhance export diversification and induce a change in economic structure. Nor does it reinforce technology-intensive industries. There will be fewer benefits for agriculture and some less competitive capital-intensive industries. Moreover, these regional agreements will bring about some structural adjustment in production and labor markets that could be painful in the short run. Since it is crucial to identify the effects on sensitive sectors and target key dynamic industries, in order to prepare for both the negotiations and domestic structural adjustment, these sectoral findings are extremely useful.

JEL Classification: C68, D58, D62, F12, F15, O54
Keywords: CGE Model, Regional Integration, Andean Community

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[1] Paper presented at the seventh annual conference on global economic analysis, June 17-19, 2004, Washington DC.

[2] Inter-American Development Bank (IDB). The views expressed in the paper are those of the authors and do not necessarily reflect those of the IDB, nor any of the governments of its member countries. We are grateful for the valuable comments on our previous results that were made at the workshop in Lima, Peru, in September 2003. All remaining errors are ours.

1. Introduction

The Andean countries have adopted a challenging trade agenda that includes simultaneous negotiations at the multilateral, regional and bilateral levels. In the Americas, the group faces three broad schedules: first, the Free Trade Area of the Americas (FTAA), a hemispheric market among 34 countries with 800 million consumers; second, an FTA with Mercosur, negotiations for which ended in April 2004; and third, an FTA with the United States, which all the Andean countries except Venezuela began negotiating in May 2004. The three tracks of this triple strategy are thought to be complementary in the context of Andean trade strategy, since the bilateral agreements can be seen either as building blocks in the construction of the FTAA, or as alternative means of securing two important markets in the event that a hemispheric agreement is not concluded.

All of these agreements may confer gains in terms of both trade and economic growth, as well as political benefits. It is hoped that improved access to those markets and the adoption of higher standards attendant on the implementation of third-generation agreements will promote an improvement in the Andean countries' economic and social performance. To this end, however, the Andean member countries must successfully streamline and modernize their productive and institutional structures. This requires substantial reforms with significant domestic economic and political implications that should be anticipated.

In view of the daunting challenges that these trade agreements will pose, it is highly useful for the Andean countries to assess the potential economic effects *a priori*, to identify the effects on sensitive sectors and target key dynamic industries so as to prepare for both the negotiations and domestic structural adjustment. Key questions include: (i) What will be the impact of these trade agreements on the Andean countries' macro performance? (ii) Which sectors will gain and which will lose as a result of the accords? (iii) What are the effects of these agreements on the labor market, especially in the short term? (iv) What will the economic costs be, if the Andean countries lose the preferential treatment currently granted to them by the United States?

To answer these questions, we apply a trade-focused general equilibrium model. The model is a class of multi-region, multi-sector, comparative, static computable general equilibrium (CGE) model, benchmarked in 1997. Beyond the standard static models, we include three other features. First, the model includes trade-related externalities that bring about efficiency gains in the production process. Second, it includes various regional trade agreements and forms of preferential treatment in place in the Western Hemisphere. This clearly distinguishes it from other CGE models applied to Latin America. Third, we include the five Andean countries. To our best knowledge, this is the first attempt explicitly to identity all five Andean countries in the model, and to quantify the impact of these agreements at the macro and sectoral levels.

The analysis of the potential effects of this trade agenda is timely, since there are few studies on the economic and policy implications of the negotiations for the Andean countries.[3] We simulate the Andean countries negotiating as a bloc in the FTAA and with Mercosur, although in reality

[3] On behalf of the General Secretariat of the Andean Community, Light (2003) undertook an analysis of four scenarios (FTAA, its variants, and ATPA), identifying three Andean countries – Colombia, Peru and Venezuela – plus Bolivia and Ecuador as one region, using the GTAP database.

commitments will be agreed by each country separately. Although the impact patterns of joint and separate agreements are expected to be similar, our exercises indicate that there will be different economic outcomes for the Andean countries to negotiate with the United States or Mercosur in a bilateral or plurilateral formula in the FTAA context. In the case of the FTA with the United States, joint agreement might not be feasible. The most likely format will be separate agreements between the United States and the four Andean countries; Venezuela will be apart to this agreement. We also analyze the impact on Venezuela under this scenario.

As the policy variable, we consider only tariffs.[4] We exclude other trade barriers and institutional factors, although we acknowledge that recent bilateral and regional trade agreements are comprehensive and cover a wide range of policy elements. Nonetheless, tariffs are the centerpiece of all trade agreements. The study also disregards agricultural and export subsidies, although we recognize that negotiations such as those for the FTAA include these matters. Since we focus on tariffs and discount any other policy elements, our simulation results may underestimate the potential gains of real regional agreements. On the other hand, given that countries in the Western Hemisphere have progressively reduced tariffs since 1997 (the year in which our database is benchmarked), the simulation results may overestimate the impact. While taking careful account of these issues, we seek to measure the economic impact of these imminent regional agreements on the Andean counties as precisely as possible.

Preliminary results show that the impact of the agreements is positive for all Andean countries. Clear gains accrue from the creation of the FTAA. These gains plainly surpass those stemming from access to regional markets, especially the United States, because of the tariff preferences already granted. The bilateral agreement with Mercosur generates modest aggregate gains, but the impact on trade is especially dynamic, because of the higher tariffs and modest level of current trade. Intra-regional trade declines as a result of the loss of intra-bloc preferences. In all three scenarios, all the Andean countries experience a strengthening of their traditional comparative advantage, especially in energy and mining and to some extent in processed foods and textiles. The sectors that benefit least are *agriculture* (grains and vegetables) and some *capital-intensive* industries, where trade is largely intra-regional or less export-oriented (vehicles and machinery). The trade agreements benefit the Andean countries, but they are accompanied by some structural adjustment in production and labor markets that could be painful in the short term. The Andean countries need to address these issues and devise appropriate means of tackling negative economic and social costs, without disrupting structural transformation and optimal domestic resource-allocation.

The rest of the paper is organized as follows. Section 2 describes the structure of the model, with particular attention to its extensions beyond standard static CGE models. Section 3 analyzes the benchmark data and stresses the structure of Andean trade and protection. Section 4 posits alternative scenarios, policy variables and simulation results for macro-variables, by county and at the sectoral level. Finally, Section 5 presents the main conclusions.

[4] Tariffs include *ad valorem* tariffs and *ad valorem* equivalents of specific, mixed tariffs and tariff rate quotas (TRQs).

2. The CGE Model

The CGE model for this study is a multi-country, multi-sector and comparative static general equilibrium model with 15 sectors[5] and 14 regions;[6] it follows the standard specifications of trade-focused applied general equilibrium models. The model is highly nonlinear, and simulates for a decentralized market economy. All regions are fully endogenized and linked through trade. The model deals with the real economy and does not consider the financial or monetary markets. The model's base year is 1997. Table 1 summarizes its main features and the assumptions underlying it.

< INSERT TABLE 1>

The model has three characteristics that do not feature in the standard static CGE models applied to trade policy analysis in the Western Hemisphere. First, it includes trade-linked externalities that lead to efficiency gains in the production process as a result of increased trade. It is widely acknowledged that greater liberalization or free trade agreements (FTAs) have dynamic effects attendant on economies of scale, technical changes, technological spillover, specialization and increased investment (Lewis, Robinson and Wang, 1995). Today this is crucial in Latin America, where trade, especially exports, is a key policy variable, as a source of growth and foreign currency earnings. To capture part of these dynamic effects, the model draws on the theoretical structure of de Melo and Robinson (1992).[7] For applications, we follow Hinajosa-Ojeda, Lewis and Robinson (1995, 1997), Giordano and Watanuki (2002) and Monteagudo and Watanuki (2003).[8]

The second extension is the inclusion of various regional trade agreements and preferential treatments now in place in the Western Hemisphere. They include seven regional trade agreements: the North American Free Trade Agreement (NAFTA), the Central America Common Market (CACM), the Caribbean Community and Common Market (CARICOM), the Andean Community (CAN), the Southern Common Market (Mercosur), the G-3 (Mexico, Colombia and Venezuela), and the European Union (EU). We also take account of four bilateral agreements (Mercosur-Bolivia, Mercosur-Chile, Canada-Chile, and Mexico-Chile) and two US preferential arrangements (the Andean Trade Preference Act, ATPA; and the Caribbean Basin Initiative, CBI).

The third extension is the inclusion of all the Andean countries. Following the Global Trade Analysis Project (GTAP)[9] country aggregation, we include all five Andean countries: Bolivia,

[5] In the model, the 15 sectors are: grains; vegetables and fruits; other agriculture; livestock; crude oil and gas; meat products; processed foods; textiles and apparel; light manufactures, refined oil and chemicals; metal products; automobiles; machinery and equipment; utilities and construction; and trade and services. Sectors, products and industries are all interchangeable.

[6] The regions are: Canada, the United States, Mexico, Central America and the Caribbean, Bolivia, Colombia, Ecuador, Peru, Venezuela, Argentina, Brazil, Chile, the European Union, and the rest of the world.

[7] Melo and Robinson (1992) first formalized and modeled the link between productivity and externalities, and applied it to the export-led growth experiment for Korea.

[8] For a more detailed discussion, see Monteagudo and Watanuki (2003).

[9] The GTAP is a consortium of international and national agencies, and academic institutes.

Colombia, Ecuador, Peru and Venezuela. This allows a more precise assessment of the impact of various trade policy options on the individual Andean countries.

The rest of the model follows the standard theoretical specifications for trade-focused CGE models. In addition to 15 sectors in each region, it includes three factors of production: labor, capital and land. The factors do not necessarily receive uniform returns (labor wages, capital rent and land prices) over sectors. The model imposes factor market rigidities or distortions in each economy so that factors need to adjust to clear the respective markets, given economy-wide market rigidities fixed at the benchmark. In factor mobility, the model applies different treatments. Both labor and capital are completely mobile across sectors, but immobile beyond national borders. The aggregate supply of capital is exogenously fixed in each country or region, whereas land is sector-specific and only used in agriculture. For labor, we consider two treatments differentiating developed and developing regions in the short-run vs. long-run time horizon. For developed countries or regions, the model applies the standard full employment assumption, where the aggregate supply of labor is fixed and wages are equilibrating variables, both for the short-run and long-run. For developing countries and regions, while the fixed labor supply is assumed in the short-run, the model allows an endogenous labor supply in the long-run, permitting unemployment, wherein the real wage derived from the nominal wage divided by the consumer price index remains unchanged.

3. Trade Flows and Trade Barriers at the Benchmark

Our CGE model is based on the individual country or regional Social Accounting Matrix (SAM), benchmarked in 1997. SAM provides a comprehensive snapshot of the economy in the model at the single base year. The SAM-based analysis offers a precise overview of the economic structure – production, trade flows and protection – that is crucial to an understanding of the simulation results.

Table 2 presents market dependency for the Andean region by market. As regards exports, the US market is by far the main destination for the Andean Community, absorbing 45 percent of the bloc's total exports. Dependence on the United States, however, varies greatly by country. Venezuela has a dependency rate of 54 percent, followed by Colombia (40 percent), whereas Bolivia's dependency is 21 percent. The intra-regional market itself is the second largest, with a share of 12 percent. Bolivia and Colombia have high intra-bloc dependence: over 20 percent of their exports go to the subregional market. Reliance on the Mercosur market is relatively low for the Andean group (4 percent), but it is an important market for Bolivia. Hence the Andean region's dependence on the hemispheric market is well above 70 percent. Venezuela has the highest rate (81 percent) and Peru has the lowest (48 percent). As to extra-hemispheric markets, the EU is the main destination, with a share of about 20 percent for most Andean countries. The exception is Venezuela, whose dependence on the EU is a mere 6 percent.

<INSERT TABLE 2>

Import patterns reveal a similar regional dependence. The United States is the leading supplier for most Andean countries. Venezuela has the highest dependency rate at 45 percent, while Colombia's rate is 35 percent. Ecuador relies least on the United States, with a dependency rate

of 16 percent. For Ecuador, the subregion is the leading supplier, accounting for 28 percent of the country's imports; dependence on Mercosur doubles relative to exports to 9 percent. Mercosur is Bolivia's main source of imports (32 percent). The Western Hemisphere as a whole accounts for 68 percent of the bloc's imports, with small variations among the members. Reliance on the EU is three percentage points higher for imports than exports, Ecuador having the highest dependency rate of 25 percent.

Table 3 indicates the sectoral composition of Andean exports by major market in the Western Hemisphere.[10] As is plain, the composition is highly heterogeneous. In the US market, *crude oil and gas* are the leading exports for resource-oriented Colombia (50 percent) and Venezuela (66 percent). In sharp contrast, *capital-intensive* manufactures represented by refined oil and gas, plus metal products, are the main products for Bolivia and Peru, while agriculture accounts for half of Ecuadorean exports to the United States. In the Andean market, the major products exchanged by the large countries are in intra-industry trade in *capital-intensive* goods: 56 percent (Colombia), 65 percent (Peru), and 79 percent (Venezuela). While Bolivia concentrates on *labor-intensive* exports, Ecuador's structure of exports to the subregional market is balanced. On the other hand, the bloc's exports to Mercosur feature a high proportion of resource-based products: *crude oil and gas*, plus refined oil and chemicals. These exports account for 92 percent of Venezuela's exports and 67 percent of Colombia's. Ecuador is an exception in this regard: its major exports are *labor-intensive* manufactures (46 percent) and *agriculture* (41 percent).

<INSERT TABLE 3>

Structure of Protection

As explained earlier, this study simulates the elimination of tariffs as barriers to market access. Tariffs include *ad valorem* tariffs and *ad valorem* equivalents of specific, mixed tariffs and tariff rate quotas (TRQs).[11] Table 4 shows the average tariffs applied to the Andean countries by other countries and regional blocs in the Western Hemisphere. For macro-sectors, we calculate weighted averages, using total export values to weigh the tariffs levied. Thus, actual protection is measured by the importing country's tariffs and each Andean country's total exports. This allows us to capture the importance of duties imposed on the main Andean exports, not just the overall level of tariffs.

<INSERT TABLE 4>

The table shows that for the group, Venezuela excepted, Mexico applies the highest tariffs on its imports from the Andean region. By macro-sector, all Western Hemisphere countries strongly

[10] In order to facilitate the analysis, we aggregate 13 sectors classified by trade in goods into 4 macro-sectors. *Agriculture* include: grains; vegetables and fruits; other agriculture; livestock. *Crude oil and gas* stand alone. *Labor-intensive* manufactures consist of meat products; processed foods; textiles and apparel; light manufactures. *Capital-intensive* manufactures comprise: refined oil and chemicals; metal products; automobiles; machinery and equipment.
[11] For single countries, tariffs are estimated as the simple average of the tariff line schedules in each sector. For regional blocs, they are estimated as the simple averages of the tariff lines across countries. Tariffs are estimated on the basis of the 8-digit tariff line schedule of the Harmonized System.

protect *labor-intensive* manufactures. Canada and Mexico maintain the largest protection bias against these products, above 10 percentage points of total protection.[12]

To calculate actual protection, we take account of several regional and preferential trade agreements in place in the Western Hemisphere.[13] During the last decade, more than 30 bilateral and plurilateral RTAs have entered into force in the region. We consider key agreements and the preferential treatment they entail. These are seven regional trade agreements: NAFTA, the CACM, CARICOM, the CAN, Mercosur, the G-3, and the EU. We also consider four bilateral agreements (Mercosur-Bolivia, Mercosur-Chile, Canada-Chile, and Mexico-Chile) and two US preferential agreements (ATPA and the CBI). For the Andean region, we use the intra-bloc protection reported by the Andean Secretariat.

Four of the five Andean countries – Bolivia, Colombia, Ecuador, and Peru – are beneficiaries of US unilateral preferential treatment under the ATPA, and face substantially lower trade barriers to the US market.[14] Total US protection against Colombia and Ecuador is to some extent lower than against Bolivia and Peru. Tariffs for *labor-intensive* manufactures are the highest, particularly in sectors that are sensitive throughout the hemisphere, such as processed foods or textiles and apparel, the latter being subject to the Multi-Fiber Agreement. Venezuela only benefits from the US Generalized System of Preferences (GSP), whose protection is slightly higher than the ATPA's. Under the GSP, the country faces overall low protection, but barriers to *labor-intensive* manufactures rise as in the ATPA.

Mercosur, another important partner for the Andean countries, has high protection across the sectors. Its total protection ranges from 8.5 percent for Colombia, to 11.7 percent for Peru. Because of a unique trading structure oriented toward resource-based exports (crude oil and gas), Venezuela faces lower (5.7 percent) protection in Mercosur. As other countries in the hemisphere do, Mercosur maintains high barriers against *labor-intensive* industries, with tariffs of 16 to 17 percent. At the sectoral level, automobiles – one of Mercosur's key industries – are protected by the highest tariffs of over 20 percent, followed by textiles and apparel.

Andean protection against its hemispheric partners varies from 9.3 percent (Bolivia) to 12.6 percent (Peru). Again, *labor-intensive* industries are heavily protected in the Andean countries. Intra-bloc trade, however, is largely liberalized. Four Andean countries – Bolivia, Colombia, Ecuador, and Venezuela – have completely eliminated trade barriers among them, and only trade between these four and Peru is subject to preferential treatment on bilateral basis, with less than 1 percent total protection.[15] Table 5 shows the Andean MFN tariffs applied by each member country.

[12] Protection bias is measured as the percentage point difference between macro-sector protecion and total protection.

[13] To this end, we mostly use tariffs from the FTAA database, officially provided by the respective participating countries in the FTAA process. We use other offical data including USITC, Mercosur, to complement the FTAA database.

[14] ATPA was enacted in 1993 and extended to the Andean Trade Promotion and Drug Eradication Act (ATPDEA) in October 2002.

[15] The intra-Andean protection is based on the "Informe sobre el Estado de Situación del Programa de Liberación entre Perú y resto de Paises de la Comunidad Andina", Andean Community General Secretariat, January 2002.

<INSERT TABLE 5>

4. Policy Simulations and Results

A. Alternative Scenarios

To assess the potential costs and gains of a free trade area with different partners, we examine three key regional options from the Andean viewpoint. These three scenarios are designed to measure the possible impact on trade and macro-variables, as well as to examine structural adjustment in production and employment, as a means of identifying dynamic industries and affected sectors in the respective processes. Our policy variable is tariffs. We apply the complete tariff elimination in all scenarios. Because we focus only on tariffs among various policy shocks, our simulation results may underestimate the real gains to be secured from regional agreements.[16] On the other hand, the database is benchmarked in 1997. Given that countries in the Western Hemisphere have progressively reduced tariffs since then, the simulation results may overestimate the impact. In addition, since the full tariff elimination is assumed, this may also overestimate the impact particularly on import-sensitive sectors.

Scenario 1 examines the creation of the FTAA, the biggest and most comprehensive integration scheme in the Hemisphere. Countries collectively eliminate tariffs on intra-hemispheric trade, while retaining their individual protection against extra-hemispheric partners. Hence this scenario simulates the creation of a hemisphere-wide FTA. With 800 million people and a GDP of $13 trillion, it would be the world's largest trade bloc, covering nearly a third of the global economy. Although discord emerged in critical areas and the process has stalled recently, the countries involved seem to be on track to complete the negotiations.

Scenario 2 examines an FTA between the Andean Community and Mercosur. Since 1997, Bolivia has been already an associate member of Mercosur. In August 2003, Mercosur and Peru signed an Economic Complementary Agreement (ECA) to establish the legal and institutional framework for economic and physical integration. Following the ECA signed in December 2003 between the Andean Community and Mercosur, both sub-regional blocs successfully ended the negotiations in April 2004 to launch an FTA starting from July 2004. This agreement leads to materialize the creation of a South America economic space comprising 350 million people. This scenario simulates the challenge of this dynamic integration movement. Countries in Andean Community and Mercosur completely eliminate tariff between both sub-regions, as well as the remaining protection within each group, while each country maintains its own protection against third partners. This option is deemed important for the purposes of strengthening South American integration and gaining bargaining leverage for the hemispheric negotiations.

Scenario 3 simulates an FTA between the Andean Community and the United States. Four Andean countries – Bolivia, Colombia, Ecuador and Peru – jointly eliminate all tariffs with the United States, reciprocally and simultaneously. In reality, joint agreement may not be feasible. Although our previous studies show that there will be a differentiated economic impact on the Andean countries negotiating jointly or separately, for the sake of simplicity, we approximate the

[16] Other than tarirffs, market access also include non-tariff measures, safeguards and rules of origin.

joint approach as a proxy for the individual agreements.[17] We also analyze the impact of this scenario on Venezuela.

In order to assess the full implications of the CAN-US FTA, we also simulate two hypothetical scenarios. The first is unilateral Andean liberalization in favor of the United States. The four Andean countries currently benefit from preferential access to the US market, but the treatment depends on political concessions granted by the US Congress. Thus it is somewhat provisional, subject to periodic congressional ratification. In the bilateral accord, the Andean countries seek to consolidate the ATPA preferences, while the United States seeks to open up the Andean market. In this case, the results might be similar to unilateral Andean liberalization, with few concessions by the United States. In order to capture this, we simulate Andean liberalization for the United States, while US protection remains unchanged. The second scenario seeks to measure the potential gains of the FTA by assessing the costs of losing preferential treatment in the US market. In this scenario, the United States applies its MFN protection to the Andean countries.

The exercises simulate both long- and short-term time horizons for all scenarios, so as to measure the impacts over different time spans. However, we focus on the long-run simulation results and report short-run results, whenever it seems appropriate. Since tariffs are the only policy instruments and external trade is the sole agent transmitting policy shocks among the partners, two key factors greatly influence the effects: (i) trade linkage with partners; and (ii) differentials in the initial protection. In general, the smaller the trade base, the greater the impact; and the higher the initial protection, the greater the impact. Nothing is independent in a general equilibrium framework, but this conventional wisdom aids understanding of the simulation results below.

It is advised to interpret the simulation results below with caution. As mentioned before, we apply the complete elimination of tariffs in all scenarios. This may not be realistic in actual negotiations. The complete elimination of tariffs in import-sensitive agricultural sectors would be politically infeasible, particularly in the United States. In fact, in most trade agreements, these products are either excluded from the agreements or phased out over a certain period. Thus, our results should be interpreted as evaluating potential gains from full market liberalization.

B. Simulation Results

Macro Results

In this section, we evaluate the aggregate impact of the three FTAs on the Andean countries. First, we observe changes in real GDP, welfare,[18] the trade balance, employment, and tariff revenue. Second, we focus on the growth rate of Andean exports to the respective markets, as

[17] Strictly speaking, countries excluded from the agreement suffer economic loss due to trade diversion. However, the effects on participating countries are similar in terms of pattern and magnitude between joint and separate agreements.

[18] Welfare is measured by the equivalent variation (EV), using households' utilities and incomes. EV takes initial equilibrium incomes and prices as base, and computes the changes needed to achieve new equilibrium utilities. For a welfare-improving change, the EV is positive.

well as their composition of trade. Finally, we look at productive sectors in terms of both production and employment.

The results show that the effects of the three FTAs on the Andean economies are positive, although they are moderate in the aggregate, in case we do not consider costs in terms of the trade balance, tariff revenue, and adjustments in production and employment. Given that the Andean countries have far from homogeneous productive capacities, the impact varies by country, especially at the sectoral level. Consistent with trade theory, in the sense that trade should foster a country's comparative advantage, but does not change its economic structure, we observe general and sectoral performance, which is constrained by initial conditions at benchmark. In general, the findings should caution policy-makers about how to manage expectations related to the real scale of the impact of an FTA, and promote the idea that trade should be part of a comprehensive development strategy. That warning stated, and it being understood that tariffs are the only policy shock applied in these simulations, the results are encouraging. They indicate the importance of tariffs among various policy instruments in the negotiations.[19] The most important findings are summarized below.

Table 6 shows the results for real GDP, welfare, the trade balance, employment and tariff revenue for each Andean country under the three main scenarios. The FTAA has the greatest effect for every macro-variable considered. The agreement adds 2 to 3 percentage points to GDP growth in each Andean country. As expected, the FTA with Mercosur has a little impact in stimulating each country's output. The GDP effect of a bilateral agreement with the United States falls between the former two arrangements.[20] The impact on households is better captured by the welfare impact, a key variable for the measurement of trade effects, and the FTAA is the most positive agreement in this regard. As for the other two FTAs, the simulation results show different impacts on the consumer's consumption bundle, coming from trends in goods prices and the effects on household income due to differentiated factor incomes. While the welfare effects of the two bilateral agreements are similar and modest for Bolivia and Ecuador, Colombia and Peru make considerably higher welfare gains under the bilateral agreement with the United States than with Mercosur.

<INSERT TABLE 6>

A troubling finding is that the trade balance in goods will worsen in all scenarios, requiring currency depreciations to bring about a return to initial conditions.[21] The scale of the depreciation suggests that the trade deficit will be wider under the FTAA and an FTA with the United States than under a bilateral agreement with Mercosur. The trade deficit with western hemisphere partners in the FTAA worsens the most for Colombia and Peru, and the least for Bolivia, while the trade surplus narrows in Venezuela and is transformed into a deficit in Ecuador. The intra-hemispheric trade imbalances are to some extent offset by trade with extra-hemispheric partners, but all countries will still have to undergo currency depreciation ranging

[19] See Monteagudo and Watanuki (2004). In the study of agricultural reform, they show that tariffs are the key policy insrument for welfare improvement and export expansion, compared with domestic support and export subsidies.
[20] As explained in the alternative scenario section, the bilateral FTA with the United States excludes Venezuela.
[21] The overall trade balance in goods and services for each countries remains unchanged.

from 3 to 5 percent over the long term. Thus, the Andean countries will need real depreciation or productivity gains larger than the expected depreciation; otherwise they will risk a loss of competitiveness in the international market and a wider trade deficit. This situation could be particularly stressful for dollarized Ecuador, since it cannot use monetary manipulations.

As expected, another problematic finding relates to tariff revenue. Because purchases from the Western Hemisphere accounts for a large proportion of Andean imports, tariff revenues will decline in each country by more than 50 percent under the FTAA; by more than 20 percent under the bilateral agreement with the United States; and by more than 7 percent under an FTA with Mercosur. Although tariff revenue accounts for a small share of fiscal revenue, a fall in tariff revenue might put further stress on already strained public finances. It is expected, however, that the booming economy stimulated by the trade agreements will generate additional fiscal receipts that could offset reduced tariff revenues. This is an area, however, in which the Andean governments should plan ahead, so that they have measures in place when the agreements enter into force.

Aggregate export growth to the Western Hemisphere under the FTAA varies between a low 7 percent for Venezuela and a high 16 percent for Peru, the differences arising from each country's initial structural conditions.[22] Exports grow to all markets except the subregion, where the loss of preferences leads to a drop in sales. Although this decline in intra-regional trade is small in value terms, the presence of goods that are only traded within the regional market might translate into a qualitatively significant negative impact, a circumstance that the countries should address promptly.[23] The bilateral agreements will yield lower gains than the FTAA, although gains from an accord with the United States are greater than those from an agreement with Mercosur in terms of total export growth except Bolivia.

The dynamic destination markets for all Andean countries in the hemispheric agreement are Mercosur, Mexico and Central America, revealing that the FTAA has the potential to promote market diversification. However, export growth is not enough to change the pattern of trade completely, since traditional markets (like the United States for Colombia, or Venezuela and Mercosur for Bolivia) still absorb a high share of new sales. Because the Andean countries undertake greater tariff elimination than most of the other hemispheric partners, the impact on imports is larger than that on exports in the Hemisphere. The United States is by far the largest source of new imports for most Andean countries, accounting for more than 70 percent of new purchases from the Hemisphere, followed by Mercosur. Ecuador is the only exception: the US share is around 25 percent, after Mercosur. *Capital-intensive* goods account for more than half of new imports for all the Andean countries.

Unsurprisingly, the three FTAs promote the Andean countries' comparative advantage in resource-based industries such as refined oil and chemicals for Venezuela and Colombia, metal products for Peru, and agricultural products for Ecuador. However, at macro-sector, tariff elimination in *labor-intensive sectors* promotes export dynamism in all the FTAs. These goods

[22] Venezuela has a less diversified and more inward-oriented economic structure than Peru.

[23] In the case of Peru, for example, only exports to Bolivia decline. Since an FTA already exists between the two countries, exports do not benefit from the price competitiveness gain from the tariff reduction. Exports to the other Andean countries – still subject to small tariff protection – increase slightly.

account for over 40 percent of new sales for Colombia, Ecuador and Bolivia. In sharp contrast, *capital-intensive* goods dominate new exports from Peru and Venezuela in the FTA with Mercosur; among commodities, resource-oriented refined oil and metal products are the major exports.

A positive finding is long-term employment gains across countries and scenarios. Despite these gains, the short-run impact on the labor market implies sectoral structural adjustments in domestic economies. Less competitive, import-competing industries such as machinery and equipment lose labor in all countries and scenarios, and displaced labor is reallocated to competitive export-oriented sectors – a painful process that governments must address.

In trying to assess the real value of an FTA with the United States, we simulate unilateral tariff elimination by the Andean countries. The results are not markedly different from the bilateral agreements for all variables except export performance. As for the cost of not negotiating with the United States, either in the FTAA or bilaterally, if the Andean countries were to lose US preferences and face the United States' MFN tariffs, Andean exports to the US market would decline. Bolivia and Peru are the most affected. In value terms, *capital-intensive* goods, mainly refined oil and chemicals, plus metal products, account for some 70 percent of the export losses in these two countries.[24] *Agriculture* is the most affected sector in Colombia and Ecuador, representing over 40 percent of the decline in exports. As a result, economic activity shrinks across sectors, and especially in affected sectors. This result suggests that policy-makers are correct in seeking to lock-in the preferences in terms of export performance.

Sectoral Results by Country

In analyzing the findings by country, we focus mainly on each country's overall trade performance, and their production and employment gains and losses at the sectoral level by scenario. One of our most significant findings is that although the results for the three FTAs are very similar when considering the target markets, it makes an economic difference to negotiate with the United States or Mercosur bilaterally or plurilaterally in the FTAA context. This is to say that besides political motivations, policy-makers must take account of potential economic effects. Another significant finding is that the agreements reinforce the Andean countries' comparative advantage in resource-based exports, but it does not necessarily enhance export diversification. Other instruments are needed to achieve that. The FTAA in particular promotes market diversification moderately, since the growth destinations are non-traditional markets. Established markets, however, do remain important in absolute terms.

Results are positive in the aggregate, but some sectors will undergo adjustment in production, some of it substantial, or risk being displaced by more efficient producers. In general, labor markets will follow production adjustment, but the overall impact is modest, as booming sectors will absorb displaced workers.[25] It should be recalled that our model is static, in the sense that it

[24] US protection increases from virtually zero to an average of almost 5 percent in all *capital-intensive* sectors. This and the fact that refined oil and chemicals plus metal products account for almost 50 percent of exports to the United States prior to the agreement explain these results.

[25] While we impose labor market rigidity, the model assumes free labor mobility to clear labor market, i.e. costless reallocation of labor from one industry to another. This may not be the case in reality particularly in the short run, where booming sectors will not easily absorb new workers displaced from ailing sectors. However, this should be

does not consider investment or any other change in initial conditions. Real results might therefore vary if governments and businesses take appropriate steps to cope with inefficiencies in the economies and foster overall competitiveness. The findings also suggest that policy-makers should implement social policies to anticipate negative effects on particular groups.

Figure 1 presents the impact of the FTAA on exports by macro-sector for major markets in the Western Hemisphere for all the Andean countries, whereas Figure 2 shows the composition of the increased exports.[26] Table 7 indicates the long-run impact on production, and Tables 8 reports the short-run impact on employment.

Bolivia

Scenario 1: FTAA

Bolivia's total export growth in the FTAA is 9 percent, but the agreement does not promote market diversification for Bolivian exports. Despite increased sales to new markets (especially to the CACM and Mexico), Mercosur, the United States and Chile together share 97 percent of the new sales. Exports to the Andean market decline by 1.4 percent. *Labor-intensive* exports account for most of the new sales to all non-Andean markets in the Western Hemisphere. Processed foods and light manufactures are the main exports to these markets.

Bolivia's imports from all its hemispheric partners increase. The leading source is the United States, which accounts for 44 percent of imports from within the Hemisphere, followed by Chile (32 percent) and Mercosur (19 percent). Machinery and equipment, and refined oil and chemicals, account for 51 percent of all imports from the Western Hemisphere. The United States is the main source of machinery and equipment, with an 80 percent share of this product category. Intra-Andean imports, on the other hand, decline by 2.6 percent, as they are replaced by more competitive partners in the continent.

Production and the labor market reflect export performance and experience growth. The most booming sectors are *labor-intensive* manufactures, especially processed foods, and textiles and apparel, followed by *crude oil and gas*, boosted by productivity gains and an increased labor force in the long run. While output rises in most *capital-intensive* industries, the already small machinery and equipment sector suffers a 3.8 percent production decline and a shrinking workforce, because the intra-regional market is the main destination of the sector's exports.

Scenario 2: CAN-Mercosur FTA

The effect of this FTA is similar to that with Mercosur under the FTAA, but the impact is less. It is important to note that since Bolivia is an associate member of Mercosur, this agreement does not have as large an impact on Bolivian trade as it does on the other Andean countries' trade.

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interpreted as follows. Trade agreements create new demand at home and from external market. Given production capacity and technology constraints, however, booming industries cannot meet increased demand with current level of factor resources. They require extra resources including labor to meet increased demand, while increasing productivities in production process.

[26] Because the impact of the other two scenarios on exports to target markets follows the similar patterns to those under the FTAA with smaller magnitude, we omit the results in tables or figures to save space.

Because the structure of its exports to Argentina and Brazil differ, however, as does its initial trade base with each of them, the impact on exports to those countries are distinct. Textiles and apparel are the most dynamic industries; the increase in exports of these products to Mercosur exceeds 15 percent, followed by processed foods. In value term, light manufacturing industries are the chief beneficiaries, accounting for 50 percent of new exports, while sales of *crude oil and gas* account for 25 percent. Interestingly, Argentina takes 80 percent of Bolivia's new exports to Mercosur, while Brazil is the destination of only 20 percent.

Capital-intensive goods dominate purchases from Mercosur, although there are some differences between the composition of imports from Argentina and Brazil. From Argentina, Bolivia buys intermediate goods: refined oil and chemicals, and metal products (52 percent of new imports from this source). From Brazil it imports heavy capital goods: automobiles, machinery and equipment (50 percent of new imports from Brazil).

As regards production, light manufactures benefit the most, while production slightly decreases in metal products, as well as machinery and equipment. In all manufacturing industries except light manufactures, worker displacement is under 1 percent.

Scenario 3: CAN-US FTA

The bilateral agreement boosts exports of processed foods and textiles and apparel, which rise by 27 percent. In contrast, sales of refined oil and gas, Bolivia's main exports to the United States, increase by a modest 1.8 percent. The same is true of metal products, which grow by 2.6 percent. *Labor-intensive* products account for 71 percent of Bolivia's total new sales to the United States. Among them, light manufacturing other than processed foods, as well as and textiles and apparel, have the highest share.

Imports from the United States increase sharply by 17.5 percent. In value terms, *capital-intensive* products account for 91 percent of new imports from the United States, and machinery and equipment alone represent 65 percent. Bolivia's purchases of refined oil and chemicals increase, as do automobile imports; together these account for 25 percent of new imports. The impact on production is positive for all industries except machinery and equipment, which are less competitive industries and export little to the United States. Metal industries lead production growth, which is achieved by increased workforce rather than productivity gain.

Compared to the bilateral agreement, the cost of unilateral tariff removal with the United States is to reduce the growth of Bolivia's exports to the United States by 3 percentage points. The most affected industries are textiles and apparel, and other light manufactures. In the event that Bolivia loses its ATPA preferences, exports to the United States decline by more than 8 percent. In value terms, *capital-intensive* goods – mainly refined oil and chemicals, as well as metal products – account for 73 percent of the loss. The negative impact spreads to the rest of the economy. Production falls across sectors, particularly in these light-manufacturing industries. The labor market slackens and there is a slight increase in unemployment.

Colombia

Scenario 1: FTAA

Colombia's exports to the Western Hemisphere increase by 7 percent under the FTAA, with diverse effects over sectors and partners. *Labor-intensive* industries expand most. In particular, textiles and apparel, with a 22.5 percent increase, are the fastest growing industries. This sector alone accounts for 25 percent of export growth.

By destination, the Southern Cone market is the most dynamic. Exports climb by 40 percent to Mercosur and 35 percent to Chile. *Capital-intensive* products, represented by refined oil and chemicals, are the leading exports to these markets; they account for 40 percent of new exports to Mercosur and 63 percent of those to Chile. Despite a modest 5 percent growth in sales to the United States, exports to the US market account for over 40 percent of new exports to the Western Hemisphere. Thus the US-bound share of Colombian exports to the Western Hemisphere rises to 57 percent as exports to the Andean subregion fall. Textiles and apparel benefit the most.

Colombia experiences a sharp increase (15 percent) in imports from the Western Hemisphere. The United States, with a 60 percent share, is the leading source. Imports from the other Andean countries, except Peru, fall slightly. The FTAA stimulates intra-industry trade in intermediate products such as refined oil and chemicals, capital goods (including machinery and equipment), and consumables represented by textiles and apparel. By commodity, machinery and equipment account for 27 percent of new imports from the Western Hemisphere, and refined oil and chemicals for 16 percent.

As to production, Colombia's gross output increases by a modest 2 percent. Reflecting export performance, textiles and apparel industries lead production by 5 percent, but production falls slightly by almost 2 percent in grains and machinery. In the long term, the labor force increases across the economy. In the short term, however, competitive imports displace labor in most manufacturing and agriculture industries despite increased production, since output growth is managed largely by higher efficiency gains. Among industries, grains, machinery and equipment are hit hardest. On the other hand, *crude oil and gas*, with a high level of international competitiveness, absorb displaced workers.

Scenario 2: CAN-Mercosur FTA

The pattern of exports to Mercosur is similar to that under FTAA but growth is less.[27] The FTA with Mercosur has greater effects on *capital-intensive* exports than others relative to the FTAA, reflecting the unique structure of Colombia's exports to Mercosur. Refined oil and chemicals exports account for 43 percent of new sales to Mercosur and represent 30 percent of total sales. *Labor-intensive* goods account for 40 percent of exports. Few agricultural products are sold to Mercosur.

[27] Due to weak trade linkages at bechmark, export growth to Mercosur is slightly lower than in FTAA.

Imports from Mercosur rise sharply by 37 percent. There is a marked difference in the composition of imports from Argentina and Brazil. *Labor-intensive* goods represented by processed foods (52 percent) are the main imports from Argentina, while *capital-intensive* products share 74 percent of new imports from Brazil. Automobiles, and machinery and equipment, together account for almost half of that share.

Production rises more evenly over industries than in FTAA. Although the impact on labor market adjustment is small, the output of grains declines because of the surge in competitive imports from Argentina. In the short term the overall impact on the labor market is insignificant, although labor is displaced in most Colombian industries and those workers are mostly absorbed by resource-oriented agriculture and the *crude oil and gas* sectors.

Scenario 3: CAN-US FTA

The biregional agreement increases total exports to the United States by 4 percent.[28] However, non-traditional exports such as processed foods, and textiles and apparel, climb by 28 percent. In value terms, exports of these products account for 65 percent of the new sales. Exports of *crude oil and gas*, one of Colombia's traditional leading exports, increase by a mere 0.6 percent. Agricultural exports, another key component of Colombia's sales to the United States, increase by a modest 2 percent, but they account for 16 percent of the new sales.

As expected, *capital-intensive* goods comprise the vast bulk of new imports from the United States (64 percent). The largest product category is machinery and equipment, accounting for 33 percent of imports, followed by refined oil and chemicals (18 percent). Imports of *labor-intensive* products from the United States, such as textiles and apparel, processed foods and light manufactures, account for 28 percent of the new imports.

The impact on production is asymmetrical, but positive for most industries. Textiles and apparel experience the largest increase in production. As in the FTAA, the less competitive machinery and equipment sector, as well as grains, suffer a slight decline in production and labor. Despite booming exports, the workforce in *labor-intensive* industries falls slightly in the short run, as those industries meet increased demand by raising production through productivity gains.

If the bilateral FTA gives rise to unilateral liberalization, Colombia's imports from the United States will increase at a level similar to growth under the full FTA, while exports to the United States fall from 4 percent under the full agreement to 1.5 percent. Labor is reallocated from weak or protected industries to the competitive *crude oil and gas* sector.

As to the cost of losing ATPA preferences, Colombia's exports to the United States decline by more than 3 percent. *Capital-intensive* exports, represented by refined oil and chemicals, suffer the greatest fall (10 percent). In value terms, agricultural goods, among the country's leading exports to the United States, account for 40 percent of the export loss. Domestic production declines and unemployment rises, as labor is forced out of industries.

[28] Colombia's key exports to the United States – *crude oil and gas*, and other agriculture including coffee – enter the US market nearly duty-free under the ATPA program.

Ecuador

Scenario 1: FTAA

The FTAA expands Ecuadorean exports to the Western Hemisphere by 9 percent; sales increase to all hemispheric partners except the Andean countries. The growth in sales to Canada, Mercosur, Mexico, Chile and the CACM ranges from 17 to 45 percent. Together, these markets account for over 60 percent of the value of new exports generated under the agreement. The processed foods sector experiences the highest export growth rate, followed by meat products, and textiles and apparel. Among the new sales, the *labor-intensive* sector accounts for 41 percent of the value, with processed foods as the most important export to the Western Hemisphere. *Agriculture* accounts for 29 percent of the new exports, vegetables and fruit and livestock being the key commodities.

The composition of new exports by major market is substantially diverse, depending on the structures of trade and protection with the respective partners. In Mercosur, where Argentina is more important to Ecuador than is Brazil, processed foods alone account for 36 percent of Ecuadorean exports. In Chile and the CACM, Ecuador's traditional *crude oil and gas* account for 54 percent and 58 percent, respectively. In the US market, raw and processed products of agricultural origin account for more than 90 percent of new sales. These exports also represent 75 percent of exports to Mexico.

There is growth in a wide range of Ecuadorean imports, from capital and intermediate products to consumer durables and consumer non-durable goods. The major source is the United States, which accounts for 33 percent of all new purchases; Mercosur has a 30 percent share. The sectoral composition of imports also varies between these sources. Ecuador largely imports refined oil, chemicals and other light manufactures from the United States, while it buys automobiles and machinery and equipment from Mercosur, basically from Brazil.

In terms of production, there is a positive impact on agriculture and labor-intensive sectors. *Labor-intensive* manufactures comprise the highest-growth macro-sector in production: processed foods expand by 6 percent and meat products by 7 percent. The *capital-intensive* sector, however, especially metal products and automobiles, declines by as much as 4 percent. The labor market performs accordingly, as expanding sectors absorb workers displaced from declining industries.

Scenario 2: CAN-Mercosur FTA

As in the other Andean countries, the impact of trade liberalization with Mercosur is similar to that under the FTAA, although there are some differences at the sectoral level. *Capital-intensive* exports grow faster under this agreement than under the FTAA, revealing the potential for intra-industry trade. Automobiles is the sector with the fastest-growing exports to Mercosur, followed by machinery and equipment, but in value terms they account for very little. By contrast, although *agriculture* and *labor-intensive* export growth is slightly less under this scenario than under the FTAA, the total value accounts for 88 percent. As a result of lost preferences, the automobile industry's sales in the Andean region fall slightly.

Imports from Mercosur grow fast, especially in the *labor-intensive* sector (50 percent). Brazil is the main source with a 70 percent share; Argentina has the other 30 percent. While Argentina is Ecuador's main source of processed foods and metal products, Brazil supplies capital goods comprising automobiles, and machinery and equipment.

The country's *capital-intensive* sector, which is less competitive than its Andean and Mercosur counterparts, experience some fall in production and employment; metal products and automobiles are the hardest hit sectors. On the other hand, processed foods and meat products enjoy gains in production and employment, as a result of increased exports to Mercosur.

Scenario 3: CAN-US FTA

The CAN-US bilateral FTA reinforces the pattern of Ecuadorean trade with the United States: agricultural exports in exchange for manufactured imports. *Labor-intensive* industries enjoy booming exports, with growth of over 25 percent in processed foods, and textiles and apparel. Despite a small growth of 2.8 percent, products of agricultural origin are the most important exports for Ecuador, accounting for more than 80 percent of new exports to United States. In value terms, the leading products are processed foods (39 percent), livestock (29 percent) and vegetables and fruits (13 percent).

Imports follow the FTAA pattern. Refined oil and chemicals are the leading imports from the United States, with a share of 26 percent, followed by light manufactures (24 percent). Imports of capital goods (machinery and equipment) and consumer durables (automobiles) together account for another 20 percent.

As to the impact on production, livestock, vegetables and fruits experience the largest gains in production and employment within *agriculture* sectors, while processed foods and meat products undergo similar expansion in the *labor-intensive* industries.

In the event of unilateral Andean liberalization in favor of the United States, the aggregate performance of macro-variables is not markedly different from the full bilateral agreement. Nonetheless, export growth slows in the processed foods sector, as well as the textiles and apparel sector, the latter circumstance affecting textiles production. If preferences in the US market are lost, Ecuador experiences a decline in exports and growth that could have been achieved in the bilateral agreement with the United States. *Labor-intensive* exports fall the most (8 percent), the largest decline being in processed foods (11 percent). Other sectors negatively affected are vegetables and fruits (10 percent), meat products (6 percent), refined oil and chemicals (7 percent) and metal products (5 percent). Growth of production and employment is negative across all productive sectors.

Peru

Scenario 1: FTAA

Total export growth to the hemispheric market under the FTAA is 15 percent. *Labor-intensive* products are the fastest-growing exports to all hemispheric markets, with very high growth to Canada, Mexico and Mercosur. Despite the 32 percent growth of *labor-intensive* exports, *capital-intensive* manufactures represent almost 40 percent of new sales, especially metal products and refined oil and chemicals. Processed foods and textiles are the main exports to the United States.

The composition of exports varies by Latin American market. *Capital-intensive* exports, like refined oil and chemicals and metal products, go to Mercosur; new exports of processed foods, and textiles and apparel mainly go to Mexico. New sales of *crude oil and gas* to Mercosur are also important for Peru, sharing 14 percent of the increased exports to the Western Hemisphere.

Imports from partners in the Hemisphere grow across all sectors and countries except the Andean subregion. The United States accounts for 45 percent of total imports, while Mercosur has a 32 percent share. Machinery and equipment, plus refined oil and chemicals, together account for 43 percent of new imports. Together, processed foods, textiles and apparel, and light manufactures represent 30 percent of the increased imports.

As regards production, only two sectors shrink as a consequence of the FTAA: grains, and machinery and equipment. Growth in the automobile sector is positive but the slowest.[29] Peruvian exports of machinery and equipment to its Andean partners also lose out to competitors from other FTAA countries. The boom sectors are textiles, metal products, *crude oil and gas*, which grow by more than 6 percent.

Among the productive sectors, grains and machinery and equipment suffer the highest losses in employment (2 percent). Automobiles, refined oil and chemicals, light manufactures, and meat products all lose workers to meet the higher demand from the other sectors of the economy.

Scenario 2: CAN-Mercosur FTA

Exports of *labor-intensive* manufactures grow by more than 60 percent, followed by *capital-intensive* exports (57 percent growth). Metal products alone account for 44 percent of new exports, while refined oil and chemicals have an 11 percent share. *Crude oil and gas* are also significant, accounting for 25 percent of exports to Mercosur. Of the *labor-intensive* products, processed foods, and textiles and apparel together account for 10 percent of the new exports, although these products are not Peru's leading exports to Mercosur.

Imports from Mercosur grow by 41 percent and the impact on the macro sectors is less asymmetrical. It ranges from 37 percent for *capital-intensive* products to 50 percent for *labor-intensive* imports. The leading imports are refined oil and chemicals, and machinery and equipment.

Gains in production are higher in *crude oil and gas* (2 percent growth) and metal products (3.4 percent). Grains production falls by 1.2 percent. As to the effects on short-term employment, workers are displaced from almost all sectors and are absorbed by growing industries.

[29] These three sectors have a lower export orientation ratio.

Scenario 3: CAN-USA FTA

A bilateral FTA with the United States increases exports by 6.8% and has a strong impact on *labor-intensive* exports (27 percent growth); other sectors grow less (under 4 percent each). Processed foods and textiles and apparel are the fastest-growing sectors, together representing 66 percent of the increased exports to the US market.

Imports are concentrated in *capital-intensive* goods, with a 68 percent share of total new imports from the United States. In value terms, machinery and equipment (42 percent) and refined oil and chemicals (17 percent) have the largest share of new imports. Grains and light manufactures follow, with shares of 8 percent and 7 percent, respectively.

With regard to the impact on production, output from the machinery and equipment sector shrinks under this scenario, as imports from the United States displace domestic producers. Production gains are concentrated in processed foods, textiles and apparel, and metal products; all of these have a high export-orientation ratio, although their export growth is lower at 4 percent. The short-term impact on employment reflects high demand from these three sectors, as labor moves away from the rest of the economy.

The cost of unilateral tariff elimination in favor of the United States is high: the growth of exports to the United States is four percentage points lower than it would be with reciprocal tariff-removal. If ATPA preferences are lost, Peruvian exports to the United States fall by more than 6 percent, affecting all sectors. In value terms, *capital-intensive* goods – mainly refined oil and chemicals, and metal products – account for 75 percent of the exports losses. Consequently, economic activity declines across all sectors and especially in these two sectors.[30] These findings also reveal those Peruvian industries that have benefited most in the past from US preferential treatment.

Venezuela

Scenario 1: FTAA

Total growth to the hemispheric market is 6.7 percent, the lowest among the Andean countries. Latin American countries are the most dynamic markets. Venezuela's exports to Chile climb by 34 percent, to Mercosur by 29 percent, to Mexico by 24 percent and to the CACM by 17 percent. Sales to the United States increase by a moderate 4 percent. As noted earlier for the other Andean countries, exports to the subregion fall.

The largest increases in exports to the Western Hemisphere are in *labor-intensive* sectors. Exports of meat products grow by 20 percent, while processed foods, textiles and apparel and light manufactures all expand by 15 percent. Sales of *capital-intensive* goods such as refined oil and chemicals, and metal products, grow by 12 percent and 10 percent respectively. Within

[30] Activity shrinks in all but two sectors, which are highly oriented to the internal market: automobiles, and machinery and equipment.

agriculture, exports of vegetables and fruits increase by 16 percent. In value terms, however, the new exports are concentrated in goods in which the country has comparative advantages, such as refined oil and chemicals; these account for 57 percent of new exports to the hemispheric market. Hence in this regard Venezuela is clearly different from the other Andean countries, where labor-intensive exports dominate new sales to the Western Hemisphere. The prime reason is Venezuela's unique, resource-oriented export structure of refined oil and chemicals. Venezuela is by far the largest supplier of these products, with a share of 70 percent of such exports from the Andean region to the hemispheric market, and they account for 32 percent of Venezuela's exports. In fact, exports of refined oil and gas comprise almost half of new exports to Mercosur and the CACM, and 70 percent of new sales to the United States. *Crude oil and gas*, the country's most important exports, account for 24 percent of new exports to the Western Hemisphere, but only 11 percent of new sales to the United States, the result of almost duty-free access to the US market. Nonetheless, it would be misleading to conclude that Venezuela specializes in *capital-intensive* industries, since refined oil and chemicals lead its exports among *capital-intensive* products; this is exclusively the result of the comparative advantage attendant on the country's huge oil resources.

As with the other Andean countries, Venezuela's imports of all categories of goods increase, but *capital-intensive* products dominate imports. Automobiles and machinery and equipment account for more than 20 percent of new imports, followed by refined oil and chemicals (13 percent) and processed foods (12 percent). The United States is the main source of imports, with a 57 percent share of new imports, while Mercosur accounts for 22 percent.

Venezuela undergoes substantially diverse structural adjustment in production and the labor market. Refined oil and chemicals, as well as metal products, enjoy the largest production gains, ranging from 5 to 3 percent. They absorb workers displaced from the less competitive machinery and equipment and automobile sectors, which suffer the greatest decline both in production (-6 percent) and employment (-7 percent). Grains production also shrinks, accompanied by a 3 percent decline in employment.

Scenario 2: CAN-Mercosur FTA

As a result of this bilateral agreement, Venezuela's exports to Mercosur increase by 30 percent. The booming exports are the *capital-intensive* industries: automobiles (107 percent), machinery and equipment (77 percent), and metal products (62 percent). However, the relative importance of these sectors in total exports remains very modest. Despite impressive export growth, production declines in these sectors. The reason is that they are subregional products for Venezuela and are mostly sold within the Andean bloc. For automobile sales, for instance, the Andean market accounts for 72 percent of total exports in this product category, while Mercosur has a share of just 0.5 percent. Consequently, extensive tariff elimination by Mercosur, which almost doubles exports to that market, cannot offset the fall in the value of exports to the Andean countries. Moreover, one troubling result is that gains in new sales are concentrated in already established resource-based products. *Crude oil and gas* account for 40 percent of the new exports, while refined oil and chemicals have a 44 percent share.

Imports from Mercosur are dominated by different kinds of *capital-intensive* manufactures: automobiles (26 percent of new imports), followed by machinery and equipment, and metal products (15 percent each). Within *labor-intensive* sectors, processed foods are the leading imports (22 percent of the new purchases).

The impact on production and employment does not clearly follow export performance. There is greater production and job-creation in resource-based *crude oil and gas* and refined oil and *chemicals*, followed by machinery and equipment. On the other hand, grains, automobiles and metal products suffer a slight loss in production and workforce.

Scenario 3: CAN-US FTA

Neither Venezuela nor the United States seems to be willing to negotiate a bilateral agreement. The overall cost of exclusion from the deal is measured by the loss of market share in the Andean subregion and a small decline in production.

Exports to the United States are unchanged and exports to the Western Hemisphere fall by a modest 0.3 percent, affected by trade on the part of other Andean partners. Andean countries' imports, essentially from the United States, increase; they displace imports from Venezuela, whose exports fall by 3 percent. *Capital-intensive* exports are the most affected, because of a decline in sales of refined oil and chemicals (-3.5 percent) and metal products (-4.7 percent) to the subregion, mainly to Colombia and Peru. Venezuelan imports from the Western Hemisphere fall by less than 1 percent, mostly from the United States.

The depressed export performance spreads across the economy and domestic production falls in all industries, but by less than 1 percent. Textiles and apparel, machinery and equipment and metal products suffer the highest production losses. The fall in employment is marginal across productive sectors.

5. Summary and Conclusion

Following dramatic trade liberalization achievements in the 1990s, the Andean Community now faces significant challenges in the area of trade negotiations. These will shape the coming decades for the bloc and its member countries. In addition to the continuing negotiations for the FTAA, the Andean countries will start negotiations for a bilateral agreement with the United States; they have completed negotiations with Mercosur, and continue with the new round of multilateral talks. Given the countries' economic structures and abundant natural resource endowments, as well as the politically sensitive circumstances, these tasks not only require considerable national efforts to undertake substantial national reforms, but also pose significant political challenges to the Community itself: to consolidate the bloc's integration process and find common positions in the negotiations.

Applying a multi-country, multi-sector, static CGE model with trade-linked externality, this study measures the potential economic impact of these imminent regional agreements, with a view to identifying the winners and losers in the economy. We also examine structural adjustment in production and labor markets, the economic costs to be anticipated in the regional

integration process. The policy variable is tariffs, the key instruments in the market access negotiations and a centerpiece of trade agreements.

Our simulation results confirm strong gains from integration and positive welfare improvements based on trade theory. In all the agreements, the impacts on macro-variables are positive, albeit modest. Trade creation (one of the main sources of benefits from regional integration) is far greater than trade diversion for the Andean countries. While the impact on imports is uniform across sectors, due largely to net income gains and exchange rate devaluations, the impact on exports is more dynamic and diverse, depending on initial protection and the structure of exports. These agreements are likely to worsen the trade balance in goods and reduce tariff revenues, which may place additional stress on public finances in the Andean countries. They also entail some structural adjustments in production and labor markets; this could be painful, particularly in the short term.

While all the trade agreements are welfare-improving, the FTAA is the best option for all the Andean countries. In particular, the FTAA strengthens the link between trade growth and productivity gains that spread over the entire economy. Guaranteed market access provides opportunities to expand intra-industrial trade in manufactures, driven by dynamic externality effects, along with an intensification of specialization in resource-based exports. The South-South bilateral agreement with Mercosur generates modest macro gains, but the sectoral impact is considerably diverse by country, depending on initial structures in trade and protection. The Andean countries further specialize in resource-based exports, in exchange for capital goods purchases. While the agreement with the United States enables the participating Andean countries to secure the key market in the north, it may involve economic and political costs. The joint efforts to consolidate Andean integration could be jeopardized when separate negotiations are concluded.

Our key and robust findings are that, while the trade linkage is enhanced and markets are secured, all the Andean countries experience a strengthening of their pattern of comparative advantage in traditional resource-based exports with low value added. As Lall, Albaladejo and Mesquita Moreira (2004) note, Latin America has fallen behind the most competitive developing countries in terms of manufacturing competitiveness. While abundant natural resource endowments can be a blessing, they can also be an obstacle to technology-intensive activities and high economic growth (Sachs and Warner, 2001), unless appropriate industrial policies are in place. This directly applies to the Andean countries. Market opening alone does not automatically guarantee export diversification, nor change the economic structure and reinforce technology-intensive industries, the main driving forces of sustained industrial growth. Another troubling result, one related to the above finding, is that the decline in intra-regional trade as a result of the erosion of Andean preferences has a direct impact on economic performance. This is particularly true for non-resource-based *capital-intensive* manufactures, concentrated largely in intra-regional or domestic markets. An increase in extra-bloc exports will not necessarily offset the decline in intra-regional trade, resulting in a net loss of total sectoral exports. The Andean countries need to design appropriate measures to bridge trade and industrial policies carefully and deliberately, so as to tackle these issues and improve industrial competitiveness in a globalized economy.

The Andean Community is at a critical stage of its external agenda. Faced with the proliferation of regional trade agreements in the Western Hemisphere, these simultaneous agreements become strategic options. Bilateral agreements can be viewed as a complementary initiatives and stepping stones to the FTAA, or an alternative path to secure key markets and an intermediate step in the process of building the FTAA. In the meantime, these agreements also provide excellent opportunities for the bloc and its member countries. In order to fully tap the potential and opportunities offered, however, the Andean countries must make continued efforts in policy reform, modernize their institutional frameworks at home, coordinate their external policies, and strengthen subregional integration, irrespective of which course they take.

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Table 1. Main Features and Assumptions of the Andean CGE Model

Items	Description
1. Production Sectors	All regions produce 15 goods using primary inputs and intermediate goods with a CES production function under CRS technology. The 15 sectors in the rest of world are fully endogenized.
2. Market Structure	All sectors face a perfectly competitive market structure.
3. Demand	Final private demand in each country or region is derived from the households' utility maximizing behavior subject to their budget constraint. Intermediate demand is determined by the fixed input-output coefficients.
4. Trade	Exports are specified by a CET function, and differentiated by market of destination. Imports are modeled with a CES specification, and differentiated by market of origin.
5. Factors	
(i) Labor	Sectorally mobile, but immobile internationally. Labor supply in developed countries is fixed in both short-run and long-run, assuming full empolyment. For developing countries, labor supply is fixed in the short-run, whereas it is endogenized in the long-run.
(ii) Capital	Sectorally mobile, but immobile internationally. Total supply in each country or region is fixed.
(iii) Land	Sector specific.
6. Trade-linked Externalities	
(i) Sectoral export externality	
(ii) Import externality of intermediate inputs and capital goods	
(iii) Aggregate export externality	
7. Major Assumptions	
(i) Saving-Investment Identity: Current amount of savings is fully utilized for investment.	
(ii) Balanced Trade:	Trade remains balanced for each country and region. In other words, initial balance of trade in goods and services remains constant.
(iii) Balanced Budget:	Government balances revenues and expenditures, including fixed income transfers and exogenous foreign transactions.
(iv) Fixed Real Wages:	For developing countries, real wages that are nominal wages normalized by the consumer price index are fixed.
(iv) No Financial Market: The model deals with the real side of the economy.	

Table 2. Market Dependency by Major Partners, 1997
(exports and imports by market as a percentage share of total)

(1) Exports

	United States	Central America	Andean Community	Mercosur	Chile	Western Hemisphere	European Union	Rest of World	Total
Bolivia	21.6	0.1	22.9	18.4	4.8	70.0	26.8	3.2	100.0
Colombia	40.6	5.5	20.3	2.0	1.7	72.5	19.0	8.5	100.0
Ecuador	38.0	5.3	12.5	2.5	4.2	64.1	19.3	16.6	100.0
Peru	28.4	1.9	7.0	4.8	2.2	47.6	23.8	28.6	100.0
Venezuela	54.4	8.3	9.4	4.4	0.7	81.2	6.2	12.6	100.0
Andean Community	**45.1**	**6.3**	**12.2**	**4.0**	**1.6**	**72.3**	**13.5**	**14.1**	**100.0**

(2) Imports

	United States	Central America	Andean Community	Mercosur	Chile	Western Hemisphere	European Union	Rest of World	Total
Bolivia	22.9	0.3	9.5	31.9	8.9	75.6	12.9	11.4	100.0
Colombia	35.5	0.9	15.7	5.0	1.6	65.0	17.8	17.2	100.0
Ecuador	15.8	3.6	27.6	8.8	4.1	64.6	25.2	10.2	100.0
Peru	29.0	0.8	17.6	11.7	4.3	66.9	16.7	16.4	100.0
Venezuela	44.7	2.1	8.5	7.7	1.1	71.6	14.4	13.9	100.0
Andean Community	**34.6**	**1.5**	**14.6**	**8.9**	**2.6**	**68.0**	**17.0**	**15.0**	**100.0**

Source: FTAA Database, IDB.

Table 3. Sectoral Composition of Exports by Major Market in the Western Hemisphere, 1997 (percentage share)

Commodity	Bolivia			Colombia			Ecuador			Peru			Venezuela		
	United States	Andean Community	Mercosur	United States	Andean Community	Mercosur	United States	Andean Community	Mercosur	United States	Andean Community	Mercosur	United States	Andean Community	Mercosur
Grains	0.0	0.5	0.0	0.0	0.0	0.0	0.0	12.0	0.0	0.1	0.0	0.0	0.0	1.8	0.0
Vegetables & Fruits	4.0	3.4	1.5	4.1	0.3	0.1	16.3	1.2	34.7	2.1	0.3	4.6	0.2	1.3	0.1
Other Agriculture	1.9	19.0	18.4	23.9	0.2	6.0	7.3	1.9	3.6	8.8	1.1	0.8	0.1	0.0	0.0
Livestock	0.2	0.0	0.1	1.5	0.5	0.0	31.5	0.4	2.7	3.5	0.4	1.3	0.5	0.5	0.1
Agriculture	**6.0**	**22.8**	**19.9**	**29.5**	**1.0**	**6.0**	**55.1**	**15.4**	**41.0**	**14.5**	**1.9**	**6.7**	**0.8**	**3.6**	**0.2**
Crude Oil & Gas	**9.4**	**1.0**	**40.0**	**49.6**	**10.9**	**22.3**	**33.4**	**28.0**	**4.3**	**19.3**	**4.9**	**42.6**	**66.2**	**4.6**	**51.9**
Meat Products	0.0	0.1	0.0	0.1	0.0	0.2	1.4	6.0	13.6	0.1	2.2	1.2	0.0	0.8	0.8
Processed Foods	2.9	61.3	12.3	2.4	11.0	2.8	4.9	6.0	29.6	3.5	8.3	3.3	0.1	6.6	1.5
Textiles & Apparel	5.4	8.7	4.4	6.5	10.7	12.9	1.0	5.0	2.1	11.8	14.3	3.5	0.0	2.4	1.4
Light Manufactures	16.0	3.9	21.6	1.9	10.7	11.3	1.6	5.6	0.9	1.6	3.0	0.5	0.2	3.0	0.1
Labor-int. mfg.	**24.4**	**74.0**	**38.3**	**10.9**	**32.4**	**27.2**	**8.9**	**22.6**	**46.2**	**17.0**	**27.8**	**8.5**	**0.4**	**12.8**	**3.8**
Refined Oil & Chem.	37.6	0.6	0.7	8.2	34.1	36.5	2.1	14.1	4.5	30.3	20.2	13.3	27.4	39.7	40.6
Metal Products	22.5	0.4	0.5	1.2	4.5	0.5	0.2	4.7	0.0	17.3	41.0	27.1	4.1	23.5	2.5
Automobiles	0.0	0.1	0.2	0.1	8.8	0.6	0.0	12.8	0.5	0.2	0.3	0.0	0.8	13.1	0.2
Machinery & Equip.	0.1	1.1	0.4	0.5	8.1	6.9	0.3	2.3	3.5	1.4	3.9	1.7	0.2	2.7	0.7
Capital-int. mfg.	**60.1**	**2.1**	**1.8**	**10.0**	**55.7**	**44.6**	**2.6**	**33.9**	**8.5**	**49.2**	**65.3**	**42.1**	**32.6**	**79.0**	**44.1**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: FTAA Database, IDB.

Table 4. Tariffs imposed by Hemispheric Partners on the Andean Countries, 1997

(Percent)

Commodity	Canada	United States		Mexico	Central America	Mercosur		Chile
		Venezuela	Rest of CAN			Bolivia	Rest of CAN	
Grains	11.62	1.64	0.00	36.73	12.97	2.10	8.40	11.00
Vegetables & Fruits	4.69	5.52	0.85	16.18	16.10	2.62	10.48	11.00
Other Agriculture	2.65	0.40	0.00	10.88	10.98	2.18	8.73	11.00
Livestock	13.57	1.98	1.13	13.89	12.32	2.56	10.19	11.00
Agriculture	**5.53**	**3.16**	**0.45**	**13.48**	**12.76**	**2.28**	**9.53**	**11.00**
Crude Oil & Gas	**0.83**	**0.13**	**0.01**	**8.85**	**4.92**	**1.52**	**6.08**	**11.00**
Meat Products	46.49	4.02	1.02	53.55	28.80	3.72	14.87	11.00
Processed Foods	28.97	15.31	9.11	27.14	18.72	4.07	16.29	11.00
Textiles & Apparel	15.47	11.09	10.32	21.36	13.93	5.04	20.15	11.00
Light Manufactures	5.72	3.34	2.66	15.23	14.22	4.08	16.30	10.91
Labor-int. mfg.	**22.56**	**10.72**	**7.87**	**25.29**	**17.35**	**4.20**	**17.23**	**10.98**
Refined Oil & Chem.	5.25	3.26	0.07	9.80	6.50	2.73	10.92	11.00
Metal Products	4.61	2.22	0.00	12.75	6.93	4.00	15.68	11.00
Automobiles	6.62	2.39	0.00	13.87	12.15	4.13	21.43	10.27
Machinery & Equip.	3.48	1.07	0.00	11.49	6.12	3.52	16.13	10.72
Capital-int. mfg.	**5.09**	**2.99**	**0.04**	**10.78**	**6.85**	**3.18**	**12.77**	**10.96**
Total	**5.56**	**1.65**	**1.82**	**12.16**	**8.20**	**3.02**	**10.08**	**10.98**

Note: Sectoral tariffs are measured as simple averages of the 8-digit tariff line schedule of the Harmonized System.
Tariffs for macro-sectors and total are estimated as weighted averages of the tariffs facing the Andean countries, using their total exports as weights.

Sources: FTAA Database, USITC, and Mercosur country data.

Table 5. Andean MFN Tariffs, 1997

(Percent)

	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	10.00	12.41	12.29	17.25	12.41
Vegetables & Fruits	10.00	13.78	14.17	20.96	13.78
Other Agriculture	10.00	9.39	8.73	13.20	9.61
Livestock	9.94	13.84	13.38	12.49	13.93
Agriculture	**9.99**	**12.38**	**12.36**	**16.31**	**12.25**
Crude Oil & Gas	**8.11**	**5.18**	**5.46**	**12.00**	**5.14**
Meat Products	10.00	20.00	20.00	19.81	20.00
Processed Foods	10.00	17.52	17.52	19.41	17.81
Textiles & Apparel	10.00	18.58	18.39	18.08	18.54
Light Manufactures	10.00	15.10	15.01	13.07	15.39
Labor-int. mfg.	**10.00**	**17.17**	**16.84**	**17.56**	**17.14**
Refined Oil & Chem.	10.00	8.36	8.73	12.00	9.45
Metal Products	9.90	10.94	10.13	12.00	11.35
Automobiles	9.19	12.56	12.38	12.00	13.04
Machinery & Equip.	9.42	9.30	9.73	12.20	9.64
Capital-int. mfg.	**9.62**	**9.70**	**9.63**	**12.09**	**10.52**
Total	**9.65**	**11.03**	**11.14**	**13.78**	**11.63**

Note: Sectoral tariffs are measured as simple averages of the 8-digit tariff line schedule of the Harmonized Syst
Tariffs for macro-sectors and total are estimated as weighted tariffs, using total imports as weights.
Sources: FTAA Database, IDB.

Table 6. Impact on Macro-variables (percentage change from base)

Macro Variables	Bolivia	Colombia	Ecuador	Peru	Venezuela
	Scenario 1: FTAA				
Exports/1	7.51	5.77	6.42	11.01	5.70
Imports/1	4.64	6.68	8.99	9.78	10.06
Real Exchange Rate/2	2.76	3.03	2.67	4.43	3.14
Real GDP (expenditure)	1.86	2.00	2.42	2.87	2.07
Welfare (EV)/3	1.93	2.32	3.44	3.42	2.43
Tariff Revenue	-66.20	-61.69	-52.46	-61.87	-70.86
Employment	2.06	2.23	2.75	3.19	2.48
	Scenario 2: CAN-Mercosur FTA				
Exports/1	2.25	1.00	1.53	3.53	1.28
Imports/1	1.26	0.99	2.16	2.99	2.05
Real Exchange Rate/2	0.71	0.31	0.67	1.18	0.47
Real GDP (expenditure)	0.49	0.30	0.60	0.76	0.39
Welfare (EV)/3	0.55	0.39	0.80	0.93	0.57
Tariff Revenue	-14.71	-7.33	-13.41	-16.88	-10.35
Employment	0.52	0.34	0.64	0.87	0.47
	Scenario 3: CAN-US FTA except Venezuela				
Exports/1	1.93	2.95	1.64	4.58	-0.24
Imports/1	1.43	3.88	2.62	4.41	-0.15
Real Exchange Rate/2	1.30	2.11	1.18	2.50	-0.03
Real GDP (expenditure)	0.70	1.18	0.73	1.46	-0.10
Welfare (EV)/3	0.45	1.14	0.80	1.53	-0.15
Tariff Revenue	-34.73	-44.82	-23.13	-36.07	-0.33
Employment	0.67	1.31	0.88	1.54	-0.13

Notes: /1: Exclude trade in services.
/2: Relative prices of tradables to non-tradables.
/3: Equivalent variations.

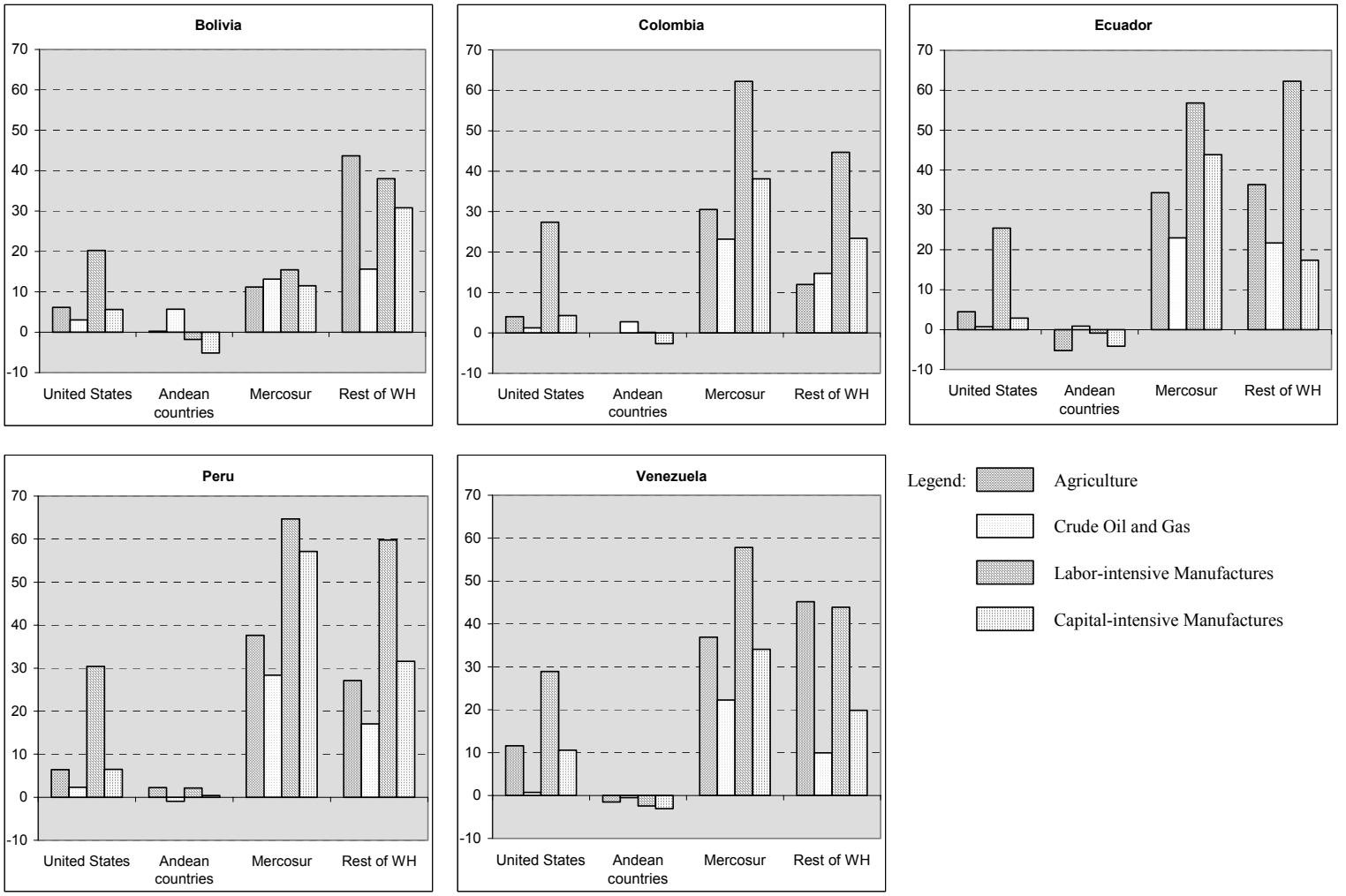

Figure 1. Export Growth by Macro-sector and Major Partner for the FTAA (percentage change from base)

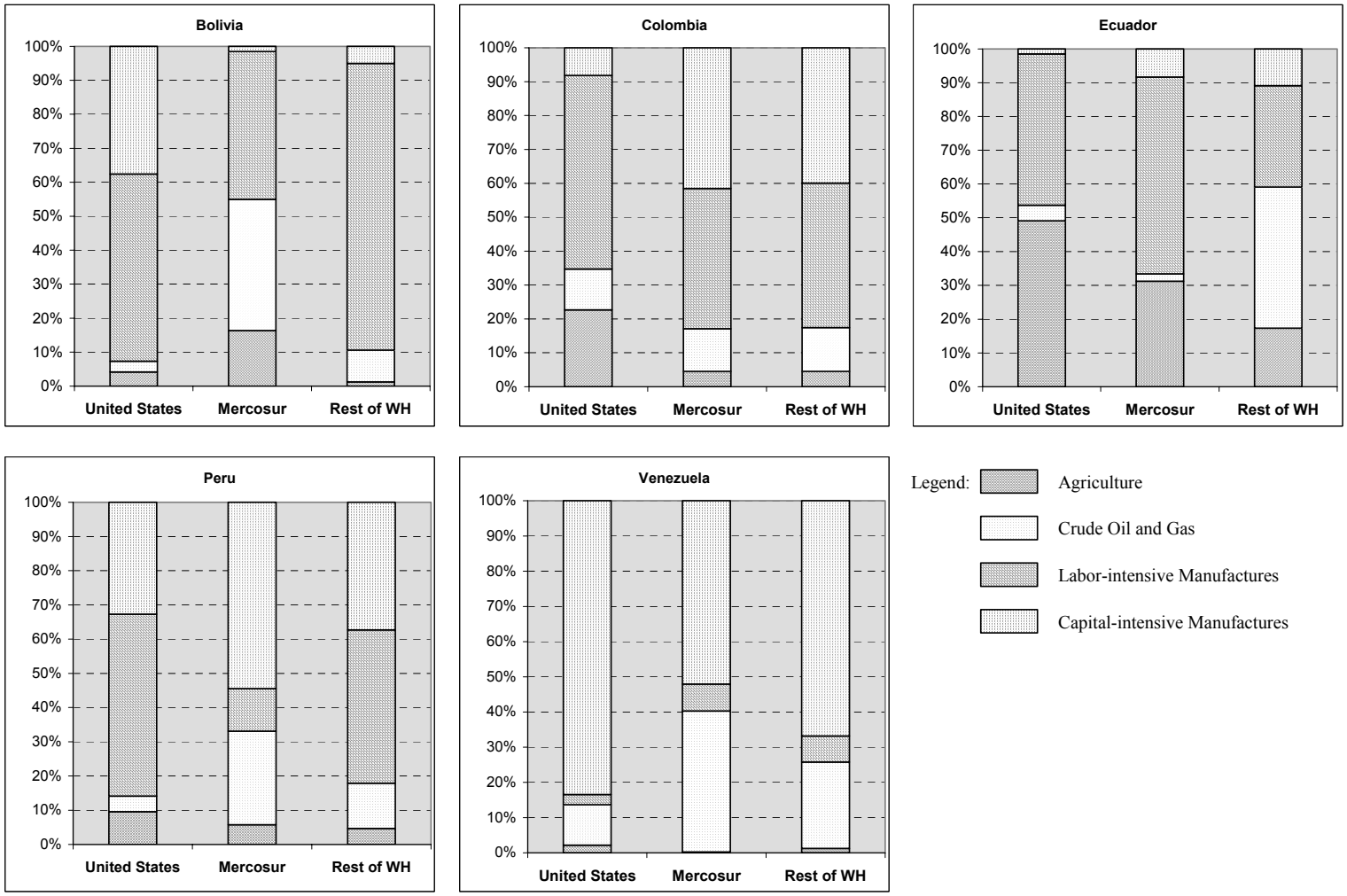

Figure 2. Percentage Share of Increased Exports by Macro-sector and Major Partner for the FTAA

Table 7. Long-run Impact on Sectoral Production

(percentage change from base)

Scenario 1: FTAA

Sectors	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	1.67	-0.39	1.58	-0.29	-1.44
Vegetables & Fruits	1.81	1.34	2.97	2.57	0.94
Other Agriculture	2.52	2.65	2.92	3.09	-0.20
Livestock	1.58	1.55	2.97	2.81	1.51
Agriculture	**1.94**	**1.62**	**2.82**	**2.48**	**0.87**
Crude Oil & Gas	**2.50**	**2.23**	**2.70**	**6.07**	**2.59**
Meat Products	1.44	1.38	7.26	3.31	1.83
Processed Foods	2.88	2.19	6.09	3.97	1.63
Textiles & Apparel	2.66	5.65	2.11	6.47	-0.04
Light Manufactures	4.06	1.90	1.43	2.57	0.27
Labor-intensive mfg.	**3.06**	**2.49**	**3.92**	**4.16**	**1.06**
Refined Oil & Chemicals	1.60	2.42	-0.08	2.89	5.24
Metal Products	2.22	0.09	-3.92	7.95	3.09
Automobiles	2.93	1.94	-3.13	1.07	-2.51
Machinery & Equipment	-3.86	-0.74	-2.03	-0.49	-3.92
Capital-intensive mfg.	**0.80**	**1.63**	**-1.80**	**2.69**	**3.02**
Utilities	0.49	0.59	0.42	0.62	0.81
Services	1.89	2.13	3.12	3.01	2.08
Utilities & Services	**1.61**	**1.90**	**2.55**	**2.45**	**1.87**
Total	**1.90**	**1.97**	**2.07**	**2.97**	**2.01**

Scenario 2: CAN-Mercosur FTA

Sectors	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	0.32	-0.15	0.50	-1.23	-0.45
Vegetables & Fruits	0.44	0.20	0.85	0.82	0.11
Other Agriculture	0.84	0.31	0.74	0.78	0.16
Livestock	0.37	0.22	0.62	0.68	0.26
Agriculture	**0.53**	**0.21**	**0.71**	**0.50**	**0.12**
Crude Oil & Gas	**1.02**	**0.35**	**0.54**	**2.18**	**0.56**
Meat Products	0.34	0.23	2.71	0.77	0.78
Processed Foods	0.60	0.23	1.34	0.97	0.05
Textiles & Apparel	0.56	0.83	0.79	0.97	0.87
Light Manufactures	1.67	0.60	0.63	0.55	0.22
Labor-intensive mfg.	**0.87**	**0.39**	**1.16**	**0.84**	**0.27**
Refined Oil & Chemicals	0.28	0.23	0.26	0.70	1.05
Metal Products	-1.14	0.23	-1.83	3.44	-0.47
Automobiles	0.39	0.83	-1.41	0.01	-0.99
Machinery & Equipment	-0.21	0.60	-0.33	0.51	1.04
Capital-intensive mfg.	**0.00**	**0.35**	**-0.53**	**1.04**	**0.37**
Utilities	0.11	0.09	0.09	0.21	0.05
Services	0.48	0.31	0.75	0.80	0.42
Utilities & Services	**0.40**	**0.28**	**0.61**	**0.66**	**0.36**
Total	**0.49**	**0.31**	**0.52**	**0.79**	**0.36**

Scenario 3:CAN-US FTA except Venezuela

Sectors	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	0.41	-0.80	-0.17	0.04	-0.16
Vegetables & Fruits	0.73	0.96	1.03	1.34	-0.12
Other Agriculture	0.85	1.64	0.90	1.64	-0.02
Livestock	0.56	0.85	1.20	1.60	-0.10
Agriculture	**0.69**	**0.96**	**0.95**	**1.38**	**-0.11**
Crude Oil & Gas	**1.53**	**1.19**	**0.69**	**2.88**	**0.09**
Meat Products	0.50	0.73	1.33	1.54	-0.14
Processed Foods	0.82	1.21	2.46	2.32	-0.19
Textiles & Apparel	1.51	3.77	0.50	4.27	-0.67
Light Manufactures	1.78	0.95	-0.44	1.33	-0.25
Labor-intensive mfg.	**1.21**	**1.44**	**1.03**	**2.47**	**-0.28**
Refined Oil & Chemicals	0.73	1.15	-0.73	1.49	-0.16
Metal Products	3.23	2.20	0.40	3.77	-0.56
Automobiles	1.78	3.20	-0.44	1.35	-0.41
Machinery & Equipment	-3.31	-0.43	-0.11	-1.22	-0.53
Capital-intensive mfg.	**0.24**	**1.31**	**-0.31**	**1.22**	**-0.30**
Utilities	0.66	0.34	0.13	0.30	-0.10
Services	-0.10	1.27	0.92	1.50	-0.08
Utilities & Services	**0.06**	**1.13**	**0.75**	**1.22**	**-0.08**
Total	**0.54**	**1.20**	**0.63**	**1.56**	**-0.13**

Table 8. Short-run Impact on Labor Market

(percentage change from base)

Scenario 1: FTAA

Sectors	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	0.15	-1.96	-0.31	-2.29	-3.06
Vegetables & Fruits	0.43	-0.18	2.07	0.50	-0.67
Other Agriculture	0.88	1.92	1.02	0.94	-1.60
Livestock	0.29	-0.16	2.02	1.05	-0.15
Agriculture	**0.52**	**0.23**	**1.48**	**0.38**	**-0.79**
Crude Oil & Gas	**0.87**	**1.67**	**1.74**	**4.68**	**2.21**
Meat Products	-0.45	-0.54	1.49	-0.50	-0.18
Processed Foods	-0.10	-0.57	0.99	0.03	-0.20
Textiles & Apparel	-0.26	-0.07	-1.11	0.78	-1.58
Light Manufactures	0.39	-0.92	-1.22	-1.06	-1.36
Labor-intensive mfg.	**-0.08**	**-0.56**	**0.03**	**-0.08**	**-0.76**
Refined Oil & Chemicals	-0.30	-0.29	-2.08	-0.61	1.68
Metal Products	0.31	-1.05	-4.27	2.89	0.61
Automobiles	0.86	0.29	-3.68	-1.22	-2.47
Machinery & Equipment	-3.37	-1.75	-3.14	-2.13	-4.53
Capital-intensive mfg.	**-0.66**	**-0.56**	**-3.33**	**-0.15**	**0.13**
Utilities	-0.49	-0.35	-1.01	-0.97	-0.16
Services	-0.03	0.06	0.09	-0.07	0.02
Utilities & Services	**-0.08**	**0.03**	**-0.02**	**-0.16**	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Scenario 2: CAN-Mercosur FTA

Sectors	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	-0.05	-0.38	0.09	-1.69	-0.74
Vegetables & Fruits	0.08	0.00	0.65	0.29	-0.14
Other Agriculture	0.33	0.18	0.30	0.25	-0.08
Livestock	0.06	-0.01	0.35	0.25	0.00
Agriculture	**0.15**	**0.02**	**0.39**	**-0.04**	**-0.15**
Crude Oil & Gas	**0.58**	**0.26**	**0.31**	**1.80**	**0.44**
Meat Products	-0.11	-0.06	0.82	-0.19	0.11
Processed Foods	-0.04	-0.09	0.18	-0.01	-0.17
Textiles & Apparel	-0.11	-0.06	-0.10	-0.08	-0.03
Light Manufactures	0.30	-0.06	-0.09	-0.30	-0.11
Labor-intensive mfg.	**0.01**	**-0.07**	**0.14**	**-0.12**	**-0.10**
Refined Oil & Chemicals	-0.13	-0.03	-0.28	-0.22	0.30
Metal Products	-1.02	-0.46	-1.55	1.33	-0.54
Automobiles	-0.02	-0.27	-1.27	-0.50	-0.78
Machinery & Equipment	-0.37	-0.16	-0.83	-0.35	-0.12
Capital-intensive mfg.	**-0.40**	**-0.14**	**-1.01**	**0.05**	**-0.12**
Utilities	-0.13	-0.04	-0.23	-0.22	-0.09
Services	0.00	0.01	0.04	-0.01	0.03
Utilities & Services	**-0.01**	**0.01**	**0.02**	**-0.03**	**0.02**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Scenario 3:CAN-US FTA except Venezuela

Sectors	Bolivia	Colombia	Ecuador	Peru	Venezuela
Grains	-0.19	-1.73	-0.84	-0.96	-0.12
Vegetables & Fruits	0.13	-0.01	0.87	0.20	-0.07
Other Agriculture	0.25	1.25	0.32	0.45	0.03
Livestock	-0.02	-0.20	0.99	0.60	-0.05
Agriculture	**0.10**	**0.11**	**0.56**	**0.22**	**-0.06**
Crude Oil & Gas	**1.08**	**0.99**	**0.43**	**2.32**	**0.13**
Meat Products	-0.26	-0.44	0.10	-0.25	-0.02
Processed Foods	-0.01	-0.39	0.56	0.22	-0.04
Textiles & Apparel	0.01	-0.05	-0.62	0.79	-0.17
Light Manufactures	0.28	-0.50	-0.95	-0.45	-0.03
Labor-intensive mfg.	**0.03**	**-0.37**	**-0.15**	**0.18**	**-0.06**
Refined Oil & Chemicals	-0.06	-0.13	-1.00	-0.12	-0.01
Metal Products	1.76	0.74	-0.32	1.57	-0.21
Automobiles	0.77	1.12	-0.86	-0.05	0.00
Machinery & Equipment	-2.43	-0.95	-0.61	-1.49	-0.02
Capital-intensive mfg.	**0.01**	**0.01**	**-0.68**	**0.09**	**-0.05**
Utilities	-0.21	-0.25	-0.35	-0.53	-0.01
Services	-0.09	0.03	-0.04	-0.08	0.02
Utilities & Services	**-0.10**	**0.01**	**-0.07**	**-0.12**	**0.01**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**