FTAA in Perspective: North-South and South-South Agreements in the Western Hemispheric Countries

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ABSTRACT

Over the last decade and a half, the countries in the Western Hemisphere have reactivated their regional agreements and created new sub-regional initiatives in the pursuit of economic and political gains and in an effort to increase competitiveness in a globalized economy. Today, the region faces a new set of challenges not only within the Hemisphere but also with extra-regional partners. This paper examines various trade arrangements involving Latin-American countries (LAC) in the context of North-South and South-South regional trade agreements, using a multi-region, multi-sector comparative static CGE model, with trade-linked externalities and scale economies benchmarked in 1997. The result shows that a FTA with the European Union generates greater gains than FTAA for MERCOSUR, but that the latter is a better option for other sub-regional blocs in the Hemisphere. In general, FTAA boosts the region's manufactured exports through intra-industrial trade, while integration with the EU expands agriculture-related exports. A surprising result is the fact that South-South agreements can be superior to North-South ones in terms of specialization in high valued-added goods for the more advanced developing countries in the region. An interesting finding related to the "importance of LAC" in the FTAA shows that LAC absorbs nearly 50 percent of the total new exports to the FTAA market. When the southernmost regional partners are considered, this share rises to over 80 percent in several manufacturing industries. In particular, the presence of LAC increases the share of non-resource-based heavy manufactures for all South American countries.

JEL Classification: C68, D58, D62, F12, F15, O54

Key Words: CGE Model, Regional Integration, Trade-linked Externalities, Scale Economies

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1. Introduction

Over the last decade and a half, regional integration has proliferated in the Western Hemisphere, as renewed regionalism has gained momentum (Devlin and Ffrench-Davis, 1999). The second wave of regionalism has reactivated the Latin America's old regional integration initiatives,[1] and has prompted to liberalize trade and to deepen economic linkage in a variety of schemes not only within the Western Hemisphere but also with extra-regional partners, especially the European Union. In the 1990s, Latin America and the Caribbean have launched more than 20 free trade agreements (FTAs) or customs union. In that decade, NAFTA was launched between a developing country (Mexico) and developed countries (the United States and Canada) and MERCOSUR.[2] Moreover, countries and regions in Latin America have sought to widen their integration schemes that go beyond trade in goods, services and factors.

Today, Latin America faces a new set of challenges, not only within the Western Hemisphere but also with extra-regional partners, especially with the European Union. As reaffirmed at the Third Summit of the Americas in 2001, participating countries are moving forward steadily according to the scheduled timetable to create the hemisphere-wide free trade area, FTAA. This is a historic and grand experiment involving formidable challenges for all hemispheric partners. Besides, bi-regional trade negotiations are continued between MERCOSUR and the European Union, as agreed at the 1999 Rio de Janeiro Summit. Recently the European Union expressed its desire to accelerate the negotiations in view of the FTAA process. In the meantime, Mexico has already entered the trade agreement with the European Union (2000) and Chile agreed to establish a broad trade accord with that bloc very recently.

The explosion of regional integration has drawn special attention among policy makers and revived debate among academics over the policy implications of regional blocs or regional trade agreements (RTAs). One school of thought sees that trade bloc is welfare reducing in a global economy, especially on non-members, due to trade diversion, and views it as an *alternative* distracting efforts to multilateral trading system (Bhagwati, 1993). On the other hand, Ethier (1998) argues that regional integration is a *supplement*, not an alternative, to multilateralism, drawn from the stylized facts of the "new regionalism". Krugman (1993) explains the emergence of natural trading blocs by introducing the notion of spatial economy by inclusion of transportation costs. As an another view, Baldwin and Venables (1995) note that countries are motivated to join regional blocs due to the fear of isolation, terms as the domino theory of regionalism.

There are numerous studies that examine the economy-wide impact of regional integration in the Western Hemisphere by using applied general equilibrium models. Roland-Holst, Reinert and Shiells (1994) evaluate the role of nontariff barriers in NAFTA, applying scale economies and imperfect competition. Brown, Dearforff and Stern (1992, 1995) examine the impact of the NAFTA, and its expansion to Latin America, using monopolistic competition. Burfisher, Robinson and Thierfelder (1992) evaluate the agricultural and farm policies in the United States-Mexico bilateral FTA. Hinojosa-Ojeda, Lewis and Robinson (1995, 1997) analyze the regional integration options for Central America

[1] The orgin of regional integration in Latin America dated back to late 1940s and early 1950s, and the process culminated in the creation of the main regional integration agreements: Latin America Free Trade Area (LAFTA, established in 1960 and replaced by the Latin America Integration Association in 1980), the Andean Community (1960), the Central American Common Market (1960), and the Caribbean Community and Common Market (CARICOM, 1973).

[2] MERCOSUR is formed by four member countries: Argentina, Brazil, Paraguay and Uruguay. Chile and Bolivia are associate members since 1996 and 1997, respectively.

and the Caribbean after the creation of NAFTA, and a variety of hemispheric integration options. Harrison, Rutherford and Tarr (1997) examine trade policy options for Chile using a multi-region trade model. Flôres (1997) uses the comparative static model with imperfect competition and increasing returns to scale in the evaluation of the MERCOSUR's customs union. Diao and Somwaru (2000, 2001) apply a dynamic model on the analysis of the MERCOSUR's customs union and FTAA, using an intertemporal model.

In the face of the active regional integration agenda for Latin America in the coming years, this study offers a preliminary quantitative assessment of the impact of the various North-South and South-South regional integration arrangements involving the Latin American countries to address the following fundamental issues. What is the potential impact of the respective integration options for its member economies? What pattern of structural transformation does each country or regional bloc undergo especially at the sectoral levels? How different is the North-South approach in comparison with the South-South arrangement? What is the role of Latin America in the FTAA for the respective Latin American countries?

To answer these questions, we apply a trade-focused, multi-region, multi-sector CGE model. While being comparative static in nature, the model introduces some elements of "new trade theory" which encompasses increasing returns, imperfect competition, technology transfers, trade externalities, total factor productivity growth, and capital accumulation. Following Hinojosa-Ojeda, Lewis and Robinson (1995, 1997), Giordano and Watanuki (2000) and Monteagudo and Watanuki (2001), we specifically incorporate two elements of the new trade theory paradigm: trade-linked externalities and economies of scale. In addition, we consider three kind of policy measures as a policy variable to evaluate the respective integration options: *ad valorem* tariff equivalent, export subsidies and domestic support. We consider various North-South and South-South regional integration scenarios for Latin America. The study starts with SAFTA in the South-South arrangement, then simulates the North-South integration arrangements for Latin America's two regional blocs (the Andean Community and MERCOSUR) with the United States and the European Union, respectively. Finally, the formation of the FTAA is evaluated.

This paper is organized as follows: Section 2 presents the structure of the model, focusing largely on the model extension. Section 3 analyzes the benchmark data based on the Social Accounting Matrix, developed for each of the respective regions. Section 4 discusses the alternative scenarios and presents simulation results. Finally, Section 5 summarizes the conclusions.

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[3] and 12 regions[4] that 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

[3] In the model, 15 sectors are: grains; vegetables, oilseeds and soybeans; sugarcane and other crops; livestock; mining; meat products; processed foods; textiles and apparel; other light manufactures, petroleum and chemicals; iron and steel; automobiles and parts; machinery and equipment; utilities and construction; and trade and services.

[4] The regions are: Canada, United States, Mexico, Central America and the Caribbean, Colombia, Venezuela, rest of the Andean Community, Argentina, Brazil, Chile, European Union, and the rest of the world.

deals with the real side of the economy, and does not consider financial or monetary markets. The base year of the model is 1997. Table 1 summarizes the main features and assumptions underlying the model.

< INSERT TABLE 1>

The model extends three features beyond the standard static CGE models. First, it incorporates trade-linked externalities that lead to efficiency gains in the production process as a result of increased trade. It is widely acknowledged that a greater liberalization or the creation of FTAs has dynamic effects resulting from economies of scale, technical changes, technological spillover, specialization and increased investment (Lewis, Robinson and Wang, 1995). Today this is an extremely crucial element in Latin America, where trade, especially exports, has become a key policy variable as a source of growth and foreign currency earnings. In order to capture these dynamic effects, the model draws the theoretical structure from Melo and Robinson (1992), and follows Hinajosa-Ojeda, Lewis and Robinson (1995, 1997), Giordano and Watanuki (2000) and Monteagudo and Watanuki (2001).

The model includes three types of trade-productivity links.[5] The first one is related to sectoral export externality, linked to the sectoral export performance: higher export growth leads to an increase in domestic productivity at the sectoral level. The second one is associated with import externality of intermediate inputs and capital goods; the degree of efficiency gains depends on the import share of intermediates and capital goods in production. The last one is an aggregate export externality; an increase in aggregate exports raises the physical productivity of capital, embedded in the capital stock, thereby leading to the economy-wide efficiency gains in the domestic production process.

The three externalities are expressed in equations (1)-(3). EK_i^k is sectoral exports where i represents the sector and k the region, $ETOT^k$ and $MTOT^k$ correspond to the aggregate exports and imports in each region. The exponents ηe^k, ηm^k and ηk^k are the externality elasticities, and n_i is the import share of intermediate inputs and capital goods. The subscript 0 refers to the benchmark.

(1) Sectoral export externality: $SAD_i^k = \left(EK_i^k / EK_{0i}^{\ k}\right)^{\eta e^k}$

(2) Import externality: $SAD2_i^k = n_i \cdot \left(MTOT^k / MTOT_0^{\ k}\right)^{\eta m^k} + (1 - n_i)$

(3) Aggregate export externality: $SAC^k = \left(ETOT^k / ETOT_0^{\ k}\right)^{\eta k^k}$ (for capital)

The sectoral export externality (SAD_i^k) and import externality ($SAD2_i^k$) improve efficiency in the use of factors of production and modify the factor demand equations derived from the firm's optimization behavior. The aggregate export externality (SAC^k) improves capital productivity embedded in the capital stock.

The externality elasticities are the key parameters that will influence the simulation results. We apply the estimations from the work of Moreira and Najberg (2000) on productivity analysis of Brazilian

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

manufacturing industries in 1990-97, the most expansionary phase of the MERCOSUR integration process. The parameters are estimated from sectoral trade data for Brazil and are applied to other regions in Latin America, adjusted with trade flows.[6]

The second extension is the inclusion of economies of scale in manufacturing industries. Following the pioneering work by Harris (1984), the nature of industrial organization—scale economies, imperfect competition, and product differentiation—has been introduced into the static modeling framework, and applied to the evaluation of trade liberalization (Rodrik, 1988; Norman, 1990; Melo and Tarr, 1992).[7] In the model, the degree of economies of scale is specified with one parameter, the cost disadvantage ratio (CDR), defined by the difference between average cost and marginal cost over average cost for the industry or representative firm in each sector, namely the ratio of fixed cost over total cost.[8] Thus, scale economies are modeled by introducing a fixed cost component in the cost function, where the fixed cost component is directly estimated by multiplying the CDR by the total cost.[9]

In order to model the imperfect competition for manufacturing industries, we follow Melo and Tarr (1992), and apply contestable market structure, the simplest form to deal with imperfect competition. The structure of contestable market is analogous to the perfect competition in the case of constant returns to scale. It assumes low-cost entry or exit and that the threat of entry drives the incumbent firms to behave competitively so that it sets the price at average costs. Thus, the average cost pricing under the contestable market implies that no firm will enter the industry. Since the number of firms in each industry remains constant, the efficiency gains are directly influenced by two elements: (i) industry outputs, as total costs of each firm moves down along its average cost curve, and (ii) by the trade externalities arising from increased trade.

The third extension is the inclusion of domestic farm programs. In addition to tariffs and export subsidies, we incorporate agricultural policies measured by the OECD producer support estimate (PSE) in the Western Hemisphere and the European Union. In the model, the components of the PSE are modeled either as price wedges, which affect output decisions, or lump-sum income transfers to farmers.[10] Following Diao, Somwaru and Roe (2001) and Burfisher, Robinson and Thierfelder (2001), the model includes fixed, per unit *ad valorem* subsidies to inputs and output. On the other hand, the lump-sum income transfer is an exogenous, direct whole-farm payments to farm households. We assume these income transfer payments do not affect production decision, but influence household's purchasing power on the aggregate consumption of all goods.

[6] For the developed countries, the parameters were estimated on the basis of the productivity growth analysis by Roberts (2000) and Stiroh (2001) for the United States; for Canada and the European Union, we follow the estimations of Giordano and Watanuki (2000) and Monteagudo and Watanuki (2001), with reference to the work of Lewis, Robinson and Wang (1995), Hinojosa-Ojeda, Lewis and Robinson (1997).

[7] Some recent applications for multi-region models include Roland-Holst, Reinert and Shiells (1994) for NAFTA, Harrisson, Rutherford and Tarr (1994) and Brown, Deardorff and Stern (1995) for the Chile's accession to NAFTA and hemispheric integration.

[8] See Francois and Roland-Holst (1997) for detailed theoretical disccusions.

[9] Industrial data to estimate the CDR (or direct estimations drawn from the literature) are available for six countries: Brazil, Chile, Mexico, Venezuela, the United States, and the European Union. The parameter values for the other Latin American countries are averaged from these industrial data among the Western Hemispheric countries.

[10] Since we incorporate the actual price gaps measured by applied tariffs and exports subsidies in the model, we do not use the broader measure of "market price support" defined by OECD.

The rest of the model follows the standard theoretical specifications for trade-focused CGE models. In addition to 15 sectors in each region, the model includes three factors of production: labor, capital and land. Factors do not necessarily receive uniform returns (wages, capital rent and land prices) across sectors; the model imposes factor market rigidities or distortions: factors need to adjust to clear the respective factor markets, given the exogenously fixed patterns of economy-wide market rigidities at the benchmark. In factor market mobility, the model applies different treatments. Both labor and capital are completely mobile across the sectors, but immobile internationally. The aggregate supply of labor and capital is exogenously fixed in each region, whereas land is a sector-specific factor and only used in agriculture.

The model traces the circular flow of income from producers through factor payments to households and firms, and back to demand for goods in product markets demanded for intermediate use, private and public consumption and investment. The single representative household in each region receives factor income plus exogenous foreign remittance, and consumes sectoral commodities with fixed expenditure shares, based on the optimization of a Cobb-Douglas utility function. Firms receive factor income as well as foreign capital, but do not consume goods. Government receives a variety of taxes as receipt. They include sectorally differentiated indirect and commodity taxes, as well as household and corporate income taxes and social security taxes. On trade, there are import tariffs and export taxes (or subsidies). It expends for public consumption, and transfers income to households and firms as direct subsidies. The remaining from revenues minus expenditures is used for public savings.

The treatment of international trade follows the standard specifications in other CGE models. Exports are modeled in constant elasticity of transformation (CET), differentiated by country of destination. Following the "Armington" assumption, imports are modeled by CES function, differentiated each other by country of origin. In common with other CGE models, our model only determines relative prices, and needs to specify the absolute price level exogenously. In the model, the aggregate consumer price index in each region is set exogenously, defining the *numeraire*.

In the model, there are three key macro closures: saving-investment identity, balance of trade, and balanced budget. Since our model is a comparative static model, investment needs to be completely financed by savings from various sources in each region. While government savings represent the difference between revenues and expenditures, private savings are determined as residuals between income and spending. Trade is also balanced for each region, valued at world prices. In other words, initial balance of trade (in goods and services) remains constant, and the exchange rates need to vary to achieve external balance in each region. Given exogenous accounts with the rest of the world, the government maintains balanced budget.

Like any other static CGE models, our model considers a medium to long-term time horizon, which allows factor markets completely to clear. In the simulations, the model does not explicitly mention how long each economy takes to reach a new equilibrium, but considers to be long enough for factors and prices to adjust fully, and for industries to respond to the given exogenous shocks.

3. Economic Structure: Trade Flows and Structure of Protection

Our CGE model is constructed on the basis of the individual country/regional Social Accounting Matrix (SAM) for each region benchmarked in 1997. SAM displays a comprehensive snapshot of the

economy in the model at the single base year. The SAM-based analysis provides an overview of the economic structure and a closer look at the structure of production, trade and protection is crucial to understand the simulation results.

Table 2 presents the principal economic indicators identified for all regions in the model. There exist enormous differences among the countries and regions. The United States and the European Union are by far the largest two regions with similar economic size: the former is around 4 times larger than the entire Latin America and the Caribbean, and the latter 7 times larger than MERCOSUR in terms of GDP. While these two regions have similarities (economic structure measured by factor share, employment and average wages), there is a salient difference in trade. While the United States remains less open, the European Union fairly relies on trade. However, to be clear, the EU's high openness measured in trade dependency is solely due to huge intra-regional trade, which accounts for nearly 60 percent of its total trade (see table 3). Excluding intra-regional trade sharply decreases its openness to the level equal to the United States. In the region, Central America and the Caribbean has the highest trade dependency, whereas MERCOSUR is the least open. The countries of the Andean Community and Chile fall somewhere between Central American/Caribbean and MERCOSUR.

<INSERT TABLE 2>

The distribution of factor income in value added is highly heterogeneous across the regions. High-income countries are likely to have greater share of labor income. The United States shows the highest share of labor income (62 percent), followed by Canada (59 percent) and the European Union (55 percent). On the other hand, Mexico and the countries of the rest of the Andean Community have the largest share of capital income. The low wages in LAC reveals a relative comparative advantage in the production of labor-intensive goods in comparison with the United States and the European Union, where the highest wages imply a comparative advantage in the production of capital-intensive goods. Comparative advantage of MERCOSUR and Chile is relatively biased towards qualified skilled labor force, as these countries have a higher average wages than Central America and the Andean countries.

Trade Flows

Table 3 presents trade flows among partners. Regarding exports, the United States and the European Union are the main destinations for most of the Latin American countries. Central America/Caribbean sells nearly half of its total exports to the United States, 18 percent to the European Union and 13 percent to its own intra-regional market. The Andean Community has the similar pattern: 44 percent to the United States, 14 percent to the European Union and 12 percent to intra-bloc market. In contrast, MERCOSUR has a greater reliance on the European Union (23 percent) and less dependence on the United States (15 percent) with intra-regional share of slightly less than 20 percent. Compared with exports to the United States and the European Union, Latin America's exports destined to the region remains fairly marginal. In the meantime, Canada and Mexico demonstrate heavy export dependence on the United States: 80 percent and 85 percent respectively.

<INSERT TABLE 3>

The patterns of imports show similar regional dependence. For all countries in Latin America, the United States and the European Union are the major sources of imports for intermediate inputs and

capital goods, but shows lesser dependence on these partners than exports. For most countries in Latin America, the share of imports originating from Latin America is again marginally low. Like the pattern of exports, the United States is the single largest source for Canada and Mexico. On the other hand, Chile is most diversified, with relatively balanced dependence on the United States and the European Union, with substantial share with neighboring MERCOSUR (10 percent for exports and 18 percent for imports).

Table 4 shows the relative sectoral intensity[11] of bilateral trade in terms of macro-sectors: primary, light manufactures and heavy manufactures.[12] Interestingly enough, the index clearly reveals that intra-regional exports are more oriented toward heavy manufactured goods in all subregional blocs in Latin America. It also shows that Latin America's trade concentrates more on heavy manufactured goods, as trade flows move down to the south in the continent, highly characterized by the nature of intra-industry trade in these industries with high value added. Among others, Brazil's exports exhibit sharp concentration of heavy manufactured goods across the Western Hemisphere. In contrast, Latin America's exports to the United States are more oriented in primary products (Andean Community) or light manufactured goods (Central America and Argentina) except for Brazil. On the other hand, the index explicitly demonstrates Latin America's strong export orientation of primary agricultural products and light manufactured goods represented by meat and processed foods to the European Union.

<INSERT TABLE 4>

Structure of Protection

In this study, to measure the impact of regional integration, we consider three kinds of policy instruments distorting world prices and restricting trade: *ad valorem* tariff equivalent, export subsidies and domestic support. Thus, we extend the scope of policy variables beyond most general equilibrium analyses of regional integration. Besides *ad valorem* tariffs, we incorporate the estimation of *ad valorem* tariff equivalent of specific, mixed tariffs and tariff rate quotas (TRQs) levied by Canada, the United States and Mexico. The European Union covers *ad valorem* plus *ad valorem* equivalent of specific and mixed tariffs, but does not include equivalent of TRQs due to difficulty in reconciling tariff line schedules between two Harmonized Systems. MFN *ad valorem* equivalent is estimated as a simple average of the corresponding tariff line schedules for single countries. For regional blocs or groups of countries, it is estimated as a simple average of all member countries.

Table 5 presents MFN tariff equivalent applied by the respective partners at the base year, 1997. In the Western Hemisphere, agriculture-related products face high protections relative to manufactured goods. Among others, meat and processed foods are the most protected products across the region except in

[11] Sectoral intensity is defined by the sectoral share in bilateral trade over the sectoral share in total trade. A value of unity means that the sector has the same export weight in th ecountry's bileteral exports as has in its total exports.

[12] Primary includes: grains; vegetables, oilseeds and soybeans; sugarcane and other crops; livestock; and mining. Light manufactues include: meat products; processed foods; textiles and apparel; and other light manufactures. Heavy munufactures include: petroleum and chemicals; iron and steel; automobiles and parts; and machinery and equipment.

MERCOSUR. While the United States has relatively low barriers (3.9 percent trade-weighted average), it maintains fairly high protection on processed foods (16.5 percent). Mexico has the third highest average MFN (12.3 percent) after MERCOSUR countries, but its protection is the most heterogeneous across the sectors with the highest tariff on meat products (53.6 percent). Central America/Caribbean and the Andean countries have similar trade protection.

<INSERT TABLE 5>

In sharp contrast with most of the hemispheric partners, Argentina and Brazil maintain a unique tariff structure, where foreign manufactured goods face higher protection than products of agricultural origin. Clearly MERCOSUR is still an incomplete customs union, as the applied MFN tariffs between Argentina and Brazil differ considerably in heavy manufactured products, notably in automobiles and parts (10 percentage deviation) and machinery and equipment (4 percentage). It is implied that the divergence in the MFN tariffs between these two countries will generate asymmetric outcomes especially on these sectors in the pursuit of joint regional integration initiatives. Chile has a moderate and uniform protection of 11 percent across the sectors. In the European Union, agriculture is heavily protected under the Common Agricultural Policy (CAP). The bloc maintains the highest protection on such sensitive products as grains and meat products (44 percent each), followed by processed foods (26.2 percent).

In addition to the estimation on MFN tariff equivalent, we also take into account regional and preferential trade agreements available in the Western Hemisphere on the basis of the FTAA database. They include seven regional trade agreements such as NAFTA, Central America (CACM) and the Caribbean (CARICOM), Andean Community (AC), MERCOSUR, G-3 (Mexico, Colombia and Venezuela), and the European Union, and three bilateral agreements (MERCOSUR-Chile, Canada-Chile, and Mexico-Chile) and two US preferential agreements (Andean Trade Preference Act, ATPA; and Caribbean Basin Initiatives, CBI). In the north, NAFTA, whose internal protection is extremely complicated, is yet to be completely liberalized, although intra-bloc barriers are fairly low. The United States has almost zero protection against its partners across the sectors except for processed foods, but Canada and Mexico still maintains 2.0 and 2.5 percent average protection on their members. In the south, MERCOSUR's intra-regional trade barriers are already nearly completely removed. However, Brazil's exports to Argentina face a slightly higher protection than the opposite case, and manufactured goods face higher protection than agricultural products. The European Union is modeled to have no intra-bloc trade barriers.

Table 6 shows domestic support measured by OECD Producer Support Estimate (PSE) applied in agriculture: Canada, United States, Mexico and the European Union.[13] The European Union is the large user amounting to $55 billion at the base year, and the United States dominates its use in the Western Hemisphere ($16 billion). By commodity, the sector of grains is the single largest recipient of the PSE, accounting for 62 percent in the United States, 73 percent in Mexico, 55 percent in the European Union and 30 percent in Canada. Meat is the second largest recipient in all countries, with the largest share (30 percent) in the European Union. Regarding the allocation by category, output and

[13] PSE includes "Market Price Support (MPS)", which is estimated as the wedge between domestic producer prices and world reference prices, and thus has the effects of trade policy (import protection and export subsidies). Since we use actually applied tariffs and export subsidies to measure the price wedges implemented as trade policy instruemnts, we exclude MPS in the estimation of PSE, as with the analysis undertaken by the USDA (2001).

input subsidies receive some 60 percent of total PSE in the United States and Mexico, whereas it jumps at 85 percent in Canada and the European Union. Grains record the highest domestic support rate measured by PSE over the sectoral production in the Western Hemisphere. Within the European Union, the rate is the highest for vegetables, oilseeds and soybean (72 percent), and second for grains (59 percent), followed by meat (25 percent).

<INSERT TABLE 6>

Finally, table 7 reports export subsidies based on the WTO notifications. The European Union is by far the single largest user, expending 15 times larger export subsidies than the entire Western Hemisphere. The industry of processed foods is the largest recipient, receiving 60 percent of the EU's total export subsidies, followed by meat industries (26 percent) and grains (13 percent). This leads to greater export subsidy rates measured by export subsidies over exports on these products in the European Union: 27 percent on grains, 22 percent on meat and 6.4 percent on processed foods. In the Western Hemisphere, the allocation over sectors varies considerably by country. While the United States and Mexico have marginal subsidy rates, Central America/Caribbean and the Andean countries have moderate rates, ranging from 5 to 8 percent on specific single commodity item.

<INSERT TABLE 7>

4. POLICY SIMULATIONS AND RESULTS

A. Alternative Scenarios

In this study, we examine the various regional integration options for Latin America/Caribbean within the Western Hemisphere and with the European Union. These scenarios are designed to measure the impact of the respective alternative options and to evaluate the Latin America's role in the context of North-South and South-South arrangements. While some of the scenarios reflect ongoing or recent negotiations, others are rather hypothetical integration options. As the policy instrument, this study considers the combination of three-policy measures—*ad valorem* tariff equivalent, export subsidies and domestic supports—but exclude non-tariff barriers (NTBs) and other institutional factors.

Table 8 presents the alternative integration scenarios for Latin America. Scenario 1 examines the creation of the South American Free Trade Area (SAFTA) encompassing MERCOSUR, Chile and the Andean Community.[14] Argentina, Brazil, Chile, Colombia, Venezuela and the rest of the Andean Community altogether eliminate trade barriers (impart tariffs and export subsidies) and domestic support, while each country maintains its own protection against the third partners. This scenario measures the impact of integration from the viewpoint of the South-South framework for Latin America, and is designed to serve as the reference scenario in comparison with the North-South arrangements and hemispheric integration FTAA. This option is specially one of the components of the MERCOSUR's strategy for widening Latin American integration and it is considered by many as an intermediate, but strategic step for Latin America to prepare for the hemispheric integration, or with the

[14] At the South American Summit Meeting held in Brasilia in September 2000, the Heads of States agreed to create a continent-wide trade bloc. But the process was being stalled due to trade tentions and discordance in trade policies among members, deteriorated further by the recent economic crisis in Latin America.

European Union.

<INSERT TABLE 8>

Scenario 2 simulates the FTA between the Andean Community and the United States, one of the North-South integration arrangements.[15] The Andean Community used to have preferential access to the United States under the Andean Trade Preference Act (ATPA) since 1991, but the Act expired last December. However, unlike the ATPA, which is a unilateral treatment extended by the United States, this scenario creates a FTA by eliminating all barriers reciprocally between the United States and all Andean member countries including Venezuela. Scenario 3 also belongs to the North-South arrangement, but between the United States and MERCOSUR. This scenario is deemed hypothetical, but the economic and policy implications of this scenario would be very useful, since it includes the United States and Brazil, two key members for the hemispheric negotiations.

Scenarios 4 and 5, belonging to the North-South arrangement, are designed to simulate a trans-atlantic FTAs between Latin America's regional groups and the European Union: the Andean Community in scenario 4 and MERCOSUR in scenario 5.[16] The latter option deserves special attention. Both blocs are seeking to accelerate the negotiations and could conclude an agreement before the planned FTAA. The MERCOSRU-EU negotiations involve the strategic importance and common interests shared by the two blocs. In light of the growing US trade dominance and the ongoing hemispheric negotiations, MERCOSUR views the European Union as the key counterbalance for the United States, in the FTAA negotiation process. For the European Union, MERCOSUR has been a traditional stronghold in the Americas, and is now increasingly important partner to block the US dominance and to restore the lost market share in Latin America, by strengthening trade relations and promoting business opportunities. Clearly the negotiations heavily hinge on agriculture. Given the complementary trade linkage between the two blocs and the EU's high protection regime on agriculture, where MERCOSUR has a salient comparative advantage and strong competitiveness, it is expected that the bloc will gain huge economic benefits from the bi-regional integration, if achieved.

Lastly Scenario 6 examines the formation of the Free Trade Area of the Americas (FTAA), the most integral and widest integration scheme in the Western Hemisphere. The countries collectively eliminate all protection to intra-hemispheric trade, while retaining their individual protection structures with the outside partners. Following the successful conclusions made in a three-year preparatory stage, the countries in the Western Hemisphere formally launched the negotiations to create a hemispheric

[15] Earlier this year, four Andean member countries except Venezuela expressed desire to broaden and extend trade benefit. The United States agreed last year to extend a five-year renewal and expansion to cover bloc's additional exports including textiles and some processed foods. But the deliberation of the ATPA is suspended in the US congress and is yet to be renewed.

[16] Trade talks between MERCOSUR and the European Union started with the Interregional Framework Cooperation Agreement, signed in December 1995, which was designed to increase economic cooperation, enhance political dialogue and prepare for the bilateral liberalization process. The Rio Summit, held in June 1999, agreed to launch negotiations towards the creation of a FTA between the two blocs through gradual and reciprocal process. This is the latest, among a number of recent initiatives aimed to increase greater economic linkages between the trans-atlantic regions before the Mexico-EU FTA agreement, which took effect in 2000.

FTA at the second Summit of the Americas in April 1998.[17] Although critical issues remain unresolved in many areas, the FTAA process has steadily progressed and has already generated significant positive impacts in a variety of areas.[18] If launched as scheduled, it will be the world's largest trade bloc with 800 million people and $13 trillion GDP, nearly a third of the global economy.

B. Simulation Results

Aggregate Impact

Table 9 presents the aggregate impact of the alternative integration scenarios. The impact of each integration option is evaluated by the changes in macroeconomic variables such as real GDP, export and import growth, compared with the calibrated baseline equilibrium.

<INSERT TABLE 9>

Clearly there is a high correlation between the size of a FTA and the potential economic gains. SAFTA, smallest integration scheme, generates positive, but moderate gains to all member economies. Due to heterogeneous trade linkage, the gains are, however, uneven among the Andean countries. Real GDP grows at a marginal rate in Colombia (0.3 percent) and Venezuela (0.4 percent), whereas it increases by 1.2percent for the rest of the Andean members. On trade, the Andean Community increases its bloc's total exports by 2.0 percent, and MERCOSUR by 1.7 percent. Integration with the United States significantly benefits Latin America's member economies. In scenario 2, the Andean Community increases its real GDP by 1.4 percept, and 3.1 percent of total exports. The gains are much larger for MERCOSUR, with 2.3 percent increase in the bloc's GDP and 5.4 percent of total exports. While this North-South integration scheme rarely affects non-member countries, some countries outside the agreement suffer very slightly.

For the Andean Community, integration with the European Union (scenario 4) is slightly inferior to the US agreement. Its combined real GDP increases by 1.1 percent and bloc's total exports by 3.2 percent. On the other hand, the EU integration is very preferable, generating tremendous economic gains to MERCOSUR. In fact, it is the best option for the group, with the highest increase of 4.7 percent combined GDP, 12.8 percent total exports, and 10.0 percent total imports. Due to the elimination of sizable domestic support, which has unilateral effects on trade, economic benefits from this integration option spill over the rest of the hemisphere, though the gain is marginal. For most hemispheric countries except MERCOSUR, FTAA is the best option, attaining the highest economic gains and export growth. Central America/ Caribbean and the Andean Community increase their real GDP by 2.1 and 2.2 percent, whereas it reaches 3.1 percent for MERCOSUR. Total exports sharply increase in the respective regional blocs: Central America by 8.5 percent, MERCOSUR 7.9 percent, and the Andean Community by 5.6 percent.

[17] At the third Summit of the Americas in Quebec in April 2001, the participating countries pledged to create a hemisphere-wide free trade area (FTAA) by the end of 2005. Official timetable agreed is to finalize the overall negotiations by January 2005, and to take effect by the end of that year, following the national ratification.

[18] See Integration and Trade in the Americas, Periodic Note, IDB, Department of Integration and Regional Programs, October 1999.

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Sectoral Results

Scenario 1: SAFTA

The creation of SAFTA increases exports by 7 percent within South America, but inter-bloc trade among MERCOSUR, Chile and the Andean Community expands more than 20 percent each. But the impact on export performance is highly uneven. The countries of the rest of the Andean Community expand total exports by 3.8 percent, followed by Chile (3.5 percent), whereas export growth is merely 1.0 percent for Venezuela. Intra-bloc trade is highly characterized by intra-industry nature of manufactured goods. Heavy manufactured goods alone account for nearly half of the increased trade, and light manufactures share another 35 percent. In the meantime, the impact on intra-bloc trade is considerably heterogeneous and clearly reflects the comparative advantage in trade and competitiveness in manufacturing industries in South America. Figure 1 presents the impact on exports by macro-sector for all partners in the model.

<INSERT FIGURE 1>

Although export growth by macro-sector is moderate, Brazil is the largest exporter in value to the SAFTA market. The country increases exports of heavy manufactures by 7 percent to that market, which account for around half of the increased heavy manufactured exports within SAFTA. Automobiles are the leading exports in value and also one of the most booming industries (9.1 percent increase to SAFTA), followed by iron and steel (7.2 percent). Argentina, on the other hand, largely increases light manufactured exports such as processed foods destined to SAFTA, which grow by 12 percent, and agricultural exports. Chile also dramatically expands light manufactured exports with 25 percent increase to South American market. SAFTA leads to the Andean Community to increase manufactured exports as well. The Andean Community primarily expands its resource-based exports—mining plus petroleum and chemicals largely from Colombia and Venezuela—with the share of 30 percent of the increased exports to the SAFTA including own market.

While SAFTA potentially brings about modest economic gains to member economies, it is of more political significance, and South America's strategic mid-term option. By consolidating regional integration, Latin America can drastically raise its bargaining power in the face of the FTAA negotiations with the United States, and the trade talks with the European Union. On the integration format, "the NAFTA model", which is being sought in several negotiations in the hemisphere, may be a realistic formula.

Scenario 2: FTA between the Andean Community and the United States

The outcome of this integration option clearly reflects two factors: (i) the bloc's unique trade links, especially export structure, with the United States; and (ii) the nature of the US preferential agreement ATPA. Resource-based products such as mining (oil and gas) as well as petroleum and chemicals

heavily dominate the bloc's exports to the United States, accounting for three-quarters of total exports to that market. In the meantime, United States offers fairly low barriers on these imports from the Andean Community under the ATPA: almost free on oil and gas, and modest protection on petroleum and chemicals (5.0 percent on Venezuela and 2.6 percent on other Andean members). On the other hand, light manufactures share only 5 percent of the group's total exports to the United States.

Because of the above Andean export structure, export growth to the United States remains modest at 3.6 percent. By macro-sector, the exports of light manufactures to the that market jump by 17 percent due to small base exports, heavy manufactured exports by 6.6 percent, and primary exports by mere 1.4 percent. In value term, however, heavy manufactured products represented by petroleum and chemicals largely from Venezuela account for nearly half of the increased exports to the United States, whereas primary and light manufactured exports share the half approximately equally. Venezuela, bloc's main exporter, accounts for a little less than half of the increased exports to the United States, and Colombia by 21 percent. This integration also activates intra-bloc exports, which expand by 3.5 percent, as fast as the speed to the United States. In sharp contrast with the composition of exports to the United States, light manufactures account for half of the increased intra-bloc exports in value, followed by heavy manufactured goods (33 percent).

Strong trade diversion effects appear with this integration. Due to initially high MFN tariff protection, the Andean Community shifts the sources of imports from third partners to the United States. Imports originating from the United States sharply increases by 14 percent. Heavy manufactured products represented by capital and intermediate goods are the main imports from that country. Machinery and equipment alone accounts for 40 percent of the increased imports from the US origin.

Scenario 3: MERCOSUR-US FTA

MERCOSUR-US FTA generates a strong positive impact on bloc's trade. Because of the initially large trade flows, bilateral trade sharply rises. Guaranteed access to the large North American market enables MERCOSUR to expand its exports to the US market by 11 percent. Light manufactures are the most booming industries, expanding the bloc's exports by 20 percent. Among others, the group sharply increases exports of processed foods by 35 percept, products on which the United States maintains the highest tariff protection (16.5 percent). Heavy manufacturing industries also enjoy robust export growth at 7.1 percent. In fact, the gains are due mainly to the creation of huge market, given that the initial US protection is relatively low to manufactured goods, the bloc's main exports. The exploitation of the economies of scale and productivity gains lead to an increase in manufactured exports to the United States. Other than processed foods, MERCOSUR, especially Brazil, penetrates its exports of heavy manufactured goods, especially metal products (iron and steel) with high global competitiveness, machinery and equipment to the vast US market.

Due to already liberalized internal market, intra-bloc trade almost remains unchanged. However, the incomplete customs union generates differentiated impact between Argentina and Brazil. While Brazil modestly increases exports to the internal market by 1.9 percent, Argentina's exports as a whole rarely expand. In fact, the deviation of the common external tariff (CET) between Argentina and Brazil on manufactured goods leads to the negative effects mainly on Argentina. As a consequence of Brazil's larger tariff elimination relative to Argentina on these products, Argentina slightly suffers decline of

exports of machinery and equipment (-3.0 percent) and automobile and parts (-1.5 percent). Brazil also faces the modest decline (-1.5 percent) of machinery and equipment exports to Argentina.

MERCOSUR's imports from the United States increase at an impressive rate (22 percent in Argentina and 28 percent in Brazil), comprising mainly manufactured products. Capital goods (machinery and equipment) account for 58 percent of imports from the United States, intermediates (petroleum and chemicals) by 16 percent and durable consumer goods (automobiles) by 14 percent. Again, bloc's large degree of tariff elimination in the formation of FTA with the United States leads to strong trade diversion. MERCOSUR decreases imports from third partners in favor of the United State.

Scenario 4: FTA between the Andean Community and the European Union

Compared with the US integration, this bi-regional integration is preferable to all Andean members except Venezuela, to which integration with the United States is superior to this alternative. This heterogeneous outcome largely comes from the exports composition of the Andean members to the EU markets, and the EU's protection structure, where agriculture is heavily protected.

The Andean Community as a whole increases its exports by 16 percent to the European Union. The rest of the Andean members enjoys dramatic increase (25 percent) in exports destined to the European Union, followed by Colombia (11 percent). For Venezuela, the corresponding export growth remains modest at 3.6 percent. Undoubtedly products of agricultural origin far dominated exports, which account for 90 percent of the increased exports to the European Union. Meat products and processed foods are the bloc's leading exports to that market, followed by raw agricultural products. The impact on intra-regional trade is similar to that simulated under the integration with the United States.

The Andean Community increases imports originating from the European Union by 12 percent. But its composition of imports is sharply distinguished from that of the US integration among the Andean members. For Colombia and Venezuela, capital and intermediate goods are the leading imports with the share of 75 to 80 percent of the increased imports from the EU source. On the other hand, because of the unique structure of imports, light manufactures and primary goods are the main imports from the European Union for the other Andean members. Interestingly, EU's agricultural reform in eliminating huge domestic support brings positive effects even to non-members due to its unilateral measure against trade partners. Third partners outside the agreement have positive, though marginal, effects on their exports.

Scenario 5: MERCOSUR-EU FTA

The integration with the European Union is the bloc's best option, far better than the US integration, and ever more preferable than the FTAA. Among all scenarios, economic gains and export growth are the largest for members and the bloc as a whole. Compared with the FTAA, the integration options is relatively desirable to Argentina than to Brazil, as the incremental increase in GDP and in exports is greater for the former than for the latter, even though the absolute gains are the opposite.

The bi-regional FTA raises the region's exports to the European Union by astonishing 37 percent. The removal of the EU's high protection in agriculture is no doubt the key element, leading to the bloc's sharp rise in exports in those sectors, in which MERCOSUR has a clear comparative advantage and strong competitiveness. Agricultural exports constitute 98 percent of the increased exports to the European Union in Argentina and 93 percent in Brazil. Meat products and processed foods account for 65 percent of the increased exports to the EU market. Thus, the pattern of impact is sharply distinguished from the FTAA reported later. Integration with the European Union leads to the bloc's second highest export growth of meat products with a dramatic increase of 120 percent after the fastest growing grains (420 percent) due largely to small base exports and the EU's highest initial tariff protection. Compared with the agricultural sectors, exports of manufactured goods also increase, but at relatively moderate rate at 5.4 percent. Brazil increases exports of heavy manufactured goods to the European Union than Argentina in value. While Brazil expands intra-bloc exports in all sector, Argentina suffers slight decline in exports of machinery and equipment within the MERCOSUR market.

MERCOSUR increases imports from the European Union by marked 30 percent. Similar to the FTAA, manufactured goods are the major imports from the European Union (90 percent) with high concentration on heavy manufactured goods comprising capital goods, intermediates and consumer durables. Machinery and equipment alone account for nearly half of the increased imports. Unlike the previous scenarios, this integration does not induce strong trade diversion, although there appear weak negative effects at sectoral levels.

Scenario 6: FTAA (Free Trade Area of the Americas)

For hemispheric partners, FTAA is the best option, generating the largest economic gains and export growth. The exception is MERCSOUR, for which FTAA is the second-best option after integration with the European Union. Compared with SAFTA, this integration boosts 2.9 times larger export growth for the Andean Community, 4.5 times for MERCOSUR, and 2.2 times for Chile. Compared with integration with the United States, MERCOSUR increases its total exports by 45 percent and the Andean Community by 80 percent. Because of NAFTA, export growth of the North American countries remains modest.

Large-scale integration strengthens the linkage between productivity gains and trade expansion that spreads over the entire economy. The elimination of trade barriers improves technological efficiency in production, and enhances efficient domestic resource allocations. Guaranteed access to larger markets, especially to the United States, enables firms to exploit economies of scale, and promotes intra-regional trade in manufactures relative to primary sectors. This mechanism leads to dynamic externality effects as a result of liberalization and the greater degree of integration process. Exports rise, as the global competitiveness increases. The domestic economy grows faster, and the whole process increases national welfare substantially.

FTAA increases Latin America's exports by 11 percent in the entire hemispheric market, and generates the strongest export growth of light manufactures in all Latin American members except Mexico. For the Andean Community and MERCOSUR, FTAA amplifies the impact on sectoral export growth under the integration with the United States, due to its dominant role in trade. However, the impact is

heterogeneous across the partners. The Andean Community, especially Venezuela and to some extent Colombia, expands further resource-based exports (petroleum and chemicals as well as oil and gas). In MERCOSUR, processed foods are the fastest growing industries and leading export earners. But in the meantime, Brazil substantially boosts heavy manufactured exports, which increase by 7.7 percent in the hemispheric market. Chile mainly increases agricultural exports (vegetables and processed foods), followed by resource-based metal products, largely to the United States. FTAA brings about promising export growth to Central America/Caribbean, which has long sought NAFT-parity to the United States. The bloc sharply increases textile and apparel exports, which alone account for 70 percent of its exports destined to the United States.

Sharply distinguished from the integration with the European Union, FTAA facilitates a strong export growth of manufactured goods in Latin America through intra-industry trade. Interestingly, Latin America absorbs nearly 50 percent of the its increased exports to the FTAA market, and heavy manufactures have 50 percent share of the new exports traded within Latin America. As moving further down to the South, the share of Latin America in FTAA increases. For the Andean Community, MERCOSUR and Chile, this share for heavy manufactured goods surpasses 60 percent, and even rises over 80 percent in several manufacturing industries. Thus, the presence of Latin America raises exports of non-resource-based heavy manufactures for the countries in South America. This is particularly the case with Brazil. Table 10 presents the Latin America's share in exports to FTAA.

<INSERT TABLE 10>

As a result of efficiency gains, Latin America is more competitive in international market. Exports increase even to third parties outside the agreement, especially light manufactures. The pattern of impact on imports is similar to the one under the integration with the United States. Latin America increases imports of capital goods (machinery and equipment), intermediates (petroleum and chemicals) and consumer durables (automobiles and parts) largely from the United States. The creation of FTAA leads to Latin America to concentrate more on hemisphere-originated imports. The European Union, excluded from the agreement, faces trade diversion. As a result, its trade with the hemispheric partners declines.

5. Conclusions

The formation of regional integration is not simply a process of maximizing potential economic gains, or balancing economic benefits and costs. Rather, it is a strategic process that also involves political elements such as domestic consideration arising from structural transformation, particularly labor market adjustment and weak industries. It also calls for complex set of policy choices: size of integration, partners, form of integration (FTA, customs union, or common market), deepness and scope of agreement. While some countries are confronting a difficult economic and political time, Latin America faces an active regional integration agenda in the Western Hemisphere and with the European Union that will decide the region's future of the coming decades.

Applying the multi-region, multi-sector general equilibrium model incorporating trade-linked externalities and scale economies in manufacturing industries, this study examines the potential economic gains, focusing on trade, of the possible alternative integration options in the context of North-South and South-South arrangements. The integration options are evaluated by the elimination of three kinds of trade barriers (*ad valorem* tariff equivalent, export subsidies and domestic support)

altogether, but excluding non-trade barriers and others institutional instruments.

The simulation results show that while the SAFTA, the South-South arrangement, generates modest economic gains for member counties, it has a political significance as a South America's mid-term option. As a whole, the process enhances exports of manufactured goods through intra-industrial trade. The Andean Community expands resource-based exports mainly from Colombia and Venezuela. While Brazil specializes in heavy manufactured exports, Argentina and Chile increase exports of light manufactures and agricultural products.

The North-South Integration, on the other hand, has considerably differentiated impact on Latin America, depending on the partner with whom it has integration, trade linkage and structure of protection by partners and of its own. Integration with the United States expands exports of light manufactures in most Latin American countries, whereas Brazil raises heavy manufactured exports to the United States. In sharp contrast, integration with the European Union drastically increases Latin America's agricultural exports, products Latin America has a strong comparative advantage and the European Union heavily protects. For MERCOSUR, this integration is the best option, superior to the FTAA.

FTAA, on the other hand, is the most preferable option for hemispheric partners except MERCOSUR. It increases manufactured exports through intra-industrial trade enhanced by dynamic externality effects, which link production efficiency gains and increased trade. Interestingly Latin America absorbs nearly half of the region's increased exports to the FTAA market, and heavy manufactured products account for 50 percent of the new exports traded in Latin America. For South American partners, the share of Latin America over the FTAA market in their heavy manufactured exports well exceed 60 percent and even rises over 80 percent in several industries. Thus, the presence of Latin America contributes to increase exports of non-resource-based manufactures for South America.

REFERENCES

Baldwin, Richard E. and Anthony J. Venables (1995) "Regional economic Integration," in Grossman and Rogoff (eds.), *Handbook of International Economics*, vol. III, Amsterdam, Holland: Elsevier Science Publishers.

Bhagwati, Jagdish (1993) "Regionalism and Multilateralism: An Overview," in J. de Melo and A. Panagariya (eds.), *New Dimensions in Regional Integration*, Cambridge: Cambridge University Press.

Burfisher, Mary E., Sherman Robinson, and Karen Thierfelder (1992) "Agricultural and Food Policies in a United-Mexico Free Trade Area," *North American Journal of Economics and Finance*, 3 (2), 117-139.

_____ (2001) "The Effects of an FTAA on Agricultural Trade in the Western Hemisphere," paper presented at the Conference on "Impacts of Trade Liberalization Agreements on Latin America and the Caribbean," organized by the Inter-American Development Bank and the Centre d'Etudes Prospectives et d'Informations Internationales, November 2001, Washington, DC.

Brown, Drusilla, K., Alan V. Deardorff, and Robert M. Stern (1992) "A North American Free Trade Agreement: Analytical Issues and a Computational Assessment," *World Economy*, 15, 15-29.

_____ (1995) "Expanding NAFTA: Economic Effects of Accession of Chile and Other Major South American Nations," *North American Journal of Economics and Finance*, 6(2), 149-170.

Devlin, Robert and Ricardo Ffrench-Davis (1999) "Towards an Evaluation of Regional Integration in Latin America in the 1990s," *World Economy*, 22 (2), March.

Diao, Xinshen and Agapi Somwaru (2000) "An Inquiry on General Equilibrium Effects of MERCOSUR-An Intertemporal World Model," *Journal of Policy Modeling*, 22 (5), 557-588.

_____ (2001) "A Dynamic Evaluation of the Effects of A Free Trade Area of the Americas-An Intertemporal, Global General Equilibrium Model," *Journal of Economic Integration*, 22 (5), 557-588.

Diao, Xinshen, Agapi Somwaru, and Terry Roe (2001) "A Global Analysis of Agricultural Reform in WTO Member Countries," in M.E. Burfisher (ed.), Agricultural Policy Reform in the WTO: the Road Ahead, Economic Research Service, AER no. 802, Washington, DC: U.S. Department of Agriculture.

Ethier, Wilfred J. (1998) "The New Regionalism," *Economic Journal*, 108 (449), 1149-1161.

Fernández, Raquel (1997) *Returns to Regionalism: An Evaluation of Nontraditional Gains from Regional Trade Agreements*, Policy Research Working Paper,1816, World Bank, Washington, DC.

Giordano, Paolo and Masakazu Watanuki (2000): "Economic Effects of a Mercosur-European Communities Free Trade Agreement: A Computable General Equilibrium Analysis," in Paolo Giordano, Alfredo Valladão and Marie-Francçise Durand (eds.), *Toward an agreement between Europe and the Mercosur*, Paris: Presses de Sciences Po (forthcoming).

Flôres, Renato G. Jr. (1997) "The Gains from MERCOSUL: A General Equilibrium Imperfect Competition Evaluation," *Journal of Policy Modeling*, 19(1), 1-18.

Francois, Joseph F. and David Roland-Holst (1997) "Scale Economies and Imperfect Competition," in J.F. Francois and K.A. Reinert (eds.,) *Applied Methods for Trade Policy Analysis: A Handbook*, Cambridge University Press: New York.

Harris, Richard. (1984) "Applied General Equilibrium Analysis of Small Open Economies with Scale Economies and Imperfect Competition," *American Economic Journal* 74(5), 1016-1032.

Harrison, Glenn. W., Thomas F. Rutherford and David G. Tarr (1997) *"Trade Policy Options for Chile: A Quantitative Evaluation,"* Policy Research Working Paper 1783, World Bank, Washington D.C.

Hinojosa-Ojeda, Raul A., Jeffrey D. Lewis and Sherman Robinson (1995) "Regional Integration Options for Central America and the Caribbean after NAFTA," *North American Journal of Economics & Finance*, 6(2), 121-148.

_____ (1997) *Convergence and Divergence between NAFTA, Chile, and MERCOSUR: Dilemmas of North and South American Economic Integration*, Working Papers Series 219, Inter-American Development Bank, Washington D.C.

Krugman, Paul (1993) "Regionalism versus Multilateralism: Analytical Notes," in J. de Melo and A. Panagariya (eds.), *New Dimensions in Regional Integration*, Cambridge: Cambridge University Press.

Lewis, Jeffrey D., Sherman Robinson, and Zhi Wang (1995) *Beyond the Uruguay Round; the Implications of an Asian Free Trade Area*, Policy Research Working Paper 1467, World Bank, Washington, D.C.

Melo, Jaime de and Arvind Panagariya (1993) *New Dimensions of Regional Integration*, Cambridge: Cambridge University Press.

_____ and David G. Tarr (1992) *A General Equilibrium Analysis of US Foreign Trade Policy*, Cambridge: MIT Press.

_____ and Sherman Robinson (1992) "Productivity and Externalities: Models of Export-led Growth," *Journal of International Trade and Economic Development*, 1, 41-69.

Monteagudo, Josefina and Masakazu Watanuki (2001) "Regional Trade Agreements for Mercosur: the FTAA and the FTA with the European Union," paper presented at the Conference on "Impacts of Trade Liberalization Agreements on Latin America and the Caribbean," organized by the Inter-

American Development Bank and the Centre d'Etudes Prospectives et d'Informations Internationales, November 2001, Washington, DC.

Moreira, Maurício Mesquita and Sheila Najberg (2000) "Trade Liberalization in Brazil: Creating or Exporting Jobs?," *Journal of Development Studies*, 36(3), 78-99.

Norman, Victor D. (1990) "Assessing Trade and Welfare Effects of Trade Liberalization: A Comparison of Alternative Approaches to CGE Modeling with Imperfect Competition," *European Economic Review* 34, 725-751.

Roberts, John M. (2001) *Estimates of the Productivity Trend Using Time-Varying Parameter Techniques*, Board of Governors of the Federal Reserve System, Washington, DC.

Robinson, Sherman and Karen Thierfelder (1999) *Trade Liberalization and Regional Integration: The Search for Large Numbers*, TMD Discussion Paper 34, International Food Policy Research Institute, Washington, D.C.

Rodrik, Dani (1988) " Imperfect Competition, Scale Economies, and Trade Policy in Developing Countries," R.E. Baldwin (ed.) *Trade Policy Issues and Empirical Analysis*, Chicago: University of Chicago Press.

Roland-Holst, David W., Kenneth A. Reinert and Clinton R. Shiells, (1994) "NAFTA Liberalization and the Role of Nontariff Barriers," North American Journal of Economics and Finance, 5 (2), 137-168.

Stiroh, Kevin J. (2001) *Information Technology and the U.S. Productivity Revival: What Do the Industrial Data Say?* Federal Reserve Bank of New York.

Table 1. Main Features and Assumptions of the CGE Model

Items	Description
1. Production Sectors	All regions produce 15 goods using primary inputs and intermediate goods with a CES production technology. The 15 sectors in ROW are fully endozenized. Manufacturing industries have IRTS, while the other sectors have CRTS.
2. Market Structure	Manufacturing industries face a contestable market structure, while the other the other sectors face a perfectly competitive market structure.
3. Demand	Final demand in each country or region is derived from household's utility maximizing behavior subject to budget constraint. Intermediate demands are determined by the fixed proportion of the input-output coefficients.
4. Trade	Exports are specified by a CET function, and differentiated by market of destination and from domestic supply. Imports are modeled with a CES specification, and differentiated by market of origin.
5. Factors	
(i) Land	Sectorally fixed, and only used in agriculture.
(ii) Capital	Sectorally mobile, but immobile internationally. Total supply in each country or region is fixed.
(iii) Labor	Same as capital.
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 are 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 exogenous foreign transactions.
(iv) Small Country:	No country has market power to influence world prices through trade, and each country behaves as a price taker.
(v) No Financial Market:	The model deals with the real side of the economy.

Table 2. Principal Economic Indicators of the Regions in the Model

Indicators	Canada	United States	Mexico	Central America/ Caribbean	Colombia	Venezuela	Rest of AC	Argentina	Brazil	Chile	European Union
GDP and Trade Flows ($billion)											
Exports*	196.6	623.2	110.1	30.3	10.5	22.8	13.1	26.2	52.4	16.7	1,917.2
Imports*	190.4	856.2	105.4	53.2	13.9	14.6	15.9	30.7	64.5	18.1	1,908.3
GDP	630.5	7,947.4	381.6	93.3	93.6	84.6	91.1	336.5	808.2	76.1	8,001.2
Trade Dependency (percent)											
Exports/GDP	31.2	7.8	28.9	32.5	11.3	26.9	14.4	7.8	6.5	21.9	24.0
Imports/GDP	30.2	10.8	27.6	57.1	14.9	17.3	17.5	9.1	8.0	23.7	23.8
Factor Share in Value Added (percent)											
Land	2.0	0.7	4.5	4.9	5.1	8.0	4.8	3.7	1.9	3.5	0.6
Labor	58.8	61.8	31.7	43.7	53.3	37.9	30.6	49.6	50.2	39.5	55.3
Capital	39.2	37.5	63.8	51.5	41.7	54.0	64.7	46.7	48.0	56.9	44.1
Factors											
Labor force (million)	16.0	138.5	37.6	21.9	17.0	9.0	16.5	14.1	75.3	5.9	175.9
Average wage ($1,000)	20.0	35.4	2.9	1.6	2.7	3.3	1.5	8.8	4.9	4.5	31.2
Capital return (percent)	13.6	16.4	19.2	14.8	24.4	16.7	21.3	19.0	15.1	25.7	13.2
Factor Proportions											
Capital stock/Labor ($1,000/worker)	98.4	131.2	30.5	12.4	8.8	28.4	14.8	55.0	30.7	25.1	134.5
Rental/Wage ratio (percent/$1,000)	0.7	0.5	6.6	9.5	8.9	5.0	14.2	1.7	3.1	5.7	0.6

* trade in goods.
Source: CGE model database.

Table 3. Trade Flows among Regions in 1997

(percent)

	Canada	United States	Mexico	Central America/ Caribbean	Colombia	Venezuela	Rest of AC	Argentina	Brazil	Chile	European Union	Rest of World	Total ($million)
Exports													
Canada	-	79.5	1.0	0.4	0.2	0.2	0.1	0.2	0.7	0.2	5.8	11.9	196,630
United States	21.2	-	10.5	2.7	0.8	1.0	0.6	0.9	2.4	0.6	20.4	38.9	623,167
Mexico	2.0	85.6	-	1.9	0.5	0.6	0.4	0.4	0.6	0.8	3.6	3.6	110,123
Central America/	2.8	49.1	1.1	13.3	0.4	0.9	0.8	0.1	0.5	0.5	17.8	12.6	30,302
Colombia	1.3	40.8	1.0	5.5	-	9.4	10.7	0.8	1.2	1.7	19.1	8.6	10,550
Venezuela	2.3	54.5	1.7	8.3	5.9	-	3.4	0.2	4.2	0.7	6.2	12.6	22,774
Rest of AC	1.1	28.9	1.2	2.9	4.4	1.5	4.5	2.3	2.4	3.2	22.3	25.2	13,092
Argentina	0.5	8.4	0.8	1.2	0.7	1.2	3.3	-	31.0	7.3	15.3	30.3	26,160
Brazil	1.1	18.1	1.5	1.4	1.0	1.5	2.2	12.9	-	2.3	27.4	30.6	52,416
Chile	0.8	16.1	2.2	0.7	1.3	0.9	4.3	4.4	5.7	-	23.1	40.3	16,699
European Union	0.9	7.5	0.5	0.4	0.1	0.1	0.1	0.4	0.8	0.2	60.3	28.6	1,917,160
Imports													
Canada	-	71.7	1.2	0.5	0.1	0.3	0.1	0.1	0.3	0.1	9.9	15.8	190,371
United States	18.6	-	11.4	1.9	0.6	1.6	0.5	0.3	1.2	0.3	18.0	45.6	856,181
Mexico	1.8	75.9	-	0.4	0.1	0.4	0.2	0.2	0.8	0.4	8.9	10.9	105,376
Central America/	1.4	33.2	5.1	8.1	1.3	4.1	0.9	0.6	1.5	0.2	13.2	30.3	53,226
Colombia	2.6	36.9	3.9	1.0	-	11.6	4.7	1.3	3.9	1.7	18.5	13.9	13,905
Venezuela	2.7	45.8	5.1	2.1	7.3	-	1.4	2.3	5.6	1.1	14.8	11.9	14,599
Rest of AC	0.9	24.4	2.8	1.6	8.9	5.4	4.0	5.7	7.9	4.8	18.5	15.2	15,909
Argentina	1.5	20.0	1.7	0.1	0.3	0.2	1.1	-	23.2	2.5	27.1	22.1	30,660
Brazil	2.3	23.7	1.9	0.3	0.2	1.8	0.6	13.3	-	1.6	26.0	28.2	64,526
Chile	2.4	23.9	5.7	0.9	1.2	1.1	2.7	11.1	7.0	-	21.6	22.3	18,072
European Union	0.6	6.9	0.2	0.3	0.1	0.1	0.2	0.2	0.8	0.2	61.7	28.6	1,908,267

Source: FTAA Hemispheric Database, IDB.

Table 4. Sectoral Intensity of Exports of Latin America and the Caribbean by Maket

Origin	Canada	United States	Mexico	entral Americ Caribbean	Colombia	Venezuela	Rest of AC	Argentina	Brazil	Chile	European Union	Rest of World
Mexico												
Primary	0.73	0.93		1.32	0.12	0.03	0.21	0.02	0.14	0.12	2.28	2.19
Light Manufactures	0.56	1.01		1.45	1.21	0.82	1.03	1.04	0.92	0.98	0.98	0.90
Heavy Manufactures	1.14	1.01		0.85	1.13	1.22	1.15	1.18	1.18	1.17	0.76	0.79
Centra America/ Caribbean												
Primary	1.09	0.87	0.44	0.24	0.29	0.09	-	0.15	0.31	0.08	2.30	0.72
Light Manufactures	0.51	1.35	0.66	0.72	0.34	0.97	0.58	0.37	0.38	1.15	0.55	0.78
Heavy Manufactures	1.57	0.62	1.72	1.75	2.20	1.49	2.05	2.24	2.14	1.27	0.91	1.42
Colombia												
Primary	1.45	1.32	-	0.54		0.06	0.32	0.89	0.17	0.12	1.41	1.08
Light Manufactures	0.58	0.66	2.57	1.46		2.09	1.70	1.45	1.77	1.57	0.51	0.98
Heavy Manufactures	0.16	0.42	2.44	1.85		2.62	2.23	0.96	2.56	2.85	0.31	0.80
Venezuela												
Primary	1.60	1.20	0.01	0.68	0.10		0.19	0.11	0.97	0.54	1.17	0.95
Light Manufactures	0.29	0.15	1.01	1.11	6.30		1.72	-	1.33	1.59	1.23	1.84
Heavy Manufactures	0.25	0.78	2.32	1.42	1.84		2.04	2.26	1.02	1.57	0.76	1.01
Rest of the Andean Community												
Primary	1.53	1.25	0.34	1.12	0.40	0.14	0.84	1.16	0.93	1.01	1.06	0.83
Light Manufactures	0.80	0.58	1.41	0.49	1.55	1.17	1.36	1.45	0.65	1.19	1.06	1.27
Heavy Manufactures	0.20	0.92	1.83	1.24	1.61	2.43	0.96	0.29	1.44	0.81	0.84	1.06
Argentina												
Primary	0.67	0.99	0.21	0.88	0.72	0.88	0.64		0.93	1.56	0.98	1.03
Light Manufactures	1.37	1.13	1.11	1.44	1.01	1.25	0.71		0.51	0.71	1.54	1.26
Heavy Manufactures	0.85	0.84	1.64	0.56	1.26	0.80	1.71		1.68	0.82	0.34	0.65
Brazil												
Primary	1.04	0.61	0.42	0.34	0.14	0.09	0.08	0.21		0.09	1.85	1.07
Light Manufactures	0.82	0.92	0.27	0.59	0.48	0.32	0.63	0.53		0.44	1.20	1.25
Heavy Manufactures	1.11	1.22	1.75	1.56	1.72	1.85	1.64	1.65		1.76	0.51	0.80
Chile												
Primary	1.00	1.28	1.04	0.30	0.79	0.67	0.51	0.28	0.99		0.93	1.08
Light Manufactures	2.50	0.89	0.87	1.90	1.71	1.81	1.86	1.53	0.89		0.57	1.08
Heavy Manufactures	0.17	0.86	1.04	1.00	0.76	0.79	0.87	1.23	1.07		1.28	0.90

Note: Measured by the sectoral share in bilateral trade over the sectoral share in total exports. Exports in services are excluded.

Table 5. MFN Tariff Equivalent by the Respective Regions in the Model: 1997

(percent)

	Canada	United States	Mexico	Central America	Colombia	Venezuela	Rest of AC	Argentina	Brazil	Chile	European Union
Grains	11.62	2.35	36.73	12.97	12.50	12.32	11.94	8.14	8.66	11.00	44.21
Vegetables, Oilseeds and Soybeans	4.69	7.12	16.18	16.10	13.46	13.42	13.32	10.48	10.48	11.00	12.93
Sugarcane and Other Crops	2.65	1.29	10.88	10.98	9.26	9.65	8.64	8.73	8.73	11.00	6.19
Livestock	13.57	1.65	13.89	12.32	14.58	14.65	13.14	10.16	10.23	11.00	13.29
Mining	0.83	0.32	8.85	4.92	5.23	5.27	5.86	5.41	6.75	11.00	0.11
Meat Products	46.49	4.88	53.55	28.80	20.00	20.00	20.00	14.87	14.87	11.00	43.80
Processed Foods	28.97	16.49	27.14	18.72	18.13	18.19	17.94	16.19	16.39	11.00	26.22
Textiles and Apparel	15.47	9.84	21.36	13.93	18.14	18.14	18.21	20.24	20.05	11.00	7.92
Other Light Manufactures	5.72	4.55	15.23	14.22	13.95	14.36	14.63	16.62	15.98	10.91	2.20
Petroleum and Chemicals	5.25	4.96	9.80	6.50	8.64	9.11	8.75	10.83	11.02	11.00	4.56
Iron and Steel	4.61	3.27	12.75	6.93	10.42	10.91	10.22	16.01	15.36	11.00	2.05
Automobiles and Parts	6.62	3.17	13.87	12.15	13.18	12.83	13.18	16.50	26.35	10.27	4.14
Machinery and Equipment	3.48	2.57	11.49	6.12	9.33	10.01	9.19	14.09	18.16	10.72	2.53
Utilities and Construction	0	0	0	0	0	0	0	0	0	0	0
Trade and Services	0	0	0	0	0	0	0	0	0	0	0
Average	6.44	3.91	12.33	10.59	10.83	11.37	11.46	13.80	15.81	10.77	4.73

Source; FTAA Hemispheric Database, IDB.

Note: MFN Tariffs are measured by simple average estimated from the *ad valorem* , plus *ad valorem* equivalents of specific, mixed and TRQs in each sectoral category. EU does not include *ad valorem* equivalent of TRQs. The sectoral protection rates for single countries are estimated as the simple average of the corresponding tariff line schedules. For Central America/Caribbean and the Andean Community, protection data is a simple average of the corresponding tariff lines among the member countries. Tariff rate "average" is weighted by trade flows.

Table 6. Domestic Support used by the Selected Countries in 1997

Sectors	OECD-Notified Domestic Support ($million)				Domestic Support Rate (%)			
	Canada	United States	Mexico	European Union	Canada	United States	Mexico	European Union
Grains	340	10,104	1,193	29,943	9.5	22.2	18.2	58.7
Vegetables, Oilseeds and Soybeans	284	2,212	9	5,639	5.6	4.8	6.4	71.9
Sugarcane and Other Crops	-	2	-	-	-	2.4	-	-
Livestock	8	195	36	182	2.1	3.2	2.0	3.1
Mining	-	-	-	-	-	-	-	-
Meat Products	318	2,555	257	16,211	4.6	3.3	3.0	25.2
Processed Foods	169	1,144	139	2,847	5.9	3.7	2.7	6.4
Textiles and Apparel	-	-	-	-	-	-	-	-
Other Light Manufactures	-	-	-	-	-	-	-	-
Petroleum and Chemicals	-	-	-	-	-	-	-	-
Iron and Steel	-	-	-	-	-	-	-	-
Automobiles and Parts	-	-	-	-	-	-	-	-
Machinery and Equipment	-	-	-	-	-	-	-	-
Utilities and Construction	-	-	-	-	-	-	-	-
Trade and Services	-	-	-	-	-	-	-	-
	1,118	16,212	1,634	54,820				

Source: OECD Agricultural Database CD-ROM, 2001.
Note: 1: PSE does not include "Market Price Support (MPS)".
2: Domestic support rate is estimated by the domestic support in value notified to the OECD over production value in the respective country SAMs.

Table 7. WTO-notified Export Subsidies by Sector in 1997

Description	**WTO-Subsidies** ($million)						**Subsidy Rate** (percent)					
	United States	Mexico	Central America	Colombia	Venezuela	European Union	United States	Mexico	Central America	Colombia	Venezuela	European Union
Grains	1.2	-	-	-	-	546.3	-0.01					-26.7
Vegetables, Oilseeds and Soybear	-	-	104.7	15.5	1.0	29.4			-5.8	-5.0	-1.0	-0.9
Sugarcane and Other Crops	-	-	-	1.7	1.4	-				-0.1	-7.8	
Livestock	-	-	-	-	-	14.7						-0.4
Mining	-	-	-	-	-	-						
Meat Products	0.9	-	-	-	-	1,119.9	-0.01					-22.0
Processed Foods	110.2	36.0	-	7.7	-	2,592.3	-0.5	-1.6		-1.3		-6.4
Textiles and Apparel	-	-	-	-	-	-						
Other Light Manufactures	-	-	-	-	-	-						
Petroleum and Chemicals	-	-	-	-	-	-						
Iron and Steel	-	-	-	-	-	-						
Automobiles and Parts	-	-	-	-	-	-						
Machinery and Equipment	-	-	-	-	-	-						
Utilities and Construction	-	-	-	-	-	-						
Trade and Services	-	-	-	-	-	-						
	112.2	36.0	104.7	24.9	2.4	4,302.5						

Sources: Various WTO Notifications.
Note: EU does not include export subsidies, categorized as "incorporated products", which amounts to ECU553 million ($625million).

Table8. Alternative Integration Scenarios for Latin America in the Western Hemisphere and with the European Union

No.	Scenarios	Description
1.	South American Free Trade Area (SAFTA)	Remove trade barriers (tariffs and export subsidies) and domestic support among MERCOSUR, Chile, and the Andean Community.
2.	FTA between Andean Community and the United States	Remove trade barriers and domestic support between the Andean Community and the United States.
3.	MERCOSUR-US FTA	Remove trade barriers and domestic support between MERCOSUR and the United States.
4.	FTA between Andean Community and the European Union	Remove trade barriers and domestic support between the Andean Community and the European Union.
5.	MERCOSUR-EU FTA	Remove trade barriers and domestic support between MERCOSUR and the European Union.
6.	FTAA	Countries in the Western Hemisphere (Canada, United States, Mexico, Central America/Caribbean, Colombia, Venezuela, rest of the Andean Community, Argentina, Brazil, and Chile) create continent-wide FTA, by eliminating trade barriers and domestic support among them.

Table 9. Aggregate Impacts of the Alternative Scenarios (percentage change)

(percent)

	Base	1 SAFTA	2 AC-US FTA	3 MERCOSUR -US FTA	4 AC-EU FTA	5 MERCOSUR -EU FTA	6 FTAA
Real GDP	($billion)						
Canada	630.5	0.00	-0.01	0.02	0.02	0.04	0.57
United States	7,947.4	0.00	0.15	0.20	0.02	0.03	0.35
Mexico	381.6	0.00	-0.05	-0.02	0.01	0.03	1.02
Central America/ Caribbean	93.3	-0.01	-0.07	0.00	0.01	0.04	2.22
Colombia	93.6	0.28	0.92	0.02	0.95	0.05	1.32
Venezuela	84.6	0.37	1.40	0.03	0.59	0.10	2.08
Rest of the AC	91.1	1.21	1.78	0.07	1.84	0.21	2.98
Argentina	336.5	0.61	0.00	1.59	0.46	4.20	2.49
Brazil	808.2	0.46	-0.01	2.59	0.37	4.94	3.39
Chile	76.1	1.14	-0.01	0.00	0.04	0.11	2.84
European Union	8,001.2	0.00	0.00	0.00	0.51	0.61	-0.01
Gross Exports	($billion)						
Canada	196.6	-0.01	0.03	0.14	0.13	0.18	1.42
United States	623.2	-0.01	0.26	0.74	0.07	0.12	1.92
Mexico	110.1	-0.01	-0.10	0.00	0.05	0.10	2.00
Central America/ Caribbean	30.3	-0.03	-0.12	0.11	0.17	0.23	8.48
Colombia	10.5	1.65	3.04	0.09	3.44	0.16	4.92
Venezuela	22.8	1.03	2.46	0.12	0.95	0.24	4.42
Rest of the AC	13.1	3.85	4.41	0.23	6.85	0.56	8.33
Argentina	26.2	2.13	0.00	3.85	1.46	12.60	6.67
Brazil	52.4	1.49	-0.08	6.17	0.89	12.93	8.50
Chile	16.7	3.47	0.00	0.02	0.12	0.33	7.73
European Union	1,917.2	0.00	-0.02	-0.03	0.62	1.14	-0.07
Gross Imports	($billion)						
Canada	190.4	0.00	-0.01	0.08	0.09	0.15	1.45
United States	856.2	0.00	0.17	0.42	0.05	0.12	1.13
Mexico	105.4	-0.01	-0.13	-0.05	0.04	0.09	2.08
Central America/ Caribbean	53.2	-0.02	-0.10	0.04	0.05	0.11	5.29
Colombia	13.9	1.32	3.23	0.07	2.69	0.13	4.87
Venezuela	14.6	1.67	4.40	0.12	1.70	0.29	7.44
Rest of the AC	15.9	3.43	3.98	0.17	5.33	0.32	7.48
Argentina	30.7	1.61	0.01	3.51	1.03	10.05	5.75
Brazil	64.5	0.99	-0.04	5.28	0.54	9.78	7.13
Chile	18.1	2.83	0.00	0.01	0.07	0.24	6.74
European Union	1,908.3	0.00	-0.01	-0.01	0.66	1.16	-0.02

Notes: The impact on trade is measured by changes in trade in goods.

Table 10. Share of Latin America in FTAA Exports in FTAA Scenario

Macro-sector	Mexico	Central America	Colombia	Venezuela	Rest of AC	Argentina	Brazil	Chile
Primary	0.20	0.18	0.30	0.62	0.47	0.88	0.30	0.34
Light Manufactures	0.54	0.18	0.56	0.33	0.60	0.59	0.30	0.62
Heavy Manufactures	0.39	0.49	0.77	0.64	0.60	0.65	0.62	0.69
Total	0.39	0.25	0.53	0.46	0.55	0.67	0.47	0.58

Note: Ratio of increased exports destined to Latin America and the Caribbean over the increase in total FTAA exports under FTAA scenario.

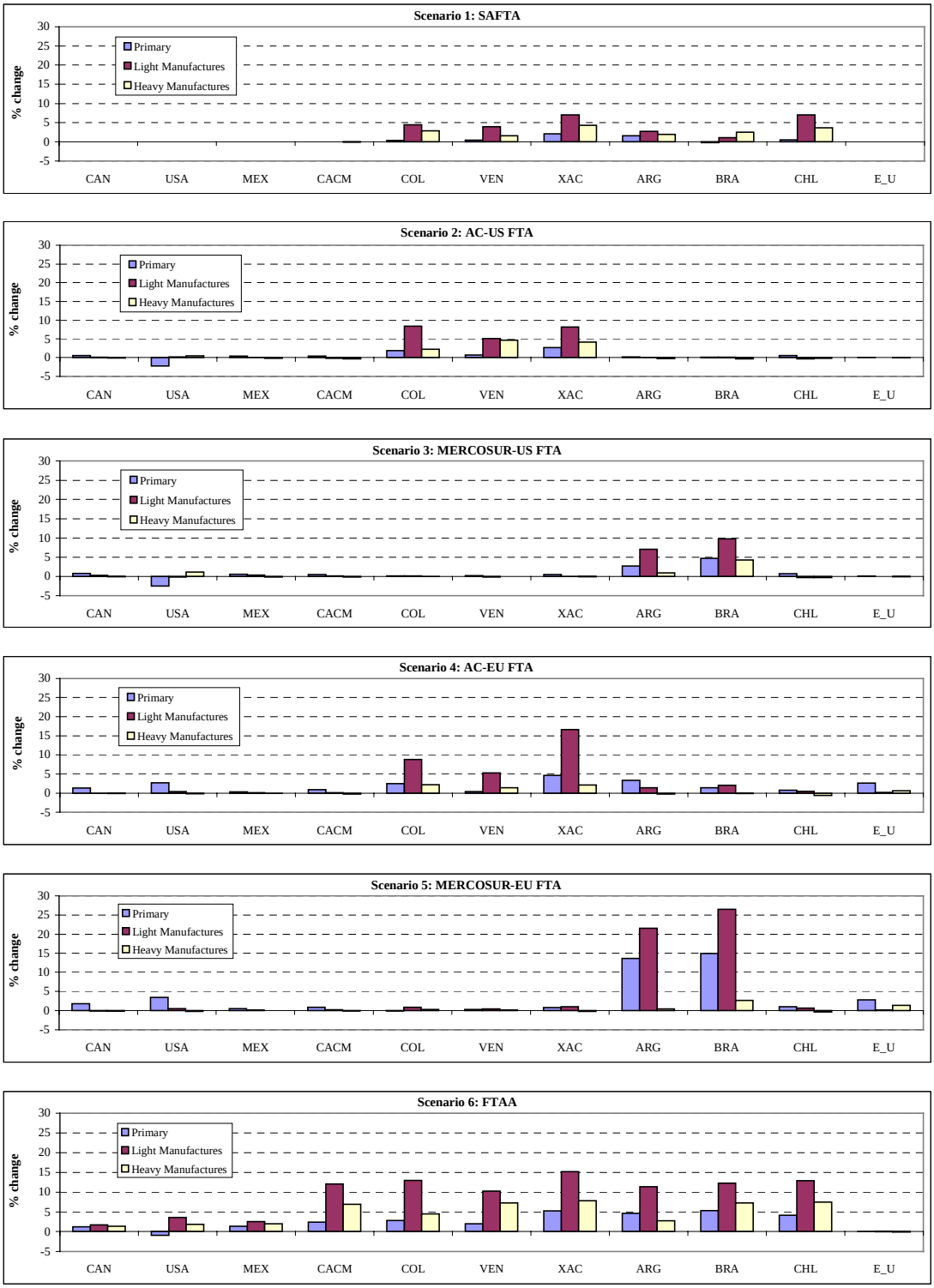

Figure 1. Impact on Exports for the Respective Partners by Macro-sector (percentage change from base)