Scenarios for trade integration in the Americas

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ABSTRACT. This paper analyzes two potential trade liberalization scenarios: a Free Trade Area of the Americas (FTAA) and an agreement between MERCOSUR and the European Union (EU). The paper utilizes a world general equilibrium model with some macro elements such as rigidities in wages and exchange rates. The empirical results show that the two regional integration scenarios create trade and increase welfare for the participants (more for the Latin American countries than for either the US or the EU) with little impact on non-participants. Realizing the potential benefits will also require adequate macroeconomic policies to avoid disruptive swings in trade balances.

JEL Classification: C5; E1; F1.
Keywords: Trade; Regional Integration; General Equilibrium Models; Developing Countries.

RÉSUMÉ. Cet article analyse deux scénarios de libéralisation des échanges : une zone de libre-échange des Amériques et un accord entre le MERCOSUR et l'Union européenne. L'article s'appuie sur un modèle mondial d'équilibre général incorporant des éléments macroéconomiques comme les rigidités au niveau des salaires et des taux de change. Les résultats empiriques montrent que les scénarios d'intégration à deux régions correspondent à une création de commerce et un accroissement du bien-être pour les participants (plus forts pour les pays d'Amérique latine que pour les États-Unis ou l'Union européenne), et qu'ils ont peu d'effets sur les non-participants. Atteindre ces objectifs potentiels nécessitera aussi d'adopter des politiques macroéconomiques qui éviteront des variations brutales dans les balances commerciales.

Classification *JEL* : C5 ; E1 ; F1.
Mots-clefs : Commerce ; intégration régionale ; modèles d'équilibre général ;
pays en développement.

◼ INTRODUCTION

Trade liberalization and economic integration in the Americas has been progressing at a steady pace since the mid-1980s. There are several reasons for these developments. On the political side, the spread of democracy in the Continent opened new opportunities for dialogue and collaboration across countries, including trade issues but also encompassing other economic and non-economic aspects. Democratic interaction replaced the segmentation and distrust that characterized much of the inter-country relationships under previous military regimes.

On the economic side, there have been important changes in trade, macroeconomic, public sector, and regulatory policies. Reduction of trade barriers occurred multilaterally, as a result of GATT/WTO negotiations; regionally, as a consequence of different trade agreements in the American continent; and unilaterally, depending on specific liberalization programs in several countries. Other economic changes, including liberalization of the current and capital accounts of the balance of payments, national treatment of foreign investments, markets deregulation, and privatization of public enterprises, led to larger capital flows and foreign direct investment in the Americas.[2] All those transformations opened opportunities for increased economic, political, social, and cultural exchanges in the Continent, and also generated further integration of LAC countries in the world economy. FIGURE 1 shows that trade expansion continues as proportion of the GDP. This is so not only because of additional policy changes related mainly to the multiple levels of different trade negotiations currently taking place, but also due to greater familiarity in the private sector with international trade opportunities created by previous policy changes. The latter implies that even in the absence of new trade liberalization initiatives, an increase of trade flows within the region should be expected – a product of the learning process in the private sector.

But, at the same time, there are different new policy negotiations and initiatives in process that would eventually facilitate further trade expansion in the region. They include ongoing discussions for the expansion of NAFTA, a Free Trade Area of the Americas (FTAA), the extension of MERCOSUR, possible links between MERCOSUR and the European Union (EU), and further global trade liberalization under the next round of WTO decided at Doha in November 2001. This paper concentrates on only two scenarios for those trade negotiations: a possible FTAA and a potential agreement between MERCOSUR and the European Union. Because of the economy-wide nature of the implications of the scenarios considered, the framework of analysis is a world computable general equilibrium (CGE) model.[3] The rest of the

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2. See for instance Morley, Machado and Pettinato (1999) who quantified the advance of policy reform in trade, finance, tax, privatization, and capital account regimes.
3. There is a long and active literature analyzing various integration and trade liberalization scenarios in Latin America, and elsewhere, using multi-country world CGE models. See, for example, the survey in Robinson and Thierfelder (1999). Recent examples focusing on Latin America include: Burfisher and Jones (Eds) (1998); Diao and Somwaru (2000 and 2001); Hinojosal-Ojeda *et al.* (1997); Robinson, Burfisher and Thierfelder (1998); Roland-Holst and van der Mensbrugghe (2001).

Figure 1 – Trade as a percentage of GDP in Latin American countries

% of GDP
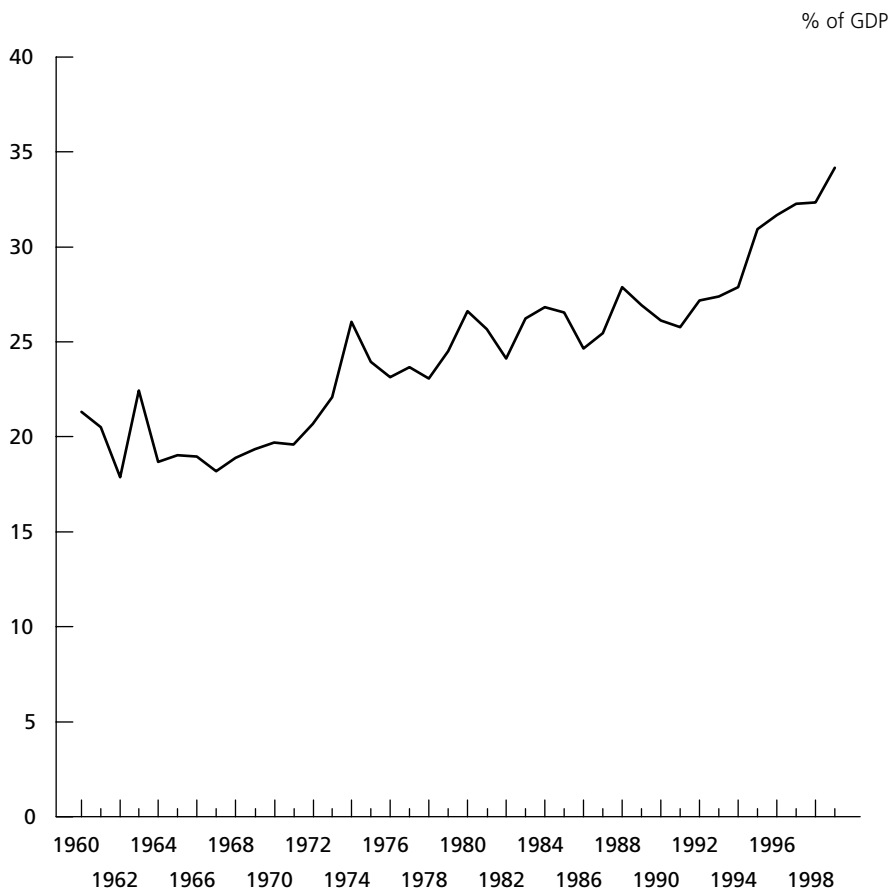
paper is organized as follows. The next section provides a quick background with trade trends and negotiating issues. The following section reviews the main characteristics of the model and the data utilized. Then the nature of the policy experiments, and the main results are presented. F inally some policy conclusions and issues for further analysis are discussed.

■ TRADE TRENDS AND ISSUES

Trade trends

TABLES 1 and 2 show the structure of the bilateral flows for the three regions (North America, Latin America, and Western Europe) and by major regional trade agreements (RTAs) involved: NAFTA, the EU-15, and MERCOSUR. For Western Europe, more than 2/3 of trade takes place within the region, while for North America, intra-regional trade is still the most import com-

ponent with almost 40% of total trade, but not as large as in Europe. For Latin America, intra-regional trade is the second largest component with 17% of all trade. However, if the Americas are considered as a whole, for North America about 55% of trade happens within the region, while for LAC the ratio of intra-regional trade flows goes up to more than 3/4 of all trade (TABLE 1). Intra-America's total trade grew at an average of 10.2% per year between 1990 and 2000, more than double the rate of extra-hemispheric trade (4.4%), and the intra-trade share jumped from 48% to 61% of the total (IADB, 2001).

Table 1 -   Intra- and inter-regional merchandise trade, 2001

Billion dollars and percentage

Origin	Destination							
	North America	Latin America	Western Europe	Other Europe	Africa	Middle East	Asia	World
North America	391	164	188	7	13	21	207	991
Latin America	211	59	42	3	4	4	22	347
Western Europe	255	58	1,677	147	63	65	195	2,485
World	1,308	335	2,429	252	127	163	1,298	5,984
Share of intra- and inter-regional trade flows in each region's total merchandise exports								
North America	39.5	16.5	19	0.7	1.3	2.1	20.9	100
Latin America	60.8	17	12.1	0.9	1.2	1.2	6.3	100
Western Europe	10.3	2.3	67.5	5.9	2.5	2.6	7.8	100

Source: From WTO, 2002.

Looking at the RTAs (TABLE 2), for the EU-15 more than 60% of total trade takes place within the region; for NAFTA comparable figures are about 55% on the export side but it is still less than 40% on the import side; and for MERCOSUR as a whole is less than 20% on both exports and imports. Although the share of trade within the European Union is higher, trade outside the region is growing faster, while the opposite holds for both NAFTA and MERCO-SUR where interregional trade has been going up much faster than trade outside those RTAs (TABLE 2).

Trade issues

The European Union has been negotiating numerous free trade agreements with important exclusions in agriculture (see the European Commission, 2001). The simulations reported here assume no exclusions from free market access. However, regarding agriculture, the simulations presented below also assume that neither the US and Canada (within the FTAA), nor the EU (within the FTMEU), will eliminate support to their producers in the regional trade agreements considered here. Those countries have already indicated that they are prepared to negotiate domestic support only within multilateral negotiations in the WTO.

Table 2 - Merchandise trade of selected regional integration arrangements, 2001

Billion dollars and percentage

	Value	Share in total exports/imports			Annual percentage change		
	2001	1990	1995	2001	1990-01	2000	2001
EU (15)							
Total exports	2,291	100	100	100	4	3	−1
Intra-exports	1,417	64.9	64.01	61.85	3	1	−2
Extra-exports	874	35.1	35.99	38.15	5	7	0
Total imports	2,334	100	100	100	4	6	−3
Intra-imports	1,421	63	65.23	60.89	3	1	−2
Extra-imports	913	37	34.77	39.11	4	15	−4
NAFTA (3)							
Total exports	1,149	100	100	100	7	15	−6
Intra-exports	637	42.6	46.06	55.46	9	18	−6
Extra-exports	512	57.4	53.94	44.54	4	11	−6
Total imports b	1,578	100	100	100	8	18	−6
Intra-imports	624	34.4	37.72	39.55	9	17	−7
Extra-imports	954	65.6	62.28	60.45	7	19	−6
MERCOSUR (4)							
Total exports	88	100	100	100	6	14	4
Intra-exports	15	8.9	20.51	17.26	13	17	−14
Extra-exports	73	91.1	79.49	82.74	5	13	9
Total imports	84	100	100	100	10	8	−6
Intra-imports	16	14.5	18.07	18.88	13	12	−11
Extra-imports	68	85.5	81.93	81.12	9	8	−5

Note: The figures are not completely adjusted for differences in the way members register their merchandise trade.

Source: From WTO, 2002.

At the same time countries in the American Continent and in Europe are embarked in different trade negotiations, with potential impacts on the results of the two RTAs considered in this analysis. The European Union, itself the result of a wide-ranging process of economic and political integration, is pursuing the enlargement of the Union, while at the same time, negotiating and participating in several other trade agreements. Ten countries (Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, and Slovenia) are likely to join the EU in 2004, while two other (Bulgaria and Romania) may join later in the decade. Trade agreements with these countries have been part of the Europe Agreements since 1992. In addition, the EU has negotiated a FTA with South Africa in October 1999; signed the Cotonou Agreement (successor to previous Lomé Conventions) with 77 African, Caribbean and Pacific (ACP) countries on June, 2000, which (among other things) establishes that Regional Economic Partnership Agreements (REPA) on trade will be negotiated and prepared between 2002-2008; and the EU approved the so-called 'Everything But Arms' (EBA) Initiative on February 26, 2001, which removes all tariffs and quotas on all

EU imports except arms (but also establishes special regimes for sugar, rice, and bananas) from the 49 Least Developed Countries (which include 40 Least Developed ACP countries). There are also bilateral agreements with a number of countries, including some in the Americas, like Mexico.

The US has also embarked in different regional trade arrangements and trade frameworks, including, among others, free trade areas (FTAs) with countries such as Jordan, Singapore, and Chile, and preferential trade agreements, like the African Growth and Opportunity Act (AGOA) with 34 sub-Saharan African countries, the Caribbean Basin Trade Partnership Act (CBTPA), and Andean Trade Preference Act (ATPA). Other countries in the Americas, particularly Canada, Mexico, and Chile, are very active negotiating bilateral trade agreements, while other sub-regional initiatives, including Central American, Andean, and Caribbean countries are also involved in different forms of trade talks.

At the same time all WTO Member countries have initiated multilateral negotiations for world trade liberalization, as agreed at Doha, Qatar, in November 2001.

The impact of a the FTAA and the MERCOSUR-EU trade agreements would depend not only on the specific commitments considered in them, but also on the interaction with some other trade agreements that may occur in parallel or before the respective negotiating process are completed.

Some of those trade agreements may also influence negotiations on other issues. An obvious case is the WTO negotiations on agriculture, which will have an impact on domestic support and export subsidies. Within regional trade agreements, some examples may be the labor and environmental clauses in the FTA between US and Jordan (those issues in NAFTA were not part of the agreement but were handled as side letters); the discussion about the potential expansion of obligations related to intellectual property (for example, whether there would be granting of patents to seeds under a potential FTAA, when now under the WTO, seeds can be protected by ad-hoc regimes, such as UPOV [4], the most common framework utilized by developing countries); and, possibly, the issue of how the EU position on GMOs may extend to other trading partners (Eastern Europe, developing countries) through RTAs.

■ MODEL AND DATA

The framework of analysis is a general equilibrium model with a multi-region and multi-sector specification. The base year is 1997 and most of the data come from the database of the Global Trade Analysis Project (GTAP), version 5 (Dimaranan and McDougall, 2002).

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4. The International Union for the Protection of New Varieties of Plants (known by its French acronym UPOV) administers a form of IPR under the International Convention for the Protection of New Varieties of Plants (adopted in Paris in 1961 and revised in 1972, 1978 and 1991).

The structure of this class of static world CGE is described in greater detail elsewhere (see for instance Lewis, Robinson, and Wang, 1995). It can also be run in a dynamic specification (see Diao and Somwaru, 2000), but in that case, because of very large computer memory requirements, the level of disaggregation of products and countries/regions has to be reduced compared to what is being presented here. There are 38 products and 29 countries and regions (see Appendix). For the American Continent there are 13 countries/regions (USA, Canada, Mexico, Central America and Caribbean, Colombia, Peru, Venezuela, Rest of Andean Pact, Argentina, Brazil, Chile, Uruguay, and Rest of South America). The disaggregation for the agricultural and agroindustrial goods and for the American Continent is the maximum possible included in the GTAP v5 database. For the aggregation of other developing regions a cluster analysis of food security situations (Diaz-Bonilla et al, 2000) was utilized. There are 5 factors of production: skilled labor, unskilled labor, capital, land, and natural resources.

The main institutions of the model are as follows. First, there is a single private household in each country that saves a constant proportion of disposable income and buys consumption goods. The household in each country owns the firms but also works there, receiving wages, distributed profits, and lump-sum transfers (which may be negative) from the government. The government spends all its tax revenues on consumption or lump-sum transfers to households. A capital account collects savings and buys investment goods. Producers within a country/region are aggregated into one representative firm for each sector, which produces the respective good or service, buying intermediate goods and hiring factors of productions. In making production decisions, the firms choose the levels of labor and intermediate inputs to produce a single sectoral output, taking into account the price of sectoral outputs, the wage rate, the prices of intermediate inputs, and the existent stock of capital. Sectoral outputs are either sold in the domestic market or exported to foreign markets.

In a multi-region and multi-sector global model, with an Armington specification, the domestically produced and consumed good from each sector is different both from the export good generated in that same sector (with that differentiation captured through a CET function), and from the imported good corresponding to that sector (utilizing a CES function). The composite export and import goods from each sector are differentiated by country of origin/destination based on constant elasticity functions acting as an aggregator. Commodity trade flows are differentiated by their geographical and sectoral origin and destination.

Domestic and world markets for goods and services equilibrate through changes in endogenously determined prices. Domestic production and consumption prices interact with world prices, the real exchange rate per country, different levels of border protection, and, if applicable, consumption, production, and export subsidies.

Factor markets also equilibrate through the interaction of demand, supply and prices. In the simulations the supply of all factors of production other than labor are kept at the base levels, and there are no changes in inter-country savings and investments flows. The labor

markets can be run with full employment (with wages as the equilibrating variable) or two alternative specifications with endogenous (un)employment: one with nominal wages fixed and an other with real wages fixed. Wages (and returns to other factors of production) may vary across sectors due to other imperfections in markets that are assumed not to change with the policy experiments presented here.

The model has two other specification changes from the standard world CGE framework. First, it includes a cash-in-advance technology (Clower, 1967) that can be utilized to anchor the nominal variables (see Walsh 1998, among others, for a general discussion of cash-in-advance models; Díaz-Bonilla, Reca, and Piñeiro, 2000, for the inclusion of a cash-in-advance technology in a CGE model). If all nominal variables are free to move, money is a "veil" and the model behaves as in the classical dichotomy in Walrasian models between the determination of relative prices and the determination of absolute levels (Patinkin, 1965). If there is any rigidity in a monetary variable, then changes in money supply or demand will have real effects. The importance of those effects will depend on the number of variables affected by nominal resistance and the degree of such resistance. A cash-in-advance specification can be derived by assuming money in the utility function (Feenstra, 1986), linking the monetary technology to the value of consumption goods. Conceivably, money can also appear as an argument in the production function (Fisher, 1974), which would link the monetary constraint to the value of production.[5] Here the cash-in-advance technology combines constraints for both consumption sales and a production, equally weighted.

Second, it is assumed that trade liberalization affects country productivity through different channels: the learning-by-doing, access to new knowledge, and scale effects of increased exports; the technological spillovers due to greater availability of better capital and intermediate goods for production; and the increase in competition in previously protected domestic markets (see the discussion of the links between trade, technology and productivity in Balassa, 1989; Grossman and Helpman, 1995; and Romer, 1994; for CGE applications with productivity linked to trade see, for instance, de Melo and Robinson, 1995; Lewis, Robinson, and Wang, 1995; and Diao and Somwaru, 2001). The model includes an endogenously determined TFP variable for each sector's value-added function. Within each country, the sectoral TFP is augmented with the increase in the volume of total trade normalized by country's total labor supply. By assuming a labor-augmenting technological change, the elasticity in the sectoral TFP function is calibrated from the factor intensity at sector's level for each country.

The US nominal exchange rate is fixed at 1, i.e., the US dollar is chosen as the world numeraire, and world prices are expressed in US dollars. Every country has its own nominal exchange rate, which may be fixed or allowed to float depending on the choice of the closure (see below), and also a country-specific numeraire price index (a price index of domestic goods). Changes in the nominal exchange rate in a region correspond to a change in the real exchange rate, defined as

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5. In principle, both specifications are compatible with the system of national accounts.

the ratio of the prices of traded goods to non-traded goods in each country/region. In this class of country models, there is a functional relationship between the real exchange rate and the trade balance in each region (Devarajan, Lewis, and Robinson, 1993).

■ SIMULATIONS

Scenarios

The world CGE is utilized to simulate two scenarios: a Free Trade Area of the Americas (FTAA), and a free trade agreement between MERCOSUR (including Chile and Bolivia) and the European Union (FTMEU). Trade restrictions are measured as ad valorem tariff equivalents. The main source of the initial levels of tariff rates for the countries and regions in the model is the same database GTAP v5. The tariff rates are weighted applied rates for each individual country and region in the database, and the weights are sectoral import shares for countries/regions in the model.

In both simulations it is assumed that full market access is allowed for all sectors across the participating countries or regions (i.e. all tariff barriers are eliminated). Obviously, the model can also be run with sectors exempted in different degrees from full market access (say sugar or automobiles), including the permanence of some tariff rate quotas. However, regarding agriculture, it is also assumed that neither the US and Canada (within the FTAA), nor the EU (within the FTMEU), will eliminate support to their producers in the regional trade agreements considered here. Therefore, the distorting effects of producer subsidies remain. Moreover, agricultural trade, particularly fresh products such as fruits and vegetables, may also be blocked by phytosanitary measures and similar non-tariff barriers, which do not show up on the tariff equivalent data included in the GTAP v5. For this reason, the potential impact of full market access may be underestimated in the model.

It was also mentioned that there are other trade negotiations in process for all parties involved, but it is not yet clear what final form several of those other trade scenarios will assume (or how they will be implemented in the cases they have been already agreed upon). Therefore, we concentrate on "pure" FTAA or FTMEU: i.e. without considering other trade events besides the specific agreement considered.[6]

Closure

The simulations are based on a mix of regimes for labor markets. For all the countries in Latin America employment changes depending on the demand for labor with real wages fixed.[7] Therefore, the simulations show variations in employment levels. For the United

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6. If other parallel or future events not considered in the simulations dilute the possible gains from access to the markets of the participating countries, then the results presented here should be considered an upper bound for possible impacts on the countries included.
7. The model considers the consumption real wage, i.e. the nominal wages deflated by the consumer price index. Simulations can also be done with the real wage deflated by the producer price index, which would then be production real wage.

States and Canada flexible wages play the equilibrating role in labor markets, which clear for predetermined levels of labor supply (i.e. the assumption of a "full employment" regime). The rest of the countries and regions are also run with fixed labor supplies, and wages equilibrate their labor markets.[8]

Countries with hard pegs such as those that adopted a dollarization regime, are run with fixed nominal exchange rates. Other countries float against the dollar, which is the world numeraire. Capital inflows and components of the current account other than trade are considered fixed exogenously at the base levels. In this way the overall trade balance is also kept at base levels. The real exchange rate is determined endogenously in all countries (Devarajan, Lewis, and Robinson, 1993; Robinson, 1991). In addition to foreign savings, also investment demand, and government consumption of goods and services are kept constant at base levels.[9]

Although the cash-in-advance constraint allows the determination of nominal variables by fixing the money supply, the simulations presented here follow the more traditional approach of defining a price index as the domestic numeraire to facilitate comparison with other simulations.[10] The index utilized corresponds to the prices of the domestic goods.

Results

TABLES 3 to 7 show different indicators of the simulated effects of the FTAA and FTMEU.

Changes in real GDP are positive for the countries participating in the FTAA and the FTMEU, while levels of the consumer prices decline slightly (TABLE 3). For the bigger countries (USA and Canada, in the FTAA, and the European Union, in the FTMEU), the increases in the GDP are below 1%. Mexico, which already has access to the US and Canadian markets, benefits slightly from the FTAA. Central America and Colombia appear to have larger increases in real GDP from the FTAA (6.3% and 5.5%, respectively). Chile and Uruguay, already global traders, have the smallest increase. For FTMEU, Argentina and the region of rest of South America gain the most in terms of real GDP, while Chile gains the least.[11] Both the FTAA and the FTMEU appear to generate quite small effects on rest of the world in terms of change in GDP, and some countries, mostly in Asia, are slightly negatively affected.

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8. In the case of the European Union the assumption of fixed labor supplies can be interpreted as resulting not from full employment, but from rigidities in the labor market where unemployment is determined by conditions that do not change with the policy experiments considered here.

9. A referee suggested that the simulations be run allowing changes in trade imbalances. With the other components of the current account fixed at the base levels this suggestion amounts to changes in foreing indebtedness. However, the assumptions of foreign indebtedness, capital accumulation, and government borrowing all exogenously fixed at base levels are necessary to be able to make meaningful welfare evaluations of the different scenarios in this comparative statics framework. Such a closure avoids the misleading effects that may appear otherwise as a result of welfare losses or gains in later periods caused by changes in future assets or liabilities (see Lofgren *et al.*, 2001).

10. The cash-in-advance equation now indicates the expansion or contraction of money supply (not reported here) needed to accomodate the simulated changes in trade policies.

11. If the FTMEU is run excluding agriculture, the results (not shown here), indicate that it would still have a positive impact on MERCOSUR countries but the full effect on GDP, for example, may be cut in half or more for all contries in South America, except Brazil and Chile (who would lose about 20% of the benefits) This result suggests the importance of maintaining agriculture as part of the negotiations for several of the MERCOSUR countries.

Table 3 -　　　　Change in real GDP and consumer price index

% change from the base

	Real GDP		CPI	
	FTAA	FTMEU	FTAA	FTMEU
US	0.77	−0.02	−0.03	0.00
Canada	0.51	−0.01	−0.08	0.00
Mexico	0.60	−0.01	−0.17	0.00
Central America and Caribbean	6.21	−0.03	−1.20	0.01
Colombia	5.48	−0.01	−0.29	0.00
Peru	3.14	−0.01	−0.17	0.00
Venezuela	3.61	0.03	−0.67	−0.01
Rest of Andean Pact	4.16	0.08	−1.30	−0.04
Argentina	3.32	4.35	−0.40	−0.19
Brazil	2.80	2.86	0.08	0.09
Chile	1.82	1.14	−0.33	−0.21
Uruguay	1.26	1.95	−0.24	−0.40
Rest of South America	5.07	5.41	−1.09	−1.62
Australia and New Zealand	−0.03	−0.03	0.00	0.00
Japan and Korea	0.00	−0.01	0.00	0.00
European Union	−0.02	0.34	0.00	−0.01
China	−0.02	0.00	0.00	0.00
Indonesia	−0.06	−0.01	0.02	0.00
Philippines	0.00	0.02	0.02	−0.01
India	−0.05	−0.01	0.01	0.00
Asia agricultural exporting	0.01	0.01	0.01	0.00
Rest of Asia	−0.21	0.04	0.02	0.00
East European and Rest of Europe	0.00	0.01	0.00	0.00
Turkey	−0.04	0.01	0.00	0.00
North Africa and rest of Middle East	0.03	0.04	−0.01	−0.01
South Africa	−0.02	−0.02	0.01	0.00
Africa mainly importing from the EU	0.00	−0.01	0.00	0.00
Africa diverse trading partners	−0.11	−0.09	0.01	0.02
Rest of the World	0.02	0.00	0.00	0.00

Source : Author's model calculation based on IFPRI's world model using GTAP5 database.

Gains in American countries' GDP due to FTAA are further decomposed according to three different sources – efficiency in resource allocation, improvement in TFP, and increase in employment. Without taking into account TFP effects and possible job creation, gains from FTAA for American countries due to more efficient allocation of current endowments, i.e., current supply of labor, capital, and land, are modest. While job creation due to FTAA generates additional modest gains in GDP, the most important contribution to the rise in GDP is from the improvement in TFP, accounting as high as 85 – 90% of increased GDP in Canada and US, and more than 50% for the other 8 Latin American countries/regions (TABLE 4).

The impacts of the simulations on wages or labor markets appear in TABLE 5. For US and Canada in which wages are the equilibrating variables in labor markets, the simulations show small increases in real wages for both skilled and unskilled labor after FTAA. For the rest of

Table 4 -   Decomposition of FTAA effect on real GDP in America

% change from the base

	Gain/loss from			
	Efficiency	TFP	Employment	Total
US	0.07	0.70	0.00	0.77
Canada	0.08	0.43	0.00	0.51
Mexico	0.16	0.33	0.10	0.60
Central America and Caribbean	2.03	2.83	1.35	6.21
Colombia	0.65	3.89	0.94	5.48
Peru	0.81	1.99	0.34	3.14
Venezuela	1.04	1.96	0.61	3.61
Rest of Andean Pact	1.83	1.95	0.39	4.16
Argentina	0.15	2.42	0.74	3.32
Brazil	0.22	2.22	0.36	2.80
Chile	0.32	0.97	0.54	1.82
Uruguay	0.05	0.79	0.42	1.26
Rest of South America	2.03	1.88	1.16	5.07

Source : Same as table 3.

world, both FTAA and FTMEU produce minor effects on the real wages. In the case of the LAC countries, whose labor markets are modeled in an unemployment mode with rigid real wages, the equilibrating variable is employment. Both the occupation of skilled and unskilled labor increases across Latin America under the FTAA, with the strongest percentage increases in Central America and Caribbean, Argentina, and rest of South America for the unskilled labor, and Central America, Colombia, and rest of Andean Pact for the skilled labor. Changes in employment in Chile and Uruguay, although positive, tend to be smaller than for the other LAC countries. The percentage changes of the simulations suggest an overall increase of employment of about 5.1-5.6 million jobs in the participating LAC countries.

The FTMEU also creates strong employment effects in the MERCOSUR members, with the largest increases for Argentina, and the Rest of Mercosur, and the smallest for Chile. The increases in total employment amount to about 2.8-3.0 million jobs.

TABLES 6 and 7 show changes in trade as a result of both agreements. In the FTAA, exports and imports increase significantly for most countries in the America, while trade rises modestly in US and Canada (which are big diversified exporters), and Mexico (which already has access to the US market). The FTMEU show similar patterns, with the European Union showing small increases, and strong effects for the Latin countries, with Chile appearing at the lower end (TABLE 6).

The FTAA creates trade (exports plus imports) at the world level, for almost 60 billion US dollars, or 0.6% of total world trade. There is a very small amount of trade decrease (trade diversion) in the countries not participating in the FTAA of about 1 billion US dollars (or 0.02% of the trade of the countries not participating). The effect of the FTMEU on world trade is about half that of the FTAA: it leads to an increase of world trade of about 26 billion

Table 5 -   Change in real wages or employment

	Unskilled labor		Skilled labor	
	FTAA	FTMEU	FTAA	FTMEU
US and Canada: change in real wages				
US	0.7	0.0	0.7	0.0
Canada	0.5	0.0	0.5	0.0
Other Americas: change in employment				
Mexico	0.5	0.0	0.8	0.0
Central America and Caribbean	4.5	0.0	7.1	−0.1
Colombia	3.6	0.0	5.7	0.0
Peru	1.7	0.0	2.8	0.0
Venezuela	3.0	0.0	3.7	0.0
Rest of Andean Pact	3.4	0.1	5.5	0.1
Argentina	3.9	4.6	3.4	4.1
Brazil	1.4	1.4	2.4	2.4
Chile	1.4	0.8	2.1	1.4
Uruguay	1.4	2.1	1.5	2.4
Rest of South America	4.3	5.2	6.9	8.3
Rest of the world: change in real wages				
Australia and New Zealand	0.0	0.0	0.0	0.0
Japan and Korea	0.0	0.0	0.0	0.0
European Union	0.0	0.3	0.0	0.3
China	0.0	0.0	0.0	0.0
Indonesia	−0.1	0.0	0.0	0.0
Philippines	−0.1	0.0	0.0	0.0
India	−0.1	0.0	0.0	0.0
Asia agricultural exporting	−0.1	0.0	0.0	0.0
Rest of Asia	−0.2	0.0	−0.2	0.0
East European and Rest of Europe	0.0	0.0	0.0	0.0
Turkey	−0.1	0.0	0.0	0.0
North Africa and rest of Middle East	0.0	0.0	0.0	0.0
South Africa	0.0	0.0	0.0	0.0
Africa mainly importing from the EU	−0.1	−0.1	0.0	0.0
Africa diverse trading partners	−0.1	−0.1	0.0	−0.1
Rest of the World	0.0	0.0	0.0	0.0

Source : Same as table 3.

US dollars, or about 0.3% of the world trade, also with a very small decrease of trade in the non-participating countries (TABLE 7). The result that the regional trade agreements are net trade creating is consistent with empirical studies of other such agreements (Robinson and Thierfelder, 1999).

Table 6 - Change in total imports and exports

% change from the base

	Total exports		Total imports	
	FTAA	FTMEU	FTAA	FTMEU
US	1.2	0.0	1.2	0.0
Canada	0.6	0.0	0.8	0.0
Mexico	1.0	0.0	1.4	0.0
Central America and Caribbean	12.1	0.0	7.5	0.0
Colombia	9.8	0.0	7.8	0.0
Peru	9.0	0.0	6.2	0.0
Venezuela	4.8	0.0	6.8	0.1
Rest of Andean Pact	7.8	0.0	7.6	0.2
Argentina	6.6	8.1	6.4	7.8
Brazil	7.3	7.5	4.2	4.2
Chile	3.1	2.0	2.7	1.7
Uruguay	2.4	3.7	2.2	3.4
Rest of South America	7.5	7.0	5.0	6.6
Australia and New Zealand	0.0	–0.1	–0.1	–0.1
Japan and Korea	0.0	0.0	0.0	0.0
European Union	0.0	0.5	0.0	0.6
China	0.0	0.0	–0.1	0.0
Indonesia	–0.1	0.0	–0.2	0.0
Philippines	0.0	0.0	0.0	0.0
India	–0.1	0.0	–0.1	0.0
Asia agricultural exporting	0.0	0.0	0.0	0.0
Rest of Asia	–0.4	0.1	–0.3	0.1
East European and Rest of Europe	0.0	0.0	0.0	0.0
Turkey	–0.1	0.1	0.0	0.0
North Africa and rest of Middle East	0.0	0.0	0.1	0.1
South Africa	0.0	0.0	–0.1	0.0
Africa mainly importing from the EU	0.0	0.0	0.0	0.0
Africa diverse trading partners	–0.3	–0.1	–0.1	–0.2
Rest of the World	0.0	0.0	0.0	0.0

Source: Same as table 3.

Table 7 - Change in total trade by region

	Exports	Imports	Total trade	Exports	Imports	Total trade
	Billion US$ from base			% change from base		
FTAA						
Americas	29.2	29.7	58.9	2.02	1.85	1.93
Rest of the world	–0.3	–0.7	–1.0	–0.01	–0.02	–0.02
Total	28.9	28.9	57.9	0.62	0.62	0.62
FTMEU						
EU-Mercosur	13.6	13.4	27.0	1.17	1.20	1.18
Rest of the world	–0.5	–0.4	–0.9	–0.02	–0.01	–0.01
Total	13.0	13.0	26.0	0.3	0.28	0.28

Source : Same as table 3.

■ Conclusions

The empirical results lead to the conclusion that these alternative regional integration scenarios – an FTAA or a potential agreement between MERCOSUR and the European Union – are good for the participants and have little impact on the non-participants. Trade creation greatly exceeds trade diversion, so both these scenarios are net trade creating, and the trade-diversion has relatively minor effects on the affected regions. For example, real wages of unskilled workers fall very slightly in Asia, but the effect on skilled wages is negligible.

In general, the gains are larger for the Latin American participants than for their large potential partners – the US and EU. These results are consistent with earlier studies of NAFTA, which also predicted small positive gains for the US and large gains for Mexico (Burfisher, Robinson, and Thierfelder, 2001).

An important caveat is that these simulations keep other possible policy changes and shocks exogenously fixed in order to identify the impacts resulting only from changes in the specific set of trade policies of interest (i.e. an FTAA and a MERCOSUR-EU trade agreement). However, it is obvious that those RTAs are not the only influences on actual trade flows. Many countries in Latin America are currently undergoing macroeconomic strains, and growth in the region has slowed. In this environment, external shocks and stabilization and structural adjustment programs are likely to lead to significant swings in trade balances and exchange rates. While short-term in nature, such swings cause far larger changes in the prices of tradable goods in these economies than would result from the type of trade liberalization and regional integration policies considered in this paper.[12] The lesson is that it is hard to reap the long-term benefits of trade liberalization in an environment of macroeconomic instability, and that, therefore, the negotiated RTAs must also consider appropriate macroeconomic stabilization and coordination policies among the parties involved.

Finally, a note on methodology. The model used in this paper is in the tradition of neoclassical multi-country computable general equilibrium models that, over the past fifteen years, have provided the core empirical framework for analyzing the impact of trade liberalization scenarios. It has long been recognized that this modeling framework must be extended to incorporate advances in both macro and micro elements if it is to provide an adequate framework for analyzing: (1) the impact of international and domestic policy liberalization on poverty and income distribution; and (2) the impact of structural adjustment and macro stabilization programs. Our model incorporates some macro elements such as a cash-in-advance mechanism and rigidities such as fixed wages and fixed exchange rates. While the literature on such extensions is growing, there is much to be done to provide a theoretical and empirical framework that adequately reconciles micro and macro theory.

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12. See, for example, Robinson, Burfisher, and Thierfelder (1998) who analyze the long-term impact on Argentina and Brazil of forming a customs union under Mercosur and compare the results with the impact of Brazilian devaluations.

On the distribution and poverty side, there has also been much progress, while, at the same time, much remains to be done. A few models have been developed of individual countries that incorporate both a CGE model and models of individual household behavior based on empirical work with household surveys (Cogneau D. and Anne-Sophie Robilliard, 2000). These "microsimulation models" hold great promise and work is underway at IFPRI using this framework in a number of Latin American countries (see for instance Morley and C. Diaz-Bonilla, 2002).

<div align="right">X. D., E. D.-B. & S. R.</div>

APPENDIX 1

Table A1.1 -   Disaggregation of Countries and Products

A. Countries and Regions	
USA	US
CAN	Canada
MEX	Mexico
XCM	Central America and Caribbean
COL	Colombia
PER	Peru
VEN	Venezuela
XAP	Rest of Andean Pact
ARG	Argentina
BRA	Brazil
CHL	Chile
URY	Uruguay
XSM	Rest of South America
ANZ	Australia and New Zealand
JPK	Japan and Korea
E_U	European Union
CHN	China
IDN	Indonesia
PHL	Philippines
IND	India
ASX	Asia agricultural exporting
OAS	Rest of Asia
EEU	East European and Rest of Europe
TUR	Turkey
NAF	North Africa and rest of Middle East
SFC	South Africa
AFC	Africa food insecure mainly importing from the EU
AFD	Africa food insecure diverse trading partners
ROW	Rest of the World

B. Products	
PDR	Paddy rice
WHT	Wheat
GRO	Other grains
V_F	Fruits and vegetables
OSD	Oilseeds
C_B	Sugar cane sugar beet
PFB	Plant-based fibers
OCR	Other crops
CTL	Bovine cattle, sheep and goats, horses
OAP	Other animal products
RMK	Raw milk
WOL	Wool, silk
FRE	Forestry
FSH	Fishing
CMT	Bovine cattle, sheep, goat, meat products
OMT	Other meat products
VOL	Vegetable oils and fats
MIL	Dairy products
PCR	Processed rice
SGR	Sugar
OFD	Other food products
B_T	Beverages and tobacco products
ENG	Energy
OMN	Other minerals
TEX	Textiles
WAP	Wearing apparel
LEA	Leather products
PPP	Wood, paper products, publishing
P_C	Petroleum, coal products
CRP	Chemical rubber plastic products
NMM	Other mineral products
MVH	Motor vehicles and parts
OTN	Other transport equipment
ELE	Electronic equipment
OME	Other machinery and equipment
UTL	Electricity water
CNS	Construction
OSG	Other services and Government

Source : IFPRI's model.

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