

Regional Trade Agreements and U.S Agriculture. Mary E. Burfisher and Elizabeth A. Jones, editors. Market and Trade Economics Division, Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 771.

Abstract

Regional trade agreements (RTA's) have become a fixture in the global trade arena. Their advocates contend that RTA's can serve as building blocks for multilateral trade liberalization. Their opponents argue that these trade pacts will divert trade from more efficient nonmember producing countries. U.S. agriculture can benefit from participating in RTA's and may lose when it does not. Agriculture is an important source of potential U.S. gains from RTA's. While the United States, as a global trader with diverse trade partners, can gain potentially more from global free trade than from RTA's, many recent RTA's have been more comprehensive in their liberalization of agricultural trade liberalization than the Uruguay Round. A strong multilateral process can help ensure that RTA's are trade creating, rather than protectionist.

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Regional trade agreements (RTA's) have become an increasingly important part of the global trading system. The United States has become an active participant in RTA's, with memberships in the North American Free Trade Agreement (NAFTA), the Asia Pacific Economic Cooperation (APEC) forum, and the U.S.-Israel Free Trade Agreement. The United States also has trade initiatives in the Caribbean Basin. An important new regional trade agreement is the proposed Free Trade Area of the Americas (FTAA), which would encompass most countries of the Western Hemisphere, and help reconcile the proliferation of trade agreements in the Hemisphere into one comprehensive trade pact.

Regional trade agreements have generated intense debate. Advocates for RTA's emphasize their *trade-creating* effects. By providing for freer trade among members, RTA's can increase welfare by shifting regional production toward the most efficient producers, enabling consumers to purchase goods at lower prices. Opponents of RTA's argue that because most agreements introduce some degree of trade discrimination, they are likely to divert trade from more efficient producers in the rest of the world. A second issue raised by RTA's is their effect on multilateral trade negotiations. Whether RTA's will reinforce or accelerate global trade talks, or act to slow down or derail them is under debate.

This report analyzes the implications of regional trade agreements for U.S. agriculture. Key findings include:

—*U.S. agriculture can gain from participating in RTA's.* By lowering trade barriers among members, the major RTA's in which the United States participates—NAFTA, APEC and, potentially, the FTAA—are expected to benefit U.S. agriculture. In the long term, their trade-creating effects—increased agricultural trade and specialization among RTA partners—will increase the efficiency of U.S. agricultural producers and reduce prices for consumers. These RTA's are expected to improve the U.S. international terms of trade in agriculture, with an increase in U.S. farm export prices relative to import prices.

—*U.S. agriculture can lose when not a member of RTA's.* Expansion of the European Union (EU) is likely to divert agricultural trade and reduce U.S. agricultural exports to the EU and to third markets. But, the current CAP program is probably unsustainable with EU expansion, and potential EU farm program reforms would reduce these negative impacts on the United States. A U.S. decision to remain outside the FTAA would divert trade from U.S. agriculture. However, many expect RTA's to induce economic growth in the Western Hemisphere. If this trade-linked growth occurs, the United States is expected to benefit from the FTAA, even as a nonmember.

—*Agriculture is an important source of U.S. gains from RTA's.* Gains from trade liberalization are roughly proportional to the size of the trade barrier. Because U.S. agricultural exports still face relatively high trade barriers in world markets, the inclusion of agriculture in trade agreements accounts for much of the U.S. gains from RTA's. Over the past decade, RTA's have become more compre-

hensive in their treatment of agriculture, in contrast to earlier RTA's, many of which excluded agriculture.

—*RTA's interact with domestic farm programs.* RTA's limit the ability of member countries to maintain independent farm programs. Market arbitrage within a free trade area will tend to unify prices, making members' efforts to use farm support programs to maintain different price levels either ineffective or costly. The conversion of most U.S. farm support into decoupled contract payments is compatible with free trade pacts. At the same time, the reduction in farm support and greater market orientation of many countries' farm sectors over the past decade has made RTA's more likely to include agriculture, increasing the gains from RTA's.

—*In agriculture, RTA's have both trade-creating and trade-diverting impacts, but trade creation dominates in most RTA's.* To date, the empirical evidence shows that the Australia-New Zealand Closer Economic Relations, the Canada-U.S. Trade Agreement, and MERCOSUR (the Common Market of the South, among South American countries) have led to increased agricultural trade with both partners and nonmembers, supporting the view that RTA's can unleash growth in trade that benefits members and nonmembers alike. When fully implemented, NAFTA, APEC, and the FTAA are expected to be net trade creating in agriculture. Only the EU has resulted so far in net agricultural trade diversion. Its expansion to include Central and East European countries is also expected to be trade diverting.

—*Regionalism and multilateralism are likely to be mutually reinforcing in agriculture.* A strong multilateral process can help minimize the negative aspects of RTA's and make it more likely that RTA's will take shape as trade-creating, rather than protectionist, agreements. In turn, the freer agricultural trade already achieved in the Western Hemisphere and committed to in APEC is likely to strengthen efforts to achieve freer trade at the upcoming mini-round of the General Agreement on Tariffs and Trade.

—*The United States can potentially gain more from multilateralism than from RTA's.* Because the United States is a global trader with diverse trade partners, it can potentially gain more from global free trade than from regional trade agreements. So far, however, multilateral talks have fallen far short of achieving free trade, and the gains to the United States from the deeper commitments made by RTA's are expected to exceed those from the Uruguay Round. But the influence of RTA's on the multilateral process is still uncertain, and they hold the potential to harm nonmembers. Because the two processes can provide important, mutually reinforcing influences, U.S. support of both can benefit U.S. agriculture.

List of Abbreviations

AFA	1996 U.S. Israel Agreement on Food and Agriculture
AFTA	ASEAN Free Trade Area
APEC	Asia Pacific Economic Cooperation Forum
ASEAN	Association of South-East Asian Nations
CACM	Central American Common Market
CAP	Common Agricultural Policy (of the EU)
CARICOM	Caribbean Common Market
CEEC	Central and East European Countries
CEFTA	Central European Free Trade Area
CER	Closer economic relations
CES	Constant elasticity of substitution
CET	Constant Elasticity of Transformation/Common external tariff
CGE	Computable General Equilibrium
CSREES	Cooperative State Research, Education, and Extension Service, USDA
CUSTA	Canada-U.S. Trade Agreement
EC	European Community
EEC	European Economic Community
EFTA	European Free Trade Area
ERS	Economic Research Service, USDA
ESIM	European Simulation
EU	European Union
EU-CEE	Euoprean Union-Central and East European Association Agreements
FDI	Foreign direct investment
FTA	Free Trade agreement
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GAMS	General algebraic modeling system
GE	General equilibrium
GTAP	Global trade analysis project
LDC	Less developed country
MERCOSUR	Common Market of the South (Mercado Comun del Sur)
MFN	Most favored nation
MOU	Memorandum of understanding
NAFTA	North American Free Trade Agreement
NIS/B	Newly Independent States and Baltics
OECD	Organization for Economic Cooperation and Development
PROCAMPO	Mexican farm income support program
ROO	Rules of Origin
RTA	Regional Trade Agreement
TFP	Total factor productivity
TRQ	Tariff rate quota
UR	Uruguay Round
URA	Uruguay Round Agreement
USDA	U.S. Department of Agriculture
WTO	World Trade Organization

Introduction and Overview

Mary E. Burfisher and Elizabeth A. Jones

Introduction

The United States has been a strong proponent of a multilateral approach to global trade liberalization. From the perspective of economic theory, this is unambiguously a “first best” strategy. The global reduction of trade barriers raises global welfare as world production shifts toward the most efficient producers, and consumers are able to purchase goods at lower prices. Regional trade agreements (RTA’s), in contrast, can have both positive and negative impacts. By providing for freer trade among members, they can improve resource allocation within the region and generate welfare gains for member countries. But because they introduce some degree of trade discrimination, they can divert trade from more efficient producers in the rest of the world. In general, if trade diversion exceeds trade creation, an RTA reduces global welfare. Concern over the potential for trade diversion is at the root of pessimism regarding RTA’s.

A second issue raised by RTA’s is their relationship to multilateralism. The current proliferation of RTA’s has occurred simultaneously with successful global trade negotiations, which were concluded in 1993 under the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), and have continued in a series of “mini-rounds” for specific sectors, including telecommunications and services. In agriculture, a mini-round of trade liberalization talks is scheduled to begin in 1999 at the World Trade Organization (WTO), the successor organization to the GATT. The current proliferation of RTA’s has generated debate about the dynamics of the relationship between them and the multilateral process of global trade liberalization under the WTO. Will regional trade agreements serve as

building blocks for multilateral trade liberalization in the WTO? Will RTA’s have a tendency to expand their membership as they adopt more open economic policies—and will this tendency eventually converge on global free trade? Could these smaller, regional negotiating groups reinforce or even accelerate the multilateral process by making more progress on difficult issues—going narrow and deep instead of wide and shallow? Or will regional trade agreements tend to do the opposite, and act as stumbling blocks to multilateral trade liberalization? Will they entrench protectionist interests that benefit from trade diversion? Will they create “fortresses” that slow or derail multilateral trade negotiations? Uncertainty regarding the effects of regional trade agreements on the multilateral process is a second reason why some argue that regionalism could be detrimental to the global trading system.

Over the past decade, regional integration has gained momentum, with active U.S. participation. The pursuit of regionalism by the United States rests on a view that the trade-creating effects of the current regional agreements are likely to predominate, for a number of reasons. One is that the characteristics of the current wave of regional agreements tend to reinforce the globalism to which the United States remains committed. Many recent agreements have locked in domestic reforms and the opening of economies, reinforcing the goals of globalism for freer trade, greater market access, and global efficiency gains. Recent agreements stand in contrast to those that proliferated in the 1930’s, and again in the 1950’s and 1960’s, many of which were inward looking, and motivated by protectionism.

Second, the U.S. pursuit of regionalism, particularly in the North American Free Trade Agreement (NAFTA) and in the Asia Pacific Economic Cooperation (APEC)

forum has been in part a response to some faltering in the GATT/WTO process. Regionalism represented a second best alternative when prospects for multilateral trade liberalization under the GATT became uncertain in the early 1990's. The U.S. pursuit of regionalism and the prospect of "fortresses" developing on both sides of the Atlantic were credited with helping to bring the Uruguay Round to a successful conclusion. Now, regionalism and multilateralism under the WTO process are both being pursued, consistent with the U.S. view that the two processes are mutually reinforcing. Finally, U.S. participation in regional trade pacts assures the United States of a continued role in regional agreements, which appear likely to move forward with or without U.S. participation.

This report analyzes the implications of regionalism for the United States, focusing on the effects of major RTA's on U.S. agriculture. These are the key questions and findings of this report:

How Will Regional Trade Agreements Affect U.S. Agriculture?

U.S. agriculture can gain from participating in RTA's. By lowering trade barriers among members, the major RTA's in which the United States participates—NAFTA, APEC and, potentially, the Free Trade Area of the Americas (FTAA)—are expected to be trade creating. Increased U.S. agricultural trade and specialization among RTA partners will generate efficiency gains for U.S. farm producers and consumers, although this will lead to some adjustment and change in U.S. agriculture. The U.S. international terms of trade in agriculture are expected to improve, with an increase in farm export prices relative to import prices.

U.S. agriculture can lose when not a member of RTA's. RTA's divert trade by lowering imports from the rest of the world as trade with partners increases. European Union (EU) expansion is likely to divert agricultural trade and reduce U.S. agricultural exports to the EU and to third markets. But, the current Common Agricultural Policy (CAP) program is probably unsustainable with EU expansion, and potential

EU farm program reforms would reduce these negative impacts on the United States. A U.S. decision to remain outside the FTAA would divert trade from U.S. agriculture. However, RTA's are expected to induce economic growth in the Western Hemisphere. If this trade-linked growth occurs, the United States will benefit from the FTAA, even as a nonmember. Economic growth in the region will stimulate Latin American agricultural trade with the United States and raise farm incomes, although these effects would be larger if the United States were party to the FTAA.

Agriculture is an important source of U.S. gains from RTA's. Gains from trade liberalization are roughly proportional to the size of the trade barrier. Because agriculture still faces relatively high trade barriers in world markets, its inclusion in trade agreements accounts for much of the U.S. gains from RTA's. Recent RTA's have been more comprehensive in their treatment of agriculture, in contrast to earlier RTA's, many of which excluded agriculture. In APEC, agriculture accounts for 75 percent of total expected U.S. welfare gains from the RTA. With or without U.S. participation in the FTAA, U.S. agricultural trade will increase by more than other sectors due to the hemisphere-wide RTA. In the case of EU expansion, U.S. agriculture will be affected more than other sectors, but these effects will be negative, while effects on U.S. manufacturing will be positive.

RTA's interact with domestic farm programs. RTA's limit the ability of member countries to maintain independent farm programs. Market arbitrage within a free trade area will tend to unify prices, making members' efforts to use farm support programs to maintain different price levels either ineffective or costly. The conversion of most U.S. farm support into decoupled contract payments is compatible with free trade pacts. At the same time, the past decade's reduction in farm support and greater market orientation of many countries' farm sectors have eliminated the inherent conflict between free trade and farm programs, making RTA's more likely to include agriculture, and increasing the gains from RTA's.

Are Regional Trade Agreements Building Blocks or Stumbling Blocks to Multilateralism?

Economywide trade creation effects dominate in major RTA's, raising world welfare. Concern over the size of the trade-diverting impacts of RTA's has been an important argument against regionalism. Case studies of the longrun impacts of four major RTA's (NAFTA, APEC, FTAA, and expanded EU) show that trade-diversion effects are likely to be smaller than trade-creation effects. Because they are expected, on net, to create trade, these RTA's will improve global welfare. These findings suggest that these RTA's will fulfill the intent of the GATT/WTO rules that permit RTA's: their gains from liberalizing internal trade at a pace faster than committed to in the Uruguay Round will outweigh the negative impacts that result from their discrimination against nonmembers.

In agriculture, RTA's have both trade-creating and trade-diverting impacts, but trade creation dominates in most RTA's. The Australia-New Zealand Closer Economic Relations (CER), the Canada-U.S. Free Trade Agreement (CUSTA), and MERCOSUR have led to increased agricultural trade with both partners and nonmembers, supporting the view that RTA's can unleash growth in trade to benefit members and nonmembers alike. When fully implemented, NAFTA, APEC, and the FTAA are expected, on net, to create trade in agriculture. Only the EU has resulted so far in net agricultural trade diversion. Its expansion to include Central and Eastern European countries is also expected to be trade diverting. While trade-creating RTA's are likely to pursue more open markets at multilateral talks, trade-diverting RTA's are less likely to do so.

Recent RTA's have committed to deeper agricultural trade liberalization than agreed to in the Uruguay Round. Smaller regional negotiating groups, the reduction and decoupling of domestic farm support in some RTA's, and a policy paradigm shift in many countries toward more open markets may account for commitments by recent RTA's, particularly in the

Western Hemisphere, to a comprehensive liberalization of agricultural trade. This trend is likely to create a stronger constituency for meaningful trade reforms in the upcoming WTO mini-round on agriculture.

Regionalism and multilateralism are likely to be mutually reinforcing in agriculture. A credible multilateral process has already proven to be an important element in the agricultural trade liberalization achieved in some agreements. In the future, multilateral commitments to reduce protection and support in agriculture could be pivotal in influencing the directions to be taken by APEC and an expanded EU on farm policy reforms and the pace of regional agricultural trade liberalization. In turn, the freer agricultural trade already achieved in the Western Hemisphere and committed to in principle in APEC is likely to strengthen efforts to achieve freer trade at the upcoming mini-round.

What Are the Policy Implications for U.S. Agriculture?

It is important that RTA's achieve their commitments to liberalize agricultural trade. While some recent RTA's have defined a time frame for liberalizing substantially all agricultural trade (NAFTA, MERCOSUR), specific reduction commitments have not been defined in APEC, and the treatment of agriculture in the FTAA is still to be negotiated. Progress in the multilateral talks on reducing barriers to agricultural trade could influence these undefined aspects of RTA's. RTA's that selectively liberalize trade make the trade-diverting effects of RTA's more likely to dominate.

A strong multilateral process can help minimize the negative aspects of RTA's. Studies in this report find that most RTA's have trade-diverting impacts in agriculture, although they are smaller than their trade-creating effects. Protectionist aspects of RTA's include: closed memberships and the adoption by members of common, distorting internal policies, as in the EU; the exclusion of some sensitive agricultural commodities, as in NAFTA; and the adoption of common external tariffs

with agricultural tariff escalation, as in the Andean Pact and Central America Common Market (CACM). A strong multilateral process that effectively disciplines the negative aspects of RTA's makes it more likely that RTA's will take shape as trade creating, rather than protectionist agreements.

The United States can potentially gain more from multilateralism than from RTA's. However, multilateral talks have fallen far short of achieving global free trade. Economywide U.S. welfare gains from the Uruguay Round are less than those expected from all RTA's combined. Although the regional initiatives have made significant commitments for opening trade with key U.S. partners, the potential remains for large, additional U.S. welfare gains from achieving global free trade. Agriculture accounts for much of these gains from free trade, indicating the importance to the United States of pursuing both regional and multilateral agricultural trade initiatives.

Regionalism and Multilateralism: What Do They Mean?

Regionalism

“Regionalism,” “regional trade agreement,” and “regional trade area” are general terms that refer to a

commitment among a group of countries to achieve some degree of economic integration. The terms refer to the whole spectrum of levels of economic integration (table 1). The most common type of regional integration is a free trade area, in which internal trade barriers are removed but members maintain independent trade policies toward nonmembers. The free trade agreement among the United States, Canada, and Mexico is an example of a free trade area. The most comprehensive RTA is an economic union, in which members remove all internal trade barriers, permit the free movement of capital and labor, erect common external trade barriers, and unify their fiscal and monetary policies. The EU, as it moves toward the adoption of a common currency, is an example of an economic union.

Two agreements analyzed in this report are not included in table 1. APEC is a regional trade initiative, but not a formal RTA. Likewise, formal negotiation of the FTAA has just begun. The level of economic integration it will achieve is unknown, although it is not expected to become an economic union. APEC and the FTAA differ from RTA's in some important respects. A key characteristic of both is their inclusion of countries as well as existing trade agreements as components. APEC includes the AFTA and NAFTA agreements, among others; while the FTAA includes NAFTA and MERCOSUR, among others. One role for these initia-

Table 1--Selected RTA's and levels of economic integration

Type	Regional trade area	Level of integration
Free trade area	NAFTA, US-Israel FTA, CEFTA, EU-CEE Association Agreements, Australia-New Zealand CER	Members eliminate tariffs among themselves but keep their original tariffs against the rest of the world.
Customs union	MERCOSUR, Andean Pact, CACM	Members eliminate tariffs among themselves and adopt a common tariff against the rest of the world.
Common market	European Economic Community	Members eliminate tariffs among themselves, adopt a common external tariff, and remove impediments to movements of factors of production across member countries.
Economic union	European Union	Members move beyond the common market to unify their fiscal and monetary policies.

Table 2--Summary of selected RTA's and their agricultural provisions

RTA	Created	Current members	Agricultural provisions
European Union (EU)	1958 (EEC-6)	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom	No internal trade barriers Common Agricultural Policy (unified trade policy and support).
Closer Economic Relations (CER) Agreement	1983	Australia and New Zealand	Free trade in agricultural products.
U.S.-Israel FTA	1985	U.S., Israel	Agriculture is covered, but Israel was granted the right to protect infant industries, particularly in agriculture Agreement designed to further liberalize agriculture trade particularly U.S. products facing nontariff barriers.
Asia-Pacific Economic Cooperation Forum (APEC)	1989	Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Singapore, South Korea, Taiwan, Thailand, United States. Peru, Russia, and Vietnam became members in 1998.	Goal of free trade in agricultural products by 2010 for developed economies and by 2020 for developing economies.
Southern Common Market (MERCOSUR)	1991	Argentina, Brazil, Uruguay, Paraguay	Nearly all intra-regional tariffs removed, only exempt agricultural product is sugar. Established Common External Tariff, ranging from 0-20 percent for agricultural products (avg. 10 percent)—generally lower than previous tariff levels.
Association of Southeast Asian Nations Free Trade Area (AFTA)	1991	Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar	Transition to FTA with CET planned by 2003. All agricultural products are included.
Central European Free Trade Association (CEFTA)	1992	Hungary, Poland, Czech Republic, Slovakia, Slovenia, Romania	Scheduled to fully liberalize agricultural trade in 1998, postponed until 2000.
EU-CEE Association ("Europe") Agreements	1992	EU and Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Bulgaria, Czech Republic, Slovenia	Separate protocol for agriculture: 5-year phase-in for most concessions, limited to tariff decreases and quota increases. Trade in some products, such as grains, not liberalized.
North American Free Trade Agreement (NAFTA)	1994 (CUSTA, 1988)	Canada, Mexico, United States	Most agricultural tariffs between Canada and U.S. eliminated by Jan. 1, 1998; restrictions on sensitive products remain (dairy, poultry, eggs, sugar containing products). Agreement not to use export subsidies in bilateral trade and not to increase or introduce new tariffs, 15-year phase-out of all tariffs, quotas, and licenses that are barriers to U.S.-Mexican agricultural trade. 15-year phase-out of tariffs, quotas, and licenses for most Canadian-Mexican agricultural trade.

Source: Sharon Sheffield, "Agriculture, the GATT and Regional Trade Agreements," in this report.

tives is to reconcile, and possibly to build on, the proliferation of RTA's. While these supranational negotiating initiatives might better be termed free trade networks (Josling, 1998), for convenience they will be referred to as RTA's in this report.

Regional trade agreements have become a significant part of the global trading system. Between 1947 and 1994, 109 regional trade agreements were reported to the GATT, nearly equal to the number of countries that are GATT members (see article by Sheffield in this report). Since 1995, at least 16 new RTA's have been reported to the WTO. RTA's have been established in every region of the world. In the Western Hemisphere, for example, about 40 trade agreements are currently operating, and at least a dozen others are under negotiation (see articles in this report by Diao/Somwaru/Raney; and Stout/Ugaz-Pereda). Nearly all WTO members are party to at least one RTA.

RTA's have taken different approaches to reducing barriers to agricultural trade. Most of the recent major RTA's have included agriculture in the removal of internal trade barriers, particularly in the Western Hemisphere (table 2). However, some of the European agreements have only partially liberalized internal agricultural trade. In most recent agreements, most farm products are included, although sensitive agricultural products are either given long transition periods or excluded (notably, dairy, poultry, and eggs in NAFTA; sugar in MERCOSUR).

Global agricultural trade has become increasingly regionalized, in some cases in advance of formal regional trade agreements. Thomas Vollrath (see article in this report) analyzed the agricultural trade patterns of the 34 member countries of six RTA's. Collectively, these countries accounted for 62 percent of global trade from 1970 to 1995. While their share of global trade is stable, the share of trade within these regions relative to their trade outside the region

increased from 30 percent in 1970 to 40 percent by 1995.

Multilateralism

Like regionalism, "multilateralism" is a general term that has several meanings. In this report, we define multilateralism as the multilateral negotiation of global trade liberalization. While multilateralism was strengthened by the completion of the Uruguay Round, full liberalization of global trade has not yet been achieved, and some trade barriers will likely remain for some time. The definition of multilateralism is important when the question is: "How does regionalism relate to multilateralism?" In theory, global free trade is optimal, but this has less policy relevance than a comparison of RTA's, many of which have achieved substantially free trade, with a multilateral process that still contains many remaining trade barriers.

Multilateralism also refers to the lowering of trade barriers on a nondiscriminatory, Most-Favored-Nation (MFN) basis, in which any tariff concessions granted to a partner are also extended to the rest of the world. An example of this is the "open regionalism" approach of APEC. Under open regionalism, members of APEC reduce their import barriers against both other members and the rest of the world. This MFN-based approach by an RTA can benefit all countries, but there is the danger that nonmembers will "free ride" and accept an RTA's tariff reductions without lowering their own barriers.

The Welfare Effects of RTA's

Trade creation, trade diversion, and terms of trade effects constitute the welfare impacts of an RTA (see appendix on the "Economics of Regionalism"). Trade creation refers to the increased trade within an RTA when internal tariffs are lowered or removed. Production efficiency increases when a member imports more from a lower cost RTA partner, and its own high-cost domestic production falls. Trade diver-

sion occurs when a member shifts its imports from more efficient, nonmember producers to less efficient partner countries within the RTA. Regional trade agreements are likely to have both trade-creating and trade-diverting impacts, and which effect will dominate depends on many factors.

The effect of RTA's on consumers is also important to consider. Trade creation benefits consumers because they can buy imported goods that are produced at lower cost than the domestic variety. Lower prices, in effect, raise consumer income. Increased income and consumption may cause consumers to import more goods, and through this trade expansion the RTA could even benefit nonmembers.

RTA's also have terms of trade impacts: changes in the supply of and demand for traded goods will lead to changes in export and import prices for both members and nonmembers. An improvement in terms of trade is good for a country; it means a given level of exports buys more imports, which increases consumption and welfare.

Welfare is the sum of trade creation, trade diversion, and terms of trade impacts. In most analyses in this report, welfare is measured in terms of "equivalent variation," which measures the cost to consumers of the same bundle of goods, before and after entering an RTA. Welfare improves if the bundle of goods costs less as a result of the RTA, but deteriorates if the bundle of goods costs more.

There are other sources of welfare gains from an RTA in addition to the "static" gains described here. RTA's can lead to "dynamic" gains if they stimulate investment, or if trade leads to productivity growth through technology transfers or learning by doing. RTA's can also lead to a rationalization within industries, with fewer companies specializing in production for a larger market, while less efficient producers close down. Studies in this report focus on the static welfare impacts of RTA's, except for the analysis of the FTAA,

which links trade with increased investment and productivity growth.

How Major RTA's are Analyzed

The studies in this report include two global assessments of RTA's: a historical analysis of the impacts of six RTA's on world agricultural trade during 1970-95, by Thomas Vollrath, and an analysis of the expected impacts of five RTA's on U.S. and global trade and welfare by Mark Gehlhar. There are regional case studies of four RTA's—an expanded EU, APEC, FTAA, and NAFTA. The first three case studies analyze RTA's under alternative assumptions about membership or internal policies, reflecting the current uncertainty about the conditions of their implementation. EU enlargement is analyzed under the assumptions that the support presently provided under its CAP is extended to the Central and Eastern European Countries (CEEC), and alternatively, that significant CAP reforms are implemented simultaneously with enlargement. APEC is analyzed as both a preferential free trade area, and as an MFN-based RTA, in which members adopt "open regionalism" and extend their trade liberalization to both members and nonmembers of APEC. Regional integration in the Western Hemisphere is analyzed under the two assumptions that the United States does and does not join the FTAA. This construction of model experiments is for analytical purposes, and provides a measure of potential U.S. gains from the FTAA. In the case of NAFTA, the interactions of the RTA and recent domestic farm program reforms are analyzed.

The global analysis by Mark Gehlhar and most regional analyses use multi-country, computable general equilibrium (CGE) models, which are described in the appendix to this report. CGE models are economy-wide and take into account linkages between agriculture and other sectors through intermediate demand and factor markets. These models focus on sectoral resource allocation, production, and trade. They solve for prices, wages, and the real exchange

rates that equilibrate product markets, factor markets, and the balance of trade between countries. The analysis of EU expansion by Leetmaa, Jones, and Seeley uses ESIM, a partial equilibrium model of the European agricultural sector. This model has more disaggregation of EU agriculture than is now available in a CGE model, and includes detailed modeling of EU farm programs. Both the CGE models and ESIM provide controlled simulations of the impacts of RTA's only, and do not provide actual long-term projections of the U.S. or world economies.

A Global Assessment of RTA's

In the global analysis, Gehlhar finds that all RTA's combined, including those already being implemented (NAFTA and MERCOSUR) and proposed RTA's (an FTAA that includes the United States, APEC under open regionalism, and EU expansion), will raise world welfare by \$49.6 billion (table 3). Of this total welfare gain, \$47.6 billion is due to APEC (assuming open regionalism), reflecting the large role of APEC's

Table 3--Global and U.S. welfare impacts of regional and multilateral trade liberalization

Trade agreement	Global impact	U.S. impact
<i>Billion dollars</i>		
Uruguay Round	33.70	4.60
NAFTA	-0.58	2.32
MERCOSUR	0.80	-0.36
FTAA-USA	0.34	-0.34
FTAA+USA	1.32	3.28
EU Expansion (no CAP reform after 1992)	0.48	-0.60
APEC (preferential trade area)	36.47	11.30
APEC (open regionalism)	16.95	-8.92
Total RTA's	49.62	6.68
Global free trade (after RTA's)	62.00	7.51

Notes: Experiments are conducted sequentially.

Results show the incremental welfare impact of individual trade reforms.

The net effect of APEC on the U.S. is a \$2.4 billion welfare gain.

Source: Mark Gehlhar, "Multilateral and Regional Trade Reforms: A Global Assessment from a U.S. Perspective," in this report.

members in the world economy, and the relatively high trade barriers in Asia. RTA's contribute more to world welfare than did the Uruguay Round (UR) of the GATT. This is because RTA's are assumed to achieve full trade liberalization in all sectors, compared with the partial trade liberalization achieved in the Uruguay Round. Yet, even these comprehensive RTA's leave considerable scope for further gains from multilateral trade liberalization. World welfare could increase by an additional \$62 billion under global free trade.

The global analysis identifies some important interactions among RTA's. One example is the conclusion that NAFTA could result in a small reduction in world welfare, although the United States is expected to gain from its membership. Most of the welfare loss would occur in Asia and stems from policy distortions in Asian agriculture, including high import protection and other farm support. NAFTA slightly increases farm production in Asia, and this movement of additional resources into a highly distorted sector could lower Asian welfare. If Asian countries remove their trade distortions, as committed to under the APEC agreement, global welfare losses due to NAFTA will be eliminated. A second example is the effect that EU enlargement and farm program reforms may have on U.S. gains from APEC. If APEC adopts open regionalism rather than trade preferences, U.S. agriculture would face greater competition in Asian markets from subsidized EU agricultural producers and from other countries. If EU enlargement is accompanied by reduced farm support, as expected, then U.S. benefits from APEC under open regionalism will increase.

Major RTA's Increase World and U.S. Welfare

In table 4, we report the global and U.S. welfare impacts from the regional case studies. An important difference between the regional and the global analyses is that the global analysis, which is sequential, incorporates additional trade liberalization into each base. Regional case studies isolate the impact of a single RTA, and enrich the analysis by incorporating

additional sectoral or policy detail in agriculture, or by including the dynamic gains from RTA's. All regional case studies of the prospective effects of RTA's find that in aggregate (but not necessarily in agriculture) their trade-creation effects dominate trade diversion. The size of the trade-diverting impacts of RTA's has been an important element in the debate over RTA's. We find that their trade-diversion effects are smaller than their trade-creation effects. Because they are net trade creating, these RTA's improve global welfare.

While the global welfare impact of an RTA is important, much of the concern about RTA's relates to the distribution of welfare effects between members and nonmembers. Although all RTA's are net trade creating, most have some trade diversion effects that hurt nonmembers. In this report, we find that the United States benefits from the RTA's in which it is a member (NAFTA, APEC, FTAA). Increased trade and low trade diversion generate efficiency gains and raise U.S. welfare. We also find that U.S. welfare may increase even when it is not an RTA member. In the two such cases examined in this report (FTAA without U.S. participation, EU expansion), two different factors are important: the economic growth associated

with RTA's, and the interaction of trade liberalization with other domestic policy distortions.

RTA's can stimulate foreign investment, capital stock growth, and productivity gains, and this economic growth increases the benefits from free trade. These potential dynamic gains from an RTA are captured in the regional case study of the FTAA by Diao, Somwaru, and Raney. The starting point of the dynamic FTAA analysis is the observation that as a result of market-oriented policy reforms in many Latin American countries in the 1980's, trade has increased and economic growth has accelerated. Assuming that trade and productivity growth are linked, the increased trade under Western Hemisphere RTA's is likely to lead to strong economic growth in the Hemisphere. Economic growth will lead to an expansion of trade that benefits the United States. Western Hemisphere integration (including the Uruguay Round, NAFTA, and MERCOSUR) could lead to a \$5.8-billion increase in U.S. welfare, in the short run. U.S. participation in the FTAA could generate additional welfare gains of \$7 billion. The global analysis by Gehlhar concurs that there are costs (or smaller gains) to the United States from not participating in the FTAA. The static, global

Table 4--Regional case studies: Global and U.S. welfare impacts of selected RTA's

Trade agreement	Model type	Global impact	U.S. impact
<i>Billion dollars</i>			
EU Expansion (no CAP reform after 1992)	CGE (Liapis & Tsigas)	1.6	0.24
EU Expansion + CAP reform	CGE (Liapis & Tsigas)	6.8	0.30
Western Hemisphere integration (FTAA-USA)	Intertemporal dynamic CGE (Diao, Somwaru, Raney)	18.5-174.6 ¹	5.76-42.82 ¹
Western Hemisphere integration (FTAA+USA)	Intertemporal dynamic CGE (Diao, Somwaru, Raney)	26.6-263.2 ¹	12.76-83.86 ¹
Net FTAA effect with U.S.	Intertemporal dynamic CGE (Diao, Somwaru, Raney)	8.1-88.6	7.0-41.04
APEC (Open Regionalism)	Recursive dynamic CGE (Coyle and Wang)	310 ²	38.5 ²
APEC (Preferential Trade Area)	Recursive dynamic CGE (Coyle and Wang)	233 ²	57.1 ²
NAFTA	CGE (Burfisher, Robinson, Thierfelder)	N.A.	0.46

N.A. means scenario was not run by that model, or not able to be calculated given the model structure.

¹ Range of results of the regional case study are from an intertemporal dynamic CGE model. The first numbers are obtained for the short term and the second numbers are for long-term equilibrium. The effects of NAFTA, MERCOSUR, and the Uruguay Round of the GATT are included in both scenarios.

The differences between the two scenarios are caused by whether the United States joins the FTAA.

² Results of the regional case study are from a recursive dynamic CGE model. Results reported are for 2020, and take into account the exogenous capital, labor and productivity growth that occur between 1992 and 2020.

analysis does not take into account dynamic productivity increases related to trade, and concludes that U.S. welfare declines if the United States does not participate in the FTAA.

EU expansion provides an example of how domestic policy distortions interact with trade liberalization. (Domestic farm policies and RTA's are discussed in more detail below). In Liapis and Tsigas' analysis of EU expansion, the CEEC is assumed to adopt internal EU policies, including 1992 farm price supports. This would reverse a policy structure within the CEEC countries that previously subsidized manufacturing and taxed agriculture. As the policy incentives are reversed with EU accession, and CEEC manufacturing output declines, U.S. manufacturing will likely gain. U.S. manufacturing gains are likely to be sufficient to outweigh losses to U.S. agriculture, and result in a small, net welfare gain for the United States. The regional analysis finds a small net welfare gain (\$240 million) for the United States from EU expansion while the global analysis finds a small welfare decline (\$600 million). The regional analysis probably overstates the welfare gain to the United States because it assumes that U.S. farm programs are coupled to production, so that a declining agricultural sector reduces U.S. subsidy expenditure and contributes to the U.S. welfare gains. Both the global analysis and the regional case study share a key conclusion regarding EU expansion to central and eastern Europe: the aggregate economic impacts on the United States are likely to be small.

U.S. welfare could improve due to its membership in APEC, whether as a preferential trade agreement or under an "open regionalism" agreement. However, U.S. welfare gains are smaller under open regionalism. This is because nonmembers can "free ride" and accept APEC tariff reductions without an obligation to reciprocate. Some of the loss to the United States from free riding occurs in agriculture, which faces greater competition and downward pressures on export prices in the APEC market, compared with a preferential RTA. These terms-of-trade losses account for the relatively smaller gains to the United States from open regionalism. Free riding may not, however, be a stable equilibrium. Coyle and Wang find that free

riders' balance of trade worsens under open regionalism because they become uncompetitive in global markets if they maintain their own tariffs on imported intermediate inputs into consumer or capital goods. This gives non-APEC countries an incentive to undertake similar trade liberalization. The uncertainty about whether free riding is likely to occur has raised concerns about open regionalism in the APEC framework. Nevertheless, open regionalism is considered to be an ideal form of RTA because it eliminates the possibility of trade diversion.

U.S. Agriculture and Regionalism

We consider the effects of regional trade agreements on U.S. agriculture from two perspectives. First, from a sectoral perspective, we can ask the same questions about the U.S. agricultural sector as we do for the U.S. and the global economies: Is the RTA, on net, trade-creating or trade-diverting? Do terms of trade improve for U.S. agriculture? But, welfare cannot be addressed at the sectoral level because it is an aggregate measure; it represents the sum of RTA impacts that are likely to differ by sector.

Second, we consider the more complex question of the relationship between regionalism and domestic policy, particularly farm support programs. Many countries provide their farmers with price or income support, and import protection or export subsidies. How does free trade within a region affect members' domestic farm programs? Conversely, how have RTA's been affected by the unilateral, domestic policy reforms adopted by many countries in the 1990's, particularly in agriculture?

Most Existing RTA's Have Created Trade in Agriculture

Vollrath's historical analysis of agricultural trade during 1970-95 finds that three RTA's—the Australia-New Zealand CER, the CUSTA, and MERCOSUR—have been net trade-creating in agriculture. The ASEAN Free Trade Area (AFTA), whose members are competitive rather than complementary in agricultural

production, displays no evidence of having influenced agricultural trade flows. Of the major RTA's analyzed, only the EU has resulted in agricultural trade diversion. Because the NAFTA and APEC RTA's are not yet fully implemented, it is too soon to assess their impacts on agricultural trade.

U.S. Agriculture Mostly Benefits from Prospective RTA's

U.S. agriculture is expected to gain from its membership in RTA's (NAFTA, APEC, FTAA). Regional case studies found that increased agricultural exports and imports will generate efficiency gains, contributing to

welfare gains. Agricultural trade creation is expected to exceed trade diversion and, in NAFTA and APEC, U.S. terms of trade in agriculture are likely to improve (table 5). In the FTAA, U.S. agricultural terms of trade may decline in the long run as agricultural productivity gains in Latin American countries increase their competitiveness in third markets—and assuming U.S. trade-linked productivity gains are relatively small—but this economic growth also further stimulates their agricultural trade with the United States.

RTA's in which the United States does not participate have mixed effects on U.S. agriculture. Liapis and Tsigas find that U.S. agriculture is hurt by the trade

Table 5--How regional trade agreements affect U.S. agricultural trade

Model	Regional trade agreements excluding the United States			Regional trade agreements including the United States			
	EU expansion + CAP reform	EU expansion (no CAP reform after 1992)	Western Hemisphere Integration (FTAA-USA)	Western Hemisphere Integration (FTAA+USA)	APEC (Open regionalism)	APEC (preferential trade area)	NAFTA
	ESIM partial equilibrium (Leetmaa, Jones and Seeley) ¹	CGE (Liapis & Tsigas)	Intertemporal dynamic CGE (Diao, Somwaru, Raney) ²	Intemporal dynamic CGE (Diao, Somwaru, Raney) ²	Recursive dynamic CGE (Coyle and Wang) ³		CGE (Burfisher, Robinson, Thierfelder)
	<i>Million dollars</i>						
Change in total U.S. ag. imports	—	-15	980	1,810	19,800	14,200	258
Change in total U.S. ag. exports	—	-834	2,530	3,300	75,700	90,500	248
Change in U.S. ag. imports from RTA	—	44	980	2,080	8,000	12,100	270
Change in U.S. ag. exports to RTA	—	-400	1,660	2,800	79,000	101,000	582
Net impact	Likely diverting	Diverting	Creating	Creating	Creating	Creating	Creating
Change in intl. ag. terms of trade	Likely deteriorates	Improves	Shortrun improvement/longrun decline	Shortrun improvement/longrun decline	Improves	Improves	Improves

¹The partial equilibrium model does not capture bilateral trade flows. A reduction in EU agricultural imports implies lower U.S. agricultural exports, so the impact on the U.S. is concluded to be "likely trade diverting."

²Results are from an intertemporal dynamic CGE model. The numbers are obtained for the short-term equilibrium. The effects of NAFTA, MERCOSUR, and the Uruguay Round of the GATT are included in both scenarios. The differences between the two scenarios are caused by whether the U.S. joins the FTAA.

³Results of the regional case study are from a recursive dynamic CGE model. Results reported are for 2020, and take into account the exogenous capital, labor, and productivity growth that occur between 1992 and 2020.

diversion that results from EU expansion, and U.S. farm exports decline. U.S. agricultural terms of trade improve because increased subsidized production in new EU members causes U.S. agricultural import prices to fall by more than export prices. Leetmaa, Jones, and Seeley find that declining EU agricultural import demand is likely to reduce U.S. farm exports. In the case of the FTAA, economic growth will benefit U.S. agriculture even if the United States does not participate in the FTAA, but it gains more by participating. Diao, Somwaru, and Raney find that U.S. agricultural exports and imports would increase by 6 and 3.2 percent, respectively, if it does not participate, compared with 7.9 and 6.4 percent, respectively, if the United States joins the FTAA. That is, if the United States joins the FTAA, U.S. farmers can achieve an additional 2 percent increase in agricultural exports, and U.S. consumers benefit from an additional 3 percent increase in agricultural imports in the short run.

EU expansion and the FTAA, both have important effects on increased export competition for the United States in third markets. The expansion of the EU to include the CEEC countries results in lower U.S. agricultural exports to both the EU and third countries. In the case of the FTAA, this competition is likely to become keener if the United States participates in the regional free trade area. This is because the technological advances in our FTAA partners that are linked to trade are likely to be larger if they have greater opportunities to integrate their economies with the U.S. economy through trade and capital investment. (It is assumed that U.S. trade-linked productivity growth is lower than in its less developed partners in the FTAA. Sources of U.S. productivity growth that are not trade-linked are not taken into account in this model.) In the FTAA analysis, the gains in U.S. exports are greater in the short and medium run, compared with the long run, when sustained technological change in our FTAA partners increases their export supply. While this analysis highlights the effects of an FTAA on increased competition for the United States, it also shows the importance of economic growth and devel-

opment in these countries for stimulating their demand for U.S. farm exports.

Until recently, agriculture has been excluded or given special treatment in most RTA's. Yet, the comprehensive inclusion of agriculture is a source of much of the expected gains from RTA's. This is because tariffs and nontariff barriers are relatively high in agriculture, and the gains from liberalization are more or less proportional to the size of the initial trade distortions. Coyle and Wang find that agriculture accounts for more than 75 percent of total U.S. welfare gains from APEC because of high initial rates of protection. ASEAN's trade-weighted agricultural import tariff was 43 percent in 1992, China's was 44 percent, and Japan's was 76 percent. Gehlhar also finds that food and agriculture contribute significantly to U.S. terms of trade gains under an APEC preferential agreement. When the relatively high APEC tariff barriers are removed, rising APEC demand for U.S. farm products raises the U.S. agricultural export price and offsets the rising price of manufacturing imports from Asian members of APEC. However, U.S. agriculture contributes a negative terms-of-trade impact if APEC adopts open regionalism because of increased competition from free riders.

Agriculture is affected more than other sectors from regional integration in the Western Hemisphere. Diao, Somwaru, and Raney find that U.S. agricultural imports and exports will increase more than trade in other sectors, increasing the share of agriculture in total U.S. trade. In their analysis of EU expansion, Liapis and Tsigas find that its impact on third countries, including the United States, is proportionately greatest in their agricultural sectors. In most cases, agricultural production and exports decline, while non-agricultural exports are hardly affected. Burfisher, Robinson, and Thierfelder find that the greater market orientation of agriculture within NAFTA has increased the allocative efficiency gains from regional free trade. In Mexico, the domestic farm program reforms linked to NAFTA are critical: agriculture can now generate allocative efficiency gains that are large enough to offset terms-of-trade losses, enabling Mexico to

achieve a welfare gain, instead of a loss, from NAFTA.

RTA's and Domestic Farm Policy Linkages

The studies in this report focus on four important linkages between RTA's and domestic policy. First, the arbitrage that will occur under regional free trade will create tremendous pressures on RTA members to reduce, decouple, or harmonize their farm support. In effect, RTA's limit the ability of members to maintain independent farm programs that are "coupled" to, or influence, farm production or trade.

Countries have commonly used policies such as input subsidies, guaranteed government purchases or support prices, consumer subsidies, import protection, and export subsidies to achieve such objectives as higher farm prices and rural incomes, and to maintain rural employment. Often, in developing countries, farm subsidies are also linked to overvalued exchange rates and are an attempt to correct an urban bias in domestic policies. Coupled policies become problematic in an RTA: they rely on import controls to be effective or affordable, they undermine the export market of the partner, or they redistribute quota rents to trade partners (table 6). If, for example, a member of an RTA tries to maintain a different price level from its partner through guaranteed prices or government stocks, then imports from the partner country with the lower price

will tend to enter its market. Increased imports will drive down the member's domestic price and drive up the costs of its price support policies. If the member country can afford the support program, it in effect bears at least some of the cost of supporting its partner's producers as well. Domestic production subsidies may be considered to be outside the scope of a regional trade agreement, but by increasing domestic supply, they can in effect reduce the demand for imports from the RTA partner and create tensions within the union.

NAFTA provides an example of the problems resulting from incompatible farm programs because the agreement has both substantially freed regional agricultural trade and allowed the domestic farm programs of its individual members to remain in place. Since NAFTA was signed in 1993, however, all three members have autonomously moved to reduce or eliminate farm support, and most remaining support has been decoupled from production or prices. Before NAFTA, Mexico had a system of guaranteed producer prices for key crops, and provided subsidies to millers that compensated them for the high cost of domestic corn and wheat relative to imports. In the 1980's, Mexico's imports were relatively cheap because of both fixed domestic prices and its overvalued exchange rate. In anticipation of the effects of free trade on its guaranteed price program for corn and beans, Mexico converted its price support programs into direct payments. Burfisher, Robinson, and Thierfelder esti-

Table 6--Effects of free trade on farm support programs

Support program	Impact of free trade on farm policy
Per unit production subsidy	Subsidy increases domestic supply and lowers import demand from RTA partner.
Guaranteed producer price and consumer subsidy	With fixed producer price, there is no change in domestic supply due to RTA, but cheaper imports from RTA partner drive up cost of subsidizing consumers to purchase domestic product.
Price support through government stocks	High domestic price support induces imports from RTA partner and drives up support costs.
Production or marketing quota	Domestic producers have fixed output, but face lower prices if imports increase under the RTA: quota rents are redistributed to foreigners.
Direct payments	Decoupled policy has no effect on adjustments of production and trade due to RTA.

Source: Adapted from Sumner and Hallstrom (1997).

mate that Mexico's farm program costs would have increased 135 percent due to increased farm imports under NAFTA if it had not restructured its farm programs. NAFTA members' remaining farm support programs have predictably led to some trade disputes among them.

The EU provides an example of how countries can choose to harmonize their domestic policies as they allow free regional trade. Liapis and Tsigas analyze the expansion of the EU to include the Central and Eastern European countries. In addition to the elimination of internal trade barriers, EU enlargement entails harmonization of trade barriers against third countries, the harmonization of domestic farm policies under the CAP (leading to common prices), and a common budget to finance agricultural support. This common sharing of support costs can lead to unequal and unsustainable fiscal burdens. Liapis and Tsigas find that extending the CAP to the CEEC countries will cost current EU members \$16.2 billion. This will likely create pressures for reforming the CAP as it is extended to new members, and this would reduce the trade-diverting effects of EU expansion on U.S. agriculture.

A second linkage is that the reduction in farm support levels and the greater market orientation of many countries' farm sectors over the past decade have reduced the inherent conflicts between farm support and free trade. Since the mid-1980's, many countries have adopted policy reforms intended to make their farm sectors more market oriented and competitive in global markets. In the Western Hemisphere, in particular, agricultural support has been dramatically reduced, eliminated, or decoupled. On one hand, this likely accounts for the more comprehensive treatment of agriculture in recent RTA's. While earlier RTA's, such as the European Free Trade Area (EFTA),¹ excluded agricultural products, most RTA's formed in the last 10 years treat agriculture more comprehensively,

particularly in the Western Hemisphere. In a case study of the U.S.-Israel Free Trade Area Agreement, Michael Kurtzig and Daniel Pick analyze how the treatment of agriculture has evolved over time in a single agreement, including its more comprehensive treatment of more difficult, nontariff trade barriers. Conversely, by entering into free trade agreements that include agriculture, countries are effectively locking in the reforms that they have implemented in their farm sectors. Market arbitrage within a free trade area acts as a discipline on internal subsidies by making some ineffective or too costly to restore.

Third, domestic farm policy reforms can increase the efficiency gains that can be achieved under RTA's. Farm policies such as guaranteed prices, government stock holding, and export subsidies tend to insulate farmers from market price signals and prevent the reallocation of resources that is a source of gains from free trade. Burfisher, Robinson, and Thierfelder analyze the separate and combined effects of NAFTA and recent farm program reforms in the United States, Canada, and Mexico. In all three countries, the impacts of farm program reforms alone are greater than the impacts of NAFTA on agricultural output and trade. However, the shift toward decoupled farm programs has caused producers to become more responsive to changing market prices due to NAFTA, and this has increased efficiency gains from the RTA. Under decoupled farm programs, the greater magnitude of agricultural resource reallocation in response to NAFTA leads to larger welfare gains for the United States and Canada. In the case of Mexico, the new farm programs enable Mexico to gain from NAFTA. With a more market-oriented farm sector, Mexico's allocative efficiency gains offset its terms of trade losses from NAFTA. Without farm program reforms, Mexican welfare would have declined under NAFTA. It is the combined effects of NAFTA and farm program reforms that may account for the perception that NAFTA has had large impacts on the region's farm sectors.

Fourth, trade liberalization within an RTA is, in many cases, not the only policy reform being implemented, making the effects of RTA's difficult to isolate. In

¹The EFTA free trade agreement, established in 1960 and which now includes Iceland, Norway, Switzerland and Liechtenstein, excluded agriculture from the removal of internal trade barriers.

some countries, economy-wide reforms that include removing or reducing domestic taxes and subsidies and unilateral trade policy reforms pre-date the formation of an RTA. These reforms create the conditions for rapid growth in some regions' trade and economies even before the RTA, and may themselves have built up pressures to open up markets through RTA's. Vollrath's analysis of the effects of RTA's on agricultural trade finds that increased integration and regionalization of trade occurred in both MERCOSUR and APEC prior to formal agreements. In other cases (Australia-New Zealand CER and CUSTA) a sharp rise in intraregional agricultural trade occurred after the agreement. This suggests that those RTA's had an important influence on trade and, according to Vollrath, were net trade creating.

Thomas Worth examines the effects of RTA's on foreign direct investment (FDI) and argues that domestic policy reforms other than regional trade liberalization have been more important in influencing investment in some cases. For example, the enactment of NAFTA did not represent a large policy change for the United States, Canada, or Mexico. Canada and the United States had liberal trade and investment policies before NAFTA. Mexico's reduction in its trade and investment restrictions in 1989 had led to a tripling of U.S. investment in Mexico from 1989 to 1993, but little additional investment occurred after the enactment of NAFTA, due in large part to the currency crisis. In the MERCOSUR countries, the changes in FDI appear to have correlated more with changes in macroeconomic policies than with the formation of an RTA. The case of AFTA is unique in that large increases in FDI and trade in the region led to the trade agreement instead of the other way around. H. Christine Bolling analyzes U.S. FDI in food processing industries in the three major RTA's: EU, MERCOSUR, and NAFTA. Her findings corroborate Worth's argument that joining an RTA does not necessarily bring new FDI: economic growth, market size, and changing consumer tastes have more direct effects on investment, although an RTA can affect these key determinants.

RTA's and Agriculture: Building Blocks or Stumbling Blocks to Multilateralism?

The debate over the role of RTA's as building blocks or stumbling blocks for multilateralism has an immediacy for global agriculture because of the commitment to begin a WTO mini-round on agriculture in 1999. An RTA acts as a building block by either prompting an acceleration in multilateral negotiations, or adding new members and converging on globalism. Stumbling blocks do the opposite. We emphasize a third relationship between RTA's and multilateralism: their complementary and mutually reinforcing impacts in liberalizing agricultural trade.

Sheffield describes the concurrent progress made on agricultural trade liberalization in RTA's and under the Uruguay Round. Until recently, RTA's largely exempted agriculture from regional trade liberalization, with the notable exception of the European Union. But over the past decade, many RTA's, particularly in the Western Hemisphere, have been comprehensive in their liberalization of agriculture, eliminating both tariff and nontariff barriers, and going substantially further than their WTO commitments. By opening their agriculture to regional free trade, member countries' farm sectors are already making adjustments to open markets. This reduces the remaining burden of adjustment posed by multilateral trade reforms, and promises to build a constituency for further agricultural trade liberalization at the mini-round.

The ability of RTA's to omit agriculture was also circumscribed by the Uruguay Round. The exclusion or limited liberalization of agriculture by RTA's was possible in part because of the many other "holes" in the GATT agreement regarding trade restrictions on agricultural products, such as waivers on quantitative import restrictions if they interfered with domestic supply control policies. A significant accomplishment of the Uruguay Round was to close some of these holes by imposing disciplines on agricultural trade barriers and trade-distorting domestic farm policies.

Leetmaa, Jones, and Seeley discuss the important role that stronger multilateral disciplines are having in influencing the direction of farm program reforms in the EU. EU expansion and the prospect of extending the CAP to new members from Central and Eastern Europe has the potential to massively increase EU farm program expenditures. Budget pressures are a key factor in instigating a reduction in EU farm subsidies, but the direction of this reform is being defined by the commitment in the Uruguay Round to “decouple,” and to reduce the trade-distorting effects of domestic subsidies.

In a second example, Michael Kurtzig and Daniel Pick analyze the 1996 revision of the U.S.-Israel Free Trade Area Agreement to provide for greater access for U.S. agricultural products. The 1996 Agreement on Food and Agriculture (AFA) was motivated partly by Israel’s failure to fully implement the terms of the 1985 agreement. It was also an effort to bring the 1985 agreement into compliance with the new rules of the Uruguay Round governing agricultural trade. The AFA dealt mainly with removal of nontariff barriers, which had been permitted by the 1985 agreement but are no longer allowed under the WTO.

The U.S.-Japan beef negotiations offer an additional example of the importance of a credible multilateral process in influencing the successful outcome of a bilateral trade agreement. John Dyck provides a case study of U.S.-Japan beef negotiations: these were narrowly focused discussions that successfully dealt with nontariff barriers. In 1988, the United States and Japan signed an agreement to phase out Japan’s quota system for beef. The agreement is viewed as of major consequence because of the size of Japan’s beef imports and because of the length and intensity of the negotiations, which took place sporadically over 20 years. The U.S.-Japan negotiations on beef and the Tokyo Round were closely connected. While there was no formal link between these bilateral talks and the Uruguay Round of the GATT, Dyck argues that the bilateral agreement could only have been achieved with the credible threat of GATT actions against Japan. In the early 1980’s, U.S. complaints to the GATT

about Japanese trade practices not related to beef were one form of leverage that influenced Japanese decisions on beef. Conversely, Dyck argues that the 1988 agreement may have influenced the outcome of the Uruguay Round, since, for U.S. agriculture, the successful performance of U.S. exports to Japan provided additional evidence that U.S. agriculture could gain from freer world trade.

The Uruguay Round also strengthened the multilateral oversight of RTA’s. RTA’s represent a major derogation of the most favored nation principle of the GATT. They are allowed under Article 24 of the GATT, which places constraints on RTA’s that are intended to foster their trade-creating characteristics, while minimizing their trade-diverting impacts. Article 24 allows RTA’s provided that (1) no external tariffs are raised, (2) substantially all barriers to trade between partners are removed, and (3) a “reasonable” time frame is established for the complete implementation of the agreement. GATT treatment of RTA’s has been criticized because of the ambiguity of these provisions. For example, it was not clear what constituted “substantially” all trade, nor was it specified whether tariffs referred to applied tariffs or to average or weighted rates. Under a Memorandum of Understanding (MOU) signed during the Uruguay Round, tariff rates and adjustment periods were defined more specifically.

RTA’s now must be reported to the WTO Committee on Regional Trade Agreements (CRTA), which was formed in 1996. So far, the CRTA has devoted much of its time to developing a systematic approach to RTA notification and review, as well as identifying areas where greater clarification is required. At the same time, the CRTA has also had to examine the backlog of new or existing RTA’s reported since the formation of the WTO. It is too early to say how well the CRTA will be able to perform its surveillance role given the amount of work and the difficulty in addressing these issues.

The more comprehensive treatment of agriculture in recent RTA’s, and their net trade-creating impacts, suggests that RTA’s are playing a positive role in liber-

alizing global trade. Nevertheless, a strong multilateral process is likely to remain important—both to minimize trade-diverting characteristics of RTA's, and to define or constrain the unfinished agendas in some RTA's. In Latin America, for example, RTA's are rapidly proliferating, and the effects of these criss-crossing preferential tariff rates is uncertain. Stout and Ugaz-Pereda analyze agricultural tariffs in four Latin American RTA's, and identify tariff-related issues. In MERCOSUR, the RTA both lowered the agricultural tariffs of Argentina and Brazil against nonmembers, and eliminated tariff escalation, in which tariffs on processed goods are higher than on bulk agricultural products. But, the common external tariff of MERCOSUR was increased in late 1997, at least temporarily, signaling the ability of the members to achieve consensus on raising trade barriers. In Chile, the overlapping tariffs that result from its network of bilateral trade agreements require complicated rules of origin (ROOs). ROOs are particularly difficult to enforce in agriculture because of the homogeneity of bulk agricultural products, and can easily become a form of disguised protection. Both the Andean Pact and the Central American Common Market (CACM) have adopted common external tariffs that provide tariff escalation, making it difficult to compete in their processed food markets. One of the main objectives of an FTAA would be to reconcile and simplify the increasingly complex system of Latin American tariffs.

What APEC will look like when fully implemented is another important question for the global economy. From the U.S. perspective, inclusion of agriculture in APEC is critical because of the high protection rates in East Asia. APEC has set a goal of free trade in agricultural products for developed members by 2010, and for less developed members by 2020, but no interim or staged reductions have been specified. Some members, including Mexico and Chile, already have low agricultural trade barriers and are reducing or eliminating farm support. Other APEC members have continued to protect their agricultural sectors. It is difficult to predict whether APEC will achieve its goals in agriculture. Some of APEC's agricultural trade liberalization will probably coincide with the multilateral negotia-

tions under the mini-round in agriculture. The two processes are likely to interact: multilateral talks may help to make APEC's agricultural trade liberalization more concrete, while the APEC commitment to free agricultural trade may help to define the goals of the mini-round.

This report provides an economic evaluation of major RTA's, but the political economy of regional trade agreements is also important in understanding how they may affect the multilateral process. The political economy characteristics of RTA's are not yet well understood: there are opposing views as to how some important characteristics influence the dynamic path of the RTA. These are the key elements of the debate: Is the motivation for an RTA to open markets, and to complement or lock in other market-oriented policies, or is the RTA protectionist in character? Does an RTA create or strengthen interest groups that benefit from trade diversion and have incentives to lobby against free trade? Organized producer groups can effectively "capture" the national policy agenda, and divert it toward protecting producer interests. As RTA's continue to expand, are large blocs likely to exert market power to improve their terms of trade, and thereby lose the incentive to move toward global free trade? Or are large blocs better able to negotiate global free trade? Is admission to the RTA open, so that any nonmember who is negatively affected by the RTA can eliminate trade diversion impacts by joining? Or, does open admission seduce members into regional initiatives and divert their political energies from multilateral initiatives? Does free trade within the RTA result in deeper integration of policies and institutions, and is this deeper integration around trade-creating or trade-diverting policies?

Whether RTA's are more beneficial for the United States than multilateralism is a fundamental policy issue. Because the United States is a global trader with diverse trade partners, it can potentially gain more from global free trade than from regional trade agreements. But so far, multilateral talks have fallen far short of achieving free trade, and the gains to the United States from the deeper commitments made by

RTA's are expected to exceed those from the Uruguay Round. But the influence of RTA's on the multilateral process is still uncertain, and they hold the potential to harm nonmembers. Because the two processes can provide important, mutually reinforcing influences, their joint pursuit can benefit U.S. agriculture.

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The Economics of Regional Integration

Mary E. Burfisher

The concepts of trade creation and trade diversion form the core of economic analyses of RTA's. Trade creation can occur within an RTA. Production efficiency improves when RTA members import more from lower cost RTA partners, and less efficient domestic production falls. Consumption efficiency improves when consumers in an RTA can buy imports at prices that are lower than those for domestic products. As a hypothetical example, assume an RTA is formed between Guatemala, an efficient coffee producer that can produce wheat only with intensive and costly irrigation, and Nicaragua, an efficient wheat producer that can produce coffee only in greenhouses. An RTA creates trade if it results in greater Nicaraguan imports of relatively low-cost Guatemalan coffee, and a shift in Nicaraguan farm production from hot-house coffee into wheat. Guatemala gains if it imports more relatively low-cost Nicaraguan wheat, and grows less of its intensively irrigated domestic wheat. Nicaraguan consumers gain because of the decline in the price of coffee, while Guatemalan consumers gain from the lower price of wheat.

Trade diversion occurs when RTA members shift their imports from more efficient, nonmember producers, to less efficient partner countries within the RTA. This reduces the world's production efficiency, and hurts consumers within the RTA, who now import from high-cost members of the RTA. In the example of Nicaragua and Guatemala, assume that prior to forming an RTA, Nicaragua had identical tariffs on its imports of cocoa from all sources. Assume that at that tariff, Nicaragua imported its cocoa from Mexico, which produced it at lower cost than Guatemala. After the RTA, trade diversion would occur if Nicaragua shifts its cocoa imports from Mexico to Guatemala. In this case, the removal of Nicaraguan tariffs gives Guatemala's higher cost cocoa an advantage over Mexican cocoa in the Nicaraguan market. Nicaraguan consumers pay less for duty-free cocoa imports under

the RTA, but when lost tariff revenue is also accounted for, Nicaragua has net losses from trade diversion.

RTA's can either benefit or harm nonmembers. Efficiency gains and increased real income within the RTA may increase the RTA's demand for imports. This is trade expansion, and it can benefit nonmembers. Conversely, both producers and consumers in nonmember countries are hurt by trade diversion. Production efficiency declines if nonmember countries must now produce goods they formerly imported at lower cost from RTA members. In the case of Mexico and Nicaragua, the shift of Nicaraguan wheat exports to Guatemala reduces export availability for Mexico, and causes Mexico to shift to wheat production and out of cocoa, the crop in which Mexico has an international comparative advantage. Mexico's consumption efficiency declines because it must now pay for higher cost domestic wheat.

Most RTA's have both trade-creating and trade-diverting impacts. Whether the trade-creation or the trade-diversion effect dominates depends on many factors, including production cost differences, rates of initial tariffs, and relative supply and demand responses (app. table 1). For example, if an RTA is formed between two countries with very different costs of production, there would be large potential gains as production shifted to lower cost producers.

Terms-of-Trade Effects

If the RTA is large enough in world markets to affect the prices of its imports and exports, or if the costs of production increase as production expands, there can also be terms-of-trade effects. "Terms of trade" refers to the relative prices of imports and exports. An RTA is likely to improve the terms of trade for members and lower them for the rest of the world. This is one of the primary concerns that nonmembers have about RTA's. In the example of the RTA between Nicaragua and Guatemala, decreased Nicaraguan demand for

Mexican cocoa might lower its price. Likewise, the shift of Nicaraguan wheat exports to Guatemala could reduce the availability, and raise the price, of Mexico's wheat imports from Nicaragua. While Nicaragua loses from the diversion of its imports from Mexico to Guatemala, its full cost would be reduced by its improved terms of trade with Mexico. That is, the Nicaraguan wheat export price to Mexico has risen, while its cocoa import price from Mexico has declined. Conversely, the trade diversion causes Mexico's terms of trade to worsen. Terms-of-trade changes are key to understanding the distributional impacts of an RTA: the costs of trade diversion can be partially, or even fully, borne by nonmembers if their terms of trade deteriorate.

Trade creation, trade diversion, and terms-of-trade effects constitute the welfare impacts of an RTA (app. table 2). Welfare refers to the efficiency of resource use in production, and the ability of consumers to satisfy their preferences.

RTA's as Building Blocks or Stumbling Blocks to Multilateralism

The effects of RTA's on the multilateral trade liberalization process have generated intense debate. Just as Viner (1950) influenced the debate over customs unions by articulating the twin concepts of trade creation and trade diversion, Bhagwati (1991) has influenced the debate over regionalism by developing a time path conceptualization of RTA's as building blocks or stumbling blocks to the multilateral freeing of trade. Building blocks contribute to multilateralism by adding new members or by prompting an acceleration in multilateral trade negotiations. Stumbling blocks do the opposite. Economic theory is still engaged in identifying the characteristics of RTA's that are likely to make them building blocks or stumbling blocks to multilateralism (app. table 3). For many of the characteristics considered relevant, there are opposing views as to how they influence the dynamic path of the RTA.

Table 1--An RTA tends to be more trade creating than trade distorting...

the larger are unit production costs differences within the RTA
the smaller are cost differences between members and nonmembers
the higher the pre-RTA tariff
the lower the post-RTA tariff that is set between the RTA and nonmembers
the greater the member country's supply and demand responsiveness, in the case of trade creation
the more competitive the pre-RTA structure of members' economies due to tariffs
the larger the initial trade flows between complementary or "natural" partners

Table 2--Welfare impacts of regional trade agreements

Trade creation	Production shifts to lowest cost producer in RTA
	Consumption shifts from domestic goods to imports from RTA partner
Trade diversion	Production shifts to RTA member, as imports decline from lower cost, nonmember exporter; if an importer, nonmember's production increases, as RTA exports shift to partner destination
	Consumption by RTA members shifts to imports from higher cost RTA partner; consumption by nonmembers shifts to higher cost domestic products
Terms of trade effects	Market size or nonconstant costs affect prices of imports relative to exports

Table 3--Are regional trade agreements stumbling blocks or building blocks to free trade?

RTA's are building blocks when...

- ...they reinforce or lock in domestic policy reforms
- ...they have open admission and outsiders are motivated to join
- ...they tackle issues that are too deep or complex for multilateral negotiations
- ...as large blocks, they influence negotiations toward free trade
- ...deeper integration of policies and institutions creates trade
- ...non-members receive unconditional MFN status.

RTA's are stumbling blocks when...

- ...they create interest groups that benefit from trade diversion
 - ...they divert political capital from multilateral initiatives
 - ...as large blocks, they exert market power to improve terms of trade for members
 - ...they block additional members to preserve trade gains
 - ...they maintain external trade preferences
 - ...deeper integration of protectionist policies diverts trad
-

Regional Integration and Farm Household Adjustment

David Skully

By focusing on the adjustment problems of farm households, this article pursues a different approach to the challenge of regional integration than the other articles in this publication. The other articles consider the aggregate or sectoral impacts of integration: How will U.S. agricultural exports or imports change? How will investment flows shift? How will GDP growth change? These are important questions, and the economic tools employed to answer them require making some simplifying assumptions about the structure of the economy and the structure of agriculture. Such models treat the economy and the sectors within it as one big firm, or, equivalently, the summation of millions of identical “representative firms.” For agriculture, one models how a representative farm will react to potential changes in the economic environment. For statements and inferences about the economy or the sector *as a whole*, the representative farm, firm, or household assumption works reasonably well. However, if one wishes to examine the impact of integration at a finer level of detail, the representative agent assumption leads to problems: there frequently is not sufficient information to render accurate disaggregated results (Kirman, 1992).

This article looks beyond the representative farm to examine the diversity of U.S. farm households. This disaggregated information complements the aggregate analysis of the other chapters. Analysis of the distributional effects of regional integration for farm households is a new research topic with, at present, few definitive answers. The information presented here is used to frame the important questions and indicate what kinds of farm households are the most likely to benefit from integration and which are at greatest risk of financial failure.

Several themes are elaborated in this article. First, there is a wide variety of farm households, and their capacity to adjust varies accordingly. Second, agricultural adjustment is systematically different from

adjustment for most other sectors of the economy because of the structure of farm households. Farm households differ significantly from nonfarm households: their assets, including their skills, land, and equipment, tend to be more sector-specific than those of nonfarm households. Third, how a farm household will fare following integration depends on both its *commodity exposure* (what the farm can produce profitably), and its *asset exposure* (the tenure (ownership versus rental), leverage, sector specificity and diversification of its assets).

Commodity Exposure

Regional integration may, for example, reduce the price of vegetables relative to the price of grains. The increase in the relative price of grains will induce a shift of land and other resources into grain production and out of vegetable production. If we assume that the farm sector is simply one big representative farm the adjustment seems smooth. At the farm level, however, problems can emerge.

First, consider that few if any farms are significant commercial producers of both grains and vegetables. Modern agriculture tends toward specialization at the farm level, yielding increased variety at the sectoral level. Consider a specialized grain farm. Integration increases the price of grains relative to vegetables, but suppose it also increases the price of corn relative to the price of soybeans. The grain farm simply changes its crop mix, planting a few more acres to corn and a few less to soybeans. The adjustment might require some minor changes in farm equipment and input purchases, but these are neither particularly difficult nor expensive.

Because the prices of both corn and soybeans rise relative to pre-integration levels, the value of grain-producing farmland increases. If the household owns or has equity in the land, it will enjoy an unrealized capital gain. Such an increase in net worth may make

it easier to finance adjustment and expansion. If the household rents the land, it will likely face higher rents. Thus the household must share some of the gain in sales with the the landowner; still, the returns to the farmer's skills and experience in growing corn and soybeans are likely enhanced. For the stylized grain farm, adjustment to our assumptions about integration is relatively easy and profitable.

Now consider the case of a vegetable producer. At the time of integration, the farm specializes in tomato production, with considerable fixed investments in specialized equipment. The next best use of the farm is to produce peppers. By assumption, the price of all vegetables has fallen relative to pre-integration levels, and the price of tomatoes has fallen relative to the price of peppers. Conversion to pepper production requires considerable new investment. Some of the tomato equipment can be adapted for peppers, but some will have to be sold, likely at a substantial discount because of the decline in tomato prices.

Because of the decline in vegetable prices, a landowning household suffers a decline in its net worth. This decline may be substantial if the land is heavily mortgaged (leveraged), and it may prove difficult, if not impossible, to finance the conversion to an alternative crop. A renting household escapes the fall in land values and benefits from lower rents, but the lower product price means that returns to the household's specialized vegetable farming skills will likely erode. For the stylized vegetable farm, adjustment to this integration scenario is difficult and results in a decline in household income and net worth. Indeed, for a farm household with a high debt/asset ratio, adjustment may force an exit from farm proprietorship.

Asset Exposure

Assume that there are only two kinds of jobs in the economy: salary (or wage) jobs and self-employment. Salary or wage jobs compensate effort at a predetermined rate. Once one is in a salary position, one's income is relatively certain and, except for exceptionally good or bad performance, one's income and employment status do not change dramatically year to year. Most jobs in industrialized economies are either managerial, administrative, or service sector salary positions or wage positions in manufacturing where wages are typically determined collectively.

Self-employment compensates effort based on the value of one's sales or billings less one's costs. In addition to self-employed professionals, entrepreneurs, and most farmers, this category includes some sales positions. In contrast to salary compensation, self-employment exposes one to greater income uncertainty. Car sales, for example, depend in large part on who shows up at the showroom. If there is no customer, it is impossible to close a deal. Farmers can control the amount of land planted and the quality of cultivation, but weather and insects, among other factors, ultimately determine yield and output. Farmers are a special case of self-employment because the variance of farm product prices is, in general, greater than the variance of industrial prices, such as automobiles, men's suits, and insurance premiums. Moreover, the price of services (e.g., medical, accounting, repair) are even less variable than the price of goods.

Although agriculture accounts for only 2.5 percent of U.S. employment, the sector accounts for over one-seventh (14.4 percent) of all self-employment. Almost half of all those employed in agriculture are self-employed as opposed to only 7 percent of those working in the nonfarm sector.

Beyond the Representative Farm

There are approximately 2 million farm operator households in the United States. Average income for farm households in 1996 was \$50,361, about 7 percent more than the average income of all U.S. households, at \$47,123. It is hardly surprising that the two averages are so similar, given that the average farm household derives only 16 percent of its income from farming activity, the other 84 percent comes from nonfarm employment and investment (see table 1). This is an excellent example of how uninformative averages can be.

USDA distinguishes between commercial farms (those with sales in excess of \$50,000) and noncommercial farms. This simple division of the farm household population into two groups yields much more information about the underlying diversity of farming. (For an even more detailed view see table 2.) Noncommercial farms constitute 74 percent of all farm households, but only 10 percent of total farm sales. The average noncommercial farm loses money from farming. Largely because of the loss from farming, noncommercial farm average household income is less than the U.S. household average. The representative commercial farm, in contrast, earns 55 percent of its income

Table 1--Sources of farm operator household income, 1996

	Noncom- mercial	Com- mercial	All
	<i>Percent</i>		
Share of farms	74	26	100
Share of farm sales	10	90	100
	<i>Dollars</i>		
Income source:			
Farming	3,419	40,623	7,906
Off-farm	45,418	33,897	42,455
Total	41,999	74,520	50,361
	<i>Percent</i>		
Distribution:			
Farming	-8	55	16
Off-farm	108	45	84
Total	100	100	100
Percent of average U.S. household income (\$47,123)	89	158	107

from farming activities and enjoys an income of \$74,519, about 60 percent more than the U.S. household average. Commercial farm households are also considerably wealthier than nonfarm households of comparable income or occupational status (table 3).

Farm households' wealth tends to be more sector specific than that of nonfarm households. First, the value or returns to a farmer's skills and effort on the farm (often called human capital) is largely determined by the price of farm output. These prices also determine the value of farmland and specialized farm equipment which constitute the bulk of farm households' net worth, particularly of commercial farms. As illustrated in the examples above, farm income and farm net worth tend to move in the same direction,

Table 3--Balance sheet for average commercial farm operation

	Assets	Liabilities	Ratio
	<i>Dollars</i>		<i>Percent</i>
Total	909,095	154,752	17
Current	155,103	59,390	38
Non-current	753,992	95,362	13
Land, buildings	557,639	75,178	13
Equipment, etc.	196,353	20,183	10
Net farm equity	754,343		

Source: USDA, ERS, 1996, Agricultural Resource Management Study.

Source: USDA, ERS, 1994, Farm Costs and Returns Survey
(percent of farm sales).

compounding the impact of good or bad price movements. In contrast, nonfarm households' net worth is typically concentrated in home equity (principal residence) with the balance diversified among vehicles, retirement plans, equities, and certificates of deposit. None of these assets is highly correlated with the salary or wage rates of household members (table 4). Because farm households' core assets (land, buildings, and equipment) trade in markets that are often less liquid than the residential and financial assets of nonfarm households, their asset values tend to be more volatile. Moreover, farm assets are not easily divisible. Consequently, farmers often find themselves "land rich and cash poor."

The representative commercial farm is not highly leveraged; its average debt/asset ratio is 17 percent. Of course, behind this low average are many farms with no debt and a small proportion, 4 percent, with a high debt/asset ratio (above 70 percent). As 85 percent of commercial farms have a leverage ratio below 40 percent, the vast majority are financially capable of adjusting to a significant change in relative prices. The

Table 2--Beyond the representative farm

Farm sales	Farms	Distribution of farms	Average sales	Total sales	Distribution of sales
<i>\$1,000</i>	<i>Numbers</i>	<i>Percent</i>	<i>Dollars</i>	<i>\$ billions</i>	<i>Percent</i>
<10	985,158	48	3,146	3.1	2
-50	497,822	24	25,507	12.7	8
-100	211,132	10	76,530	16.2	11
-250	220,888	11	160,346	35.4	24
-500	73,100	4	350,792	25.6	17
-1,000	30,839	2	681,459	21.0	14
1,000	16,561	1	2,209,015	36.6	24
Total	2,035,500	100	73,995	150.6	100
Noncommercial	1,482,980	73		15.8	10
Commercial	552,520	27		134.8	90

Table 4--Net worth and its composition, 1995

U.S. households with income between \$25,000 - \$49,999			U.S. households with income between \$50,000 - \$99,999			Self-employed households		
Percent of all HH:	31.1		Percent of all HH:	20.2		Percent of all HH:	9.7	
Median	54,900		Median	121,200		Median	152,900	
Mean	119,300		Mean	256,000		Mean	731,500	

	Percent owning	Median Value		Percent owning	Median Value		Percent owning	Median Value
Major Assets			Major Assets			Major Assets		
Nonfinancial			Nonfinancial			Nonfinancial		
Vehicles	92.2	11,100	Vehicles	93.2	16,200	Vehicles	85.7	12,000
Residence	68.4	80,000	Residence	84.4	120,000	Residence	73.9	120,000
Investment RE	16.5	40,000	Investment RE	24.9	57,300	Investment RE	32.1	100,000
Business	9.8	26,300	Business	17.5	30,000	Business	58.0	71,000
Financial			Financial			Financial		
Bank account	94.7	2,000	Bank account	98.6	4,500	Bank account	91.3	4,400
Retirement	52.6	10,000	Retirement	69.8	23,000	Retirement	47.8	24,000
Life Insurance	33.1	5,000	Life Insurance	42.5	7,000	Life Insurance	41.5	6,000
Savings bonds	27.4	700	Savings bonds	39.9	1,200	Savings bonds	26.0	1,000
Stocks	14.3	6,900	Stocks	26.0	5,700	Stocks	18.8	17,500
CDs	13.7	10,000	CDs	15.6	13,000	CDs	18.6	15,000
Mutual funds	12.4	12,500	Mutual funds	20.9	15,000	Mutual funds	18.2	25,000

Source: Survey of Consumer Finances, 1995

Note: median value of asset is only of households which own such assets, not of all households.

only commercial farms at great financial risk due to adjustment are those with highly leveraged balance sheets *and* a high degree of exposure to products likely to fall in price after integration.

The adjustment prospects for noncommercial farm households are even more varied. Many of these households can be distinguished from nonfarm households only by their nominal engagement in farming. Clearly the adjustment to integration will also be nominal and pose no significant risk. Similarly, one might safely discount the adjustment problems of households engaged in farming primarily to reap tax benefits.

But there are many small farms that derive virtually all of their income from farming, although their gross sales are less than \$50,000; they are hardly noncommercial. Some of these farms may do a thriving business truck farming on the urban fringe. Even if highly leveraged, integration is unlikely to affect net worth because the conversion value to residential real estate probably determines land values. Similarly, for farm households with substantial nonfarm human capital, for example if one or both spouses have advanced off-farm skills, it is relatively easy to shift out of farming to a reasonable salary in town.

The most problematic small farms are households in relatively isolated or persistently poor rural areas. Changes in relative prices can cause significant adjustment problems. However, as economist Theodore Schultz argued over 50 years ago, rural poverty is not significantly alleviated through higher commodity prices (Schultz, 1945, 1949). Lower commodity prices may increase the burden of poverty, but the causes of rural household poverty are, principally, lack of skills, resources, and access to information and services (public and private). Even the most favorable changes in agricultural trade policy and international commodities flows will not alleviate these causes.

Conclusion

The two linked diagrams in figure 1 summarize the arguments above. The upper diagram summarizes the grain and vegetable farm examples: how a farm household will fare following integration depends on both its commodity exposure and its asset exposure. In terms of asset exposure, renters are considered to have negative exposure and landowners to have positive exposure. Of the four combinations in the upper diagram, only the upper right quadrant is likely to face significant adjustment risk. The curved arrow expands these potential at-risk farms in the lower diagram.

The lower diagram shows how adjustment risk depends on a farm household's income diversification, in particular, its dependence on farm income and the farm's financial exposure, that is, its debt/asset ratio. Farms with high farm income dependency are at risk of liquidity problems and perhaps solvency problems. Of these farms, those with high leverage are at the greatest risk of insolvency (lower left quadrant).

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Figure 1

Summary of farm response to declines in commodity prices

		Commodity exposure price effect	
		+	-
Asset exposure	+	Higher income, greater wealth	Lower income, less wealth
	-	Higher rent, higher income?	Lower rent, lower income?
		Dependency on farm income	
Financial condition exposure		high	minimal
		low leverage	Major decline in income and net worth, low risk of failure
	highly leveraged	Very high risk of failure	Minor decline in income, potential major decline in net worth

RTA's and Agricultural Trade: A Retrospective Assessment

Thomas L. Vollrath

Abstract

This article examines the impact of six regional trade areas on agricultural trade. Five are of recent origin: AFTA, APEC, CER, CUSTA, and MERCOSUR. The sixth, the EU, has a longer legacy. All of these areas, with the exception of APEC, are formalized agreements. Except for AFTA, all have imported increasingly more agricultural goods from member states than from the rest of the world since the mid-1980's. This raises a concern about whether integration has lowered world economic welfare through agricultural trade diversion. Empirical evidence shows that, with the notable exception of the EU, none of the regional trade agreements (RTA's) diverted agricultural trade at the sector level. The analysis also shows that the CER, CUSTA, and MERCOSUR created agricultural trade.

Introduction

Agricultural markets in many countries have gradually opened to world trade since the mid-1980's. Countries have adopted domestic market-oriented reforms, honored timetables for reducing tariffs under the Uruguay Round, and joined regional trade areas and/or agreements. Researchers have described the progress toward free trade in agricultural products as being glacial (Barichello *et al.*, 1991): "The situation changes at a speed so slow that the observer may think there is no movement at all. But, as with a glacier, there is an underlying flow so inexorable that it is hard to think of the trend being soon reversed."

Regional trade agreements (RTA's) can advance the cause of trade liberalization. They can free up markets by reducing tariffs among member countries, albeit at

the risk of diverting trade away from nonmember countries. They can also facilitate agreement on contentious issues that confound the multilateral trade negotiations of the World Trade Organization, such as the harmonization of technical standards and the formation of technical working groups that address pesticide regulations, phytosanitary restrictions, and product quality standards—all of which may be disguised nontariff barriers.

Within the past decade, many prominent economists (Bergsten, Dornbusch, Krugman, Summers) have become advocates of regional blocs as a practical means to achieve freer trade (*Economist*, various years). Many policymakers believe that RTA's make markets more efficient—neoclassical theory says that the reduction of international trade barriers shifts world production toward efficient producers and enables consumers to purchase goods at lower prices. But the growth in

intraregional trade and the recent proliferation of RTA's concern others who worry that RTA's may diminish welfare gains from multilateral trade liberalization (*Economist*, Oct.18, 1997; and Panagariya, 1996).

A welfare problem may exist because RTA's extend preferences to (and, therefore, discriminate in favor of) partner countries. Whether any individual RTA advances the well-being of society—that is, its trade-creating effects dominate its trade-diverting effects—is an empirical issue. This article addresses this question by examining agricultural trade of six regional trade areas, namely AFTA, APEC, CER, CUSTA, EU, and MERCOSUR.¹ All of these areas, except APEC, possess formal agreements.

World Agricultural Trade Is Becoming More Regionalized

Figure 1 puts regional agricultural imports into a global perspective by showing trade shares of the 34 countries belonging to 6 regional trade areas. The importance of member countries in global imports does not appear to have changed much in the last 25 years. Collectively, these countries accounted for 62 percent of global trade in agricultural goods in 1995, the same percentage as in 1970 and the 1970-95 average. By contrast, the share of their intraregional trade to global trade rose more than 10 percentage points between 1970 and 1995, increasing to 40.3 percent by 1995. This suggests the rising importance of regionalization in world agricultural trade.

¹The 18 original APEC countries are Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Singapore, South Korea, Taiwan, Thailand, and the United States. Russia, Peru and Viet Nam joined in 1998. The AFTA countries are Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand. The CER countries are Australia and New Zealand. The CUSTA countries are Canada and the United States. The EU countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom. The MERCOSUR countries are Argentina, Brazil, Paraguay, and Uruguay.

The total value of intraregional imports in comparison with member imports from all suppliers shows how deep integration is. Increases in intraregional trade shares depict increased reliance upon regional sources of supply. Declining shares indicate decreased dependence. Figure 2 shows how intraregional import shares of the specific regional trade areas changed between 1970 and 1995.²

The European Union's (EU) precursor, the European Economic Community (EEC), established the Common Agricultural Policy (CAP) in the early 1960's to manage the agricultural market. The aim was to improve farmer income, stabilize the market, and guarantee regular supplies for consumers. The CAP promoted free internal trade by granting preferences to member-country suppliers, as demonstrated by the intra-EU share of agricultural imports rising from 28 percent in 1962 to 70 percent in the 1990's.

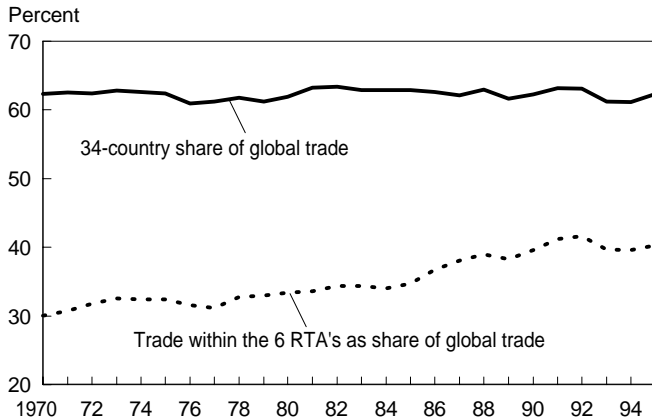
Australia and New Zealand established the Closer Economic Relations (CER) in 1983. Within 5 years, the agricultural import shares that Australia and New Zealand supplied each other increased 10 percentage points to 27 percent, before reaching what appears to be a new structural equilibrium (23-25 percent).

The Canada-U.S. Free Trade Agreement (CUSTA) was formally launched in 1989. As with the CER, the intra-CUSTA share of Canadian and U.S. trade increased for several years before leveling off. The sharp rise in intraregional trade shares immediately following the birth of both CER and CUSTA suggests that integration induced a change in the sourcing of agricultural imports—one that favored member-country suppliers.

In 1988, MERCOSUR established an economic union between Argentina and Brazil after years of unilateral tariff reductions in both countries. This early liberalization altered the agricultural price structure within both countries, inducing changes in the pattern of their agri-

²MERCOSUR is not included in figure 2 only because it would render the chart hard to read.

Figure 1
Growing importance of regionalization in global agricultural trade*



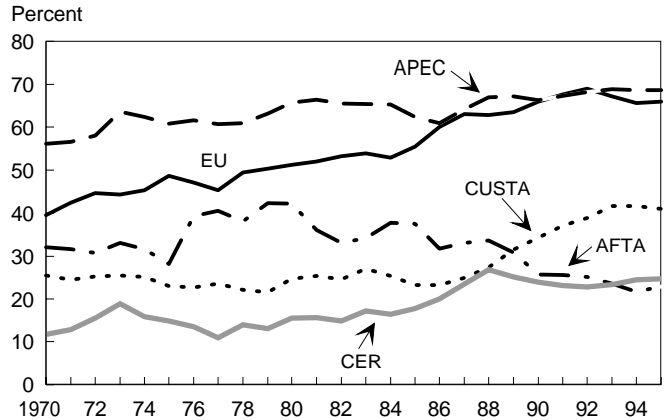
*34 countries belonging to APEC, AFTA, CER, CUSTA, EU & MERCOSUR.

cultural imports. From 1983 to 1990, the share of intra-MERCOSUR trade doubled, rising to 60 percent. After declining sharply between 1990 and 1991, this share moved upward again with the expansion of MERCOSUR to include Paraguay and Uruguay in 1991.

Members of the Association of Southeast Asian Nations (ASEAN), originally formed for political and military reasons in 1967, formally launched the ASEAN Free Trade Area (AFTA) in 1991. Little incentive exists for AFTA countries to import many agricultural goods from each other, given similarity in their resource endowments and production patterns. Indeed, intra-AFTA trade shares show that member countries have become less dependent upon each other to supply domestic agricultural import needs within the last 15 years (fig. 2).

The Asia-Pacific Economic Cooperation (APEC) Forum, unlike the other regional trade agreements, is a *prospective* RTA. APEC has yet to sanction any concrete trade disciplines. The steady growth in intra-APEC trade, as with MERCOSUR, predates formal integration. APEC's membership includes both major agricultural exporters, such as the United States, Canada, and Australia, as well as large and/or rapidly growing agricultural importers like Japan, South

Figure 2
Share of agricultural imports provided by member countries



Arrows identify years that regional trade areas were created.

Korea, Taiwan, Singapore, Hong Kong, and China. The mix of supplying and purchasing countries is favorable to growth in intraregional trade.

Trade shares provide some insight into the changing structure of agricultural trade. But, an economic framework is needed before welfare implications can be drawn about the formation of these regional trade areas. The concepts of trade creation and trade diversion are central in determining whether an individual regional trade area or RTA advances freer world trade or diminishes world welfare.

A Search for Trade Creation and/or Trade Diversion

According to Viner (1950), *trade creation* occurs when imports are substituted for domestic products as a result of tariff reductions that reduce the price of member imports below that of home-produced goods. *Trade diversion* occurs with a shift in imports from an efficient nonmember exporter to a more expensive producer from the country's RTA partners due to preferential tariff treatment. Trade diversion, in Viner's view, does not necessarily mean a decline in trade, but rather a shift in trade away from least-cost suppliers.

Meade (1955) extended the concepts of trade creation and trade diversion to include trade expansion, which occurs whenever demand is highly price-responsive. Should the prices consumers pay for agricultural goods decline following the imposition of an RTA, imports expand if the price elasticity of demand is greater than one.

Trade creation/diversion associated with the elimination of internal duties can be evaluated from a country, regional, or global perspective. Here, the issue is addressed within the context of RTA-member and RTA-nonmember suppliers offering agricultural goods in the international market using an empirical model first developed by Balassa (1967). Economic implications are drawn for the six regional trade areas and the world at large.

Balassa was interested in assessing the welfare impact of European integration. He developed an economic model because it was not possible to observe directly how much trade would have taken place in the absence of the EEC. The analytical framework requires three types of import demand functions to be estimated—one typifying imports from member countries, another imports from nonmember countries, and finally total imports. The model generates *ex post* income elasticities of import demand in periods preceding and following the creation of the EEC. The difference in the two period elasticities “correspond to Meade’s extended concepts” of trade creation and trade diversion (Dayal and Dayal, 1977).”

The generated elasticities measure the relative responsiveness of imports to changes in both income and prices. Being *ex post* estimates, they reflect both substitution effects (movement along indifference curves), as well as income effects (movement from one indifference curve to another) (Balassa, 1963). An RTA that purchases goods from lower-priced suppliers induces trade expansion because of the direct price and income effects of integration. Lower prices and increases in real income entail movement to an indifference curve

farther from the origin.³ Conversely, an RTA that purchases goods from high-priced suppliers induces movement to an indifference curve closer to the origin.

Assuming that the generated elasticities would have remained unchanged in the absence of integration, Balassa reasoned that a rise in the income elasticity for intra-regional imports following RTA creation indicates *gross trade creation* and that a rise in the income elasticity for imports from all sources together expresses *trade creation proper*. Similarly, *external trade creation* would be signified by a shift of imports from partner-country to nonpartner producers when the income elasticity of demand for extra-area imports rose.

Trade diversion is revealed by a decline in the income elasticity of demand for extra-area imports following integration. This occurs when an RTA supports high-priced production by shifting from efficient nonmember producers to less efficient RTA-partner producers. Trade diversion involves a misallocation of resources, causing not only global trade to contract but world economic welfare to decline.

To obtain the necessary elasticities, Balassa (1967, 1974) simply divided the percent change in imports by the percent change in income. Subsequently, a number of researchers, also investigating the impact of EEC integration, used regression analyses to estimate the elasticities from import demand functions (Kreinin, 1969; Sellekaerts, 1973; Truman, 1969; and Thorbecke and Pagoulatos, 1975).

In this study, the *ex post* income elasticities of import demand were calculated using the following model:

$$\ln M = \beta_0 + \beta_1 \ln Y + \beta_2 D + \beta_3 [(\ln Y) * D] + \epsilon$$

where M is the sum of RTA-member agricultural imports expressed in constant 1987 terms, Y is the

³These welfare implications relate to the static payoffs from neoclassical theory.

1987 dollar value of RTA gross national product (GNP), D is the dummy variable with the value of 0 for the pre- or previous-integration years and unity for the post- or modern-integration years, and ϵ is the stochastic error term. Agricultural trade data are from ERS's reconciled UN Comtrade. Real GNP data were obtained from the World Bank's CD-Stars disk. These

data were not available prior to 1970. For this reason, Balassa (1974) elasticity estimates for intra, extra, and total trade were used for the 1953-59 and 1959-70 periods (table 1).

The income elasticity for the pre-integration period is $\hat{\beta}_1$ and for the post-integration period, the sum of $\hat{\beta}_1$ and $\hat{\beta}_3$.

Table 1--Ex post income elasticities of import demand for agricultural goods¹

	Pre-integration period	Post-integration period	Ex post income elasticity of import demand		Difference	Chow test
			Pre-period (β_1)	Post-period ($\beta_1 + \beta_3$)	Post-period / pre-period (β_3)	F-statistic
Total-area imports						
Trade creation proper						
AFTA	1970-92	1993-95	0.83*	1.58	0.75	0.99
APEC	1970-88	1989-95	1.31*	1.59	0.28	2.61
CER	1970-83	1984-95	0.69*	3.81	3.12*	27.90*
CUSTA	1970-88	1989-95	1.32*	2.56	1.24*	14.40*
EU	1953-59	1959-70	1.67^	1.53	-0.14^	
EU	1959-70	1971-95	1.53^	1.02	-0.49*	
MERCOSUR	1970-88	1989-95	1.16*	5.84	4.68*	4.67*
MERCOSUR	1970-90	1991-95	1.16*	4.31	3.15	9.36*
Intra-area imports						
Gross trade creation						
AFTA	1970-92	1993-95	0.71*	1.32	0.61	1.51
APEC	1970-88	1989-95	1.52*	1.80	0.28	0.82
CER	1970-83	1984-95	1.14*	4.92	3.78*	13.80*
CUSTA	1970-88	1989-95	1.36*	4.43	3.07*	34.40*
EU	1953-59	1959-70	2.56^	2.51	-0.05^	
EU	1959-70	1971-95	2.51^	1.92	-0.59*	
MERCOSUR	1970-88	1989-95	1.06*	5.12	4.06*	10.72*
MERCOSUR	1970-90	1991-95	1.06*	4.77	3.71	15.18*
Extra-area imports						
External trade creation or trade diversion						
AFTA	1970-92	1993-95	0.88*	1.63	0.75	3.79*
APEC	1970-88	1989-95	0.97*	1.16	0.19	1.07
CER	1970-83	1984-95	0.63*	3.54	2.91*	25.40*
CUSTA	1970-88	1989-95	1.30*	1.45	0.14	0.07
EU	1953-59	1959-70	1.43^	1.04	-0.39^	
EU	1959-70	1971-95	1.04^	-0.12	-1.16*	
MERCOSUR	1970-88	1989-95	1.22*	6.71	5.49*	2.73
MERCOSUR	1970-90	1991-95	1.22*	3.89	2.67	4.24*

¹ UN-FAO-defined agriculture.

* statistically significant at 5-percent level.

^ estimates from Balassa (1974).

(Estimated coefficients are denoted by beta hats, $\hat{\beta}$'s). Both the intercept, β_0 , and the intercept dummy, β_2 , are included in the empirical model for statistical, not economic, reasons. The β_0 intercept embodies the mean effect of omitted variables and, thereby, ensures that the estimating equation conforms to the classical assumption that the expected value of the error term is zero; the β_2 intercept dummy guarantees that the parameter estimate of the slope dummy, $\hat{\beta}_3$, is not biased.

The econometric model is not perfectly specified. There is no provision for gauging the impact of the Uruguay Round. Unfortunately, it is not possible for regression techniques to distinguish between regional-trade-area and Uruguay-Round effects until more time passes and additional data become available. It is important to bear in mind, when interpreting the econometric results, that the slope dummy variable may be upwardly biased. The Uruguay Round, an omitted variable, is expected not only to have a positive influence on agricultural imports, the dependent variable, but is likely to be positively correlated with the regional trade areas.

Empirical Findings

The empirical findings are summarized in table 1 using Balassa's terminology. "Gross trade creation" relates to Viner's trade-creation scenario whereby imports from partners belonging to the same regional trade area are implicitly compared with domestic sources of supply. "Trade diversion" and "external trade creation" relate to Viner's trade-diversion scenario whereby imports from members are compared with those from nonmembers. "Trade creation proper" compares domestic sources of supply with all foreign sources.

RTA member countries are interested in determining whether gross trade creation characterizes their union. Meanwhile, nonmember countries are interested in determining whether external trade creation or trade diversion dominates. Global welfare increases when intra-area trade creation outweighs extra-area trade diversion. This is measured by trade creation proper.

The results of both individual *t*-tests on the slope coefficients as well as *Chow* tests, which determine whether observations in both the pre- and post-integration periods belong to the same regression model, are shown in table 1. Estimated β_1 income coefficients were always statistically significant at the 5-percent level. Individual tests for the slope dummies showed β_3 to be significant in most cases.

Change in trade patterns attributable to the formation of regional trade areas was confirmed in two-thirds of the cases examined, as revealed by the *F*-statistics exceeding the critical value of 3.44. But the null hypothesis (no difference between the two periods) was not rejected among any of the APEC and AFTA supplying markets except for extra-AFTA suppliers. However, in this latter instance, the *t*-null hypothesis that β_3 equaled zero was "accepted," meaning that AFTA probably did not affect trade with nonmember suppliers.

The econometric results show neither trade creation nor trade diversion in APEC or AFTA. These results are not particularly surprising. APEC lacks a formal agreement among members. As a consequence, no trade disciplines have been imposed. The countries belonging to AFTA have similar resource endowments and produce similar types of agricultural goods. There is, therefore, little economic incentive for them to increase agricultural trade among themselves despite the existence of a formalized agreement.

But the empirical evidence points to trade creation in the CER, CUSTA, and MERCOSUR. In these three RTA's, the income elasticities of agricultural import demand increased for intra-area, extra-area and total trade following integration. The changes in these elasticities suggest that once agricultural markets become more open, consumers readily shift to lower-priced foreign sources of supply.

There is no evidence of trade diversion in the CER, CUSTA, or MERCOSUR. In fact, the CER and MERCOSUR are associated with external trade creation, as demonstrated by the rise in their extra-area

import demand elasticities after the pre-integration period. The statistically significant t-statistics for the slope dummies depicting extra-area imports support the view that these two RTA's have become more reliant upon agricultural imports from not only member countries but from the rest of the world.

Agricultural trade was created by CUSTA in its supplying markets. But the rise in the income elasticity for imports from member suppliers was considerably greater than the rise in the elasticity from all suppliers. While the responsiveness of agricultural imports to income growth in CUSTA almost doubled for total-area imports, it tripled for intra-area imports. This nonuniformity suggests CUSTA may have enhanced market efficiencies between Canada and the United States.

Post-period elasticities in the CER and MERCOSUR were three to five times greater than pre-period elasticities, indicating substantial trade creation, both proper and gross. Moreover, percentage changes in their extra-area and intra-area elasticities show that both CER and (pre-1991) MERCOSUR integration were associated with more rapid growth in external than internal trade creation. These results support the view that these RTA's did not divert agricultural trade from more efficient nonmember suppliers, but created trade worldwide as more open markets unleashed dynamic efficiency gains.

Post-integration import demand elasticities fell in all three markets for the EU. This can be explained by the slowdown in the growth of EU agricultural imports and the decline in the longrun income elasticity of demand for agricultural goods in member countries. The relevant test for trade diversion in the EU case involves a comparison of the change in their intra elasticities with their change in the extra elasticities. The empirical results indicate that the EU may have shifted from nonpartner to partner sources of supply in the post-1970 period. Notice that the drop in the extra-EU elasticity between 1959-70 and 1971-95 (1.16) is greater than the drop in the intra-EU elasticity (0.59). These results, albeit based upon tenuous extrapolations

using Balassa's estimates, suggest continued agricultural trade diversion in the EU.

Summary

Trade-share analysis shows that the agricultural trade of member economies of the major RTA's is being increasingly dominated by intra-regional trade. The formation of regional trade areas may have influenced the growth in regionalization. In AFTA, however, intraregional trade did not increase following the establishment of its free-trade agreement because member countries possess competitive, not complementary, production patterns in agriculture. Moreover, intraregional trade has increased in APEC, despite the absence of binding agreements. APEC countries have complementary production and consumption patterns in agriculture.

It is difficult to draw economic inferences from an analysis of trade shares alone. We, therefore, use an economic model of trade creation and trade diversion to draw economic implications about the changing patterns of agricultural imports. This model utilizes import demand elasticities to assess the impact of specific RTA's on economic welfare. However, the empirically generated elasticities may embody effects other than RTA's, such as rational expectations about the Uruguay Round.

The econometric results suggest that not all regional trade areas have had an impact on economic welfare as a result of altering agricultural trade patterns. Neither APEC nor AFTA display evidence of either creating or diverting agricultural trade. However, the CER, CUSTA, and MERCOSUR were found to have had positive influences on economic welfare and to have helped open members to the world agricultural economy. Each of these regional trade agreements has created more agricultural trade than it has diverted, in contrast to the EU.

The story is still unfolding. Fully envisioned regional-trade-area liberalization has not yet been achieved.

APEC is not yet a *bona fide* RTA. All regional trade areas analyzed in this study are programmed to become more open in the future. Within CUSTA, and its NAFTA extension, for example, commodities are classified into categories that became duty-free immediately in 1994, and others that will be freed in 5, 10, and 15 years. But, there can be some backsliding. After agreeing to put into place a common external tariff in 1995, MERCOSUR members increased external tariffs by 3 percent this past November (*Economist*, Dec. 20, 1997).

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Multilateral and Regional Trade Reforms: A Global Assessment From a U.S. Perspective

Mark Gehlhar

Abstract

To assess how the United States is served by various trade agreements, this paper provides a global analysis of regional and multilateral trade reforms. A series of regional trade agreements is conducted using a global model. This approach permits welfare gains to be accounted for in a consistent manner while allowing for interaction between regional agreements. The U.S. perspective differs from that of other countries because it has a more global orientation in its trade patterns. Although there can be significant gains from U.S. participation in regional agreements, the success of regional trade agreements (RTA's) does not diminish the importance of multilateral agreements. After full implementation of all major regional trade agreements, the economy-wide gains to the United States from a complete multilateral reform remain higher than the net gains from RTA's. An open-regional agreement like that proposed by APEC appears less attractive for the United States than an open-global agreement that could be achieved by a WTO multilateral agreement.

Introduction

The United States has played a significant role in both regional and multilateral trade negotiations and is likely to have an influential role in shaping future trade reforms. The rapid growth and high profile of regional trade agreements (RTA's) has shifted public attention toward these agreements. For example, the North American Free Trade Agreement (NAFTA) stimulated greater public interest in the United States than did the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) (Destler, 1995). This may stem from the fact that the issues addressed by multilateral agreements are not as clear to the public as those raised by RTA's. While it is clear that regional trade agreements have stimulated greater public interest, it is

less clear whether the economic importance of RTA's matches that of the multilateral trade agreements.

Economists have addressed whether regionalism is in conflict with multilateralism. A global viewpoint, however, does not necessarily represent a particular country's perspective. Countries initiate trade agreements based on their own perspectives, which typically are more regionally oriented. Generally RTA's form when countries recognize their economic interdependence with regional partners. This dependence is characterized by the strength of regional trade and investment. The degree of regional dependence can vary across countries, and because of this, the actual importance of RTA's may also differ significantly from one country to another.

Table 1--Country comparisons of regional trade, 1995

Country	Regional partners						
	NAFTA	Other APEC	MERCOSUR	Other Latin Am.	EU	ROW	World
	<i>Percent of total trade</i>						
U.S.	27.0	38.2	2.2	4.1	19.5	9.1	100
Canada	74.1	12.5	0.7	1.0	8.4	3.4	100
Mexico	78.8	7.6	1.5	2.7	7.4	2.0	100
Australia	15.7	55.6	0.8	0.2	19.9	8.0	100
Japan	27.9	44.3	1.0	0.8	15.0	11.0	100
Taiwan	24.6	56.4	0.9	0.5	14.0	3.6	100
Argentina	14.8	16.0	26.9	4.8	28.7	8.8	100
Brazil	22.0	18.0	13.0	4.2	30.2	12.6	100
Czech Rep.	2.4	4.1	0.5	0.4	79.2	13.5	100
France	6.5	9.0	1.0	0.8	66.6	16.1	100
Germany	7.5	12.3	1.2	0.6	63.3	15.1	100

Includes both imports from and exports to each region.

Source: United Nations COMTRADE.

The United States holds a unique trade position in the global economy because of its array of trading partners and wide range of products traded. This global orientation magnifies the issue of regionalism versus multilateralism. Is the United States better served by individual RTA's or by comprehensive global reforms pursued through the World Trade Organization (WTO)?

Characteristics of U.S. Trade

The economic impact of regional and multilateral trade reforms on the United States depends partly on existing trade patterns. For example, Canada's and Mexico's shares of trade with NAFTA are 74 percent and 79 percent, while the U.S. share of total trade with NAFTA is only 27 percent. Similarly, individual APEC¹ countries have greater trade with the APEC region than does the United States. For Australia, Japan, and Taiwan, the shares of trade with other APEC countries are 56, 44, and 56 percent, whereas the U.S. share is 38 percent. Australia has become

increasingly integrated into the dynamic Asia-Pacific region while trade with Europe has become less important. It was this growing interdependence of Australia on the Asia-Pacific region that prompted Australia to initiate an APEC free-trade agreement.

Among NAFTA and other APEC members, the United States has a higher share of trade with other Southern Hemisphere countries including the countries of MERCOSUR and other Latin America. The EU is an important partner for many non-EU, especially for Argentina and Brazil. But from the EU's perspective, trade with non-EU countries is less important than trade with other European countries. Geography, common economic policies, and historical cultural ties forged close trade links in Europe. For example, France and Germany both have intra-EU trade shares above 60 percent. The Czech Republic, a candidate for joining the EU, conducts 79 percent of its trade with other EU countries.

Another important characteristic of U.S. trade is the wide variation in sectoral trade balances by region. While gains from trade liberalization are brought about by increased volumes of imports and exports, these gains can be offset through terms-of-trade effects. Differences in regional trade balances (table 2) can affect the U.S. terms of trade. For example, the United States is a net supplier of services to the world, there-

¹Asia-Pacific Economic Cooperation forum consists of Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Singapore, South Korea, Taiwan, Thailand, and the United States.

fore, trade in services is an important source of U.S. income. A drop in the price of services relative to other tradeables can lead to lower U.S. welfare. A lower price for light manufactures, where the United States is a net importer, can be welfare improving since this reduces household expenditures.

While the United States is generally thought of as a net food supplier, this is not the case on an individual partner basis. The United States is a net food supplier with respect to “other APEC,” the EU, and the “rest of world,” with trade balance ratios of 3.3, 1.27, and 4.68. But the United States is a net food importer with NAFTA, MERCOSUR, and other Latin American countries, with export/import ratios of 0.84, 0.46, and 0.86. Terms-of-trade effects for a given regional agreement are related to existing trade balances within that particular region.

Empirical Modeling of Regional and Multilateral Reforms

For this global analysis, it is important to obtain a consistent set of results for both regional and multilateral reforms. This is done using a single modeling framework that explicitly links all countries in the global economy. For this study, the GTAP² framework

²Global Trade Analysis Project established a common data base and modeling framework for a world wide consortium of researchers performing global trade analysis. The GTAP database is documented in McDougall (1997). Theory of the model is described in Hertel and Tsigas (1997).

Table 2--U.S. trade balances by region and sector, 1995

	NAFTA	Other APEC	MERCOSUR	Other Latin Amer.	EU	ROW	World
	<i>Export / import ratio</i>						
Food and agriculture	0.84	3.53	0.46	0.86	1.27	4.68	1.80
Natural resources	0.12	1.22	0.54	0.02	0.90	0.02	0.22
Light manufactures	0.55	0.19	0.36	0.65	0.55	0.30	0.34
Heavy manufactures	0.82	0.64	2.40	2.46	0.96	1.44	0.84
Total merchandise	0.72	0.64	1.48	0.93	0.93	0.75	0.74
Total services	5.91	2.26	22.37	0.51	2.50	1.68	2.40

Source: United Nations COMTRADE and GTAP version 4 database.

is used consisting of a standard neoclassical-type model and a global database. Trade linkages are represented by bilateral trade flows and measures of tariffs and non-tariff barriers are represented on a bilateral basis. Economic gains from trade reforms are measured in terms of household welfare, which takes into account changes in income and all prices. Simply put, household welfare is a measure that reflects the economic well-being of an aggregate household in each region. Models vary in the way welfare is measured. One difference in the way welfare is measured in the GTAP model is that it takes into account both consumption and savings, with the return on savings determined by a global market for savings and investment.

Experimental Design

To assess the total impact of RTA's requires an accounting of impacts of individual regional trade agreements, including both those in existence and those being proposed. The NAFTA and MERCOSUR agreements are well into implementation. Still in negotiation is the Free Trade Agreement of the Americas (FTAA), covering NAFTA and South American countries. The FTAA debate is over whether all NAFTA members will participate in a regional agreement or whether bilateral agreements will be formed with individual NAFTA countries. Of most interest in this study is how the United States will be affected by either participating or not participating in an FTAA.

The largest regional trade agreements on the horizon are in Europe and the Asia Pacific area. The EU has made plans for expansion to include the Central and

Eastern European Countries (CEEC³). Although this regional trade agreement does not directly involve the United States, the outcome could have implications for other RTA's. New EU members are expected to adopt the Common Agricultural Policy (CAP). Depending on reforms of the CAP, its extension to all CEEC members could create additional trade distortions in world agricultural markets.

The United States is a member of the Asia-Pacific Economic Cooperation forum. In 1994, members of APEC set a goal of free and open trade in what is known as the Bogor Declaration. Full implementation of reforms is expected by 2010 for developed countries and by 2020 for developing countries. In 1995, at the Osaka Ministerial meeting, members agreed that trade liberalization would be comprehensive in sectoral coverage. Members have not resolved the fundamental issue of whether to adopt a preferential free-trade arrangement or a potentially divisive arrangement called "open regionalism" by opening their markets to nonmember countries.⁴

Table 3 describes the series of experiments used in the analyses. The sequence of the experiments is consistent with the order in which trade liberalization has occurred or will likely occur. Each experiment is performed using a set of policy shocks that represents removal of trade barriers. Since GTAP is a global model where countries are linked by bilateral trade, the effects of policy changes in one region are transmitted to other regions. The world economy adjusts to these policy shocks by establishing new market equilibrium prices and quantities. Each experiment produces an updated base equilibrium, which is then used in a subsequent experiment. This sequencing of experiments allows for measurement of incremental impacts of individual trade reforms.

³The Central and Eastern European Countries include Poland, Hungary, Czech Republic, Slovak Republic, Romania, and Bulgaria.

⁴Fane (1995) makes the point that the Bogor Declaration left this choice open by qualifying "the goal of free and open trade" by the clause "in Asia Pacific."

The starting point for conducting the set of experiments is a post-Uruguay (GATT) base. This means that the Uruguay Round commitments are phased in and all markets adjust from these reforms. The first in the series of experiments is the NAFTA (experiment 1). Here, all border interventions are removed between the United States, Mexico, and Canada for all agricultural and nonagricultural sectors. The "post-NAFTA" state would represent the world economy after full adjustments have occurred from the trade liberalization of NAFTA. The impact of the NAFTA agreement is measured as the difference between the beginning base (post-Uruguay) and the post-NAFTA state. This post-NAFTA state then becomes a new base for conducting the MERCOSUR trade reforms (experiment 2), and so on (table 3).

Experiment 4 involves the integration of the CEEC's with the EU-15 member countries. Exactly how EU integration will occur is still unknown. Attempts at modeling the EU expansion and associated reforms have done so with a number of alternative scenarios.⁵ Basically, modeling it involves the elimination of barriers on intra-European trade and harmonizing external barriers at the post-Uruguay Round levels. Trade barriers are removed on trade between CEEC's and the EU-15 while the CEEC's adopt the same external import barrier as the EU. Domestic support and export subsidies are left unchanged for both EU-15 and CEEC members.

The final regional trade agreement, APEC, is examined in steps. First, trade in the APEC region is liberalized on a preferential basis (5a). Second, APEC members open their borders to non-APEC members. This is carried out in two steps in order to show incremental impact of opening trade to the EU. Opening trade to non-EU countries becomes experiment 5b and opening trade to EU members becomes experiment 5c. The combined effects of experiments 5a-5c equals the open-

⁵See Bach, and Frandsen (1998); and Hertel, Brockmeier, Swaminathan (forthcoming) for alternative scenarios of EU expansion.

Table 3--Experimental series for regional and multilateral trade reforms

Experiment	Base for implementation	Trade agreement	Description
E1	post-Uruguay Round	NAFTA	Remove all trade barriers on trade flows between U.S., Canada, and Mexico
E2	post-E1	MERCOSUR	Remove all trade barriers on trade flows between Argentina and Brazil
E3a	post-E2	FTAA excluding U.S.	Remove all trade barriers between Canada, Mexico, Chile, and MERCOSUR
E3b	post-E3a	FTAA with U.S.	Remove all trade barriers between U.S. and FTAA
E4	post-E3b	EU expansion	Remove trade barriers between CEEC's and EU CEEC's adopt same external import barriers as EU
E5a	post-E4	APEC preferential	Remove all trade barriers between APEC countries
E5b	post-E5a	APEC open regional excl. EU	APEC opens trade to all countries except EU
E5c	post-E5b	APEC open to EU	APEC opens trade to EU
E6	post-E5b	Full multilateral liberalization	Remove all remaining trade barriers in world

regional agreement. After completion of the APEC liberalization scenario, it is assumed that all remaining barriers are removed by way of a WTO multilateral trade agreement (experiment 6).

Results

Table 4 provides a summary of the U.S. and global welfare gains from each of the trade reforms. When the United States does not participate in an RTA, it experiences a loss. This can be seen for the MERCOSUR, the FTAA, and the EU expansion. The net U.S. welfare gain for the Western Hemisphere is \$4.9 billion. By comparison, gains from the Uruguay Round yield \$4.6 billion. Also, the gain from joining FTAA (\$3.28 billion) is greater than the gain from NAFTA (\$2.32 billion).

Expansion of the EU will provide gains (\$480 million) by expanding its membership and exploiting the comparative advantages of East and West Europe. Exports of agriculture and light manufactures from CEEC's to the EU-15 increase substantially. The United States experiences a loss of \$600 million. The

manner of CAP reforms, which is entirely outside the realm of U.S. policy, can affect this outcome.

The various APEC trade liberalization experiments show different outcomes.⁶ The largest single RTA gain for the United States (\$11.3 billion) comes from the APEC preferential agreement. If APEC is implemented on an open-regional basis, the U.S. gain is only \$2.4 billion. The loss in U.S. welfare is accounted for largely (\$6 billion) as a result of extending free trade to the expanded EU.

After accounting for RTA gains, the full multilateral agreement generates \$7.5 billion in welfare gains to the United States, higher than the cumulative gains from all RTA's (\$6.7 billion). That suggests that the United States has considerable incentive for further trade liberalization beyond the currently proposed RTA's.

Without further analysis of the results, in particular for the APEC liberalization, it remains unclear exactly why

⁶Similar results for APEC liberalization were generated by Young and Huff (1997).

Table 4--Summary of global and U.S. welfare gains from regional and multilateral trade reforms

Liberalization scenario	U.S.	World
	<i>Billion \$U.S.</i>	
Uruguay Round	4.57	33.65
E1 NAFTA	2.32	-0.58
E2 MERCOSUR	-0.36	0.80
E3a FTAA excluding U.S.	-0.34	0.34
E3b FTAA including U.S.	3.28	1.32
Total for Western Hemisphere	4.90	1.54
E4 EU expansion	-0.60	0.48
E5a APEC preferential	11.30	36.47
E5b APEC open to all except the EU	-2.92	5.81
E5c APEC open to the EU	-6.00	11.14
Total for APEC open regional agreement	2.38	47.60
Total RTA's	6.68	49.62
E6 Full-multilateral liberalization (after RTA's)	7.51	62.03

the United States experiences gains or losses. Of particular interest are the differences in results generated in experiments 5a-c, where there is a dramatic shift in U.S. welfare. To understand the factors behind these changes, it is helpful to perform an analysis of welfare decomposition. Changes in welfare for the experiments conducted here are generated from two major sources: allocative efficiency, and terms of trade.⁷ These components of welfare for the APEC experiments are shown in table 5. Allocative efficiency captures the gains caused by resources shifting from one sector to another. For the APEC preferential agreement, this efficiency effect accounted for \$6.7 billion of the \$11.3 billion (U.S.) welfare gain. The results are conservative. Accounting for factor accumulation effects or productivity gains would tend to amplify the results and increase the gain in welfare.⁸

⁷See Huff and Hertel (1996) for details on welfare decomposition in the GTAP model.

⁸See Lewis, Robinson, and Wang (1995) for incorporating dynamic effects in APEC liberalization.

The deterioration in U.S. terms-of-trade effects dominates the welfare changes in both experiments where APEC opens to non-APEC members. When APEC opens borders to nonmembers except the EU, the efficiency effect is only \$1 billion, compared with a large decline in U.S. terms of trade (\$3.9 billion). When APEC removes barriers on trade from the EU, the terms-of-trade effect contributes a U.S. welfare loss (\$6 billion).⁹

By sector, agriculture and light manufactures contribute significantly to the positive terms of trade under the APEC preferential agreement (table 6). When APEC trade liberalization occurs, Asia-Pacific's light manufacturing sector expands. This increases the cost of production for the agricultural sector as labor and capital are bid up. Agricultural production costs rise at the same time that import protection is removed leading to an overall contraction of the Asia-Pacific agricultural sector. Food consumption in that region shifts toward foreign-produced food, thereby increasing the demand and export price for U.S. agriculture.

The United States depends more on Asia-Pacific as a source of agricultural income than as a supplier of food. For light manufactures, Asia-Pacific is more important as a supplier than a purchaser. As a result of liberalization, U.S. consumers face higher priced food

⁹Strong terms-of-trade effects are common with the type of import demand specification used in GTAP (see Brown 1987 for discussion of this topic).

Table 5--Sources of U.S. welfare gains and losses from APEC liberalization

	Allocative efficiency	Terms of trade	Total welfare
	<i>Million \$U.S.</i>		
APEC preferential	6,749	4,527	11,301
APEC open but excl. EU	1,015	-3,934	-2,921
APEC open to EU	427	-6,420	-5,998
Total	8,191	-5,827	2,382

but are more than compensated with lower priced light manufactures, which make up a far larger share of U.S. household expenditures on foreign goods.

When APEC removes trade barriers for non-APEC members, the United States experiences a terms-of-trade loss. In experiments 5b and 5c, agriculture has a negative terms-of-trade effect. U.S. agriculture faces greater competition, driving down agricultural export prices. Opening trade to non-EU member countries (experiment 5b) contributes more to the decline in U.S. agricultural terms of trade (-0.098) than opening to EU member countries (-0.093). This suggests that U.S. agriculture faces as much (or more) competition from non-EU members as from the EU. Of more significance is the terms-of-trade loss due to trade in services.¹⁰ Because the United States is a large net supplier of services, a lower export price can hurt U.S. terms of trade. Here we see that when APEC opens trade with the EU, the services sector contributes more than any other sector to the decline in the U.S. terms of trade. The U.S. terms of trade are positive in the FTAA and the multilateral reforms reflecting differences in sectoral trade flows by region.

¹⁰The EU is a major supplier of global shipping services.

Conclusions

From a U.S. perspective, the success of regional trade agreements does not diminish the importance of multilateral agreements. After full implementation of all major regional trade agreements currently under consideration, the economywide gains to the United States from a complete multilateral reform remain higher than the net gains from RTA's. While the United States conducts international trade with a wide range of partners throughout the world, for other countries RTA's appear more attractive than multilateral agreements because of closer economic ties with regional partners and the greater ability to negotiate these agreements.

RTA's will continue to evolve, and the United States runs a risk by not participating. As with the FTAA, a regional agreement can form regardless of U.S. participation, and the United States may suffer when excluded. However, when the United States participates, the gains can be significant. In fact, the combined gains from NAFTA and FTAA are greater than the welfare gains from the Uruguay Round. This highlights the fact that regional trade reforms with Latin America are important as is "fast-track" trade-negotiating authority.

The way in which an RTA is implemented has strong implications for U.S. trade gains. The United States stands to gain significantly from an APEC preferential

Table 6--Contribution to U.S. terms of trade by sector: APEC, FTAA, and multilateral liberalization

Sector	Liberalization Experiments				FTAA*	Complete multilateral
	APEC preferential	APEC open but excl. EU	APEC opens to EU			
	<i>Percentage point change</i>					
Agriculture	0.280	-0.098	-0.093	0.015	0.213	
Natural resources	0.075	-0.059	-0.009	0.007	0.090	
Light manufactures	0.579	0.011	0.055	0.021	0.118	
Heavy manufactures	0.009	-0.030	-0.086	0.118	-0.221	
Services	0.030	-0.109	-0.265	0.063	0.387	
Capital goods	-0.520	-0.102	-0.229	0.076	0.098	
Terms of trade	0.454	-0.386	-0.626	0.302	0.686	

Terms of trade calculated as a ratio export price index to import price index

*with U.S. participation

agreement that liberalizes trade among members. Much of these gains are from greater efficiencies achieved by better resource use. On the other hand, if APEC countries remove barriers to all partners on an open regional basis, a significant reduction in U.S. welfare could result. This loss is driven chiefly by unfavorable terms-of-trade effects. This open-regional agreement appears lopsided from a U.S. perspective. Free-riding by nonmembers puts the United States at a competitive disadvantage. For other APEC members this may not be important, since much of their trade is conducted with member countries. But for the United States, with a larger share of trade with other countries, it is more important that non-APEC countries reciprocate in a GATT-consistent manner by removing their trade barriers.

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A Dynamic Evaluation of the Effects of Western Hemisphere Integration on the U.S. Economy

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Abstract

This study examines the dynamic effects of regional integration arrangements in the Western Hemisphere on the U.S. economy, including U.S. agriculture and agricultural trade. The analysis uses an intertemporal, global, general equilibrium model which takes into account saving-investment, capital accumulation, and the linkage between trade and economic growth. The study finds that the United States will enjoy economic gains from a hemisphere-wide integration, regardless of whether it joins the FTAA. However, U.S. agricultural exports and imports, and farm incomes will increase more when the United States participates. Besides its comparative advantage in agricultural and services trade, the United States also has a comparative advantage in financial capital markets. This would allow U.S. households to further enjoy the benefit of hemisphere-wide integration by investing in other nations in the hemisphere, especially when the United States joins the FTAA.

Introduction

Reionalism is an integral part of the broader economic policy reforms that have occurred in the Western Hemisphere over the last decade. This chapter examines the dynamic effects of regional integration arrangements in the Western Hemisphere on the U.S. economy, including U.S. agriculture and agricultural trade, by taking into account changes in saving-investment and capital accumulation. Through close linkage between open trade and economic growth, especially through technological spillovers embodied in the trade, countries within the hemisphere, including the United States, will enjoy economic gains from more trade in the Americas. Besides its comparative advantage in trade of agricultural commodities and services, the United States, as a wealthy country, also has a compar-

ative advantage in financial capital markets. This allows U.S. households to further enjoy the benefit of hemisphere-wide economic integration by accumulating assets of other nations in the hemisphere, especially when United States joins the Free Trade Area of the Americas (FTAA).

Development of Regional Trade and Integration in the Western Hemisphere

Regional trade agreements have been a key factor in advancing and consolidating the market-oriented reforms underway in the hemisphere in this decade. Beginning in mid-1980, many Latin American coun-

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tries undertook comprehensive economic reform programs, including a fundamental shift from the import-substitution development policies of previous decades to more open, market-based policies.

In the 1960's and 1970's, governments in most Latin American countries adopted an import-substitution strategy in forming their economic policies, especially trade policies. These developmental strategies were based on the idea that the substitution of domestically produced goods for imports would stimulate a country's economic growth by supporting local industries in the form of producer subsidies and conserving foreign exchange. In implementing this strategy, many Latin American countries levied heavy taxes on agricultural exports to subsidize industrial development and imposed high import barriers on agricultural inputs. Such tax burdens were further exacerbated by inflationary fiscal policies that implicitly taxed the primary sectors of production, especially agriculture. These fiscal policies subsequently led to monetization and overvaluation of the countries' currencies, which resulted in further taxing producers of traded goods. The two oil shocks of the 1970's raised import prices for the Latin American countries and slowed their economic growth. When interest rates rose sharply in the early 1980's, these countries were trapped in serious macroeconomic crises with heavy burdens of foreign debt. Thus, structural adjustment and economic policy reforms became inevitable in trade as well as macroeconomic policy reforms.

While government expenditures were reduced, fiscal deficits remained in the early reform period because of lack of tax reforms. The monetization of the fiscal deficit and the use of domestic debt instruments made foreign investors hesitant, which further contributed to shortrun instability in real exchange rates (Little *et al.*, 1993 and Alam and Rajapatirane, 1993). Latin American countries inevitably had to adopt tight monetary and fiscal policies accompanied by devaluation of floating exchange rates. To promote and maintain a stable macroeconomic environment, they

also adopted prudent fiscal management, economic deregulation, and financial sector reforms.

Trade reforms involved a shift from import-substitution regimes toward outward-oriented trade regimes. After the reforms, average tariff rates declined dramatically. Many countries also simplified the tariff categories. Thus, the degree of openness, measured by the ratio of the sum of exports and imports to Gross Domestic Product (GDP), increased from a pre-reform level of 49 percent to a post-reform (1991) level of 58 percent for Latin American countries on average (Alam and Rajapatirane, 1993). The reduction of protection barriers on imports and expansion of exports led these countries to adopt rules consistent with the General Agreement on Tariffs and Trade (GATT), and, consequently, to become members of GATT.

Regional integration was another step in the successful trade and macroeconomic reforms and became an integral part of them. MERCOSUR (The *Mercado Común del Sur*), the second largest regional trade arrangement in the Western Hemisphere, was established in 1991 among the countries of Argentina, Brazil, Paraguay, and Uruguay. MERCOSUR eliminated most trade barriers among its members and established a common external tariff for most agricultural products by 1995, with longer transition periods for a few sensitive agricultural products.

The United States and Canada also started to reduce their direct government intervention in agricultural markets and liberalized agricultural trade in the 1980's. In 1989, these two countries established the Canada-U.S. Free Trade Agreement. In 1994, the North America Free Trade Agreement (NAFTA), the largest regional trade arrangement in the Western Hemisphere, was established among the three north American countries.

Besides NAFTA and MERCOSUR, a multitude of other trade agreements have been initiated or re-activated during the past decade. About 40 trade agreements now operate in the hemisphere, and at

least another dozen are under negotiation (see map in chapter 12).

This proliferation of trade agreements with the broader economic policy reforms in the hemisphere has given rise to calls for a comprehensive, hemisphere-wide agreement. At the Miami Summit of the Americas, held in December 1994, the leaders of 34 Western Hemisphere democracies, including the United States, pledged to negotiate a Free Trade Area of the Americas (FTAA) by the year 2005. Formal negotiations were initiated in April 1998 at the second Summit of the Americas in Santiago, Chile.

An FTAA could simplify the complex system of regional and bilateral trade preferences prevailing in the hemisphere, and ensure more open and transparent rules for U.S. trade and investment in the rapidly growing markets of Latin America on a comparable basis with other exporters. Further, an FTAA could help countries in the hemisphere lock in the economic reforms they have already adopted and improve the long-term outlook for growth and stability in the hemisphere.

The Western Hemisphere is a large market for U.S. agricultural exports as well as an important supplier for U.S. agricultural imports. Many countries in the Western Hemisphere are both important trade *partners* and major *competitors* for U.S. agricultural products in third-country markets. In addition, many of them have a comparative advantage in agricultural production. As the old policies that discouraged agricultural production and constrained economic growth are replaced with more market-oriented economic policies, agricultural productivity and economic growth in the region are expected to accelerate. As a highly dynamic region with abundant agricultural resources, the Western Hemisphere is setting up a stage for dynamic changes in the region by adopting economic policies and trade reforms. Therefore, how the regional integration of the Americas evolves, specifically whether the United States is actively involved, will have important implications for U.S. agriculture.

Structure of the Analysis

Studies on the effects of regional integration in the hemisphere on the U.S. economy need to take into account the major dynamic factors, especially capital accumulation and the close linkage between trade and economic growth through technological spillovers. Thus, this study was conducted in a global, dynamic, general equilibrium framework developed in the U.S. Department of Agriculture's Economic Research Service (Diao and Somwaru, forthcoming. See also their analysis of the FTAA, using a static framework with more commodity detail, in a forthcoming ERS report). The model is dynamic in the sense that firms and households have intertemporal optimization behavior, that is, a forward-looking behavior, such that a regional trade agreement (RTA) or other trade policies will affect savings, investment, capital accumulation, and international borrowing and lending activities of each country and region in the model. Furthermore, in the model, trade liberalization affects a country's productivity growth through *technological spillovers*. That is, if a country, especially a developing country, becomes more open in trade to other countries, it is more likely to learn and adopt advanced technologies embodied in international trade, especially trade with developed countries. Such spillovers of advanced technologies or knowledge through imports of capital goods or foreign investment, will improve a country's productivity, that is, more outputs can be produced using the same amount of productive resources (Grossman and Helpman, 1991; Romer, 1994).

Besides its intertemporal or dynamic property, the model is global and covers all countries and regions in the world. As the focus of the study is in the Western Hemisphere, the major Western Hemisphere countries are included as individual countries, while the rest of the countries in the world are treated as an aggregated region in the model. Western Hemisphere countries in the model are the United States, Canada, Mexico, Argentina, Brazil, Chile, and all other Western Hemisphere countries as a region (OWH). The

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behavior of each country and region with regard to sectoral production, consumption, exports and imports, investment, aggregate domestic savings, international borrowing and lending (that is, international financial capital flows) is consistent with economic theory (Goulder and Summers, 1989; Go, 1994; Barro and Sala-I-Martin, 1995). Trade flows among regions are multilateral and, hence, world prices are endogenously determined by world market-clearing conditions. Except for the policy variables, which are exogenous, the endowment of land is the only variable that cannot be endogenously determined by the model. Capital is endogenously accumulated over time. Resources can move among sectors and the general equilibrium feature of the model ensures that adjustments are consistent cross sectors.

The evaluation of the potential dynamic effects of alternative regional integration scenarios is captured by the use of several economic indicators. These indicators include the growth paths of real GDP, total consumption, agricultural income, total investment, total and agricultural trade (exports and imports), as well as changes in foreign capital inflows or outflows.

We conducted two alternative hemisphere-wide integration scenarios in the model. In both scenarios, NAFTA, MERCOSUR (including Chile), and the Uruguay Round agreement are fully implemented. In the first scenario, a hemisphere-wide FTAA is modeled by eliminating all tariffs among the hemisphere countries except for the United States. Specifically, the United States eliminates only its import tariffs with the other two NAFTA member countries, while Canada and Mexico join the FTAA and eliminate tariffs with all other countries in the hemisphere. We call this scenario *RIAA-1* (Regional Integration Arrangements of the Americas). In the second scenario, *RIAA-2*, the United States fully participates in a hemisphere-wide free trade agreement, eliminating all tariffs with all other hemisphere countries, while all other countries in

the hemisphere eliminate tariffs with each other and with the United States.

The data used to calibrate the model are aggregated from the Global Trade Analysis Project (GTAP) database, version 3, which represents the world in 1992 (McDougall, 1997). The focus of the model, based on the data of 1992, is not to predict real economic performance after the base year (1992). Instead, the model is used to generate and compare different outcomes from alternative policy scenarios. Thus, the model outcomes are reported in relative terms, that is, deviations from the base. The impacts of an FTAA on the U.S. economy are measured by comparing the different outcomes of the two scenarios.

The estimated effects of an RTA depend critically on the initial level of protection and the degree of liberalization applied in the model. We measure trade restrictions as ad valorem tariff equivalents. The initial levels of tariff rates for the countries and regions in the model were obtained from the GTAP database, version 3. The tariff rates were weighted applied rates for each individual country and region in the database, and the weights are sectoral import shares for each country and region in the model. The trade share data were also obtained from that database. Within the Western Hemisphere in 1992 (base year), average tariffs (agricultural and manufacturing sectors) ranged from 5 percent for Canada and 10 percent for the United States to 30 percent for Argentina and Brazil (for the sectoral tariff rates see table 1).¹

¹However, for most of the countries in the hemisphere, especially for NAFTA and MERCOSUR member countries, the tariff rates have been significantly reduced in recent years, but the database fails to capture that. Hence, the simulated effects of tariff reductions in the hemisphere, regarding NAFTA and MERCOSUR member countries, may be overestimated by accounting for some effects that have already been achieved in the last 5 years after the implementation of these two agreements. Additionally, the database does not include nontariff barriers.

Dynamic Effect of Alternative Regional Integration Schemes on the United States

The gains from trade liberalization are mainly generated from three sources: the allocation of resources to more profitable activities, the more rapid capital accumulation due to more profitable investment alternatives, and growth in a country's total factor productivity (TFP) due to access to new foreign product and process technologies. Since the United States is a highly developed country with relatively low levels of economic distortions in trade, gains for the U.S. economy generated directly from its own trade liberalization or from trade liberalization of other countries in the hemisphere can be expected to be small compared with gains by the developing countries in the hemisphere. Furthermore, the aim of this study is not to predict the real growth or performance of the U.S. economy, which is determined by many factors including domestic economic policies and the level of domestic technological research and development activities.

Effects on GDP

Numerous studies have found empirically strong and positive linkages between growth in a country's TFP and the share of its economy involved in trade with a more advanced nation (for example, Coe and Helpman, 1995; Wang and Xu, 1997; and Coe, *et al.*, 1997). It is very important for the analysis to capture such linkages, especially since most countries in the hemisphere

are developing countries. In the model, the full implementation of existing regional integration agreements (NAFTA and MERCOSUR) and the Uruguay Round agreement, together with a hemisphere-wide integration, stimulate productivity growth of the countries in the hemisphere as well as investment. This allows all countries in the hemisphere to enjoy more rapid growth. For instance, under the two scenarios, Mexico and Chile would enjoy a two-digit positive increase in their GDP levels from the base, while the growth in Argentina's and Brazil's GDP would exceed 7 percent in total in both scenarios (fig. 1).

On the other hand, gains for the U.S. economy, measured by annual growth in its GDP, are relatively small in both scenarios, regardless of whether the United States joins the FTAA. In the first scenario, if the U.S. remains outside of an FTAA, U.S. GDP would grow 0.6 percent in total. In the second scenario, when the U.S. joins the FTAA, its GDP increases by 1.2 percent in total. Hence, the net FTAA effect of U.S. participation in the bloc, measured by the deviation in U.S. GDP growth under the two scenarios, is quite modest, about 0.6 percent in total (fig. 2, the chart for the United States).

Growth in a country's GDP takes time. Establishment of an RTA does not immediately translate into capital accumulation and improvements in productivity. Thus, the simulation results show that GDP growth in each country in the hemisphere is insignificant in the first few years of the two scenarios. Except for Mexico and Chile, almost all other countries in the hemisphere observed less than 1-percent growth in their GDP in the first 3 to 5

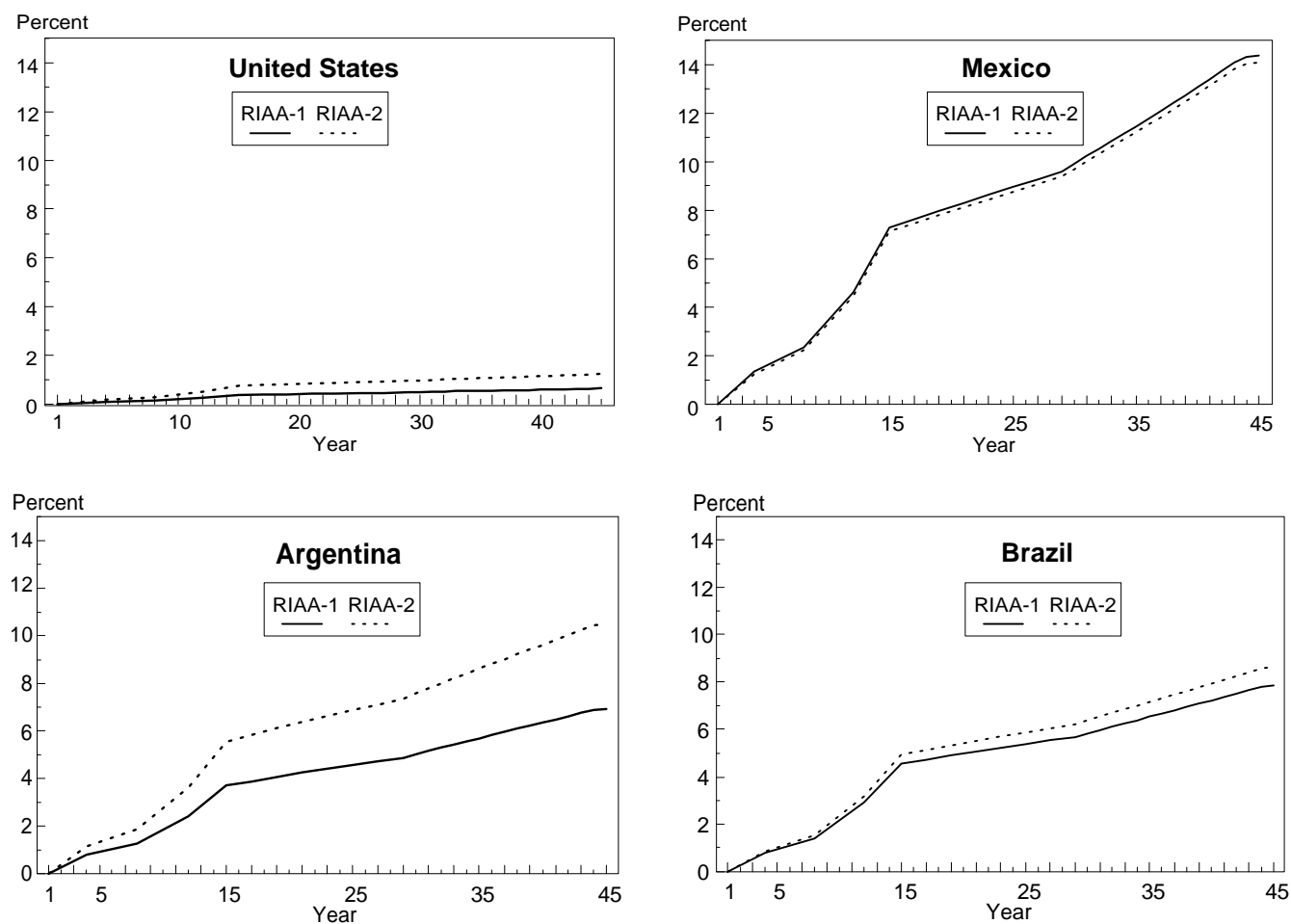
Table 1--Initial tariff rates in selected Western Hemisphere countries (1992)

Commodities	USA	Canada	Mexico	Argentina	Brazil	Chile	OWH ¹
Crops	0.06	0.08	0.07	0.19	0.30	0.13	0.21
Livestock	.02	.00	.01	.15	.08	.22	.11
Processed food	.02	.14	.15	.21	.16	.22	.19
Manufacturing	.10	.04	.11	.30	.29	.21	.18

¹OWH is other hemisphere countries.

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Figure 1
Deviation from base GDP in selected Western Hemisphere countries
 (The base GDP is normalized to one)

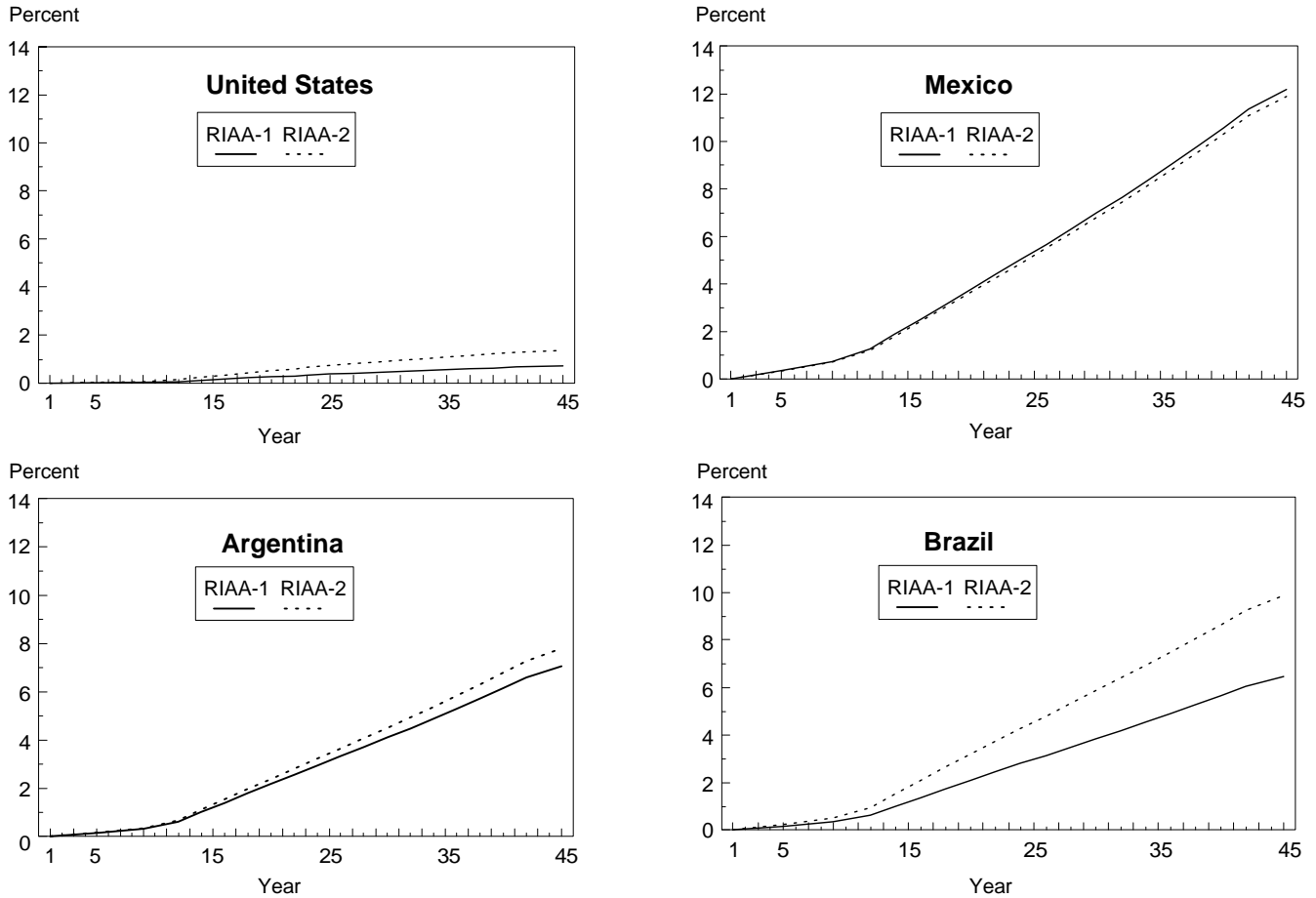


years in the two alternative RIAA scenarios (while U.S. GDP only increased totally by 0.08 and 0.18 percent, respectively, in the first 3 to 5 years). These short-term effects of the RIAA or the effects observed in the first few years in the simulations are equivalent to the static effects of the RIAA captured by a comparative static analysis in a traditional computable general equilibrium (CGE) framework. In other words, a static CGE analysis mainly captures the effects of resource reallocation at given levels of productive resources, including capital stock and technology.

Effects on Capital Accumulation and TFP

Deviations in GDP growth under the two different integration scenarios reflect differences in capital accumulation (in response to trade policy changes) and productivity growth (in response to spillovers of technologies from advanced developed countries, fig. 2). The investment responses in each country are endogenously determined in the model by their firms' choices

Figure 2
Deviations from base capital stocks in selected Western Hemisphere countries
 (The base capital stocks are normalized to one)



to maximize their intertemporal profits. The technological spillover elasticity, which links productivity growth with trade (especially with advanced developed countries), is based on the result from econometric estimation in the literature.²

The simulation results indicate that, for the developing countries in the hemisphere, improvement in their total factor productivity and increased investment due to regional integration are equally important to their economic growth, while for the United States, with small technological spillovers emanating from the poorer countries, the direct effects of a regional trade agreement on its growth are mainly captured by an

²A sensitivity test was performed for determining the size of spillover elasticities.

increase in its investment.³ Under the two alternative RIAA scenarios, the U.S. total capital stock increases by 0.7 and 1.4 percent (fig. 2), respectively, while the level of its TFP improves by only 0.25 and 0.5 percent, respectively, over the entire time horizon.

Effects on U.S. Foreign Assets

As a wealthy economy, the investment opportunities of the United States are not limited to within the country and, hence, a rise in GDP alone cannot be used to describe all the effects of an RTA on the U.S. economy.⁴ As increased capital investment in developing countries cannot be fully financed by their domestic savings, international financial capital markets would be an important source to finance their rapid growth in investment. This would create opportunities for the United States to invest abroad, either through international lending activity or foreign direct investment in these hemisphere countries. These *indirect* effects generated from the growing demand for U.S. capital outflow may be relatively strong, given that the economic adjustments in the developing countries in the hemisphere are expected to be drastic. The model simulations capture such indirect effects of regional integration. Under both scenarios, we observe that for the developing countries in the hemisphere,

foreign capital inflows increase dramatically following a hemisphere-wide integration, and demand for foreign capital inflows increase more in the second scenario in which the United States joins an FTAA. These create opportunities for U.S. firms to invest abroad. In total, the foreign assets owned by the U.S. private sector and invested in other countries in the hemisphere rise by 9 and 13 percent, respectively, under the two scenarios implying a 4 percent gain in U.S. foreign investment if the United States fully participates in an FTAA (fig. 3).⁵ This implies that the measure of importance of the FTAA for the U.S. economy should be based on the indirect effects generated from the growing foreign demand for the U.S. financial capital, rather than on the direct effects on commodity trade only.

As a wealthy country, the United States has a comparative advantage in the financial capital market, besides its comparative advantage in trade of agricultural goods and services. With rapid economic growth in the developing economies due to the RIAA, increases in the demand for U.S. financial capital are expected to be large, which allows U.S. households to accumulate assets of other nations in the hemisphere. Hence, to evaluate whether the United States should participate actively in further economic integration in the hemisphere, it is important to also emphasize U.S. comparative advantage in world financial markets.

Effects on Consumption

Economic growth implies higher income for consumers and, hence, increases in their levels of consumption. Under both scenarios, the path of changes in a country's overall consumption is almost the same as the path for its GDP growth. This is not too surprising since income growth is a major determi-

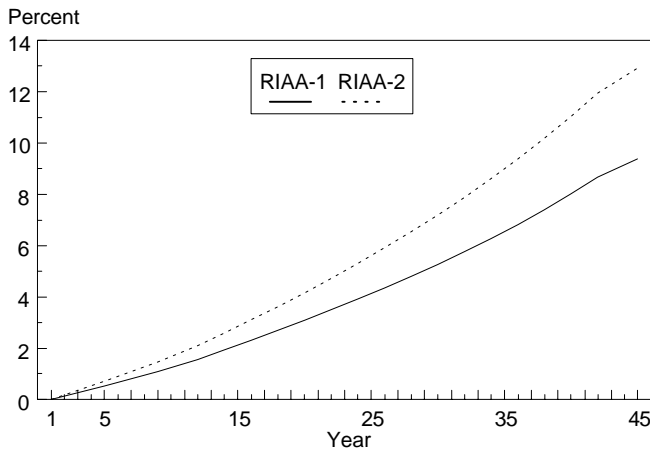
³When growth in a country's TFP takes place, the country's investment and, hence, capital stock increases more than in the absence of TFP growth. This reasoning relies on the famous diminishing returns to scale theorem. That is, if TFP does not grow, returns to capital fall with an increase in capital stock, and, hence, investment becomes less profitable and eventually stops augmenting and so does capital stock. On the other hand, if TFP grows, i.e., the productivity of labor employed in an economy rises, returns to capital become relatively constant, and capital can grow continuously with investment. In the RIAA-2 scenario, for example, while Mexico's TFP increases by 5 percent in the time horizon, the stock of capital on Mexico rises by 12 percent. If TFP did not grow, the stock of capital in Mexico would increase by only 3.4 percent in the same scenario.

⁴According to the World Bank definition, the Gross Domestic Product (GDP) is measured by returns to productive factors employed in domestic production processes.

⁵By definition, returns from foreign assets are included in a country's gross national product (GNP) and not in its GDP. In the simulations, the increased returns from foreign assets owned by the U.S. private sector are about 0.05 percent of the U.S. GNP; hence, growth of the U.S. GNP is almost parallel to growth of its GDP.

Figure 3
**Deviations from base foreign assets
In the United States**

(The base foreign assets are normalized to one)



nant of consumption patterns. This result implies that consumers in all countries in the hemisphere benefit from a hemisphere-wide integration, but the benefits for the U.S. consumers are modest, in terms of changes in U.S. overall consumption. Furthermore, the gap between the two growth paths of U.S. total consumption, depending on whether or not the United States joins the FTAA, is also quite small.

Effects on U.S. Farm Income

Similar to changes in GDP and total consumption, U.S. farm income, measured by returns to capital and labor employed in the agricultural and agricultural-related sectors, also shows modest growth (slightly more than 1-percent increase in total) under both scenarios (fig. 4). The increase in U.S. farm income due to its participation in the FTAA is quite small, less than 0.5 percent. The major effects of the alternative RIAA's on U.S. farm income originate from more efficient allocation of resources, including the creation of more job opportunities in agricultural and agricultural-related sectors than from increased capital investment. This is clearly captured by the shortrun effects (3 to 5 years) on U.S. farm income, that is, increases in farm

income due to increased returns to agricultural and agricultural-related labor, land, and capital. In the long run, however, additional increases in U.S. farm income are negligible. This indicates that, as the United States has a comparative advantage in agriculture, U.S. full participation in an FTAA would allow resources to be more efficiently used in U.S. agricultural production, which is a major source for increased U.S. farm income. However, other countries in the hemisphere also have a comparative advantage in agricultural production, and may become competitors for U.S. agricultural products. Thus, in the long run, the competitiveness of U.S. agricultural exports may be challenged by neighboring countries. This is captured in the model by the relatively stagnant long-term growth in U.S. farm income. Note that, as the agricultural sector is quite aggregate in the analysis, we cannot identify which sub-sectors may be hurt and which may grow. Furthermore, TFP growth in agriculture may be different from economywide TFP growth. The United States could, in principle, counter the competitive tendency by increasing investment in agricultural research and development (R&D). The effects of that, however, are beyond the scope of this study.

Effects on U.S. Total and Agricultural Trade

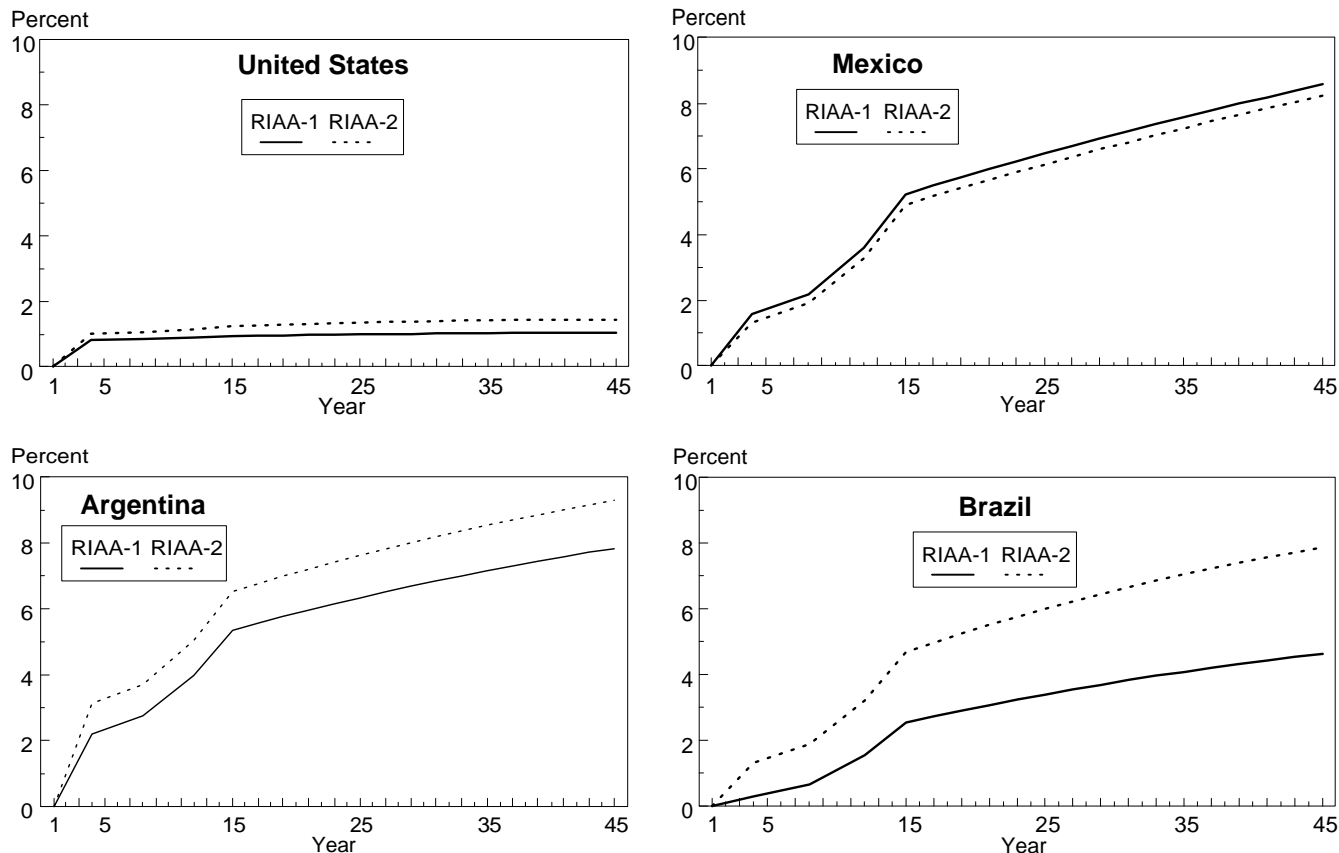
As expected, the effects of an RTA on trade flows are larger than those on economy-wide indicators, such as GDP and total consumption. The reason is obvious, as integration will re-enforce economic linkages among the countries. In the short run, U.S. total merchandise exports and imports would be 3 and 2.3 percent higher, respectively, than the base under RIAA-1, and 5.6 and 4.6 percent higher, respectively, under RIAA-2 (table 2). Deviations of increases in U.S. total merchandise exports and imports between the two alternative RIAA scenarios, or the net effects of U.S. participation in an FTAA, are more significant than those for U.S. GDP. That is, if the United States joins the FTAA, U.S. exporters can enjoy an additional 2.6-percent increase in exports and U.S. consumers can enjoy a 2.3-percent

A Dynamic Evaluation of the Effects of Western Hemisphere Integration on the U.S. Economy

Figure 4

Deviations from base farm income in selected Western Hemisphere countries

(The base farm income normalized to one)



increase in imports, compared with the first scenario (RIAA-1) in which the United States stays out of the FTAA. As U.S. total exports grow more rapidly than its total imports in both scenarios, the U.S. trade deficit would become smaller.

U.S. agricultural exports and imports grow more rapidly than total merchandise trade under both scenarios. Compared with the base, U.S. agricultural exports and imports would increase, in the short run, by 6 and 3.2 percent, respectively, under RIAA-1, and 7.9 and 6.4 percent, respectively under RIAA-2. That is, if the United States joins the FTAA, U.S. farmers can achieve an additional 2-percent increase in agricul-

tural exports and U.S. consumers will benefit from an additional 3-percent increase in agricultural imports. As agricultural exports grow rapidly, the share of U.S. agricultural exports in total merchandise trade will rise by 1 percentage point (from 8.6 to 9.6 percent of U.S. total merchandise trade) due to U.S. participation in the FTAA. With relatively high tariffs on agricultural imports within the hemisphere, agricultural trade had suffered more than other sectors before the regional trade reforms. Once tariffs are eliminated or reduced through a hemisphere-wide integration, the sectors with high import barriers earlier will experience rapid growth in trade. Fast growth in agricultural imports does not necessarily hurt U.S. farmers' interests.

A Dynamic Evaluation of the Effects of Western Hemisphere Integration on the U.S. Economy

Table 2--Deviations from base exports and imports in selected Western Hemisphere countries

(The base exports/imports are normalized to one, and deviations are in percentage (a))

	RIAA-1(b)			RIAA-2(c)			Effects from U.S. Joins FTAA(d)		
	Short-run (e)	Medium-run (f)	Long-run (g)	Short-run	Medium-run	Long-run	Short-run	Medium-run	Long-run
1. Total exports									
USA	2.96	2.90	2.89	5.63	5.57	5.58	2.59	2.60	2.61
Mexico	8.06	16.65	23.14	8.46	16.64	22.76	0.37	-0.01	-0.31
Argentina	23.52	29.04	32.26	26.67	32.41	35.93	2.56	2.61	2.77
Brazil	9.29	13.16	16.36	13.56	19.61	24.78	3.91	5.69	7.24
2. Total imports									
USA	2.27	2.47	2.58	4.61	4.90	5.04	2.28	2.38	2.40
Mexico	16.51	18.17	20.08	16.21	17.87	19.75	-0.26	-0.25	-0.27
Argentina	24.11	24.91	25.26	26.43	27.57	28.14	1.87	2.13	2.30
Brazil	21.85	22.58	22.79	33.21	34.30	34.61	9.32	9.56	9.62
3. Total agricultural exports									
USA	5.99	5.28	4.67	7.87	6.73	5.87	1.78	1.38	1.14
Mexico	6.96	11.86	15.41	6.90	10.61	13.39	-0.05	-1.12	-1.74
Argentina	10.28	13.61	16.45	14.53	17.53	20.21	3.86	3.46	3.23
Brazil	-0.67	1.25	5.17	4.09	6.82	12.85	4.79	5.51	7.31
4. Total agricultural imports									
USA	3.16	3.19	3.19	6.37	6.47	6.53	3.11	3.18	3.23
Mexico	21.04	20.37	20.72	20.69	20.10	20.51	-0.29	-0.23	-0.18
Argentina	16.20	16.20	16.54	16.01	16.25	16.82	-0.16	0.04	0.25
Brazil	28.06	28.54	28.09	30.42	31.37	30.87	1.85	2.21	2.17
5. U.S. trade with other Western Hemisphere countries									
Total exports to WH	7.73	8.26	8.78	17.77	18.64	19.40	9.33	9.59	9.76
Total imports from WH	2.35	5.12	7.14	7.14	11.27	14.15	4.68	5.85	6.55
Total agricultural exports to WH	14.00	13.43	13.52	23.41	22.64	22.90	8.25	8.12	8.26
Total agricultural imports from WH	17.34	18.86	20.25	25.09	27.70	29.98	6.60	7.44	8.09

(a) The base is a steady state path derived from the base year (1992). In the base, NAFTA, MERCOSUR and the Uruguay Round agreements are all assumed not to be in implementation.

(b) RIAA-1 is a scenario in which NAFTA, MERCOSUR (including its common external tariffs) and the Uruguay Round agreements are fully implemented. In addition, the tariffs among two NAFTA members (except for U.S.), MERCOSUR, and the other Western Hemisphere countries are eliminated.

(c) RIAA-2 is a scenario in which NAFTA, MERCOSUR (including its common external tariffs) and the Uruguay Round agreements are fully implemented. In addition, the tariffs among NAFTA (including U.S.), MERCOSUR, and the other Western Hemisphere countries are eliminated.

(d) The FTAA effects of U.S. joins the FTAA are approximately represented by the comparison between RIAA-2 and RIAA-1.

(e) It is approximately the first 1 - 5 years.

(f) It is approximately the first 5 - 15 years.

(g) It is beyond year 15.

Larger U.S. agricultural export growth and agricultural resource reallocation result in higher farm incomes as the result of U.S. participation in the FTAA.

In both scenarios, U.S. agricultural exports would increase more in the short run (the first 3 to 5 years) and medium run (the first 15 years), compared with the long run (the first 20 to 30 years). That is, gains in U.S. agricultural exports observed in the short or medium run

may partially cease in the long run. Under the RIAA-2 scenario, for example, U.S. agricultural exports reach their highest level during the first 15 years. After that, U.S. agricultural exports fall slightly (1 to 1.5 percent) in the following 5 to 20 years, compared with the highest level obtained in the early period.

We mentioned earlier that the gains for U.S. agriculture generated from regional integration are mainly

due to more efficient allocation of productive resources. Since U.S. technology and, hence, agricultural TFP would not be significantly improved due to an RIAA alone, gains from regional integration are negligible, with respect to long-term U.S. economic growth.⁶ On the other hand, the developing economies in the Western Hemisphere would enjoy gains generated from the more efficient use of resources as well as improvements in TFP due to an RTA. Furthermore, given that some countries in the hemisphere, such as Argentina and Brazil, have a comparative advantage in agricultural production, these countries' agricultural products would compete with U.S. products in third-country markets since these countries are retaining their growth in agricultural exports in the long run. Such competition is observed in both scenarios, since close economic linkages with the United States would allow the developing countries to benefit more from catching up with the advanced U.S. agricultural technology. For example, in RIAA-2, Argentina's and Brazil's agricultural exports would increase 3.8 and 7.7 percent, respectively, more than in RIAA-1 in the long run (table 2).

The competition in agricultural exports (presented in this study in terms of aggregated agricultural commodities) between the United States and other countries in the hemisphere would take place mainly in third-country markets in the model, that is, the Rest of World. Even so, agricultural trade between the United States and its neighboring countries in the hemisphere actually increases, especially if the United States joins the FTAA. (If the United States is a member of the FTAA, its agricultural exports to the hemisphere are about 9 percent higher in both the short and long run than if the United States is not a member.) This implies that, with a relatively rapid

growth in other economies in the hemisphere, closer economic relationships between the United States and its neighboring countries would create more trade opportunities for U.S. agricultural exporters. In contrast to U.S. total agricultural exports in third-country markets, in which market gains would eventually cease, U.S. agricultural exports to the countries in the hemisphere might experience continuous growth even in the long run.

Summary and Conclusions

The economic integration in the Western Hemisphere can be viewed as another step in a sequence of trade liberalization policies that most countries in the region have been pursuing in the last decade. The United States will continue to enjoy gains from more open economic policies, and these gains will be larger if it joins a future hemisphere-wide integration agreement.

Taking into account the close linkage between open trade and economic growth, developing countries in the hemisphere would benefit more from a further hemisphere-wide integration, which would allow them to increase trade with the United States. As most of these countries have a comparative advantage in various types of agricultural production and agricultural trade, U.S. agricultural exports may face increased competition in the long run. Competition in agricultural trade between the United States and other countries in the hemisphere would take place mainly in third-country markets, while trade between them would rise, especially if the United States joins an FTAA.

The direct effects of an FTAA on the United States, measured mainly by GDP growth, are modest, given that the United States is an advanced and open economy. The gap in U.S. gains between membership and nonmembership in the FTAA is not large. On the other hand, the indirect effects of an FTAA, that is, the effects on U.S. investment abroad or U.S. financial capital outflow to neighboring countries, are much stronger than the direct effects caused by increased

⁶This does not imply that U.S. agricultural TFP will not grow in the future. As many econometric studies (for example, Gopinath and Roe, 1997) have shown, growth in U.S. agricultural TFP is mainly driven by U.S. technological research and development activities, TFP might not necessarily be affected by an RTA in the Western Hemisphere.

investment within the United States. The United States is a wealthy country, with a comparative advantage in world financial capital markets. Hence, to determine whether the United States actively participates in a hemisphere-wide integration agreement, the longrun effects of an FTAA on the U.S. economy, beyond the increased opportunities in regional trade, should be taken into account.

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CEEC Accession to the EU: A General Equilibrium Analysis

Peter S. Liapis and Marinos E. Tsigas

Abstract

This chapter examines the economic implications of European Union enlargement on EU members, the United States, and the rest of the world. Our findings include the following: economic welfare in the enlarged EU may improve, due mainly to improved terms-of-trade for the Union; extension of the CAP to agricultural producers in the new member countries may cause a substantial increase in the CAP budget; further reforms in the CAP may lead to a welfare improvement for the European Union but they may not reduce substantially transfers to new member countries; the economy-wide impact for the United States may be positive and small; agricultural producers in the United States, however, may be hurt.

Introduction

On the spectrum of economic integration defined by economists, the European Union (EU) represents the most intensive integration among countries. Since its formation as the European Economic Community in 1957, its name has evolved as the degree of integration among member countries has steadily progressed. *Union* signifies the march toward ever-deepening political, economic, and social policy harmonization among member countries. The contemplated inclusion of many of the Central and Eastern European Countries (CEEC's), therefore, entails much more than the typical regional trade agreements (RTA's) discussed elsewhere in this report. In addition to eliminating trade barriers among its members, common to other RTA's, EU enlargement entails harmonization of trade barriers

against third countries (indicative of customs unions) and, more important, the harmonization of domestic sectoral policies leading to common prices, a common budget to finance agricultural and other policies, and ultimately, a common currency.

Conventional comparative static economic analyses of RTA's focus on terms of trade and on resource allocation effects and whether there is trade creation or trade diversion, and hence, whether welfare improves or declines due to the RTA. Trade-creation and trade diversion do not refer to the volume of trade pre- and post-RTA formation. Trade-creating RTA's are presumed to increase the welfare of the importing country of the RTA, while trade-diverting RTA's are presumed to reduce the welfare of the importing

country. Theoretical models with few sectors and/or countries do not indicate whether an RTA will be welfare-enhancing for its participants, much less for the excluded countries. Whether an RTA is welfare-enhancing depends, in part, on the relative demand and supply elasticities of the importing country, the cost structure of member and competing third countries, and the tariff level before the formation of the RTA. The presumption, however, is that RTA's are more successful the nearer together member countries are, because transport costs would not dissipate the gains from trade. Also, successful RTA's are more likely among countries with similar levels of factor endowments and development. Both these criteria, especially physical proximity, bode well for EU expansion.

The level of development of the EU and the CEEC's, however, is quite dissimilar, so the expansion may lead to welfare losses if trade diversion dominates. For example, the 1993 GDP of the seven CEEC's (that is Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia) was only 3 percent of the EU level, while their population was 26 percent, suggesting low factor productivity. But the CEEC's are land-abundant: their total agricultural land area is 38 percent of the agricultural land area in the EU. Their agricultural and food production technology is labor-intensive, utilizing more than 22 percent of their labor force compared with less than 6 percent in the EU. Agriculture is also a more important sector to the CEEC's, contributing 11 percent to their GDP, compared with 3 percent for the EU.

An additional complicating factor in a theoretical model-based determination of the welfare effects of EU enlargement is that it involves not just changes in border policies, but in domestic policies as well. Consequently, whether the EU's eastward enlargement will be welfare enhancing or not is a question that we must address with a numerical economic model as we do below.

One of the key building blocks of the EU has been its Common Agricultural Policy (CAP). The CAP is predicated on high domestic prices, protected by high

tariffs and other barriers against third countries, and facilitated by extensive use of export subsidies to reduce surplus production stimulated by the artificially high domestic prices. Member countries of the EU guarded their agricultural sectors while liberalizing their manufacturing sectors during multilateral negotiations in the GATT. This approach resulted in a highly protected and distorted agricultural sector, a sector where the CEEC's may have a comparative advantage and which employs a larger portion of its productive factors relative to the EU.

Current EU members must balance the financial costs of eastward enlargement (that is displacement costs to import-competing sectors and budgetary costs of carrying out agricultural and structural policies) with the political insurance of stable democratic neighbors to the east. The open-ended support provided to agricultural producers in the past resulted in budgetary problems which, along with pressures from third countries during the Uruguay Round, finally led the EU to reform the CAP in 1992. Potential EU expansion and additional budgetary costs have prompted the EU Commission to propose further CAP reforms in its *Agenda 2000*. One proposal is to further reduce support prices from the levels attained with the 1992 CAP reform.

The political impetus for accession is equal, if not stronger, in the CEEC's. The policy changes that the CEEC's have undergone as they shifted from centrally planned to market-driven economies have been extensive. Their economies declined substantially during the transition, as did those of their trading partners, forcing them to find alternative markets following the formation of the Newly Independent States and Baltics (NIS/B). The CEEC's must continue to undergo further changes to join the EU and these changes will have economywide implications. But these countries see both political and economic gains. Accession to the EU will anchor their continued drive to democracy, and even though they will be joining a highly distorted RTA and they may experience economic losses from nonoptimal allocation of resources, they view the potential financial transfers as important contributors

to infrastructure development and productivity gains. Plus, accession provides them with the potential for increased foreign direct investment and an easy entry into the markets of a large, rich neighbor.

As a prelude to accession and to help solidify the new democracies, the EU signed Association Agreements, commonly called Europe Agreements, between 1991 and 1995, with each of the potential CEEC entrants. The main purpose of these agreements is to promote closer economic and cultural cooperation.

The EU has announced the timetable for negotiations with the “fast track”¹ CEEC’s. Although the CEEC’s come to the table without a great deal of negotiating power, the anticipated high budget costs of EU enlargement have brought about pressures to further reform the CAP in conjunction with enlargement.

For third countries, including the United States, the concern about EU enlargement is not so much the potential of losing the CEEC markets because these countries are very small traders. For example, U.S. exports to the CEEC’s in 1992 were less than 1 percent of total exports, as was the case for U.S. agricultural exports. Third-country concerns are with their potential exclusion from trade in the enlarged block, that is, CEEC’s displacing their exports to the EU, and the potential displacement of their exports in third markets given the subsidies that the CAP provides to agriculture. The potential changes in trading patterns may also have terms-of-trade effects, which may reallocate resources among sectors in third countries. However, neither the United States nor other third countries have much scope to influence the outcome of the enlargement negotiations.

Here, we examine the economic implications of EU enlargement on current and new EU members; its implications for the CAP budget; the implications of EU enlargement coupled with CAP reforms; and the

implications of EU enlargement on the U.S. economy and the rest of the world. We find that: (1) economic welfare in the expanded EU of 22 countries may improve by about \$1.5 billion, due mainly to improved terms of trade for the EU; (2) extension of the CAP to agricultural producers in the new member countries may cause a substantial increase in the CAP budget and a substantial net transfer (of about \$16.1 billion) from the current EU members to the new EU members; (3) further reform in the CAP (e.g., 20-percent cut in agricultural producer subsidies) may lead to a substantial welfare improvement for the EU but may not reduce transfers to new member countries substantially; (4) the economywide impact for the United States may be positive, but small (up to \$241 million); (5) agricultural producers in the United States may be hurt (e.g., relative returns to land decline), but consumers benefit from lower import prices; (6) the economywide impact for the sum of all other countries may be negative but small (\$103 million); (7) the Asian and African economies, may be the only ones hurt by the EU expansion, due mainly to a negative terms-of-trade impact.

Economic Framework and Simulation Design

The implications of CEEC accession are assessed in the context of an economywide global trade framework that has 8 regions and 16 traded commodities.² We use the Global Trade Analysis Project (GTAP)

²Our specification is: the United States; EU-12 (the 12 EU members prior to the 1995 expansion); EU-3 (Austria, Finland, and Sweden which joined the EU in 1995); CEEC-7 (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia); the Newly Independent States and Baltics (NIS/B); Middle East and Northern Africa (MEA); Countries of European Free Trade Area (EFTA); and the rest of the world (ROW). There are four primary agriculture sectors (wheat, other grains, nongrain crops, and live-stock), and four processed foods sectors (meat products, dairy products, other processed food products, and beverages and tobacco). The rest of the economy is represented with eight sectors (forestry, pulp and paper; coal; oil; gas; petroleum and coal products; chemicals, rubbers, and plastics; other manufactures; and services).

¹Cyprus and five CEEC countries, Czech Republic, Estonia, Hungary, Poland, and Slovenia, are in this group.

model to assess the effects of CEEC accession to the EU. GTAP is a global trade applied general equilibrium framework, which is fully documented in Hertel (1997). We focus on the effects of accession on the United States, participating countries, and agriculture and food industries.

One of the most contentious issues regarding CEEC accession is its impact on the costs of the CAP. To consider this issue in our analysis, we modified the GTAP model by including a budget component. We determine the budget expenditures required to finance the CAP given our policy assumptions, and the tax rate needed to generate the necessary revenue to balance the budget. Even though most of the EU's budget revenue is derived from value-added tax, for computational ease we impose a tax on income. Our results do not depend on the method used to generate the revenue.

Our model is based on 1992 data. The GTAP data have information on tariffs and export subsidies established by the Uruguay Round Agreement (URA), and domestic support rates for 1992 (McDougall, 1997). For the EU, however, the URA commitments do not reflect the lower domestic prices resulting from the 1992 reform of the CAP. To reflect the impact of the CAP reform, we use recent border policies for agriculture in the EU and CEEC-7 (Hertel *et al.*, 1997). Table 1 shows all supply and export subsidies and import tariffs in our data. These data suggest that the EU subsidizes agriculture more than the CEEC-7. For example, while the EU provided about 43 percent export subsidy to its wheat exporters, the CEEC-7 taxed wheat exports to the tune of about 17 percent. Support for nonagricultural sectors, however, is higher in the CEEC-7 than in the EU. For example, while the EU imposed tariffs of about 7.9 percent on manufactured goods, the CEEC's imposed a tariff of about 8.6 percent. Supply subsidies in the EU suggest that as a result of CEEC accession, producer prices in agriculture would increase more than those in manufactures. This change in relative prices contributes significantly to our results.

Our CEEC accession simulation consists of: (1) removing all trade barriers between the 7 CEEC

(CEEC-7) countries in our model and the 15 EU member countries (EU-15); (2) harmonizing CEEC-7 output subsidies and import protection, with respect to other countries, with that of the EU-15; and (3) participation of CEEC-7 in the EU budget. The CAP has some production-limiting policies such as land set aside for grains and oilseeds and a milk quota. We do not impose these policies on the acceding CEEC's because it is not clear that the set-aside program will be imposed on the new entrants, nor is it known what their quotas may be. Furthermore, our dairy sector includes processed products whose production is not constrained.

To assess the impacts of further CAP reform, we conduct a second simulation where CEEC accession is coupled with a 20-percent reduction in producer support for agricultural commodities in the EU (a frequently mentioned target).

Simulated Effects of CEEC Accession to the EU

Output and Resource Effects

Table 2 shows estimated impacts of CEEC accession on output supply in percentage change, as well as 1992 values of supply for selected regions. For third countries, including the United States, the largest impact of CEEC accession is on their agricultural sectors. In most cases, supply of agricultural commodities is reduced, but changes are less than 1 percent. Even in the EU-15, CEEC-7 accession has a minuscule effect on supplies, especially in nonagricultural sectors. Output changes the most in agricultural sectors, where supplies fall from 0.5 to 2 percent. But, for the CEEC-7, accession expands output, especially in the agricultural sectors. These results are not surprising, given the relatively large change in CEEC prices following accession.

An important result is the change in composition of output between agricultural and nonagricultural sectors within a country and the shifts in production between countries. EU enlargement leads to expansion of the

Table 1--Supply subsidies, import tariffs, and export subsidies in the model

	US	EU-12	EU-3	CEEC-7	NIS/B	EFTA	MEA	ROW
	<i>Percent</i>							
Supply subsidies								
Wheat	0.2462	0.0479	0.0479	0.0054	0.0013	-0.0191	-0.0038	0.0335
Other grains	0.2374	0.021	0.021	0.0019	-0.0119	-0.0249	-0.0033	0.0354
Nongrains	0.0395	0.5396	0.5396	0.0032	-0.0032	-0.0218	-0.0033	0.0567
Livestock	0.0269	0.0698	0.0698	0.0044	-0.0028	-0.0183	-0.0056	0.0049
Forestry, pulp, and paper	0	-0.0153	-0.0017	-0.0031	-0.0154	-0.0161	-0.0115	-0.0192
Meat	0	-0.0411	-0.0024	0.0516	-0.0023	-0.0087	-0.0052	0.0048
Milk	0.0327	-0.002	-0.0017	0.0012	0.1202	-0.0111	0.1995	0.0204
Other food products	0	0.0002	-0.003	0.0103	-0.0061	-0.0101	-0.01	-0.0109
Coal	0	-0.0097	0.0751	0.0036	0.0047	-0.0523	-0.0002	-0.0132
Oil	0	-0.1886	-0.0022	-0.1163	-0.0521	-0.0755	-0.0064	-0.0147
Gas	0	-0.1647	-0.0022	-0.2053	-0.0574	-0.0723	-0.0320	-0.0193
Beverages and tobacco	0	-0.3479	-0.0025	0.0048	-0.191	-0.4042	-0.2517	-0.3097
Chemicals, rubbers, and plastics	0	-0.0079	-0.0039	-0.004	-0.0352	-0.0722	-0.0062	-0.0516
Petroleum and coal products	0	0	-0.0004	-0.0152	-0.0382	-0.0543	-0.0401	-0.0574
Other manufactures	0	-0.0077	0.0017	0.0008	-0.0194	-0.0249	-0.0181	-0.0279
Services	0	-0.0233	0.0056	-0.0023	-0.0313	-0.0396	-0.0134	-0.0279
Import tariffs								
Wheat	0.04	0.43	0.43	0.3039	-0.0699	0.54	0.2198	0.4251
Other grains	0.0046	0.85	0.85	0.1696	0.02	0.6722	0.1691	1.0249
Nongrains	0.4765	0.5	0.5	0.1114	0.11	0.627	0.2358	0.2752
Livestock	0.017	1.53	1.53	0.2384	0	0.0081	0.2128	0.2243
Forestry, pulp, and paper	0.0118	0.0204	0.0199	0.0554	0	0.0097	0.2511	0.1007
Meat	0.04	1.53	1.53	0.2504	0.355	0.763	0.2828	1.1524
Milk	0.92	0.66	0.66	-0.2599	-0.02	1.0538	0.2527	0.5992
Other food products	0.0275	0.0772	0.076	0.1352	-0.0073	0.0529	0.2448	0.115
Coal	0	0.0053	0.0057	0.0202	0	0.005	0.17	0.0585
Oil	0.0051	0	0	0.0205	0	0.0087	6.8198	0.0509
Gas	0	0.0046	0.0024	0.0133	0	0.008	0	0.0598
Beverages and tobacco	0.0339	0.1638	0.1507	0.4271	0	0.0607	0.2898	0.3562
Chemicals, rubbers, and plastics	0.0787	0.1435	0.116	0.061	0	0.0118	0.2054	0.1098
Petroleum and coal products	0.0085	0.018	0.0207	0.0729	0	0.3182	0.2543	0.1206
Other manufactures	0.0995	0.0786	0.0767	0.0865	0	0.0265	0.2657	0.1383
Services	0	0	0	0	0	0	0	0.0001
Export subsidies								
Wheat	0.1283	0.43	0.43	-0.17	-0.0016	0	-0.002	0.0314
Other grains	0.0092	0.85	0.85	0.15	-0.0006	0	-0.0007	0.0207
Nongrains	0	0.1945	0.1945	0	-0.0186	0	-0.0027	-0.0307
Livestock	0	1.24	1.24	0.15	-0.0003	0	-0.0145	-0.0271
Forestry, pulp, and paper	0	0	0	0	-0.0284	0	-0.0065	-0.0242
Meat	0.01	1.24	1.24	0.15	0.0135	0	-0.0099	-0.0031
Milk	0.3311	0.66	0.66	-0.26	0.0568	0	-0.0131	0.0693
Other food products	0	0.0059	0.0059	0	-0.012	0	-0.0030	-0.0207
Coal	0	0	0	0	-0.4286	0	-0.0191	-0.0117
Oil	0	0	0	0	-0.4286	0	-0.0006	-0.0526
Gas	0	0	0	0	-0.4279	0	-0.0003	-0.0206
Beverages and tobacco	0	0	0	0	-0.1435	0	-0.0011	-0.0331
Chemicals, rubbers, and plastics	-0.0073	-0.0089	-0.0089	-0.0578	-0.0550	-0.0553	-0.0508	-0.0402
Petroleum and coal products	0	0	0	0	-0.4286	0	-0.0049	-0.0353
Other manufactures	-0.0003	0	0	-0.0104	-0.0746	-0.0049	-0.0029	-0.0573
Services	0	0	0	0	-0.0072	0	-0.006	-0.0101

Table 2--Supply impacts

Commodity	U.S.		EU-15		CEEC-7		NIS/B	ROW
	<i>Mil. dol.</i>	<i>Percent</i>	<i>Mil. dol.</i>	<i>Percent</i>	<i>Mil. dol.</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Wheat	14,949	-0.66	22,465	-0.56	2,014	20.30	-0.80	-0.18
Other grains	46,503	-0.88	24,591	-1.03	5,679	26.78	-0.65	-0.37
Nongrains	62,182	-0.90	186,808	-2.00	14,662	50.07	-2.41	-0.56
Livestock	98,485	-0.44	291,711	-2.06	6,271	42.48	-0.51	-0.73
Meat products	88,008	-0.34	235,128	-1.95	11,528	39.25	-0.60	-0.27
Dairy products	50,930	-0.44	122,707	-2.16	3,502	119.39	-0.89	-4.18
Other food products	225,246	-0.08	426,346	0.17	23,417	-3.06	0.19	-0.04
Manufactures	1,714,420	0.00	2,546,733	0.74	95,986	-20.69	0.05	0.10

nonagricultural sectors in third countries, but the effects are inconsequential. Following CEEC accession, nonagricultural output in the EU-15 expands, albeit moderately. The change in the composition of output in the CEEC-7, however, is more dramatic. In contrast to other countries, nonagricultural production declines. At post-accession relative prices, the CEEC-7 become more specialized in agricultural production and produce more of the world's supply, while more of the nonagricultural products are provided by other regions.

Sectoral allocation of resources does not change very much in the nonparticipating countries. In the United States, CEEC-7 accession leads to a slight shift in resources out of agricultural sectors. In the EU-15, resources flow out of agriculture as demand for these factors declines. In the CEEC-7, the large expansion in agricultural output attracts resources, which are withdrawn from other sectors in the economy. Relative returns to land, an indicator of how the agricultural sector is affected, decline in the United States and the EU by 1.75 and 3.66 percent, respectively.

Trade Effects

CEEC accession has very little effect on total trade despite the fact that CEEC-7 imports expand by 30 percent. This relatively large expansion has almost no impact on total world trade (the volume and value of total global trade increases less than 1 percent), because the CEEC-7 countries account for a very small share of world trade.

Following CEEC accession, third-country agricultural exports decline, while nonagricultural exports are hardly affected. For the United States and ROW, the fall in agricultural exports, except for dairy products, is small, but for the NIS/B, the fall in agricultural exports is more substantial (table 3). These results suggest that the already shifting trade patterns between the NIS/B and CEEC's (following the transition period) will continue after accession.

The specialization in production that occurs in EU-15 and CEEC-7 is manifested in their exports. As a result of CEEC accession, the CEEC-7 become more

Table 3--Trade impacts on exports

Commodity	U.S.	EU-12	EU-3	CEEC-7	NIS/B	ROW
	<i>Percent</i>					
Wheat	-1.01	7.71	-8.70	124.94	-2.12	-0.58
Other grains	-3.06	-5.68	4.71	177.44	-13.70	-2.26
Nongrains	-3.34	-5.58	5.72	384.88	-12.90	-4.05
Livestock	-4.34	-5.30	-12.34	663.95	-12.40	-3.45
Meat products	-2.13	-5.82	29.32	666.86	-9.22	-3.48
Dairy products	-22.50	-15.44	-11.26	2,237.89	-9.68	-21.90
Other food products	-0.48	8.72	11.37	-28.17	0.72	0.59
Manufactures	0.05	2.85	2.37	-15.18	0.18	0.21

specialized in agricultural production and their exports of these products expand; the EU-15 become more specialized in manufactures and they expand their exports of those products (table 3).

EU enlargement is trade-diverting in agricultural products as EU-15 imports from third countries are displaced by imports from CEEC-7 (table 4). U.S. agricultural exports to EU-15 decline as a result of accession, with the largest declines occurring in livestock and livestock products—the sectors with the largest increases in output in CEEC-7. Similarly, exports to EU-15 from other third countries also decline, and CEEC-7 exports (except other food products) to EU-15 expand. EU-15 imports of other food products and nonagricultural goods from third countries are little affected, but imports of these commodities from CEEC-7 fall substantially, reflecting the fact that output of these sectors declines in CEEC-7.

Following accession, U.S. and other third-country agricultural exports to the CEEC-7 decline significantly, with the exception of wheat (table 5). The fall in demand for agricultural imports from third countries is not surprising given the large increases in CEEC-7 output. Import demand for wheat in CEEC-7 expands mostly to satisfy feed demand of the expanded livestock, meat, and dairy sectors. Increased demand for other food products is also satisfied by increased imports from all regions, including the United States. In contrast, expanded demand for manufactures is satisfied by increasing imports from the United States and EU-15 at the expense of NIS/B and ROW. In other

Table 4--EU-15 imports from various countries of origin

Commodity	U.S.	CEEC-7	ROW
	Percent		
Wheat	-1.88	188.52	-1.28
Other grains	-6.68	35.13	-3.22
Nongrains	-8.11	532.04	-7.65
Livestock	-17.36	1,049.53	-35.13
Meat products	-34.87	809.58	-34.37
Dairy products	-9.96	1,229.76	-8.38
Other food products	-0.48	-24.54	0.18
Manufactures	0.24	-12.16	0.55

Table 5--CEEC-7 imports from various countries of origin

Commodity	U.S.	EU-15	NIS/B	ROW
	Percent			
Wheat	74.79	94.00	173.34	75.72
Other grains	-15.39	15.74	-14.83	-14.77
Nongrains	-60.80	22.80	-60.26	-60.43
Livestock	-80.46	-36.53	-80.31	-80.27
Meat products	-81.88	-53.32	-81.83	-81.77
Dairy products	-76.37	-63.12	-76.34	-75.88
Other food products	8.73	117.14	29.54	31.82
Manufactures	32.36	47.13	-0.56	-8.12

grains and nongrains, EU-15 exports to CEEC-7 expand while exports from third countries contract.

The expanded EU is also a competitor to the United States in the agricultural markets of third countries. U.S. agricultural exports to these countries decline while those from the EU expand. Even in the U.S. import market, EU exports displace those from other countries. U.S. imports of agricultural commodities, from all regions, increase by less than 0.5 percent, except for other grains, meat, and dairy products, which increase by 2, 4, and 5 percent as world prices of these products fall due to expanded subsidized EU exports.

The net effect of CEEC accession on trade is that all regions, except CEEC-7, have an increase in their trade balance, that is, the value of exports increases more than the value of imports. For the United States, the trade balance increases by \$193 million (1992 dollars), for the ROW it increases by \$209 million, while the other regions enjoy small increases in their trade balance. The largest impact is on the trade balance of the EU-15 and the CEEC-7. The EU-15 enjoy an increase of \$14.7 billion, while the increase in import demand for nonagricultural products leads to a decline of \$15.2 billion for the CEEC-7.

The overall terms of trade for the United States improve negligibly as the prices of imported commodities fall more than the prices of exports. The terms of trade of the CEEC-7 improve dramatically as they are now exporting under higher prices to the EU-15. The terms of trade of the EU-15 decline slightly as the prices of their imports increase.

Income, Expenditures, EU budget, and Welfare

CEEC-7 accession to the EU results in a substantial (21-percent) increase in the region's household income; household income in EU-15 and the other regions does not change. Consequently, household demand in the CEEC-7 expands substantially, especially in manufactured goods.

The bulk of EU's budget is devoted to supporting the CAP through the European Agricultural Guidance and Guarantee Fund (EAGGF) and to providing transfers to disadvantaged member states or regions through the Structural and Cohesion Funds. Our estimate of EU budget costs focuses on the EAGGF component but does not include compensatory payments from the recent CAP reform. However, many argue that compensatory payments should not be granted to CEEC farmers, so excluding these payments may not do serious damage to estimates of costs. However, payments from the Structural and Cohesion Funds, which could be substantial, are also not included. Allocation of these funds will more than likely be a political decision (Baldwin *et al.*, 1997), which is outside the scope of our analysis. In this regard, we underestimate expenditures. But our budget includes expenditures on export subsidies as well as subsidies on domestic production. In this regard, we may be overestimating budget costs because EU-15 subsidies for CEEC-7 domestic production may be excluded in the accession agreement. Hence, it is not clear whether we overestimate or underestimate budget exposure due to accession.

Table 6, part A, summarizes the welfare impacts of CEEC-7 accession to the EU. Budgetary costs seem a legitimate cause for concern, as CEEC-7 accession leads to a net transfer of \$16.1 billion (1992 dollars) from the EU-15 to CEEC-7, 35 percent of the EU's agricultural budget for that year. The CEEC-7 contribute \$3.2 billion to the EU budget, but they receive \$4.2 billion to subsidize their exports and \$15.1 billion to subsidize their domestic producers. Our results are similar to those generated by Baldwin and others.

The welfare impact of CEEC accession is positive for the world as a whole, the CEEC-7, and the United States; there are welfare losses, however, in the EU-15 and the sum of remaining regions. World welfare, measured by equivalent variation, increases by \$1.6 billion. The United States gains \$241 million; other third countries combined lose about \$103 million. In the United States, lower production and export levels for subsidized agricultural and food commodities lead to efficiency gains, which account for the majority of U.S. welfare gains; there is a positive terms-of-trade impact, but it is very small. We expect, however, that the efficiency gains from lower agricultural production and exports would be actually smaller because of agricultural policy reforms in 1996. The net welfare impact for the United States would still be positive though. We confirmed this hypothesis using a simulation without supply and export subsidies in the United States.

The largest beneficiary of accession is the CEEC-7, with a welfare gain of \$17.7 billion, most of which is due to the income transfer from the EU-15. The residual welfare impact, a gain of \$1.5 billion, may be decomposed to: (1) substantial efficiency losses from resources moving into the highly subsidized food and agriculture sectors, and (2) a substantial improvement in its terms of trade, which dominates efficiency losses.

The EU-15 lose \$16.1 billion in welfare, most of which is due to the income transfer to the CEEC-7. The residual welfare impact, a loss of \$76 million, may be decomposed to: (1) substantial efficiency gains from resources shifting out of the highly subsidized agricultural sector to the less subsidized nonagricultural sector, and (2) a substantial deterioration in the terms of trade of the EU-15, which dominates efficiency gains.

Economic welfare declines by \$103 million in all other regions combined. It is, however, the Asian and African economies that are hurt by the EU expansion, due mainly to a negative terms-of-trade impact.

A welfare improvement for the world as a whole from CEEC-7 accession is mainly due to the agricultural

Table 6--Welfare impacts of CEEC-7 accession

	U.S.	EU-15	CEEC-7	All other regions	Global impact
	<i>Million dollars</i>				
A. Base					
Impact					
Of transfer	0.0	-16,140.8	16,140.8	0.0	0.0
Of policy changes	240.9	-75.7	1,540.1	-103.3	1,602.0
Total welfare	240.9	-16,216.5	17,680.9	-103.3	1,602.0
B. Under reformed CAP					
Impact					
Of transfer	0.0	-14,283.8	14,283.8	0.0	0.0
Of policy changes	295.8	4,265.5	1,873.3	339.3	6,773.9
Total welfare	295.8	-10,018.3	16,157.1	339.3	6,773.9

policies in regions other than the EU and the CEEC-7. Policies are assumed to be those in place in 1992. The sum of efficiency gains from lower agricultural production and exports in all other regions is larger than the efficiency losses in CEEC-7 from higher agricultural production and exports. If we considered agricultural policy reforms that have taken place in several countries since 1992, we would expect the welfare impact for the world as a whole to be smaller, but still positive.

The results presented above regarding changes in production and trade do not materially change following further CAP reform (i.e., reduction of producer support by 20 percent). But, further CAP reform substantially improves global welfare (table 6, part B).

Lower prices imposed under this scenario lower CAP budget costs. Net transfers to the CEEC-7 from the EU-15 with this scenario are \$14.3 billion, almost \$2 billion less than in the previous scenario. In addition, lower EU prices lead to higher global welfare, up \$6.8 billion compared with \$1.6 billion without CAP reform.

In the United States, the new price scheme leads to larger welfare gains. As in the previous simulation, efficiency gains, though smaller, result from lower agricultural production and exports. However, improvement in the U.S. terms of trade is substantially larger than in the previous simulation, and this leads to a larger welfare improvement.

The welfare loss of the EU-15 is \$6 billion less than in the previous simulation. Not only is the income transfer to the CEEC-7 lower, but the residual welfare impact is now positive. There are substantial efficiency gains in the EU-15 due to lower agricultural and food support, but these efficiency gains are eroded by a deterioration in its terms of trade.

Even though the CEEC-7 accede to an EU with lower agricultural support, their welfare gains are reduced only \$1.5 billion from the previous simulation. The residual welfare impact is greater than in the previous simulation because, as expected, efficiency losses under reduced agricultural support are smaller.

Global welfare improves substantially from CEEC-7 accession under a reformed CAP because agricultural supports are reduced in the EU-15 itself. Relative to the earlier simulation, in this simulation, larger efficiency gains in EU-15 dominate smaller efficiency losses in CEEC-7 and smaller efficiency gains in all other regions.

Conclusions

Our results suggest that the EU enlargement will be welfare-enhancing for third countries. For the United States, enlargement means that agricultural exports to the CEEC's and EU-15 fall modestly, while nonagricultural exports expand. U.S. agricultural exports to third countries also decline as exports from the

enlarged EU expand, but the overall trade balance for the United States is positive, and there are small welfare gains. U.S. welfare gains are even larger with further CAP reform.

Our results indicate that CEEC accession is trade-diverting in agricultural products. Upon accession, CEEC's will have a comparative advantage in the agricultural sectors while nonagricultural sectors will contract. Furthermore, EU enlargement will impose substantial costs to the EU agricultural budget. In terms of resource allocation and supply changes, as expected, we found that all of the adjustment is in the CEEC-7: its agriculture expands and manufactures shrink. Accession has a small effect on total trade of the EU-15 and the CEEC-7.

Global welfare increases \$1.6 billion with EU enlargement, \$6.8 billion with further reform of the CAP. In this case, efficiency gains from CAP reform in the EU-15 and reduced transfers to the CEEC lead to smaller welfare losses for the EU-15, while total welfare for the CEEC's is only \$1.5 billion less than in the base scenario.

The results presented are conditional on the modeling framework and the base year. During 1992, the economies of the CEEC's were in transition-induced decline. The percentage changes in output may be less dramatic given a more recent base year. Similarly, we assumed that the agricultural sectors of the CEEC's

were not constrained by output-reducing policies such as land set-aside or quotas. If these policies are imposed on the new entrants, output effects will be mitigated. However, our results are similar to those in other studies, suggesting that the limitations are not serious.

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Farm Policy Reforms and Harmonization in the NAFTA

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Abstract

The NAFTA agreement is being implemented at the same time that the United States, Canada, and Mexico are adopting major reforms of their domestic farm support programs. This paper analyzes the interaction between trade and domestic policy reforms. Domestic policy changes have had a greater impact on the region's agriculture than NAFTA. They also affect how regional agriculture will respond to NAFTA in the long term. By strengthening market signals, policy reforms increase farm producers' responsiveness to changing prices due to NAFTA, leading to potentially greater specialization and trade, and larger welfare gains than under the former support programs. New farm programs also result in more trade creation and less trade diversion due to NAFTA than would have occurred under former programs. In the United States, NAFTA is expected to increase agricultural production and trade. Free regional trade effectively limits the ability of NAFTA members to maintain independent farm programs because the pressures of market arbitrage tend to unify prices. The recent decoupling of most support by NAFTA members is compatible with the trade pact.

Introduction

The removal of trade barriers between the United States, Canada, and Mexico under the North American Free Trade Agreement (NAFTA) has had positive but generally small impacts on U.S. agriculture through 1996 (USDA, 1997). More important for the region's agriculture than NAFTA are the major farm program reforms that have been adopted by all three members of the trade bloc, which have increased the market orientation of North American agriculture. Farm program reforms have been driven mostly by domestic budgetary pressures and broad, economy-

wide changes in members' economic policies that are not directly related to NAFTA. To a lesser extent, NAFTA has also motivated reforms, because free trade within the region makes some types of farm support programs costly or ineffective, and creates pressures to harmonize institutions and regulations.

Domestic policy changes have had a greater impact on the region's agriculture than NAFTA. They also affect how regional agriculture will respond to NAFTA in the long term. By strengthening market signals, policy reforms increase farm producers' responsiveness to changing prices due to NAFTA, leading to potentially

greater specialization and trade, and larger welfare gains than under the former support programs. New farm programs will also result in more trade creation and less trade diversion due to NAFTA than would have occurred under former programs. NAFTA and farm program reforms together will result in substantial structural change in the region's agriculture. It is their combined impacts that may account for the perception that NAFTA has significantly affected the region's farm sectors. The regional pact is likely to contribute to the goals of the upcoming mini-round for achieving more open world markets, and more market-oriented global agriculture. By adopting less trade-distorting farm programs and liberalizing the regional agricultural market, the North American countries are already addressing, and resolving, some of the issues that will be on the agenda in the upcoming, multilateral World Trade Organization (WTO) talks on agriculture.

NAFTA's Comprehensive Treatment of Agriculture

The NAFTA agreement, essentially three binational agreements among the United States, Canada, and Mexico, came into effect on January 1, 1994. It incorporates the Canadian-U.S. free-trade agreement (CUSTA) implemented on January 1, 1989, and adds binational agreements between the United States and Mexico, and Canada and Mexico. A small trilateral component establishes institutional mechanisms for administering NAFTA and resolving disputes. NAFTA's treatment of agriculture is comprehensive and, with a few exceptions, provides for the eventual full liberalization of agricultural trade in the region. In addition to tariffs and quotas, NAFTA addressed export subsidies, import safeguards, rules of origin, and sanitary and phytosanitary (SPS) requirements.

Between the United States and Canada, tariffs on most agricultural products were phased out over a 10-year period, and were completely eliminated by January 1, 1998. As specified in the original CUSTA, NAFTA allows Canada to permanently maintain restrictions on

imports of dairy, poultry, and eggs from the United States. These restrictions, originally specified as quotas, were later redefined as tariff-rate quotas (TRQ's) to comply with the rules of the WTO. A TRQ permits a specified quantity to be imported duty free, with quantities above that quota to be assessed a tariff at pre-NAFTA rates. The United States maintains TRQ's on imports of sugar, dairy products, and peanuts from Canada.

Between the United States and Mexico, NAFTA eliminated all agricultural import quotas and most tariffs. Remaining tariffs on sensitive products, such as U.S. imports of wheat, rice, and horticultural crops, were permitted phase-out periods of 5 to 15 years. For some commodities, extended protection over the 5- to 15-year time period is in the form of TRQ's, in which over-quota tariffs are gradually reduced over the transition period. U.S. imports of peanuts, sugar, and frozen orange juice and Mexican imports of corn, beans, and dry milk are covered by TRQ's for the full 15-year period. Special safeguards, or "snap-back" tariffs, allow specified quantities to be imported at preferential NAFTA rates, with excess quantities assessed at tariffs that "snap-back" to the lower of either the June 1991 most-favored-nation (MFN) rate or the current MFN rate. For U.S. horticulture, special safeguards are designed as seasonal TRQ's.

In the Canada-Mexico agreement, Canada accorded Mexico the same treatment as the United States under CUSTA, including Canada's continued import protection on dairy, poultry, and eggs. Mexico specified long phase-out periods for the same commodities as in the U.S.-Mexico agreement. As a reciprocal measure, Mexico permanently retained its import protection from Canada's supply-managed commodities—poultry, dairy, and eggs.

Export subsidies between the United States and Canada were banned under CUSTA. Under NAFTA, export subsidies are permitted if the importing country agrees to them, or the importer is benefiting from subsidies from other countries. This treatment has enabled the United States to continue to extend GSM credit guaran-

tees to Mexico. NAFTA also requires that SPS measures be scientifically based, nondiscriminatory and transparent, and that they restrict trade only minimally.

Farm Program Reforms Strengthen Market Signals

Domestic agricultural programs in the NAFTA countries have undergone fundamental change since 1994. In general, domestic reforms have both lowered support levels and “decoupled” payments by making them independent of farmers’ production decisions or market conditions. At the same time that these reforms have made the region’s agriculture more market-driven, NAFTA has contributed to changes in regional agricultural market conditions.

The 1985 Food Security Act, the first large-scale U.S. farm program reform, reduced target prices, froze payment yields, and introduced some planting flexibility. Farm legislation in 1990 reduced payment acres and further increased planting flexibility. In April 1996, the United States adopted the Federal Agriculture Improvement and Reform (FAIR) Act, which fundamentally changed the U.S. farm support program. The FAIR Act replaced the longstanding, crop-linked, deficiency-payments/supply-management program that covered wheat, rice, feedgrains, and upland cotton with a program of fully decoupled, temporary contract payments based on land acreage enrolled in the former deficiency payments program. Payments were capped at about \$36 billion over 1996-2002, and were scheduled to decline over the 7-year program. The FAIR Act also eliminated the Acreage Reduction Program (ARP), gradually eliminated dairy price supports, and modified U.S. peanut and sugar programs.

Canada’s new generation of farm programs, introduced in 1991 under the Farm Income Protection Act (FIPA), mostly affected grains and oilseeds, Canada’s major export crops. Producer subsidies for grains, provided mainly as freight subsidies under the Western Grain Transportation Act (WGTA), were eliminated by August

1995; this support was replaced with two voluntary revenue insurance programs to which producers and the Federal and Provincial Governments contribute. The Gross Revenue Insurance Program (GRIP), available to grains and oilseed producers, has already been discontinued due to its high costs. The Net Income Stabilization Account (NISA) extends risk management support to all grains, oilseeds, and some horticulture.

Canada continues to support poultry, dairy, and eggs through supply management programs that rely on production and import quotas to maintain farm prices at levels based on the costs of production. Because these programs require trade restrictions, Canada exempted these sectors from free trade under NAFTA. Butter and skim milk prices are additionally supported through marketing board purchases; export subsidies are financed through producer levies. Direct payments to dairy producers ended in 1996.

Mexican agricultural policy reforms began in the late 1980’s. Before that, Mexico supported its agriculture through subsidized inputs, guaranteed producer prices, food processing subsidies, retail price controls, and high import barriers. In 1988, Mexico sharply lowered tariff protection and converted most import quotas to tariffs following its accession to the GATT. However, import licensing remained an important instrument for price support, particularly for corn, a staple crop produced by Mexico’s large subsistence farm sector. In 1991, Mexico began to lower agricultural input subsidies and to reduce the pervasive role of the government in purchasing, storing, and distributing agricultural commodities. Mexico reduced subsidies to corn and wheat millers and eliminated most retail food price controls. Guaranteed producer prices and government purchases were continued only for corn and beans.

In anticipation of NAFTA, Mexico adopted the PROCAMPO program in October 1993. PROCAMPO is a 15-year, direct payments program that compensates producers for the loss of input subsidies, price support, and import protection. It was designed to provide transitional, mostly decoupled income support

to farmers while allowing Mexico's agriculture to undergo structural change in response to market conditions. Farmers who continue to produce receive annual PROCAMPO payments based on historical acreage in nine specified crops. In 1996, Mexico announced the Alliance for the Countryside (*Alianza para el Campo*), a major initiative to improve agricultural productivity that includes PROCAMPO and other programs.

Effects of NAFTA and Farm Program Reforms

Model Scenarios

We analyze how farm program reforms and NAFTA affect regional agriculture using a multi-country, computable general equilibrium (CGE) model of the United States, Canada, and Mexico. The model focuses on sectoral resource allocation, employment, production, and trade. It solves for relative prices, wages, and the real exchange rate that equilibrate product markets, factor markets, and the balance of trade among the three countries. The model includes substantial agricultural detail, including specific modeling of pre- and post-NAFTA farm programs. The base year of the model is 1993.

Four scenarios compare the effects of trade and domestic policy changes (table 1). The first two scenarios compare the effects of NAFTA under pre-NAFTA farm programs with the effects of NAFTA under the decoupled and/or reduced farm support introduced in all three countries since 1993. In the first scenario, we implement NAFTA (free trade in all sectors, with exclusions for some farm products), but assume pre-NAFTA farm programs remain at 1993 levels of expenditure. In the second scenario, we assess the effects of NAFTA trade policy liberalization against a different base, one that assumes that domestic farm program reforms are already in place, at 1996 levels of expenditure. In the United States, the domestic reforms eliminate deficiency payments and introduce decoupled contract payments. In Mexico, decoupled PROCAMPO payments replace the guaran-

Table 1--Model scenarios

Scenario	Base model	Experiment
1	1993 base	NAFTA
2	1993 base year with post-NAFTA farm policy reforms	NAFTA
3	1993 base year	Farm policy reforms
4	1993 base year	NAFTA plus farm policy reforms

teed price for corn and farm input subsidies. Canada reduces farm subsidies, increases revenue insurance payments, and maintains supply-management programs. These two NAFTA scenarios suggest that farm program reforms increase the flexibility of producers to respond to changing prices under NAFTA. In the new farm-program environment, the change in the sectoral structure of agriculture is greater, and welfare gains are larger compared with the effects of NAFTA under pre-NAFTA farm programs.

In scenario 3, we analyze the effects of farm program reforms alone (implemented simultaneously in all three countries). In the United States and Canada, domestic farm program reforms are shown to have much greater effects on agriculture than trade liberalization. In scenario 4, both farm program reforms and NAFTA are implemented in all three countries. This scenario shows the combined, long-term effects of trade and domestic farm policy reforms on North American agriculture.

Farm Policy Reforms Magnify NAFTA Effects

In all three countries, NAFTA has a greater effect on agriculture under the new farm programs than under pre-NAFTA farm programs. One measure of NAFTA's impact is the change in factor employment: the number of workers, acres of land, and value of capital stock initially employed in agriculture that must find new employment, in agriculture or elsewhere, after changes in agricultural policies. Under both old and new programs (scenarios 1 and 2), NAFTA has a greater impact on Mexican agriculture than on U.S. and Canadian farm sectors, reflecting Mexico's greater

Farm Policy Reforms and Harmonization in the NAFTA

trade dependence on its North American partners and higher pre-NAFTA trade barriers.

In Mexico, employment effects of NAFTA are substantially greater under the new farm programs than the old—labor employment changes 1.3 percent under the old programs and 5.1 percent under the new (table 2). However, the effects of NAFTA on Mexico's land use are slightly lower under the new farm programs—this is an example of how one country's farm program can affect resource allocation in its trade partner. In scenario 1, free trade exposes Mexican wheat production to the more heavily subsidized U.S. production, and Mexican land use devoted to wheat drops sharply after NAFTA. Under the new farm programs, U.S. wheat production is lower because deficiency payments have already been eliminated, and Mexican wheat production is less affected by import competition under free trade.

In the United States, NAFTA results in greater adjustment in land use with the new, decoupled farm program than with the former farm program. Labor and capital exhibit negligible differences between the scenarios. In Canada, labor adjustment to NAFTA is

marginally greater under its new program than under its pre-NAFTA farm support program (0.6 percent vs. 0.5 percent).

Why does the extent of agricultural adjustment differ in the two scenarios? Under Mexico's former, guaranteed price program, producers and consumers faced fixed prices for corn. Corn millers were compensated with input subsidies for purchasing corn at the artificially high, guaranteed price. Likewise, in the United States, the former deficiency payments programs for wheat, corn, and other program crops largely insulated producers from NAFTA effects on their markets. In these fixed-price sectors, farm output could change only marginally due to NAFTA, in response to some of the adjustments in more market-oriented farm sectors that compete with program crops for land, labor, and capital. Under the new farm programs (scenario 2), producers respond to market price signals, which are affected by NAFTA. In contrast, Canadian WGTA subsidies were coupled to output, but Canadian producers still responded at the margin to changes in relative prices due to market shocks such as NAFTA. Under Canada's revenue insurance programs, which we assume to be a fixed transfer to household

Table 2--Changes in factor employment due to NAFTA, under old and new farm programs

	Scenario 1: NAFTA under old farm programs	Scenario 2: NAFTA under new farm programs	Scenario 4: NAFTA plus farm program reforms
	<i>Percent change</i>		
United States:			
Labor	0.2	0.2	1.3
Land	0.1	0.2	0.5
Capital	0.1	0.1	2.7
Canada:			
Labor	0.5	0.6	1.4
Land	0.9	0.9	1.7
Capital	1.4	1.4	6.1
Mexico:			
Labor	1.3	5.1	9.3
Land	4.7	4.6	8.5
Capital	2.3	3.2	8.6

Note: Percent change in factor employment refers to number of workers, land, or capital that leave any farm sector because of NAFTA, relative to base level of agricultural factor employment. They may be reemployed in other farm or nonfarm sectors.

income, producers still respond to price shocks, but the initial level of output is lower since subsidies have been removed.

New Farm Programs See Greater Welfare Gains

The flexibility introduced by farm program reform leads to larger welfare gains under NAFTA (table 3). Under decoupled farm programs, resources are more flexible in moving into sectors that become more remunerative under free trade, and out of sectors that face competitive pressures from imports. This flexibility is particularly important for Mexico because it results in a welfare gain from NAFTA, instead of the welfare loss that would have occurred under Mexico's guaranteed price programs.

Under both old and new farm programs (scenarios 1 and 2), Mexico's terms of trade decline because of NAFTA. One reason is that Mexico's pre-NAFTA import barriers were slightly higher than those of its North American partners, causing Mexico's imports to increase more than its exports as those barriers were lifted. Mexico's high trade dependency on its North American partners results in a large increase in import demand when trade barriers are removed. Some analysts have cited the expected deterioration in Mexico's terms of trade due to NAFTA as an argument against regional trade agreements (Bhagwati and Panagariya, 1996). In scenarios 1 and 2, we find that terms-of-trade losses lead to net welfare losses only if there are distorting domestic policies in place that prevent an efficient reallocation of resources in response to trade reforms. Under Mexico's new, decoupled farm programs, NAFTA leads to net welfare gains. The United States and Canada also achieve larger welfare gains under NAFTA with reformed farm programs than under former farm programs.

Farm program reforms within NAFTA also benefit nonmembers. In the context of domestic reforms, NAFTA supports trade creation and minimizes trade diversion for all three participants.

Farm Program Reforms Reduce Effects of NAFTA on Farm Program Costs

Expenditures on farm programs coupled to farm output are affected by NAFTA (table 4). In scenario 1, we assume that U.S. deficiency payments for wheat, corn, feed grains and other program crops remained in place under NAFTA. Assuming fixed target prices, we analyze how the deficiency payment costs would have changed as a result of the effects of NAFTA on market prices. Under NAFTA, deficiency payment costs would have declined because of increased demand from Mexico for crops such as corn and wheat. Total U.S. farm program costs, including expenditures on deficiency payments, dairy programs, and other programs, would have declined by 1.4 percent (scenario 1). Likewise, Canada would have experienced slight changes in farm program expenditures under NAFTA. Assuming Canada's pre-NAFTA subsidy levels had been maintained, total farm program costs would have increased 0.1 percent. The increase is based on increased output of subsidized crops, and increased export subsidy costs associated with the dairy price management program.

In contrast, Mexico's farm program expenditures would have increased dramatically following free trade, if Mexico had maintained its guaranteed price program (scenario 1). Under this program, the government guaranteed a fixed price for domestic corn production, maintained import quotas (with an estimated tariff equivalent of 83 percent in 1993), and subsidized corn millers to offset the high cost of domestic inputs. Faced with cheaper corn imports from the United States under NAFTA, these subsidy expenditures would have increased substantially, raising total farm program expenditures by 126 percent. Such a dramatic increase in program costs suggests that Mexico needed to restructure its farm program support in a free trade environment.

Farm Policy Reforms Have Greater Effect Than NAFTA on Region's Agriculture

In the United States and Canada, the effects of farm program reforms alone (scenario 3) are greater than

Farm Policy Reforms and Harmonization in the NAFTA

Table 3--Trade creation, trade diversion, terms of trade, and welfare impacts of NAFTA

	Scenario 1: NAFTA under old farm programs	Scenario 2: NAFTA under reformed farm programs
<i>Million dollars</i>		
United States:		
Imports from NAFTA	8,478	8,503
Imports from rest of world	-2,686	-2,659
Agricultural imports from NAFTA	253	267
Agricultural imports from rest of world	-12	-12
Welfare	374	464
<i>Percent change</i>		
International terms of trade	0.5	0.6
International agricultural terms of trade	1.6	2.1
<i>Million dollars</i>		
Canada:		
Imports from NAFTA	3,105	3,106
Imports from rest of world	-200	-198
Agricultural imports from NAFTA	64	64
Agricultural imports from rest of world	5	5
Welfare	494	500
<i>Percent change</i>		
International terms of trade	0.4	0.4
International agricultural terms of trade	0.6	0.9
<i>Million dollars</i>		
Mexico:		
Imports from NAFTA	3,009	3,269
Imports from rest of world	-625	-573
Agricultural imports from NAFTA	776	774
Agricultural imports from rest of world	-49	-48
Welfare	-1,020	299
<i>Percent change</i>		
International terms of trade	-0.8	-0.9
International agricultural terms of trade	-0.7	-1.9

Note: Welfare is reported as equivalent variation, where a positive number indicates a welfare gain.

the effects of NAFTA on agricultural output and trade (table 4). For the United States, even large changes in its agricultural trade with NAFTA partners translate into relatively small changes in farm output, compared with the effects of domestic policy reforms—U.S. agricultural trade is geographically diversified so North American trade accounts for only a small share of production.

For the United States, NAFTA increases agricultural output, imports, and exports under both old and new programs. The increases help offset some of the contractionary pressures that new farm programs introduce in the farm sector. NAFTA and farm policy reform combined cause a slight (less than 1 percent) reduction in farm output and relatively small changes in exports and imports.

Table 4--Impacts of NAFTA and farm program reforms on agriculture

	Scenario 1: NAFTA under old farm programs	Scenario 2: NAFTA under new farm programs	Scenario 3: Farm program reforms	Scenario 4: NAFTA plus farm program reforms
	<i>Percent change from base</i>			
United States:				
Output	0.1	0.1	-0.7	-0.7
Exports	1.0	1.3	-5.2	-4.0
Imports	4.3	4.7	2.6	7.4
Farm program costs	-1.4	0.0	-35.0	-35.0
Canada:				
Output	-0.4	-0.4	-3.5	-3.9
Exports	0.1	0.1	-7.7	-7.6
Imports	1.5	1.5	-0.4	1.1
Farm program costs	0.1	0.0	-4.7	-4.7
Mexico:				
Output	-1.5	-1.8	-2.5	-4.1
Exports	7.8	10.4	2.6	13.6
Imports	27.5	23.7	4.6	28.5
Farm program costs	126.0	0.0	-46.7	-46.7

Note: In scenario 2, the base incorporates farm program reforms. In all other scenarios, the base is pre-reform period. Scenarios do not add up because the model is nonlinear; scenario 4 captures the interaction between NAFTA and farm programs.

For all three countries, the combination of NAFTA and the new farm programs have significant impacts on their farm sectors (scenario 4). The combined effects of both of these shocks may account for the perception that NAFTA has significantly affected the region's agriculture.

Farm Policies, Trade Disputes, and Policy Harmonization

Although the three NAFTA members significantly changed their farm programs, some coupled programs remain, including the U.S. sugar, dairy, and peanut programs, and Canada's supply management programs in dairy, poultry, and eggs. Regional free trade makes coupled farm programs difficult to sustain, since arbitrage within NAFTA can increase the costs of domestic price supports and export subsidy programs, or can make them ineffective in raising domestic prices. Consequently, the remaining coupled programs have either received special treatment under NAFTA or have become trade irritants. In some instances,

disputes have led to the successful negotiation of bilateral solutions, while in others, disputes have been taken outside NAFTA to the WTO.

Canada's supply management programs remain viable because NAFTA permitted Canada to continue to control imports of dairy, poultry, and eggs from its NAFTA partners and the rest of the world. While import controls are permitted (the United States failed to rescind them in a WTO action), Canada's dairy export subsidies have become a trade irritant within NAFTA. In 1997, the United States brought a complaint against them in the WTO, and in 1998 requested that the WTO investigate the dairy support program.

U.S.-Canadian grain trade has resulted in a number of trade-related disputes since NAFTA's inception. During a dispute about the surge in Canadian wheat exports into the United States in 1993-94, the United States expressed concern about the ineffectiveness of the U.S. Export Enhancement Program in raising U.S. domestic wheat prices. In the absence of controls over wheat imports from Canada, U.S. export subsidies

would either be unable to raise U.S. wheat prices or, if they succeeded, would increase costs because the United States would in effect be subsidizing both U.S. and Canadian wheat exports. The dispute resulted in the formation of a Canada-U.S. Joint Commission on grains that recommended greater coordination of cross-border trade, grading and regulation, infrastructure, domestic programs, and export programs and institutions. In early 1998, in response to continued tension over bilateral grain trade, the two countries established a pilot program to help U.S. wheat enter Canada, monitored by the Canadian Grain Commission. The program, intended to protect Canadians from the potential introduction of karnal bunt, responds to U.S. complaints about the difficulty of selling wheat in Canada.

The United States has retained import controls over sugar imports from both Canada and Mexico; the controls on Mexican sugar will be phased out after 2008. The NAFTA agreement permits Mexico to export a gradually increasing quantity of its net surplus production, sugar production minus consumption of sugar and high-fructose corn syrup (HFCS), to the United States. This agreement prevents Mexico from substituting sweeteners for sugar in its domestic consumption to increase its sugar available for export. Mexico's sugar industry has struggled with increased domestic use of HFCS, much of it imported from the United States. HFCS imports dampen the domestic price of sugar, but duty-free exports to the United States cannot increase. Mexico has begun to subsidize its sugar exports to non-U.S. markets to support its domestic price and imposed a tariff on U.S. HFCS imports. The United States may approach the WTO to resolve the HFCS conflict with Mexico.

Despite some important, commodity-specific trade disputes among the North American partners, they have also achieved a substantial degree of policy harmonization. Under NAFTA, the three countries have reconciled many divergent standards and regulations. The resolution of phytosanitary disputes in citrus, for example, is credited with having had a greater impact on stimulating U.S. exports of fresh citrus to Mexico than tariff reductions, and contributed to U.S. acceptance of live hog

and avocado imports from Mexico. Under CUSTA, for example, Canada and the United States have worked toward harmonizing beef inspection.

NAFTA and Multilateralism

NAFTA farm policy developments are likely to reinforce the goals of the 1999 WTO mini-round in agriculture to increase the transparency of farm policies and reduce their trade-distorting effects. NAFTA members have already adopted less trade-distorting farm programs because of domestic budgetary pressures and a broad public policy shift toward more open markets and reduced government intervention. Increased trade within the NAFTA region has pressured members to resolve remaining conflicts among their farm support programs and regulations. Some of these solutions, as for the U.S.-Canadian grain trade, are ad hoc, while others are a permanent resolution of problematic trade issues. As a consequence, NAFTA is already addressing some of the same issues that will be on the agenda at the 1999 multilateral WTO talks on agriculture. At the same time, the WTO continues to serve as a venue for resolving some NAFTA disputes, indicating that strengthening both the regional and multilateral processes can be mutually reinforcing.

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Chile Entering NAFTA: Implications for U.S. Horticultural Trade

Susan Pollack and Agnes Perez

After NAFTA was enacted between Canada, the United States, and Mexico, Chile was the first country to ask for consideration to be included. The U.S. horticultural industry has not voiced any opposition to Chile's inclusion. Chilean fruit already enters freely into U.S. markets. A free trade agreement could open Chilean markets for U.S. horticultural products, which now have only limited access.

Chilean noncitrus fruit and U.S. fruit production schedules are complementary. Chilean noncitrus fruit has shown a growing presence in the U.S. market, especially during the winter months when tariff rates are at their lowest due to the lack of direct competition.

Chile harvests much of its fruit from November through March, and these winter imports have allowed the United States to have a year-round supply of fresh noncitrus fruit. The United States has become a major market for a number of Chilean products, such as grapes, cherries, peaches, pears, nectarines, plums, apricots, avocados, and apple juice.

As a result of its seasonal advantage, Chile is a major supplier to the United States of winter fresh fruit and an important supplier of juices. Fresh and frozen fruit imports from Chile totaled 504,888 tons and fruit juice imports totaled 41.8 million gallons in 1996/97. On average, Chile provides 19 percent of the total volume of U.S. fresh and frozen fruit imports, with nearly three quarters arriving between November and March. Chile does not supply the U.S. market with many vegetable products. Mexico and other South American countries provide the bulk of these imports.

Chilean fruit sales (fresh and processed, including wine) to the United States more than doubled from \$262.7 million in fiscal 1988/89 to \$613.1 million in 1996/97. Despite yearly fluctuations during the 9-year period, the volume of imports has increased 31 percent for fresh and frozen fruit, more than tripled for fruit juices (353 percent), and increased more than 15 times for wine (1,462 percent).

U.S. trade disputes with other countries and periods of bad weather have helped expand the U.S. market for Chilean fruit. The U.S. anti-dumping action against New Zealand's kiwifruit exporters, which began in 1992, resulted in Chile's share of U.S. kiwifruit imports increasing from 5 percent in 1988/89 to 74 percent in 1996/97, making Chile the largest foreign supplier for the United States.

In addition, Chile has been a major supplier of avocados to the U.S. market. While Mexico is the world's largest avocado producer, 66 percent of U.S. fresh avocado imports come from Chile. Phytosanitary restrictions have kept Mexican fresh avocados from entering the United States since 1914. Beginning in July 1993, Mexican shipments were allowed into Alaska, and in November 1997 to 19 Northeastern and Midwestern States during the winter months. Chilean avocado exporters now face increased competition from Mexico with the partial lifting of this ban.

Increases in Chilean imports due to bad weather in the United States are, by nature, temporary. Increased shipment of Chilean oranges maintained U.S. fresh-orange supplies when a hard freeze in California in December 1990 reduced the 1990/91 U.S. crop 40 percent from the previous season. A similar situation with the U.S. avocado crop in 1989/90 largely accounted for the sharp rise in Chilean avocado imports that year.

U.S. exports of fruits and vegetables to Chile have been minimal. Despite having grown more than 20-fold in the past 9 years, U.S. fresh fruit exports to Chile totaled only 297 tons in fiscal year 1996/97. Fruit juice exports increased from 1,230 gallons in 1988/89 to 386,603 gallons in 1996/97. The United States had a horticultural trade deficit of \$622 million with Chile in fiscal 1996/97.

Until mid-1997, Chile maintained phytosanitary trade restrictions that effectively limited U.S. fresh fruit exports into its country. In preparation for the talks to

enter NAFTA, however, Chile lifted certain bans. Beginning in November 1997, it has allowed five California-produced fruits—table grapes, kiwifruit, oranges, grapefruit, and lemons—to be imported. Chile still limits access to most other fresh fruit from the United States.

Because of the present disparity in horticultural trade between the United States and Chile, U.S. horticultural products would most likely benefit from a free trade

agreement. Because of its small population, Chile would remain a small market for U.S. horticultural products, but could still provide some marketing opportunities for fresh U.S. summer and fall fruit producers. If Chile would further open its markets, U.S. growers could sell stone fruit—peaches, plums, nectarines, cherries—as well as apples to Chile during its winter months. Chilean consumers could benefit from year-round availability.

Regional Trade Agreements and Foreign Direct Investment

Thomas Worth

Abstract

This paper reviews previous research on why firms pursue foreign direct investment (FDI) in certain countries and explores the relationship between FDI and regional trade agreements (RTA's). Researchers have focused on the determinants of FDI, but few have studied what effects RTA's may have on FDI. The first part of this paper examines the determinants of FDI for manufacturing industries in general and for the agricultural industries specifically. The second part of the paper explores how RTA's affect the determinants of FDI. Some important theoretical reasons why a firm might choose to invest in a foreign country are to avoid paying tariffs, to take advantage of lower factor prices, and to better serve a foreign market. Empirical studies on the locational determinants of FDI generally conclude that the last reason is most important. Most FDI migrates to countries with a high per-capita GDP (or high growth rate of GDP) and a large market size. The single greatest influence RTA's have on FDI is through their effects on market size and on GDP. RTA's, through trade liberalization, combine fragmented markets into a single large one and they generally increase the growth rate of member countries' GDP.

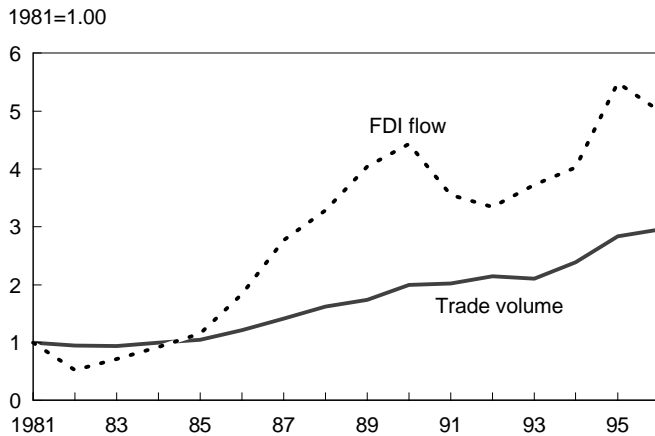
Introduction

Foreign direct investment (FDI) has become a more visible topic because of its rapid growth in the last two decades. Among members of the Organization for Economic Cooperation and Development (OECD), who account for most of the world's FDI and trade, FDI outflows increased by five times whereas trade grew by three times from 1981 to 1996 (fig. 1). Yet nations have developed far more comprehensive agreements for trade than for FDI. Initially there was the General Agreement on Tariffs and Trade (GATT) which had a global focus. Then several groups of countries developed separate regional agreements such

as the European Union (EU) and the North American Free Trade Agreement (NAFTA). Although trade-oriented, these RTA's can affect the pattern and volume of FDI as well.

Here, I examine why firms pursue FDI in certain countries and explore the relationship between FDI and RTA's. Researchers have focused on the determinants of FDI, but few have studied what effects RTA's may have on FDI. I first examine the determinants of FDI for manufacturing industries and for agricultural industries specifically. I then explore how RTA's affect these determinants.

Figure 1
Trade volume and FDI flow, OECD countries



Source: "International Direct Investment Yearbook" OECD, various years.
"Yearbook of International Statistics," UN, various years.

Determinants of FDI

The interaction of regional trade agreements and foreign direct investment became a concern in the 1960's with the formation of the European Economic Community (EC). More recently, with the formation of the European Union (EU) and the 1992 Single Market initiative, this concern has re-emerged. Still, very few studies have specifically addressed the interaction of RTA's and FDI. Researchers, however, have been studying the determinants of FDI since the early 1960's. Lessons learned from these studies can shed some light on how RTA's affect FDI.

Determinants of FDI for Manufacturing Industries—Theoretical Studies

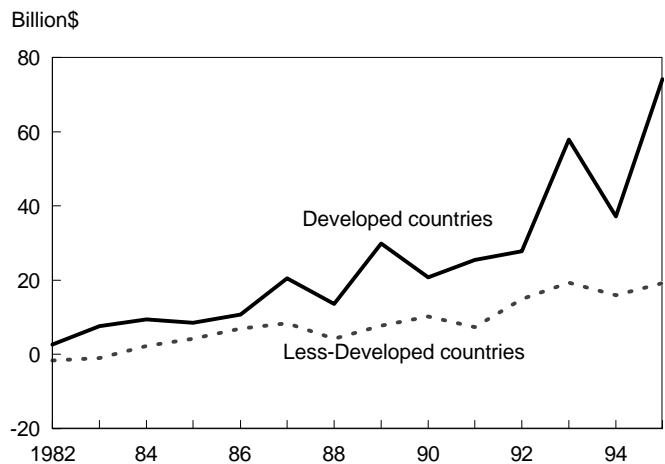
All firms must decide where best to locate their production. There are several theories on how firms make this decision. Ultimately, firms are seeking to maximize their profits, whether by investing abroad or expanding domestic production and exports. The earliest theories explain FDI as capital seeking its highest return. Therefore, capital should flow from

developed, capital-abundant countries to less-developed countries (LDC's) where capital is scarce and should earn a higher return. However, the capital-abundant United States has greater FDI flows to developed countries than to LDC's (fig. 2). This is the case with other developed countries as well.

Explanations of why FDI takes place between developed countries focus both on firm characteristics and on industry characteristics. Each theory explains a motivation for FDI, but none is able to explain all instances of FDI. By grouping many theories into an "eclectic paradigm" composed of three groups (ownership advantages, internalization advantages, and locational influences), a useful framework emerges. Many empirical studies are based on the eclectic paradigm.

Theories in the first group, "ownership advantages," posit that a firm will invest abroad only if it possesses some kind of advantage over its foreign competitors. Usually, this advantage is an intangible asset such as a well-recognized brand name or a superior technology. The advantage must be substantial enough to overcome the additional costs of operating in an unfamiliar foreign country.

Figure 2
FDI outflows from the U.S.



Source: "International Direct Investment Yearbook" OECD, various years.

Another group of theories focuses on “internalization advantages.” These theories address the question of why firms engage in FDI rather than licensing or in some way providing their intangible assets for foreign-owned firms to use. One reason a firm may pursue FDI is to increase the firm’s market power, allowing it to earn a higher return. Foreign direct investment may also be the least expensive way to safeguard intangible assets. For example by keeping direct control of a foreign producer, the firm is better able to ensure the quality of its foreign production and thus protect the reputation of its brand name. It is also easier for the firm to prevent technological advantages from leaking to foreign competitors.

The last group of theories, referred to as “locational influences,” try to explain why FDI flows to a particular country rather than another, or not at all. One theory is that FDI is “tariff jumping”: firms may find it cheaper to produce their output in a foreign country rather than to export their domestic production and pay a tariff. Other factors that may influence the destination of FDI are market size, factor prices, and cultural similarity.

RTA’s affect locational influences but do not generally affect ownership or internalization advantages. One of the few theories developed about RTA’s and FDI predicts that an RTA should increase FDI into the integrated area as firms seek to take advantage of an expanded market now able to support projects with larger fixed costs. This occurs even if the integration involves lowering internal barriers without increasing external barriers. In other words, an increase in FDI is not necessarily due to tariff jumping. This might explain the surge in the early 1990’s of FDI into the EU, which has generally lowered internal barriers without increasing external barriers.

Blomström and Kokko (1997) provide a heuristic, but more comprehensive, analysis of how RTA’s affect investment. First, they separate the effects of RTA’s along two dimensions; the indirect effects on FDI through trade liberalization, and the direct effects from changes in investment rules connected with the RTA.

Trade liberalization has two opposing effects on FDI. Lowering intraregional tariffs can lead to an expanded market and an increase in FDI. But, lowering external tariffs can reduce FDI to the region if tariff-jumping investments are scaled back in favor of exports.

The effect of an RTA will vary by industry and country. Those industries with direct investments based on ownership or internalization advantages have less incentive to change their level of investment in response to a change in external tariffs than do industries engaged in tariff jumping investments. Countries with the strongest locational advantages will receive most of the FDI oriented toward serving the regional market. Countries with weak locational advantages will see little change in their level of incoming FDI as a result of the RTA. In fact, they may experience FDI outflows as firms relocate production to the most competitive country in the regional agreement.

RTA’s may have provisions explicitly protecting and facilitating FDI, such as a national treatment standard for foreign investments or a guarantee against expropriation of those investments by the foreign government. To the extent that the provisions improve the investment climate, FDI will increase. Even if the change in investment policy is not large, the effect may be large because the change is negotiated in the context of an RTA, giving it a credibility that it otherwise would not have.

Blomström and Kokko predict that the effect of an RTA depends on two factors—the attractiveness of a country as a site for FDI and the magnitude of that country’s liberalization of trade and investment policies. For instance, a country with strong locational advantages undergoing a significant liberalization of trade and investment in an RTA will see the largest increase in FDI. What this framework does not tell us is how significant the liberalization of policies needs to be to affect FDI. Nor does it tell us which locational advantages are most important for attracting FDI. At this point the issue becomes an empirical one.

Determinants of FDI for Manufacturing Industries— Empirical Studies

Studies on the locational determinants of FDI flows in the manufacturing industries generally arrive at similar conclusions. The most influential locational advantages for outflows of FDI from the United States are per capita GDP, the growth rate of GDP, and market size. This fits with the general observation that most FDI flows to developed countries. FDI not bound for developed countries goes to the few LDC's with large markets and high growth rates such as China, Mexico, and Malaysia.

Factor prices appear to play a secondary role in determining the destination of FDI. Lower capital costs (in the form of lower interest rates) attract FDI. Lower labor costs also attract FDI but to a lesser extent. This is likely due to the fact that manufacturing industries tend to be capital-intensive. Labor claims a smaller share of total costs than does capital.

The fact that market size has a greater influence on FDI flows than do factor prices suggests that most FDI in the manufacturing industries is market-seeking. It is oriented toward serving local or regional markets rather than using a country as an inexpensive production site for exports to other parts of the world.

Trade barriers do not seem to significantly influence FDI from the United States. Studies either find a weakly positive effect or no effect at all. By contrast, Japanese FDI appears to be sensitive to trade barriers or the threat of trade barriers. One study reports that Japanese firms are more pessimistic about protectionism than are U.S. firms. When asked about the EU, 66 percent of Japanese companies surveyed expected the EU to strengthen its external trade barriers. Only 44 percent of U.S. companies had the same expectation. This is likely due to the fact that Japanese exporters have faced more source-specific trade barriers, such as voluntary export restraints of automo-

biles, than have U.S. exporters. Although Japanese companies are more concerned about protectionism in the EU than are U.S. companies, that concern is not central to their decision to invest. In a separate survey, most Japanese firms did not cite trade barriers as a major reason for not investing in the EU.

Determinants of FDI for Agricultural Industries

FDI in the agricultural industries (processed foods and related products) claimed 6 percent of total U.S. FDI in the manufacturing industries in 1996. Agricultural FDI follows patterns similar to other manufacturing industries. The agricultural industries are capital-intensive and undertake FDI (rather than licensing) to maintain quality, protect a trademark, and take advantage of economies of scale. Most U.S. FDI flows in the food and agricultural industries are bound for Europe.

As with manufacturing, per capita GDP, growth rate of GDP, and market size are the major determinants for FDI in the agricultural industries. The costs of labor and capital inputs are less important. This suggests that agricultural FDI is undertaken to serve a market rather than to create a platform for exports.

The effect of trade barriers and FDI in agricultural industries is unclear. Several studies do not find a consistent effect of trade barriers on agricultural FDI. One study suggests that trade barriers may lead to more FDI through indirect means. An increase in protection appears to increase the sales of foreign affiliates, which may eventually lead to an increase in FDI.

Another factor influencing agricultural FDI is "cultural distance." FDI tends to go to countries with a similar language or system of laws. This is similar to the behavior of other manufacturing industries in that they agglomerate in countries where previous FDI and trade has been highest. A strong level of intellectual property protection appears to encourage FDI as well.

Effect of RTA's on FDI

The most significant RTA to U.S. agricultural industries is the EU. The majority of agricultural FDI is bound for the EU. FDI into the EU has increased dramatically with the formation of the EU in 1992, with most of it (78 percent) coming from the United States and Japan.

The EU has attracted FDI because its trade liberalization policies enhanced GDP growth and expanded market size. The EU transformed a group of fragmented markets into a single integrated market, and its size is still growing with the recent addition of several countries and more on the horizon. The formation of a common market is expected to add 5 percent to the average growth rate of the EU member countries for the next several years. Several studies find that membership in the EU is a positive factor in attracting FDI.

The effects of regional integration are not uniform across the region. RTA members with stronger locational advantages than others attract most of the FDI. In the case of the EU, Britain is the most common destination for FDI from the United States. Britain's chief advantages, versus other EU members, are a large home market, cultural similarities, low factor costs, and U.S. firms' extensive experience there from earlier investments.

Another effect of the EU is a change in the structure of FDI across the integrated region. Some U.S. food companies have reduced the number of production plants in Europe while the total value of their European assets has grown. This indicates that the firms are consolidating their production into a smaller number of sites, presumably to take advantage of economies of scale.

It is unlikely that trade barriers, or the threat of trade barriers, has played a significant role in the recent surge of U.S. FDI into the EU. The "1992" Single Market initiative has centralized a fragmented system of trade barriers. EU members are not as free to make

unilateral restrictions on imports from nonmember countries as before.

The effect of NAFTA on FDI appear minor for the United States, Canada, and Mexico. Canada and the United States had liberal trade and investment regimes before NAFTA. Mexico had restrictive trade and investment policies, but many of those restrictions were relaxed in advance of NAFTA in 1989.

The reduction of Mexico's trade and investment restrictions in 1989 led to a tripling of the U.S. investment position in Mexico from \$4.9 billion in 1989 to \$15.2 billion in 1993. Just like the EU, prospects for a high rate of GDP growth in Mexico attracted U.S. FDI. This was especially true for agricultural FDI, which is primarily market-seeking. Unlike the EU, Mexico started out with restrictive investment policies and then relaxed them. This certainly played a major role in attracting U.S. FDI.

Even though Mexico relaxed its investment restrictions in 1989, there were still concerns. In a 1991 survey, 25 percent of firms in the U.S. food industry felt that Mexico's intellectual property protections were too weak for them to transfer their newest or most effective technology to Mexico. NAFTA is intended to allay those and other investment concerns. Since the enactment of NAFTA in 1994, however, U.S. FDI into Mexico has grown very little. This is partly due to Mexico's currency devaluation in 1995 and low rate of growth. Some studies point out that U.S. firms had already made their investments in advance of NAFTA when Mexico unilaterally relaxed its investment and trade provisions. One study estimates that U.S. agricultural FDI into Mexico is 0.91 percent higher in 1996 than it would have been without NAFTA.

Since the enactment of NAFTA, FDI into Mexico from other countries has increased even though U.S. FDI has remained flat. This indicates that the investment policy changes, not market growth, attracted non-U.S. FDI. One explanation is that Mexico's inclusion in NAFTA gave its recently liberalized investment and trade regime greater credibility in the eyes of foreign investors.

Two other RTA's, AFTA and MERCOSUR, are less comprehensive than the EU and NAFTA. MERCOSUR—which consists of Argentina, Brazil, Paraguay, and Uruguay—began liberalizing trade in 1991 and established a customs union in 1995. It provides for free trade between the member countries, but several significant industries are excluded. Unlike the EU and NAFTA, some external barriers to trade increased with the adoption of the RTA. The effect of MERCOSUR on FDI appears to be small. FDI to Argentina increased dramatically after 1991, but a majority of the increase was due to the privatization of public enterprises. Brazil did not experience an increase in FDI until 1994 when it implemented macroeconomic reforms. FDI to Paraguay and Uruguay has been lagging. MERCOSUR in its present form will have only a small impact on future FDI to the region.

AFTA (ASEAN Free Trade Area) is unique in that large increases in FDI and trade in the region have led to the agreement instead of the other way around. By 2003, tariffs will be down to 0-5 percent for the “included” industries. The “excluded” industries, a majority, are exempt from the tariff cuts. Although far from comprehensive, AFTA is projected to significantly boost GDP growth in the region. To the extent the AFTA increases GDP growth, FDI flows into the region will be enhanced as well.

AFTA does not significantly change the investment policies of its member countries. Despite this, FDI flows into the region have increased dramatically in the last 5 years. This supports earlier findings that market size and growth are the most important factors influencing FDI.

Conclusion

RTA's can affect FDI both directly through investment provisions and indirectly through trade liberalization. The evidence so far suggests that it is the changes in per capita GDP, GDP growth, and market size—factors influenced by trade liberalization—that most affect the

flow of FDI into a region. This applies to both agricultural and nonagricultural industries. The degree to which a trade agreement affects these factors will determine the extent to which it affects FDI.

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U.S. Foreign Direct Investment in the Global Processed Food Industries

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U.S. foreign direct investment (FDI) in global food processing industries reached \$32 billion in 1995 (table 1). Over 75 percent is in the EU, NAFTA, and MERCOSUR, the world's major trading areas served by regional trade agreements (RTA's). This box describes the growth in FDI since 1980, the growth in FDI in the top EU countries, the product mix in FDI, and how U.S. FDI in the Western Hemisphere interacts with U.S. trade in processed foods.

U.S. foreign direct investment in the global processed food industry nearly quadrupled from 1980 to 1995 (table 1). U.S. FDI to the EU food industry surged in the late 1980's and early 1990's. U.S. FDI to the MERCOSUR and NAFTA food industries grew in the early 1990's, but from a lower base. Nearly 41 percent of the investment stock in 1995 was in the EU, a declining share from 1990. About 25 percent was in NAFTA and 11 percent was in MERCOSUR, significantly higher than in 1990.

Membership in an RTA does not necessarily bring FDI. FDI to RTA's is often concentrated in a few countries. More than half of the U.S. FDI in the EU (15)

processed food industry is in the UK, France, and Germany (table 2). Canada received 63 percent of U.S. FDI in NAFTA, and Brazil received 62 percent of U.S. FDI in MERCOSUR.

The European Union is the largest free trade area, and has grown in membership since its inception in 1957. The UK, Ireland, and Denmark were the first additions to the original EC-6, followed by Greece. The next additions were Spain and Portugal. The most recent round brought a reunified Germany, Sweden, Finland, and Austria. Growth patterns of U.S. foreign direct investment show that only Spain and Ireland appear to have attracted FDI upon joining the EU. Reunification of Germany may have enhanced U.S. FDI to Germany's processed food industry, but EU charter member France had an influx of FDI in the same period as Germany.

The type of investment has also shifted. In earlier decades, most U.S. FDI was in export products from the host countries or in processing such as flour mills or vegetable oil refineries. Processing investment continues in the 1990's, but increased investment is geared to production of bakery products, beverages,

Table 1--U.S. foreign direct investment in the food processing industries, selected regions

Region	1980	1985	1990	1995	1980-85 change	1985-90 change	1990-95 change
	<i>Billion dollars</i>				<i>Percent</i>		
EU (15)	3.7	4.3	7.5	13.1	16	74	75
Mercosur	0.6	1.0	1.3	3.7	67	30	184
NAFTA	2.2	2.1	3.6	8.1	-5	71	125
Other	1.8	1.9	3.2	7.5	6	68	134
World	8.3	9.3	15.6	32.4	12	68	108
	<i>Percent</i>						
Share of total							
EU (15)	46	46	48	41			
Mercosur	7	11	8	11			
NAFTA	27	23	23	25			
Other	22	20	21	23			
World	100	100	100	100			

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, August 1982, 1988, 1994, and September 1997 issues.

For the sake of consistency, data for the EU have been adjusted to include the 15 countries in 1985 and 1990. The data series has been revised many times.

Table 2--U.S. FDI in the top EU countries

Country	1980	1985	1990	1995	1980-85	1985-90	1990-95
	<i>Billion dollars</i>				<i>Percent</i>		
U.K.	1.4	1.8	2.7	2.9	28	50	7
France	0.3	0.4	0.3	2.2	33	-25	633
Germany	0.8	0.6	1.1	2.2	-25	83	100
Spain	0.3	0.2	0.9	1.8	-33	350	100
Netherlands	0.4	0.6	0.8	1.3	50	33	63

and other more highly processed consumer products for use in the host country (table 3).

U.S. FDI and Trade in Processed Foods

Is U.S. FDI a substitute or complement for U.S. trade in processed food products? Both U.S. exports of processed foods and sales from U.S. affiliates have increased since the 1980's, with global sales exceeding U.S. processed food exports. The choice between trade and FDI is product-specific and depends on many factors (table 4). If trade and FDI are indeed substitutes, there would be polarity; products with large exports would have hardly any FDI and, products with considerable FDI would rarely be exported. The pairing of FDI and trade among Western Hemisphere countries (Canada, Mexico, Brazil, and Argentina) with known U.S. FDI shows that the pairing is not so clearcut.

For many large exports between the United States and Canada/Mexico, trade and FDI are complementary.

U.S. exports to Canada indicate that many heavily traded products (U.S. exports greater than \$100 million), such as chocolate and vegetable products, are used as intermediate products in the host country. U.S. poultry product, U.S. vegetable oil, corn milling, and dairy product exports are also used as intermediate products for further processing in Mexico. Meat and seafood products are unique. Multinational companies also decide that a specific product will be produced in a particular plant, leading to specialization in production lines between the United States and Canada.

U.S. affiliates are often the source of major (\$100 million) import products, such as fruit juices and chocolate products from Brazil. On the other hand, many products from U.S. affiliates generate little or no trade (\$50 million) because of high transportation costs, high tariffs, or import bans. Dairy and poultry products often have high trade barriers. Flour milling and other cereal products are most economically produced close to the consumer. These products lend themselves to FDI.

Table 3--Product mix of U.S. FDI in the global processed food industry

Industry	1985	1990	1995	1985-90 change	1990-95 change
	<i>Billion dollars</i>			<i>Percent</i>	
Grain milling products	2.0	3.2	4.5	60	41
Bakery products	0.6	1.0	2.5	67	155
Beverages	1.9	3.1	9.4	63	206
Meat products	0.3	0.5	0.4	66	-13
Dairy products	0.7	0.5	1.3	71	160
Preserved fruits and vegetables	0.5	2.3	3.0	360	30
Other processed foods	3.3	5.0	11.2	51	126
	<i>Percent</i>				
Share of total					
Grain milling products	22	21	14		
Bakery products	7	6	8		
Beverages	21	20	29		
Meat products	3	3	1		
Dairy products	8	3	4		
Preserved fruits and vegetables	5	15	9		
Other processed foods	36	32	35		

Source: Compiled from data from U.S. Department of Commerce, Bureau of Economic Analysis.

Table 4--A comparison of U.S. FDI and trade in the food industries in selected countries

Canada	Mexico	Brazil	Argentina
Industry	Industry	Industry	Industry
U.S. exports > \$100 million			
Meat products	Poultry products		
Seafood	Dairy products		
Pet foods	Corn milling		
Chocolate products	Vegetable oils		
Vegetable products			
U.S. exports \$50 - \$100 million			
	Chocolate products		
U.S. imports >\$100 million			
Meat products	Seafood	Fruit juices	
Seafood	Beer	Chocolate products	Meat products
Beer	Fruit juices		
U.S. imports \$50 - \$100 million			
Soft drinks			
U.S. trade<\$50 million			
Poultry products	Flour mills	Meat products	Dairy products
Dairy products	Breakfast cereals	Poultry products	Flour mills
Flour mills	Livestock feeds	Dairy products	Corn milling
Pasta	Bakery products	Flour mills	Breakfast cereals
Malt	Cookies and crackers	Corn milling	Livestock feeds
Flavorings and spices	Pasta	Breakfast cereals	Pet foods
Chips	Candies	Livestock feeds	Cookies and biscuits
Jams and jellies	Soft drinks	Pet foods	Pasta
	Mayonnaise	Biscuits, cookies, and crackers	Beer
	Flavorings spices	Soft drinks	Soft drinks
	Chips	Powdered soft drinks	Vegetable oils
	Fruit products	Vegetable oils	Mayonnaise
	Vegetable seeds	Fruits and products	Popcorn
		Vegetable seeds	
		Mayonnaise	
Trade> \$50 million and no FDI			
Rice milling			

Source: ERS calculations based on C. Bolling, S. Neff, and C. Handy, *U.S. Foreign Direct Investment in the Western Hemisphere Food Processing Industry*, AER-760, Econ. Res. Serv., U.S. Dept. Agr., March 1998.

Agriculture, GATT, and Regional Trade Agreements

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Abstract

Concurrent with the development of the GATT/WTO multilateral trading system, there has been a significant increase in the number of regional trading blocs. Nearly all WTO members are parties to at least one RTA, which raises the question: Is the proliferation of RTA's an indication that countries are turning to regional initiatives to achieve trade liberalization, or do RTA's actually impede this process? Concerning agriculture, both the GATT and RTA's have only recently begun to more fully liberalize trade, and further progress in this area is needed. Instead of asking whether RTA's inhibit or facilitate world trade liberalization, it might be useful to consider other ways (such as strengthening WTO rules on RTA's and compliance mechanisms) to ensure that RTA's are trade creating, not diverting.

Introduction

Concurrent with the development of the GATT multilateral trading system, there has been a significant increase in the number of regional trading blocks. Over the period 1947-94, 109 regional trading agreements (RTA's) were reported to the GATT, nearly equal to the number of countries that are contracting parties (CP's) to the multilateral trade treaty.¹ Since 1995, at least 16 new RTA's have been reported to the

World Trade Organization (WTO), the successor body to the GATT. Nearly all WTO members are parties to at least one RTA—European RTA's account for the majority of these agreements, while Japan and Hong Kong are not members of any formal RTA's.²

Is the proliferation of RTA's, especially over the last 10-15 years, an indication that countries are turning to regional initiatives to achieve world trade liberalization? Or are RTA's actually an impediment to this process? To answer these questions, this article exam-

¹Since the GATT is technically a treaty, its signatories are referred to as contracting parties. The World Trade Organization, on the other hand, is an organization to which the contracting parties to the GATT became members in 1995. Therefore, in reference to the GATT, countries are referred to as Contracting Parties, while when discussing the WTO, they are designated as members.

²Both belong to the Asia-Pacific Economic Cooperation Forum (APEC). Since it is not a formal RTA, it has not been reported to the WTO. However, it is included in this study since its signatories have indicated their intent to liberalize trade within the region in the next century.

ines the coexistence of RTA's and the GATT—specifically, how the GATT treats RTA's under Article XXIV and how Article XXIV has been applied. GATT and RTA provisions on agriculture are compared to examine how (or if) either approach has liberalized agricultural trade. Finally, the larger question of whether RTA's are stumbling blocks or building blocks to trade liberalization is addressed.

What Does the GATT Say About Regional Trade Agreements?

When the GATT was being developed, the contracting parties envisioned the need for rules to regulate regional trade. Although such agreements are preferential in nature and represent an exception to the GATT cornerstone of most-favored nation (MFN) treatment, countries were tolerant (even supportive) of RTA's since they were viewed as leading to increased trade and therefore a more efficient allocation of resources.³ The political realities of post-war Europe and plans for greater European integration were also factors behind the general acceptance of RTA's. At the same time, there was an attempt to fashion the provisions for RTA's in very precise legal language in order to prevent complete circumvention of GATT rules. Despite this intent, the language contained in the GATT on the formation of customs unions (CU's) and free trade agreements (FTA's) turned out to be ambiguous, and most FTA's and CU's are not fully consistent with provisions of the GATT.

Article XXIV of the GATT contains the primary provisions covering CU's, FTA's, and interim trade agreements (ITA's)⁴, and is based on three primary criteria: (1) trade barriers must not increase from levels prior to the formation of a CU or FTA (XXIV:5), (2) all internal trade barriers (including

quantitative restrictions) must be eliminated (XXIV:8), and (3) all CU's, FTA's, and ITA's must be reported to the GATT to determine if conditions (1) and (2) are met, and to allow CP's to provide input (XXIV:7). The latter is achieved through the formation of a working party on regional trade, in which any interested country can participate.⁵

Although the provisions of Article XXIV seem obvious and clear cut, their ambiguity is revealed in their application. For example, XXIV:5 is unclear as to whether the concept of "trade barriers" applies to individual tariff lines (or to a specific trade measure) or to the tariff schedule as a whole (calculated, for example, on a trade-weighted average). Moreover, it is not clear if this provision refers to applied rates or to bound rates, both of which are contained in a country's schedule of commitments.

Second, XXIV:8 requires the elimination of all internal barriers⁶ on "substantially all trade." The purpose of this provision is to prevent countries from setting up preferential trade arrangements that exempt less import-competitive sectors, and to facilitate the trade-creation effect of the RTA. However, no consensus has been achieved as to what constitutes "substantially all trade"—is it qualitative (sectoral) or quantitative (share of intra-member trade covered) or both? Most RTA's have excluded, at least initially, some sensitive sectors.

Concerning ITA's, XXIV:5(c) requires a plan and schedule for the formation of a CU or FTA "within a reasonable amount of time." Again it is unclear what constitutes a reasonable amount of time for implementation. XXIV:7(b) contains language that enables the CP's to review this plan and schedule, to determine

³Viner's (1950) work on trade creation/diversion questioned this assumption.

⁴An interim trade agreement refers to an interim agreement that is necessary for the formation of a CU or FTA.

⁵Since 1996, the Committee on Regional Trade Agreements reviews all notifications relating to RTA's.

⁶Except where permitted under Article XI—general elimination of quantitative restrictions; Article XII—balance of payments; Article XIII—administration of quantitative restrictions; Article XIV—exceptions to non-discrimination; Article XV—exchange arrangements; and XX—general exceptions.

whether or not the formation of the CU/FTA is feasible, and to make recommendations on its implementation. The parties intending to create a CU/FTA cannot proceed without taking these recommendations into account. However, in many cases, the working parties were unable to complete their examination of the ITA before the CU or FTA was enacted, thereby reducing the efficacy of this provision.

Another factor contributing to the perceived weakness of Article XXIV is that most CU's and FTA's do not fully meet its criteria. Hoekman and Kostecki (1995) point out that a political decision was made early on not to examine the formation of the European Economic Community (EEC) in 1957 too closely, since the six countries making up the EEC had threatened to withdraw from the GATT if the EEC was found not to be in conformity with Article XXIV (some countries felt the formation of the EEC raised trade barriers). As the EEC did not fully meet the criteria of Article XXIV, a precedent was set for other RTA's. In fact, since the formation of the EEC in 1957, almost no GATT working party on regional trade agreements has resulted in unanimous agreement that Article XXIV criteria were met.⁷

With the proliferation of RTA's during the 1980's and 1990's and the problems with application of Article XXIV cited above, the GATT CP's recognized the need to clarify Article XXIV's criteria. The result was the "Understanding on the Interpretation of Article XXIV of the General Agreement on Tariffs and Trade 1994" ("Understanding" for short), drafted during the Uruguay Round (UR) of negotiations. The Understanding reiterates that, to be consistent with Article XXIV, all CU's, FTA's, and ITA's must satisfy, among others, the provisions of paragraphs 5, 6 (compensation for tariff increases due to the formation of a CU), 7, and 8 of that Article.

⁷As of January 1995, only 6 RTA's have been found to be compliant with Article XXIV by unanimous agreement of the working party. Of these 6, only 2 are presumed to still be in operation (Czech-Slovak CU and the Caribbean Community and Common Market).

It also outlines how the evaluation of trade barriers before and after the creation of a CU (as contained in paragraph 5(a)) should be conducted. First, tariffs and related charges will be compared "based upon an overall assessment of weighted average tariff rates and of customs duties collected." The WTO Secretariat is instructed to compute trade-weighted average tariff rates, using data on *applied* (not bound) tariff rates provided by CU members for a "previous representative period." The definition of a "previous representative period" is left open for interpretation. Also concerning paragraph 5, the Understanding states that the "reasonable amount of time" mentioned in point (c) should "exceed 10 years only in exceptional cases."

One area that the Understanding does not address is the definition of "substantially all trade." In the preamble, members recognize that the gains from greater integration are reduced if "any major sector of trade is excluded" from the elimination of internal trade barriers, but there is no further clarification of how to determine if this requirement has been met.

Agriculture and RTA's

Although the GATT requires that CU's and FTA's remove trade barriers on internal trade, the "hole" (to use Hoekman and Leidy's terminology) opened by the phrase "substantially all trade" has allowed many RTA's to exclude agriculture from total liberalization (or use a staged reduction in trade barriers).⁸ The primary exceptions to this are the EU, the Australia-New Zealand Closer Economic Relations (CER) Agreement, and the Baltic FTA between Estonia, Latvia, and Lithuania, all of which currently have no internal agricultural trade barriers.

Although RTA's have taken different approaches to reducing barriers to agricultural trade, nearly all maintain some degree of protection, especially for sensitive

⁸It should be noted, of course, that the GATT itself contains many holes as far as agriculture is concerned.

products (table 1). The EU and EFTA FTA's with other countries (and each other) generally exclude trade in most agricultural products from complete liberalization, and market access opportunities in the EU and EFTA markets are limited through the use of tariff-rate quotas and other mechanisms. The CEE FTA's (CEFTA, Czech-Slovak CU) are moving in the direction of removing internal barriers on agricultural trade, although not as quickly as originally envisioned.

RTA's in the Western Hemisphere have made greater progress in removing internal agricultural trade barriers, although it should be noted that some of these barriers were removed only after implementation. The North American Free Trade Agreement (NAFTA) instantly removed tariffs on a number of agricultural products, and uses a staged reduction and eventual elimination of many of the remaining trade barriers. Most tariffs on agricultural trade between the United States and Canada expired on January 1, 1998 (as contained in the earlier Canada-U.S. FTA), while Mexico has a longer transition period (15 years maximum) to phase out most of its trade barriers with the United States and Canada. The Southern Common Market (MERCOSUR) has removed nearly all intra-regional tariffs, and the only agricultural product exempt from complete liberalization is sugar.

Road to World Agricultural Trade Liberalization Paved by RTA's or Multilateral Agreements?

Do RTA's in fact result in freer agricultural trade? In other words, have RTA's gone further than multilateral trade negotiations (MTN's) in liberalizing agricultural trade? A related and more general question can also be asked: Are RTA's a path or an impediment to multilateral trade liberalization?

To answer the first question, it is necessary to compare the path RTA's and MTN's have taken in liberalizing agricultural trade. The earliest RTA's, such as the EEC and EFTA (and the FTA's between them), did little to liberalize world agricultural trade. While it is true that

the EEC removed all internal barriers to agricultural trade, it also raised external barriers and is generally viewed as trade diverting for agricultural products (see studies by Vollrath; Liapis and Tsigas; and Leetmaa, Jones, and Seeley in this report). EFTA excludes most intra-trade in agricultural products from complete liberalization.

At the same time, the GATT from its inception has treated agriculture differently from most other sectors, by allowing the use of quantitative restrictions and trade-distorting subsidies. Moreover, the first three negotiating rounds (1949, 1951, 1956) after the GATT's creation did little to liberalize agricultural trade. On the other hand, the formation of the EEC in 1957 turned out to be a major setback for MTN's on agriculture, as the EEC proved to be a main impediment to greater liberalization in the Dillon (1961-62) and Kennedy (1964-67) rounds. While other CP's may have been less than enthusiastic about bringing agriculture fully under GATT disciplines, nevertheless, the EEC was a formidable opponent to agricultural trade liberalization.

Agricultural trade liberalization was relatively limited until recently, both in terms of regional and multilateral trade initiatives. The Uruguay Round of MTN's (1986-94) was the first multilateral breakthrough in bringing agricultural trade under the same GATT disciplines faced by other sectors. The Uruguay Round Agreement on Agriculture prohibits the use of nontariff barriers (with a few exceptions), reduces tariff levels, and disciplines trade-distorting domestic and export subsidies. New negotiations to continue the reform process are scheduled for 1999-2000.

Most RTA's formed in the last 10 years have included agriculture in the removal of internal trade barriers, or have made progress in reducing or prohibiting the introduction of new trade barriers. Agricultural trade between the United States and Canada reached a high degree of liberalization in 1998, with the removal of all tariffs. MERCOSUR has removed all internal agricultural barriers (with the exception of sugar), and its common external tariff results in a lower rate of protec-

tion for some products than was previously the case. APEC, an informal regional trade initiative, has set the year 2010 (2020 for developing countries) as a goal for complete trade liberalization. One reason for the greater degree of coverage of agricultural products in recent RTA's (compared with earlier ones) is that these agreements provided a way for like-minded countries to pursue more rapid agricultural trade liberalization at a time when multilateral trade talks (Uruguay Round) were foundering during the late 1980's.

Given the almost concurrent progress made at both the regional and multilateral level, it is difficult to say if RTA's have gone further than MTN's in agricultural trade liberalization. While recent RTA's have gone further than earlier ones in reducing trade barriers, it took MTN's to bring one of the largest RTA's, the EU, under stricter discipline. And, as Hoekman and Leidy point out, the same factors that block (or stimulate) trade liberalization in MTN's can also be strong in RTA's (see appendix on U.S.-Israel Free Trade Area Agreement). It is not coincidental that the agricultural and food products with the highest rates of protection in WTO members' schedules of commitments are the same products excluded from complete liberalization in most RTA's.

The second question, "are RTA's a path (building blocks) or an impediment (stumbling blocks) to multilateral trade liberalization," is best addressed by examining the relative merits of regional and multilateral trade approaches that have been debated in the literature. Although the issue of regionalism versus multilateralism is discussed in very general terms, it should be clear that the analysis pertains as much to agricultural trade as it does to trade in other sectors.

One perspective, put forth by Jagdish Bhagwati (1991), among others, is that RTA's are a dangerous development in the world trading system and a distraction from the goal of multilateral trade liberalization. Bhagwati sees RTA's as purely preferential agreements, which lower trade opportunities for third countries and are generally trade diverting. Moreover, he cites evidence from political economy studies that

suggests strong motives for producer groups to push for RTA's. Winters (1996) has echoed this concern, writing that multilateral trade liberalization could stall if producers get what they want from RTA's (trade diversion makes bad economics, but good politics).

On the other hand, Bergsten (1997) and others have argued that RTA's benefit multilateral trade liberalization. One reason for this, Bergsten believes, is that RTA's put pressure on other countries to liberalize. Blackhurst and Henderson (1993) have written that regional integration brings benefits through lower transaction costs, larger markets, and therefore more effective competition, which provides an incentive for greater integration/liberalization. The empirical work in this study appears to support this observation, as the U.S. agricultural sector benefits from inclusion in trade agreements but is less well off when remaining outside regional integration. Since countries have an incentive to join RTA's, the results increasingly become multilateral.

Others point out that RTA's and the GATT multilateral system can be mutually beneficial. For example, some RTA's are based on WTO/GATT mechanisms and provisions, which help to solidify GATT trade rules. On the other hand, RTA's have enabled countries to move more quickly to reform their trade regimes (for example, RTA's were out in front in liberalizing government procurement and trade in services), leading to multilateral liberalization in those areas. The challenge, as several observers have noted, is how to move from the regional level of liberalization to the multilateral forum ("switching to the multilateral horse once the race begins," as Winters put it), and at the same time, ensure that RTA's do not harm nonmembers through trade diversion.

While both sides of the "building/stumbling block" argument make valid points, a third approach, which takes a pragmatic look at the experience of RTA's and the GATT, is also helpful to consider. Blackhurst and Henderson have posited that RTA's are neither inherently good nor bad, but that the effect of RTA's on the world economy depends on the motive in forming it,

the way it is formed, and how it changes over time (are trade barriers removed?, are other countries able to join?). Most economists would probably agree that an RTA open to any interested country and that fully dismantles trade barriers (in the vein of the “open regionalism” of APEC) is a step forward in trade liberalization, and preferable to an RTA that makes membership to outside countries difficult, retains internal trade barriers, and is based primarily on political considerations, which would likely lead to a retaliatory response from nonmembers.

Following this line of thought, some observers of RTA's and trade liberalization have turned their attention to identifying ways to make RTA's less trade distorting, as well as factors that inhibit true liberalization in either the regional or multilateral context. One approach is to examine Article XXIV not only in terms of its provisions on RTA's, but to consider ways to make compliance with those provisions more likely.

While the UR Understanding provided some clarification of how XXIV:5 (tariff levels on the whole cannot increase after formation of an RTA) should be applied, some economists feel that looking at pre- and post-RTA tariff levels is the wrong indicator, since trade diversion is still possible even if tariffs are reduced. McMillan (1993) and others have proposed using trade levels as a better indicator of whether or not trade diversion occurs because of an RTA. However, Hoekman and Leidy point out that looking at trade data alone makes it difficult to determine causality, and have suggested that policy-based indicators should also be examined. Other proposals to strengthen Article XXIV criteria include requiring an open accession clause that would minimize the possibility of trade diversion and the “hub and spoke” effect of multiple RTA's (for example, the web of agreements between the EU, EFTA, and the Central and East European countries), and the use of the lowest pre-CU tariff rate as the common external tariff (a proposal of Bhagwati's).

Second, and equally as important (if not more so), is the issue of compliance with WTO/GATT rules (not

only Article XXIV, but more recent agreements such as on agriculture, technical barriers to trade, sanitary and phytosanitary measures, and rules of origin). While none of the RTA's reported to the GATT was unanimously accepted as fully compliant with Article XXIV, none was found to be in violation, and there have been very few disputes brought to the WTO/GATT based on Article XXIV noncompliance.⁹ As pointed out earlier, some have attributed this weakness in application to the political decision made not to hold the EEC too strongly to Article XXIV rules. However, without any credible threat of surveillance and possible sanction, an RTA has little incentive to comply with Article XXIV.

The Understanding addresses the need for greater emphasis on the notification and review process, which if implemented, could lead to greater pressure for RTA's to comply. So far, the WTO Committee on Regional Trade Agreements (CRTA), which was formed in 1996, has devoted much of its time to developing a systematic approach to RTA notification and reviews, as well as identifying areas where greater clarification is required.¹⁰ At the same time, the CRTA has also had to examine a backlog of new or existing RTA's reported since the formation of the WTO. It is too early to say if the CRTA will be able to play the kind of watchdog/surveillance role identified above, given the amount of work and the difficulty in addressing these issues (many of which are very contentious); however, it appears that the Committee is moving in the right direction.

⁹Only three cases have involved Article XXIV noncompliance, all involving the EU as the respondent and relating to preferential agricultural trade arrangements with developing countries. In all three cases, adoption of the panel results was blocked by the EU and its trading partners (the disputes took place before the WTO dispute resolution mechanism was developed).

¹⁰Issues identified in WT/REG/W/12 include: differences in WTO regulatory framework for CU's and FTA's, overlapping dispute settlement systems, legal implications of overlapping membership in RTA's, enlargement of CU's, notification under the Enabling Clause, definition of the term “substantially all trade,” and assessment of RTA's in which one or more members does not belong to the WTO.

As the empirical evidence presented by other studies in this report demonstrates, RTA's are not necessarily the trade-diverting "poxes" on the world trading system that Bhagwati has described, and can be building blocks to greater liberalization. However, these results also support Blackhurst and Henderson's contention that the terms of the RTA's formation and how it changes over time are important determinants of whether or not it will be trade creating or diverting. As a result, it may make sense to move beyond the "building/stumbling block" paradigm to look at ways in which GATT rules on RTA's and compliance with those rules can be strengthened to ensure that RTA's are more likely to create trade rather than to divert it.

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Table 1—Selected reciprocal RTA's and agricultural provisions

RTA	Created	Current Members	Agricultural provisions
Europe			
European Union (EU)	1957 (EEC-6)	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom	No internal trade barriers. Common Agriculture Policy (unified trade policy and support)
European Free Trade Association (EFTA)	1960	Iceland, Norway, Switzerland, Liechtenstein	Agriculture is excluded from removal of internal trade barriers
Central European Free Trade Area (CEFTA)	1992	Hungary, Poland, Czech Republic, Slovakia, Slovenia, Romania	Scheduled to fully liberalize agricultural trade in 1998, postponed until 2000
Czech-Slovak Customs Union	1993	Czech Republic and Slovakia	Existing agricultural trade barriers not completely removed, but new barriers cannot be introduced
EU-EFTA FTA's	1973	Bilateral FTA's between EU and individual EFTA members	Trade concessions on agriculture were negotiated on product-by-product basis; EFTA adopted EU sanitary and phytosanitary regulations
EU-CEE Association ("Europe") Agreements	1992	EU and Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Bulgaria, Czech Republic, Slovakia	Separate protocol for agriculture: 5-year phase-in for most concessions, limited to tariff decreases and quota increases. Trade in some products, such as grains, is not liberalized
EFTA-CEE FTA's	1993	EFTA and Hungary, Poland, Romania, Bulgaria, Czech Republic, Slovakia	10-year transition period for elimination of tariffs and quantity restrictions (QRs) on products covered by the agreement (processed agricultural products)
Baltic FTA	1996	Estonia, Latvia, Lithuania	Internal agricultural trade was liberalized on January 1, 1997
Baltic FTA's with Norway, Switzerland	1992, 1993	Bilateral FTA's between Norway and Switzerland with Estonia, Latvia, and Lithuania	Processed agricultural products are included, unprocessed agricultural products are covered in a separated bilateral arrangement
EFTA FTAs with Israel and Turkey	1992 (Turkey) 1993 (Israel)		EFTA and Turkey: FTA by 2002 includes processed agricultural products and fish products; in both cases, bilateral arrangements for agricultural trade with EFTA members apply
Western Hemisphere			
Southern Common Market (MERCOSUR)	1991	Argentina, Brazil, Uruguay, Paraguay	Nearly all intra-regional tariffs removed, only agricultural product exempt from liberalization is sugar. Established common external tariff, ranging from 0-20 percent for agricultural products (avg. 10 percent)—generally lower than previous tariff levels

--continued

Agriculture, GATT, and Regional Trade Agreements

Table 1—Selected reciprocal RTA’s and agricultural provisions--continued

RTA	Created	Current Members	Agricultural provisions
Western Hemisphere			
U.S.-Israel FTA	1985	U.S., Israel	Agriculture is covered, but Israel was granted the right to protect infant industries, particularly in agriculture. 1996 Agreement designed to further liberalize ag. trade particularly U.S. products facing nontariff barriers
North American Free Trade Agreement (NAFTA)	1994 (CUSTA—1988)	Canada, Mexico, United States	<p>Agricultural trade treated bilaterally:</p> <p>Most agricultural tariffs between Canada and U.S. eliminated by Jan. 1, 1998 (as contained in the Canada-U.S. FTA); restrictions on sensitive products remain (grains, meat, eggs, sugar containing products, fruits and vegetables); agreement not to use export subsidies in bilateral trade and not to increase or introduce new tariffs</p> <p>15-year phase-out of all tariffs, quotas, and licenses that are barriers to U.S.-Mexican agricultural trade</p> <p>15-year phase out of tariffs, quotas, and licenses for most Canadian-Mexican agricultural trade</p> <p>All 3 countries agreed to use their WTO schedules to discipline domestic support and export subsidies</p>
Asia			
Closer Economic Relations (CER) Agreement	1983	Australia and New Zealand	Free trade in agricultural products
Association of Southeast Asian Nations Free Trade Area (AFTA)	1991	Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar	Transition to FTA with common external tariff planned by 2003. Since 1994, coverage includes agricultural products
Multi-Regional			
Asia-Pacific Economic Cooperation Forum (APEC)	1989	Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Singapore, South Korea, Taiwan, Thailand, United States; Peru, Russia, and Vietnam became members in 1997	Goal of free trade in agricultural products by 2010 for developed economies and 2020 for developing economies

U.S.-Israel Free Trade Area Agreement

Michael Kurtzig and Daniel Pick

In 1985, Israel became the first country to sign a bilateral Free Trade Area Agreement (Agreement) with the United States. Israel, isolated from regional trade by the Arab boycott, sought to integrate itself into the global economy in an effort to overcome the limitations of its small domestic market. U.S. interest in the Agreement was sparked by a readiness to further trade relations in general, and by the awareness that the EEC-Israel free trade agreement of 1975 had been partially responsible for a reduction in U.S. merchandise and agricultural exports to Israel.

The U.S.-Israel Agreement's principal goal was the elimination of all duties on trade between the two countries. The Agreement applied not only to tariffs but also to licenses, subsidies, and other trade restrictive measures for both agricultural and industrial products. While the agreement phased out tariffs on nonagricultural products, eliminating all duties by January 1, 1995, Article VI of the agreement permitted each country to maintain nontariff barriers for the protection of sensitive, domestically produced, agricultural products. Israel maintained levies and fees on a wide range of agricultural products and placed quotas and bans on others.

The Agreement is a dynamic document and under regular scrutiny. It provides a consultative mechanism between the parties and in 1996, the United States and Israel agreed on a 5-year program of gradual and steady liberalization of Israel's market for food and agricultural products. One objective of the 1996 Agreement on Food and Agriculture (AFA) was to provide for immediate access for all U.S. farm products, which was to have been achieved by January 1, 1995 under the 1985 Agreement. However, this was not achieved, as nontariff barriers (NTB's) and technical barriers to trade continue to hamper U.S. access to the Israeli market. On the other hand, the reduction in duties and setting of tariff-rate quotas (TRQ's) for nearly 100 products has helped increase certain U.S. exports such as frozen fruit and breakfast cereals to Israel.

In addition to its GATT multilateral trade commitments and its agreement with the United States and the European Union (EU), Israel also has trade agreements with Canada, Turkey, Slovakia, the Czech Republic, Hungary, European Free Trade Association states, and Jordan. With respect to all other countries, Israel substituted steep tariffs for NTB's and is now reducing these tariffs. Israel's import liberalization program and new trade agreements have diluted U.S. advantages under the bilateral Agreement.

U.S. Agricultural Trade with Israel

In the 5 years prior to the Agreement (1980-84), Israel's total agricultural imports averaged \$827 million; and in the 5 years following (1986-90), \$965 million per year. The U.S. share of Israel's agricultural imports averaged 38 percent in the 5 years prior to the agreement and dropped to 29 percent in the following 5 years. The EEC share rose from 29 percent to 42 percent. Bulk commodities dominate U.S. agricultural exports to Israel, with 93 percent of the total value prior to the agreement and 87 percent in the following 5-year period.

U.S. agricultural imports from Israel have historically been relatively low, averaging \$55 million in the 5 years prior to the Agreement and \$80 million in the 5 years following. This represents 0.3 percent of total U.S. agricultural imports and about 6 percent of Israel's agricultural exports. Two-thirds of total U.S. agricultural imports from Israel are consumer-oriented goods such as dairy products, biscuits, and wafers, which grew 44 percent following the Agreement, while horticultural imports from Israel doubled. The data show that trade growth has not been reciprocal but rather that the Agreement benefitted Israel more.

Motives for the Agreement On Food and Agriculture

The substantial nontariff barriers on agriculture in Israel led to the 1996 Agreement on Food and

Agriculture. In addition, the 1996 AFA was negotiated in an effort to reconcile the inconsistencies between the 1985 Agreement and the global trade rules that resulted from the Uruguay Round of the GATT. The Uruguay Round and Israel's membership in the newly formed WTO required the Government to transform into tariffs all administrative or nontariff barriers to trade; these had been allowed by the U.S.-Israel Agreement.

Many products that were banned or subject to small quotas are now covered by TRQ's or tariffs under the 1996 AFA. The AFA is comprehensive and provides for immediate and meaningful access for U.S. farm products. The AFA categorizes products as: (1) those free from duty or other restrictions, (2) those imported duty-free within a specified TRQ, and (3) those subject to preferential tariff treatment. The AFA reduced duties and established TRQ's for nearly 100 U.S. products and allowed the free entry of many U.S. products. The AFA is to last for 5 years, at which time the two governments commit to seek further improvements.

Obstacles to free trade between the United States and Israel remain, however, including national treatment, weights and measures, kashrut (Kosher) certification, and violation of Article 6 of the 1985 Agreement regarding products not produced domestically. In 1994, Israel established the Israeli Kosher Meat Import Law prohibiting all imports of non-kosher meat. The ban is administered in violation of both the 1985 Agreement and WTO's "national treatment" provisions (Article 8 of the 1985 Agreement and GATT article III) as non-kosher meat is already produced and sold in Israel. The 1997 Trade Estimates Report for Israel estimates that once the kosher certification problem is

resolved and U.S. slaughterhouses meet the veterinary requirements imposed by Israel's religious authorities, the potential market for U.S. beef and beef products could be \$25-\$100 million annually. In early 1998, however, the Israeli Parliament (Knesset) approved an amendment to the basic law—Freedom of Occupation—that makes the current ban on imports of nonkosher meat permanent. In this case, neither the 1985 Agreement nor the 1996 AFA was of any help in lifting this nontariff barrier.

Israel's labeling and standard weights requirement has been a persistent problem for the United States. Israel requires that many household products be sold in fixed package sizes (e.g., 200, 400, or 500 grams) using metric weights and measures. This requirement effectively precludes exports of many U.S. products, as does the lack of an English translation for certain regulations and Israeli standards of certification. In the 1994 Trade Policy Review of Israel done by the GATT, Canada, which also has a free trade agreement with Israel, raised similar issues of packaging, marking, and labeling as obstacles to their trade with Israel. Such trade barriers hurt U.S. exports of important value-added products—in particular, prepared vegetables, fruits, and pasta. However, in mid-1998, Israel undertook to cancel all weights and measures standards on food, which is expected to take effect later in the year. However, until that happens, packaging and labeling standards will continue to prevent the importation of a broad range of U.S. foods, with a potential value of \$20-\$40 million. These imports are not expected to detract from domestic producers' market share; they are likely to shift the source of supply from the EU to the United States.

U.S.-Japan Agreements on Beef Imports: A Case of Successful Bilateral Negotiations

John Dyck

Abstract

Over more than 20 years, successive rounds of bilateral negotiations between the United States and Japan opened the Japanese market to beef imports. These negotiations were grounded in the GATT rules and linked in important ways to simultaneous multilateral trade negotiations. U.S. beef trade with Japan flourished in the aftermath of the U.S.-Japan beef agreements. The United States maintained its large share of a growing market as managed trade under the quota system was replaced by free trade. The agreements opened a beef market now worth over \$1 billion in exports each year to the U.S. industry, and should be viewed as a major success for bilateral negotiations within the multilateral GATT framework.

Introduction

In 1988, the United States and Japan signed an agreement to phase out Japan's quota system for beef imports. Since 1991, Japan's beef trade has been limited only by Japan's sanitary barriers and ad valorem tariffs. The 1988 agreement culminated a series of negotiations about Japan's beef imports and defused what had been a major source of trade friction. The size and value of Japan's beef imports as well as the length and intensity of the negotiations make this a leading example of bilateral problem-solving in agricultural trade. This article examines the nature, benefits, and costs of the negotiations and examines the relationship of this bilateral case to multilateral negotiations. While the costs of attaining the beef agreements were high, the benefits in terms of improved agricultural trade performance for the United States seem to be considerable. Rather than being a

strategy in competition with multinational negotiations, the U.S.-Japan beef negotiations should be viewed as a successful outgrowth of and complement to the multilateral trade framework of the GATT.

Japan's Beef Market

Japan's cattle had been primarily used as draft animals until the 1950's and 1960's when field cultivation shifted to motor power. But Japan's field cultivation farm community retained the Japanese draft breed—Wagyu—as a beef animal, and many of Japan's small farmers kept 1 or 2 cattle to market for slaughter. Grain feeding, introduced about 1960, allowed cattle fattening to proceed beyond the bounds of Japan's own feed sources, which are quite limited because of the lack of pasture and feedgrain crops. Wagyu meat marbles well, with fat tissue interspersed in the muscle so that the meat is very tender. Grain feeding to

achieve a high degree of marbling quickly became so intensive that Wagyu meat was raised with a much longer fattening period than in other parts of the world. At the same time, milk consumption was rising fast in Japan, leading to the development of a large dairy herd based on Holstein animals. Beef from Wagyu animals was supplemented by beef from the steers and unbred heifers of the dairy herd, which were also intensively fattened.

Japanese consumption of beef grew quickly from a very small base, beginning in the 1960's. The Government retained control over beef imports, and beef prices in Japan became quite high by international standards because supply was limited to the high-cost domestic production. Beef was regarded as a luxury commodity.

Japan's Trade Rules

After acceding to the GATT in 1955, Japan blocked the entry of many products under the "balance of payments" clause (Article XI) of the GATT. When Japan disinvoked this justification in 1963, it kept its quota on beef imports as one of the "residual import restrictions" no longer clearly permissible under the GATT. The Government originally administered import quotas primarily to orchestrate beef prices in the Japanese market. The Livestock Industry Promotion Corporation (LIPC), a government-owned corporation established in 1961, promoted orderly growth in Japan's livestock product markets, monitoring price bands for meats and intervening in the market when prices became too high or too low. The LIPC had important trade functions, administering Japan's variable levy on pork imports and acting as the principal importing agent for beef.

Japan has long been completely free of foot-and-mouth disease, a viral disease that affects cattle and swine. To avoid possible infection from meat imports, Japan imposes a ban on imports of fresh, chilled, and frozen beef from countries where the disease may be present. In the 1960's, 1970's, and 1980's, this limited its imports to the small number of areas that were foot-and-

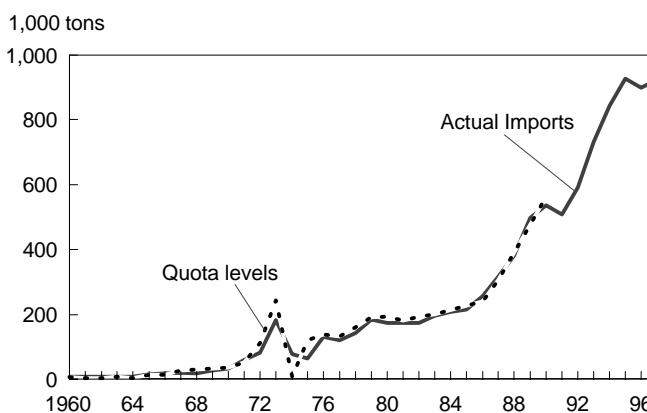
mouth free. Thus, the opportunities offered by Japan's beef imports—and the destabilizing effect of bans or disruptions of the imports—were shared by essentially three supplying countries: the United States, Australia, and New Zealand.

Imports grew in the early 1970's (fig. 1). However, when cattle raisers' feed costs soared as part of the global feed crisis of 1973-74, the LIPC imported no beef at all for almost a year in 1974-75, fearing that Japanese producers' returns would be squeezed between high feed costs and beef prices that would be lower if imported beef also had to clear the market. The ban meant that foreign beef producers suddenly were deprived of an important market.

Challenges by Exporting Countries

According to Coyle (1983), "in the late sixties and early seventies, the import quotas on beef and citrus were high on the U.S. list of items requiring 'prompt and favorable' action by Japan." In 1975, after resuming quota imports, Japan announced a system of annual amounts to be imported from the exporting regions of Oceania and North America. This regional allocation of what had been a global quota disturbed

Figure 1
Japan's beef imports, 1960-97
(excludes imports outside quota categories)



Actual imports are Jan-Dec., carcass weight equivalent (USDA)
Quota levels are April/March, shipped weight divided by .7 (ABARE)

exporting countries, especially when Japan cut in half a previously announced quota amount for Australian origin in 1976.

Negotiations with both the U.S. and Australian Governments resulted in expansion of certain categories of the quota in 1976 and 1977. The U.S. pressed for larger amounts under the quota for hotel use, and for a quota for “high-quality” beef, which was defined as grain-fed beef. A 1-year interim agreement in 1977 was followed in 1978 by a more comprehensive, 4-year agreement under the auspices of the Tokyo Round of multilateral negotiations under the GATT. The basis of this agreement was achieved as part of the Strauss-Ushiba understanding (between the United States Special Trade Representative and Japan’s Minister for External Economic Affairs) that settled a number of outstanding issues between the United States and Japan in the Tokyo Round.

The 1978 agreement defined annual, global quotas for each Japanese fiscal year, 1979-82. Although the total quota for 1979 was little higher than the actual imports for 1973 (the year with the highest imports until then), and total quota growth over the 1979-82 period was only 500 tons, the 1978 agreement provided a guarantee of minimum annual imports, ending the risk to exporters of unilateral reduction or cessation of the trade by Japan. In addition, the United States secured a commitment that a rising portion of the quota would be filled only by high-quality beef.

Because the U.S., Australian, and New Zealand commercial beef sectors compete with each other for the Japanese market, it is easy to imagine a scenario of diplomatic competition by the exporting countries’ governments to negotiate the biggest possible piece of the pie for their exporters. Japan showed an early preference for explicit geographic quotas: so much for Australia, so much for the United States, etc. But the exporting countries sharply rejected this approach. In these and later negotiations, the U.S. and Australian Governments realized a common interest in expanding general access to Japan’s market. However, they chose

to negotiate separately with Japan, while exchanging information frequently.

When the 1978 agreement lapsed (at the beginning of 1983), a new agreement was difficult to reach. After nearly 2 years of discussions, the U.S. and Japan agreed in 1984 in the Beef-Citrus Understanding of that year that the beef import quotas for 1984-87 would expand the high-quality portion by 6,900 tons per year. Later in 1984, a bilateral agreement between Australia and Japan expanded the total quota by 9,000 tons per year for the same years. The Australian-negotiated increase in the total quota was not in addition to the U.S. increase, so that much of the 9,000-ton increase was to be made up of high-quality beef. The 1984 agreement also dealt with citrus imports (including negotiating an end to grapefruit juice quotas).

The 1984 U.S.-Japan agreement committed Japan to “introduce a new measure...to facilitate consultations between foreign suppliers and Japanese users.” This led to the establishment of a subquota for the Simultaneous-Buy-Sell (SBS) system, which allowed direct negotiations between purchasers and sellers, so that companies could negotiate the size, quality, price, and timing of a purchase. This represented a considerable relaxation of the quota rules from the tender system employed by the LIPC in the rest of the quota, which could not easily accommodate immediate agreement between a specific user and a specific seller about a beef shipment. The SBS system was open to imports from all origins.

By 1984, there was a certain pattern to the revision of Japan’s beef import rules. Although there was some domestic pressure for greater importation of beef, the dominant pressure for liberalization came from the Governments of the United States and Australia. Prior to both the 1978 and 1984 agreements, negotiations were described at the time as intense, stretched over 2 years, and were not in place until over a year after the previous agreement expired. The United States, in both cases, secured concessions primarily for high-quality beef, which is the U.S. specialty. Australia worked for increases in the total quota. In both cases, these agree-

ments were realized in negotiations by the U.S. Special Trade Representative (Strauss in 1978, Brock in 1984) in the context of widespread tension about Japan's trade with its number-one export destination, the United States. Both agreements were for 4 years, and operated primarily through the state trading regime of the LIPC.

1988 Beef-Citrus Agreement

As the 1984 agreement reached its end in 1987, interest in Japan's agricultural import markets, including the beef market, was high. The surge in the value of the yen after 1985 sharpened the disparity between costs of food inside the protected Japanese market and in the rest of the world. Japan's burgeoning exports of nonagricultural goods led to very large current account surpluses with the United States, and to calls from the U.S. side for Japan to allow greater agricultural imports in order to lessen the trade imbalance. Within Japan, the Keidanren, an organization speaking for major Japanese businesses, called for greater agricultural liberalization. The Japanese Government appointed high-level committees of advisors, chaired by Haruo Maekawa, which issued reports in 1986 and 1987 calling for freer access to agricultural imports, among other policy recommendations. The Forum for Policy Innovation, a group of scholars interested in agriculture, openly advocated ending Japan's quantitative restrictions as early as 1978. While popular and political support for maintaining Japan's agricultural import barriers precluded unilateral liberalization by Japan, the argument that such barriers were burdensome to the economy as a whole was heard widely within Japan in the late 1980's.

Pressure from outside Japan was particularly strong in 1987 and 1988. The United States had pursued a case against Japan through the GATT since 1983, calling for Japan to give up its quotas on 12 categories of agricultural imports, including processed beef (but not chilled and frozen beef). By 1987, a GATT panel had ruled informally against Japan, which sought to block the formal adoption of the panel's report. This failed

and, in February 1988, the GATT formally decided that Japan should remove import quotas on 10 of the 12 categories. The ruling showed how vulnerable other Japanese quantitative restrictions, devised before the disinvokation of the balance-of-payments justification, were to international rejection.

After the expiration on March 31, 1988, of the 1984 agreement, bilateral negotiations on the level of Japan's import regime were difficult. The United States, Australia, and New Zealand complained to the GATT that Japan's restrictions on beef imports were unfair and in violation of GATT Article XI:I; panels were set up to hear the complaints of the United States and Australia. Given the growing external and internal pressure against the barriers to agricultural trade, it was regarded as likely that a new agreement would expand imports of beef. There were some expectations that U.S.-Japan negotiations would again result in an enlargement of the amount of high-quality beef to go into Japan under a new sequence of quotas.

However, in June 1988, the U.S.-Japan Beef-Citrus Agreement negotiated a phase-out of the quota system, from 1988-90, and allowed Japan to impose higher tariffs in 1991 and afterward. The 25 percent tariff effective in 1990 and before was to be replaced by tariffs of 70 percent in 1991, 60 percent in 1992, and 50 percent in 1993 and afterward. The U.S. opted for completely commercial trade, with no LIPC involvement, and no high-quality beef requirements. These provisions flew in the face of warnings from some quarters that the U.S. share of the Japanese beef market depended heavily on these levers. As in 1978 and 1984, other governments followed up in the wake of the U.S. action; subsequent agreements between Japan and Australia, New Zealand, and Canada basically followed the pattern of the U.S. agreement, and the GATT cases pending against Japan's policies were withdrawn.

The U.S.-Japan agreement also committed Japan to phasing out its quotas on oranges and orange juice, and to lowering tariffs on eight other horticultural products. As with beef, all these trade liberalization measures applied to other exporters. The annual trade value of the

products addressed in the 1988 agreement was \$1.54 billion, with beef comprising 72 percent of the total.

Gains From the Bilateral Beef Agreements

It is difficult to establish by how much U.S. beef exports to Japan increased or U.S. beef prices rose as a direct result of the agreements, especially the 1988 agreement. It is unlikely that, in the absence of the agreements, Japan would have opted to increase imports unilaterally, or that the kind of beef actually imported after the quota's end would have been the choice of the LIPC anyway. It is more likely that the pattern of trade in beef shown by Japan's import statistics since 1987 has been heavily influenced by the trade rules it negotiated with the United States and other countries in the 1970's and 1980's.

The 1978 and 1984 agreements compelled imports of grain-fed beef. Such imports were not likely to have entered in large quantities in the absence of the agreements. Japanese domestic production was entirely grain-fed beef. Given that the LIPC was primarily interested in protecting Japanese beef producers, it likely would have had a predilection for importing grass-fed beef, for uses (such as hamburgers and meat processing) that would not directly displace Japanese beef. The effect of the high-quality beef sub-quotas negotiated in 1979 and 1984 was thus to force grain-fed beef, largely supplied by the United States, into a market that otherwise might have been closed. Besides the immediate advantage of greater sales, there may have been a longer-term effect of increasing awareness of U.S. meat qualities and business practices among Japanese companies, and, vice versa, of the Japanese tastes and business practices among U.S. meat companies and producers.

The imposition of the SBS system, negotiated by the United States in the 1984 agreement, served even more directly to familiarize the Japanese and foreign meat companies with the needs of the Japanese market and the abilities of exporting firms. U.S.-

origin beef achieved considerable success in the SBS subquota, and the 3-year phase out period provided for in the 1988 agreement involved steady expansion of the SBS system.

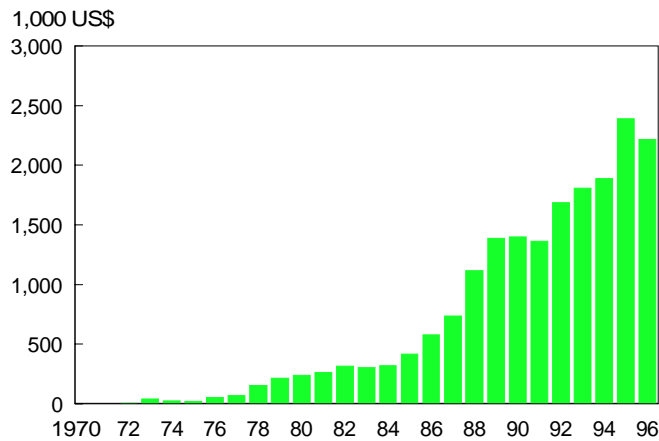
Behind the U.S. abandonment of the quota system in 1988 was a calculation that the system's advantages to the United States, which as Japan's most powerful trade partner enjoyed bargaining strength in determining quota sizes and composition, were outweighed by other factors.

First, it was believed that free trade would give more advantage to U.S. beef exports than the quota system could. The quota system distorted trade by influencing the types of beef imported and the timing of imports. For the U.S. beef industry, the lack of flexibility and transparency was a major detriment. The LIPC, a quasi-government agency, decided what and when to import based on criteria that were in part unobservable. As a protector of Japan's high-quality beef supply, the LIPC had an interest in seeing that imported beef was a cheap, generic commodity, not differentiated by quality.

Second, the slow and painful process of renegotiating the quota system was a burden for the United States, and shifting to a permanent, fully open system would relieve the United States of this negotiating burden and let it focus on other issues.

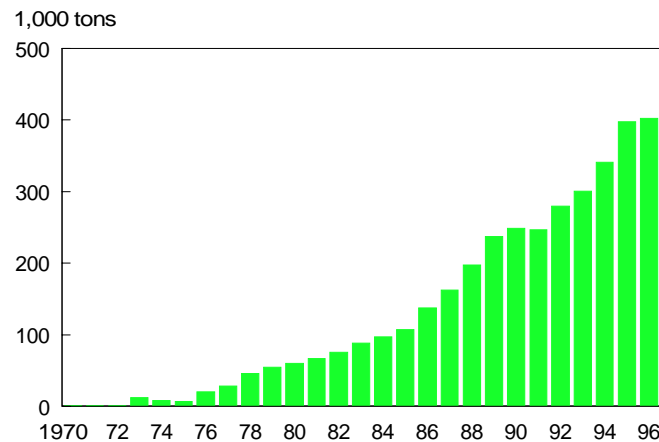
Trade results from 1988 and after suggest that the U.S. position to completely eliminate quotas benefited U.S. beef exports. Japan's imports of U.S. beef and offals rose by almost 90 percent in value (compared with 1987) as the quota was phased out, 1988-1990. The increase of 95 billion yen (\$650 million, at the 1990 exchange rate—see figure 2) in the beef trade created a new plateau for U.S.-Japan trade that has been sustained or exceeded since then. Volume increased by over 50 percent in the same period. Total Japanese imports of beef rose by over \$1 billion (158 billion yen, at the 1990 exchange rate, from the end of 1987 through 1990—fig. 3), with increases in non-beef commodities adding still more trade. The U.S. share of

Figure 2a
Value of U.S. beef and beef offal imports by Japan, 1970-96



Source: Japan Exports and Imports

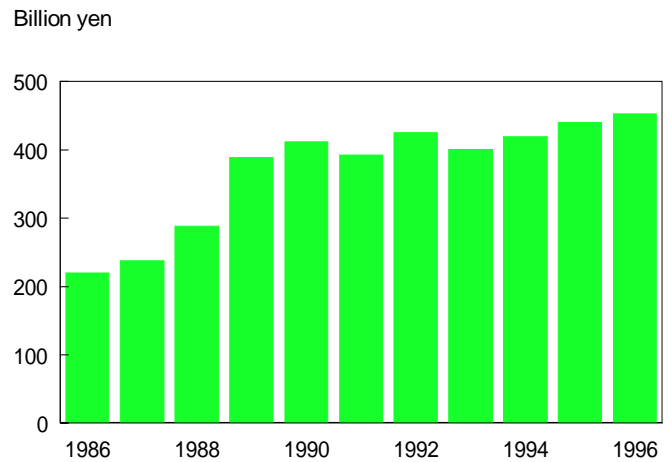
Figure 2b
Volume of U.S. beef and beef offal imports by Japan, 1970-96



Source: Japan Exports and Imports, product weight.

the Japanese market has remained near its 1987 level of 61 percent of total Japanese beef import value (fig. 4—those imports formerly under quota plus the imports formerly brought in under the “offal” category). The U.S. share for the total package of goods in the 1988 agreement has also remained relatively steady. While the country shares of Japan’s market for imported beef changed relatively little, there were major shifts in the corporate makeup of the trade with

Figure 3
Japanese imports of beef and citrus

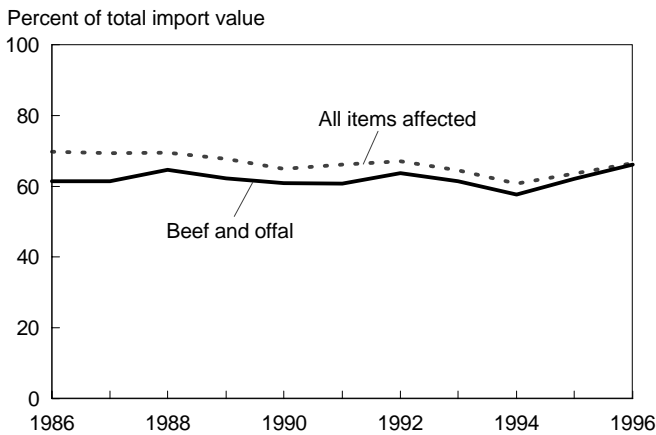


Includes other minor commodities whose tariffs were lowered in 1988.
 Source: Japan Exports and Imports

Japan. The 1988 agreement was followed by a period of great activity as Japanese and U.S. firms made investments in or established joint ventures and alliances in North America and Oceania.

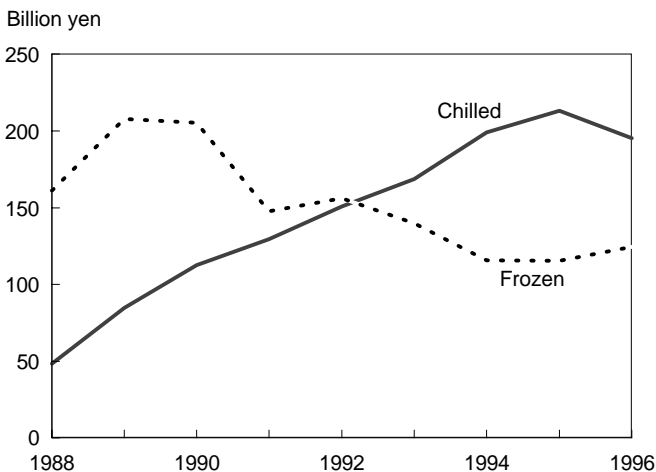
The Japanese import market, freed from LIPC involvement, turned strongly toward imports of grain-fed beef (as Australia shifted some of its exports into grain-fed beef) and toward chilled, rather than frozen, beef (fig. 5). Chilled beef could compete more effectively with fresh Japanese-raised beef, and commanded a higher price. U.S. firms quickly developed and adopted methods of sending chilled beef to Japan by ship, rather than by air, reducing the transport cost substantially. The pronounced shift in the quality of imports illustrates the distortive nature of the quota/state trading system on trade before the agreements. In the 1978 agreement, the United States had deliberately forced a quality shift by negotiating a high-quality (grain-fed) beef subquota. In 1988, by forcing the removal of the quota altogether, the United States opened a door to another quality shift—chilled beef from the United States (Australian shippers had already shifted to significant chilled trade before the 1988 agreement).

Figure 4
U.S. share of Japan's imports affected by beef-citrus agreements



Source: Japan Exports and Imports

Figure 5
Beef imports by Japan



Source: Japan Exports and Imports

The 1988 Beef-Citrus Agreement was imitated outside Japan. South Korea revoked its balance-of-payments justification for trade barriers in 1989, and the series of bilateral agreements on beef imports that it signed with the United States, Australia, New Zealand, and

Canada echoed parts of the agreements with Japan. An SBS system was set up and expanded, at the insistence of the United States. The Korean quotas were non-discriminatory about origin and type of beef. Korea's trade partners pressed repeatedly for a complete end to the quotas, and there were few U.S. voices in support of Korea's quota because of the successful U.S. performance after Japan's quota was phased out. While the end of the Korean quota system (set for 2001) was negotiated as part of the Uruguay Round (UR) settlement, the negotiations about it during the UR were often bilateral, and the details are contained in a side agreement with the United States formally attached to Korea's UR schedule.

Finally, other commodity spillovers can be credited in part as benefits of the U.S.-Japan Beef-Citrus Agreement. Although the beef agreements did not address Japan's trade barriers to pork imports, U.S. pork exports to Japan grew strongly after 1988 as a trade in chilled pork developed. Shipments of chilled pork used the technology and marketing channels that were opened up by shipments of chilled U.S. beef in the aftermath of the agreement. U.S. exports of chilled meat surged after the 1988 agreement, and this development likely occurred earlier than it would have if the beef quota system had been maintained.

Costs of the Bilateral Beef Agreements

A major cost of the agreements was the negotiating time and negotiating leverage expended on them. Substantial amounts of time were required from staff of the U.S. Department of Agriculture, the Office of the Special Trade Representative, and the U.S. Embassy in Tokyo. U.S. elected officials faced repeated pressure from constituents to get greater access to the Japanese market. Other bilateral issues between the United States and Japan had to share the negotiating time and leverage with the beef issue.

Negotiating the beef issues induced political friction in Japan. Beef is a high-profile commodity in Japan, both

for producers and consumers. As with rice, voices within Japan emerged that suggested consumers could gain from freer imports, but farmers' protests against any liberalization of trade dominated the debate. As a result, Japan's Government found it costly to negotiate the agreements, especially the 1988 agreement.

Japanese political leaders had to expend a lot of their influence to ensure acceptance of the agreements. U.S. successes on beef may have limited forward movement on other issues, because Japan's leadership had to be pushed hard to make concessions on beef.

Another cost of the 1988 agreement was the concession made by the United States in allowing Japan to raise its beef tariffs from 25 percent to 50 percent after an interim 2-year period with even higher rates.

Particularly in 1991, the first year after the quota was eliminated, the 70 percent tariff seemed to depress imports from year-earlier levels. Subsequent negotiations in the Uruguay Round secured a reduction of Japan's beef tariffs from 50 percent in 1994 to 38.5 percent in 2000, accompanied by a safeguard mechanism that allowed snapback to the 50 percent rate in case of surges in imports.

The end of the quota also hurt trade that had sprung up to circumvent the quota. The United States dominated one such category, so-called "diaphragm beef," which enjoyed a low tariff and no quota control because the Japanese classified it as beef offal (on the basis that it was not attached to a bone in the animal, although it is a muscle meat). After the quota, this trade shrank in volume and value, but remained substantial.

Japan's beef production would likely have been larger without the increased beef trade generated by the beef agreements. Beef production in Japan is heavily grain-based, and relies on imports of feedgrains and oilseed meals. The largest supply source of these feedstuffs has usually been the United States and imports of beef reduced this volume from levels that otherwise would have been reached. However, beef exported to Japan from the United States and to a lesser extent from Australia was grain-fed, and increased beef exports to Japan led to greater animal

feeding in those countries. To a large extent, the location, but not the amount of feeding, was changed by the agreements. The value added to the feed inputs by cattle raising and beef production shifted from Japan to the beef-exporting countries.

Bilateral Approach and Multilateral Approach

It is tempting to compare the bilateral approach with the multilateral GATT/WTO negotiations, and to consider the benefits and disadvantages of each. However, in the case of beef in Japan, the two approaches cannot be separated. Japan's controls on imports were globally acceptable to begin with because they were accepted in the GATT. When Japan gave up the underlying rationale for this acceptance in 1963 (by revoking its reliance on the balance-of-payments clause), the clock began ticking on its controls, with expectations that an increasingly rich country would reduce and eliminate them in order to credibly ask for freer access for its own exports to other markets. The 1978 beef agreements were negotiated simultaneously with the Tokyo Round of the GATT, and U.S.-Japanese negotiations on beef and the Tokyo Round were intimately connected—Japan's access rules on beef were one of the key issues to be settled before the Round could be completed, and became part of the agreement ending the Round.

While there was no formal linkage of the 1984 bilateral negotiations to GATT multilateral talks, U.S. complaints to the GATT in the early 1980's about specific Japanese trade practices not related to beef surely were one form of leverage that influenced Japanese decisions on beef. The 1988 agreement was negotiated after the beginning of the Uruguay Round, and in the context of the U.S. Government's professed commitment to completely free trade in agriculture. Thus, the U.S. preference for a complete end to quotas was based on a larger policy agenda, as well as strategic considerations related to beef markets.

The Beef-Citrus Agreement of 1988 may have influenced the outcome of the Uruguay Round. The boom in Japanese imports and U.S. exports of beef began immediately after the 1988 agreement, and showed its sustainability through 1993, when the Round was concluded. For U.S. agriculture, the successful performance of U.S. exports after this bilateral agreement, which allowed free trade to U.S. competitors as well as to U.S. exporters, could have rallied U.S. support for free trade in the Uruguay Round.

A report to Congress by the U.S. International Trade Commission (ITC) in 1988 explored the possibility of a comprehensive bilateral trade agreement with Japan, a proposal raised by the U.S. Ambassador to Japan, Mike Mansfield, and U.S. Senator Robert Byrd. Ambassador Mansfield made a statement that "...we should at least study the shape of a free trade agreement" because "the U.S. should switch from approaches which politicize trade issues, exacerbate friction, raise emotional stakes, erode public support here for American objectives and risk undermining both countries' commitment to the alliance. We have no alternatives at present to our piecemeal approach which could last—but should not—into the next century" (ITC, 1988). The ITC report, however, found substantial support for bilateral negotiating strategies among the experts it polled, with success in the beef and citrus negotiations singled out. Respondents also pointed out the threat of GATT action as influential in concluding disputes such as those over beef and citrus. While the beef agreements with Japan stand as successful achievements of bilateral negotiation, they arose out of and benefited from multilateral negotiations and agreements.

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Economic Integration and Open Regionalism in APEC: The Gains for U.S. Agriculture

William Coyle and Zhi Wang

Abstract

The Asia Pacific Economic Cooperation (APEC) forum could assume a more pivotal role in the integration of the Pacific Rim, which is a market for more than 60 percent of U.S. agricultural exports. In 1994, APEC announced in its “Bogor Declaration” a plan to achieve free trade in 2010 for developed members and in 2020 for other members. Its free-trade plan calls for open regionalism, allowing benefits from trade liberalization undertaken by members to accrue not only to APEC members but to non-APEC members as well. In this paper, we analyze open regionalism in a dynamic context. Even though the gains for the United States from open regionalism are less than they would be under an exclusive free trade area, open regionalism may be preferable because it is nondiscriminatory and because it creates pressure on non-APEC economies to liberalize their policies to maintain the competitiveness of their economies. From a U.S. perspective, inclusion of agriculture is critical: more than 75 percent of U.S. welfare gains from APEC would come from agriculture, mainly due to high initial rates of protection in East Asia.

Introduction

The Asia Pacific Economic Cooperation (APEC) forum is made up of 21 diverse Pacific Rim economies (table 1), including the United States, and represents a significant regional market for U.S. food and agriculture trade. In FY 1997, the APEC region accounted for more than 60 percent of U.S. agriculture and food exports and 50 percent of imports. Over the past 10 years, APEC has accounted for practically all the growth in U.S. non-bulk exports. The region covers North America, East Asia including China, Southeast Asia, Oceania, and Chile. Russia, Vietnam, and Peru joined in 1998, increasing the membership from 18 to 21 economies.

APEC, initiated in 1989, has a relatively short history. It is an outgrowth of other loose-knit fledgling Pacific Rim institutions, the most influential being the business-oriented Pacific Economic Cooperation Council (PECC), founded in 1980 by Australia and Japan. (See box for a comparison of APEC and the WTO.)

Growth in Intra-APEC Farm Trade So Far Not Attributable to APEC

In the APEC region, intra-regional agricultural trade, a measure of integration, has grown significantly in the last 15 years. The APEC region now rivals the EU

Economic Integration and Open Regionalism in APEC: The Gains for U.S. Agriculture

Table 1--Factor endowment, intensity, and relative size of model regions, 1992

	USA	Canada	Mexico	Japan	Australia	Korea	Taiwan	China	ASEAN5	EU12	Rest	
											OECD	World
<i>Billion U.S. dollars</i>												
GDP and trade flows												
GDP	5,671.8	572.3	327.9	3,644.9	285.4	307.3	211.5	461.2	389.9	6,616.4	900.4	3,047.7
Exports	573.8	140.0	56.2	378.4	48.7	83.4	92.0	122.0	176.0	734.0	267.6	453.5
Imports	640.5	144.0	72.7	309.5	52.8	90.2	83.3	141.3	183.2	788.8	254.4	544.6
<i>Percent</i>												
Relative size in the world												
GDP	25.3	2.6	1.5	16.3	1.3	1.4	0.9	2.1	1.7	29.5	4.0	13.6
Exports	18.4	4.5	1.8	12.1	1.6	2.7	2.9	3.9	5.6	23.5	8.6	14.5
Imports	19.4	4.4	2.2	9.4	1.6	2.7	2.5	4.3	5.5	23.9	7.7	16.5
<i>Percent</i>												
Trade dependence												
Exports/output	10.1	24.5	17.1	10.4	17.1	27.1	43.5	26.5	45.2	11.1	29.7	14.9
Imports/absorption	11.3	25.2	22.2	8.5	18.5	29.4	39.4	30.6	47.0	11.9	28.3	17.9
<i>Percent</i>												
Share in world factor endowment												
Land	13.4	3.2	1.8	0.3	3.6	0.2	0.1	6.9	4.0	5.9	0.6	60.1
Agricultural labor	0.2	0.0	0.8	0.3	0.0	0.4	0.1	41.7	6.1	0.8	0.1	49.4
Unskilled labor	8.1	1.0	1.8	4.7	0.6	1.3	0.7	17.7	6.0	11.0	1.1	46.1
Skilled labor	15.7	1.4	1.5	4.2	0.8	0.8	0.4	23.3	3.5	13.6	2.4	32.6
Total labor	5.2	0.6	1.3	2.6	0.4	0.8	0.4	29.4	5.8	6.5	0.8	46.2
Capital	23.3	2.2	1.4	17.5	1.5	1.0	0.6	1.8	1.4	30.6	4.7	14.0
<i>Percent</i>												
Factor share in value-added												
Land	0.3	0.6	2.7	0.8	1.2	5.6	1.9	7.4	6.3	0.4	0.8	2.7
Agricultural labor	1.3	2.9	4.9	2.3	1.5	5.5	4.8	17.1	7.3	3.5	2.6	7.0
Unskilled labor	33.6	33.2	12.5	41.5	34.7	35.6	45.4	17.8	17.5	39.4	29.4	27.6
Skilled labor	29.2	21.8	14.3	15.2	23.8	8.4	7.4	18.1	8.3	24.8	28.2	13.6
Total labor	64.1	57.9	31.7	58.9	59.9	49.4	57.6	53.0	33.2	67.7	60.2	48.1
Capital	35.6	41.5	65.6	40.3	38.8	45.0	40.5	39.6	60.5	31.9	39.1	49.2
<i>Percent</i>												
Skill distribution of regional labor force												
Agricultural labor	2.2	3.0	28.7	5.8	4.7	22.6	12.1	65.7	48.8	5.5	5.1	49.5
Unskilled labor	66.8	72.6	59.4	77.8	72.2	67.7	76.9	26.1	45.0	72.9	62.8	43.3
Skilled labor	31.1	24.5	11.9	16.4	23.1	9.7	11.0	8.2	6.2	21.6	32.2	7.3
<i>US \$1,000 per worker</i>												
Annual wages												
Agricultural labor	26.6	38.0	1.6	21.1	10.0	3.3	8.5	0.1	0.4	26.1	23.8	0.4
Unskilled labor	22.0	18.0	2.0	28.2	15.4	7.2	12.6	0.4	0.9	22.3	21.9	1.6
Skilled labor	41.0	35.1	11.3	48.9	33.1	11.8	14.5	1.2	3.2	47.4	41.0	4.7
Average wages	28.0	22.8	3.0	31.2	19.3	6.7	12.4	0.3	0.8	27.9	28.1	1.2
<i>US \$1,000 per hectare</i>												
Average land rent	8.5	7.2	31.1	612.6	6.6	730.6	406.1	28.4	37.5	29.9	74.3	9.1
<i>Percent of capital stock</i>												
Average capital return	12.1	14.6	19.3	11.2	10.2	17.3	19.4	11.4	20.5	9.7	10.2	14.3
<i>US \$,000 per worker</i>												
Capital (land) intensity												
Capital/labor	128.5	112.0	31.8	191.0	122.4	35.5	44.8	1.8	7.1	135.2	179.1	8.7
<i>Hectares per worker</i>												
Land/labor	1.5	3.3	0.8	0.1	6.1	0.1	0.1	0.1	0.4	0.5	0.5	0.8
<i>Ratio</i>												
Relative factor prices												
Rental/wage	0.4	0.6	6.5	0.4	0.5	2.6	1.6	41.3	25.6	0.4	0.4	11.7
Land rent/wage	0.3	0.3	10.5	19.6	0.3	108.5	32.9	102.5	46.7	1.1	2.6	7.5
Rental/land rent	1.4	2.0	0.6	0.0	1.6	0.0	0.1	0.4	0.6	0.3	0.1	1.6

Data source: Calculated from the 1992 multi-regional SAM estimated by the author from Version 3 GTAP database (Hertel, 1997) and additional factor endowment data collected by the authors (Wang, 1997a).

Differences and Similarities Between APEC and the WTO

While the World Trade Organization is a new institution, it is an outgrowth of an agreement reached in 1947 among 23 countries. APEC was born in 1989. Both institutions have important differences, as well as significant similarities. A major difference is the sheer size of the WTO, with 132 members, and a large permanent staff of more than 450 at its Geneva headquarters and a budget of about \$80 million. APEC is a smaller regional institution, with 18 members and no significant bureaucracy, only a small secretariat in Singapore of about 30, mainly temporary staff, seconded for a few years at the expense of member governments. Its operational budget is \$2-3 million, and its "headquarters" moves around the region. Much of APEC's business is handled by the country hosting the annual ministerial meeting, which rotates among members: the United States in 1993, Indonesia in 1994, Japan in 1995, the Philippines in 1996, Canada in 1997, Malaysia in 1998, and New Zealand in 1999.

The similarities may be more important than the differences. Trade negotiations in both start with a political commitment, and members must agree on principles and agendas. Consultations are undertaken to reach reciprocity (WTO) or comparability (APEC); "offers" are made in the WTO, "national action plans" are submitted in APEC. The principle of comprehensiveness, is promoted in both organizations, bringing agriculture into the WTO as well as into APEC. Flexibility is allowed through exceptions such as "blue box" policies and the backloading of textile quota phaseouts under the Uruguay Round, and allowing members to deal with sensitive sectors in different ways and at different times in APEC. Finally, the principle of most favored nation treatment is important in both. APEC adheres to the practice of open regionalism, which conveys the benefits of APEC reforms to all trading partners, making APEC's programs consistent with WTO principles.

Source: Fred Bergsten, "The Case for APEC: An Asian Push for World-wide Free Trade," in *The Economist*, Jan. 6, 1996.

with respect to intra-regional agricultural trade; 68 percent of APEC's agricultural exports in 1995 went to other members of APEC, compared with almost 70 percent in the EU, and the share has been rising steadily. But the integration so far is not attributable to the APEC institution, but instead to economic growth, policy reform, and the freer play of comparative advantage. Economic growth in the region has outpaced the world average by about 30 percent for about 10 years through 1997. The Asian financial crisis has slowed growth in the last two years, raising uncertainty about future performance. While many APEC economies around the Pacific Rim have liberalized both domestic farm policies and agricultural trade, sometimes on their own initiative, and sometimes as the outcome of bilateral, regional, or multilateral trade negotiations, the Asian financial crisis may slow some of these efforts in the short term. Examples of liberalization efforts affecting countries in the region but independent of APEC are:

- The North American Free Trade Agreement (NAFTA), signed in 1993. It will be fully implemented by 2008. Tariffs are being cut and markets opened for agriculture and other sectors. Free trade in agriculture between the United States and Mexico will be achieved by the year 2008, with most barriers removed by the end of 2003.
- Australia and New Zealand's free trade agreement, Closer Economic Relations (CER), signed in 1983. The agreement has brought limited benefits for agricultural trade because both nations have had relatively open borders for agriculture, and because their major agricultural markets are outside the region.
- New Zealand's unilateral reforms affecting agriculture and other sectors beginning in 1984. New Zealand farmers adjusted through a period of a rising currency, high interest rates, and depressed commodity prices. With the adjustment period complete, New Zealand's farm sector parameters are now largely set by the macroeconomic environment.
- The Association of Southeast Asian Nations' (ASEAN) free trade agreement signed in 1994, with a commitment to adopt a Common Effective

Preferential Tariff of 0-5 percent by 2008. The timetable later was accelerated to 2003. ASEAN includes Brunei, Burma, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. (Burma and Laos not yet members of APEC.)

- Policy reforms in China and Taiwan, in conjunction with WTO accession talks, resulted in a number of changes such as China's reducing its average tariff on agricultural goods from more than 30 percent in 1991 to 20 percent in 1997.
- Increased integration of agriculture and food trade between Hong Kong and China since Hong Kong reverted to China in July 1997.
- Implementation of the Uruguay Round Agreement began in 1995, with a 6-year phase-in period through 2000 for developed countries, and through 2004 for developing countries.
- Several bilateral agreements between the United States and Japan, Korea, and Taiwan since the mid-1980's that liberalized trade in beef, citrus, tobacco products, and other non-bulk commodities. Collectively these measures increased the value of farm exports to East Asia by other APEC economies by billions of dollars.

The Bogor Declaration of 1994

APEC could assume a far more pivotal role in future Pacific Rim integration than it has since its inception in 1989. About 6 months after the Uruguay Round Agreement was signed, APEC leaders issued their "Declaration of Common Resolve" in Bogor, Indonesia, on November 15, 1994, announcing that members would adopt the long-term goal of free and open trade and investment in the Pacific Rim region. This goal would be pursued by reducing barriers to trade and investment and by promoting the free flow of goods, services, and capital within the region.

APEC members pledged to pursue regional free trade on a most favored nation (MFN) basis and to promote the notion of open regionalism, allowing the benefits from trade liberalization undertaken by members to

accrue to nonmembers as well. Developed economies would fully liberalize their economies by 2010 and other members by 2020. At the Osaka Ministerial Meeting in November 1995, APEC members reaffirmed the free trade goal, calling for comprehensive treatment, including controversial sectors like agriculture, but flexibility in dealing with various trade sectors in meeting this goal. Action plans were tabled at the Manila Ministerial Meeting in November 1996 for implementation beginning in 1997. Peer pressure is the vehicle for ensuring comparability in commitments among the 21 economies as members pursue "concerted unilateral liberalization," but in consultation with and under the scrutiny of other members. Action plans are updated and revised periodically at the annual Ministerial meetings.

With regard to agriculture, these initial action plans in some cases offered accelerated or broader implementation of commitments made under the Uruguay Round Agreement. For example, Australia agreed to complete the reduction of bound rates for agricultural products by January 1999 instead of 2000. China, not a member of the WTO but quite active in APEC, announced at the last APEC Ministerial meeting in Vancouver that it would make significant tariff cuts on industrial and agricultural products by 2005. Other economies promised to accelerate trade-facilitating measures that would enhance food and agricultural trade, such as liberalizing of foreign investment in the transportation sector (Chile) and in expediting inspection procedures for highly perishable trade (South Korea).¹

APEC's Vision of Open Regionalism

The APEC plan for regional free trade is distinguished from other regional trade liberalization efforts by the ambiguous concept of "open regionalism," described in the APEC Eminent Persons Group's 1993 report.

¹Unpublished memorandum by Jeff Clark, Economic Research Service, U.S. Dept. Agri., January 5, 1996.

Commissioned in 1992, the Eminent Persons Group was to “enunciate a vision for trade in the Asia Pacific region...” and described open regionalism in their recommendations to leaders on regional trade liberalization, later adopted in the Bogor declaration:

...the [APEC] members would set a goal of achieving free trade in the region and indicate that they prefer to do so through further global liberalization but would pursue a regional path, on a GATT-consistent basis, if the favored strategy were not achievable. This would operationalize APEC’s concept of “open regionalism” or “open economic association” in a new and effective manner.²

Open regionalism, according to the report, would “obviate any charges that [APEC] was ‘going regional’,”³ a particular concern given the inconclusive status of the long drawn-out Uruguay Round negotiations at that time.

Pros and Cons of Open Regionalism

Detractors of APEC’s open regionalism argue that the benefits from APEC liberalization should accrue only to members or to nonmembers who reciprocate with similar liberalization measures. According to this view, the nondiscrimination principle embedded in the open regionalism concept should be applied conditionally by APEC to avoid possible exploitation by “free riders,” like the EU.⁴

²Report of the Eminent Persons Group to APEC Ministers, *A Vision for APEC, Towards an Asia Pacific Economic Community*, October 1993, pp. 27-28.

³*Ibid.*, p. 28.

⁴Trade Policy Forum, *Asia-Pacific and Western Hemisphere Regional Initiatives: Cooperation for Increasing Competition, Background Paper for Experts Roundtable*, Pacific Economic Cooperation Council, 12th General Meeting, Santiago, Chile, Sept. 29, 1997, p. 17.

Advocates of open regionalism argue that the liberalizing nation is the greatest benefactor from such action; non-APEC economies that “free ride” APEC’s free trade measures by not offering reciprocal policy reform would benefit less than the member economies. Remaining distortions would hamstring nonmember countries’ ability to compete and take advantage of the opportunities in APEC. Therefore, what other economies do or not do is less important than what APEC members do. The APEC forum serves to encourage members to move forward on the open regionalism agenda.

Is it naive to think that an economy will undertake liberalization without reciprocity? New Zealand did just that, unilaterally undertaking extensive agricultural policy reforms in 1984. Left to face the market, New Zealand farmers, after a difficult adjustment period, have prospered. The recent Asian financial crisis also demonstrates the importance of an economy’s openness regarding trade and foreign investment. Some of the most severely affected economies in Asia now face pressure from the International Monetary Fund as a *quid pro quo* for loans to undertake banking and trade policy reforms to encourage economic recovery in a globalized world economy.

APEC’s Open Regionalism in Perspective

Given APEC’s controversial objective of free trade through open regionalism, we evaluate its implications for the U.S. economy and agriculture, and compare it with two alternatives: an exclusive APEC free trade area and multilateral free trade in which non-APEC economies undertake the same reform as APEC members. How does open regionalism compare with these other approaches with respect to impacts on national welfare,⁵ trade creation and diversion, agricultural trade, farm income, and prices? What are the

⁵We measure changes in national welfare by changes in household consumption, evaluated at base year prices.

impacts on APEC partners and economies outside the region? And what is the distribution of gains and losses across U.S. economic sectors in general and for agriculture in particular?

We use a recursive, dynamic, computable general equilibrium model to address these questions. The model incorporates four sources of economic growth: labor force growth, accumulation of physical capital, changes in the skill composition of the labor force, and total factor productivity (TFP) growth. The labor force growth rate is set exogenously. Capital stock in each 1-year simulation period equals the last period's capital stock plus total investment minus depreciation. No optimal behavior is assumed for investment and capital accumulation. All net investments in the previous period are assumed to become new production capital in the next period. The increase in the skilled labor force is based on the growth in the stock of tertiary educated labor in each region estimated by the World Bank (Ahuja and Filmer, 1995), which indicates changes in the numbers of those qualified for employment as professional and technical workers. TFP growth rates are obtained from econometric estimates by the World Bank (Thomas and Wang, 1993, Martin and Mitra, 1996).

In the model's base scenario, the world economic growth path from 1992 to 2025 is generated, driven by the four sources of growth and assuming full implementation of the Uruguay Round and NAFTA and that China and Taiwan do not participate in the Uruguay Round liberalization process. Domestic agricultural support in the United States is assumed to be reduced by 95 percent as a result of the provisions of the 1996 FAIR Act, and domestic support in other OECD countries and in newly industrialized Asian economies is assumed to be lowered by 40 percent.

Three other scenarios are compared with the base scenario: an APEC free trade area (FTRA); the case of open regionalism (OPEN), featuring APEC trade liberalization on an MFN basis; and global trade liberalization under which non-APEC economies undertake policy reform in the same way as APEC (FULL).

Liberalization means reducing import protection and export subsidies in the developed and newly industrialized economies of APEC (the United States, Canada, Japan, Australia, Korea, and Taiwan) to zero by 2010, and removing all import barriers in all other APEC economies (Mexico, China, and ASEAN) by 2020. China and Taiwan will not benefit from the elimination of the Multi-Fibre Arrangement since they are not members of the WTO. Protection levels decline at a constant annual rate. All exogenous forces driving economic growth are the same as in the base scenario. The only differences among the three scenarios and the baseline are changes in each country's trade policy.

The model is a highly stylized simplification of the world economy that is far from perfect (Wang, 1997a). Liberalization of the service sector is not modeled. The size of parameters, such as elasticities of substitution and initial rates of protection, are uncertain. Therefore, the numbers reported in this paper need to be interpreted with caution: they can be viewed as indicative but not as precise forecasts.

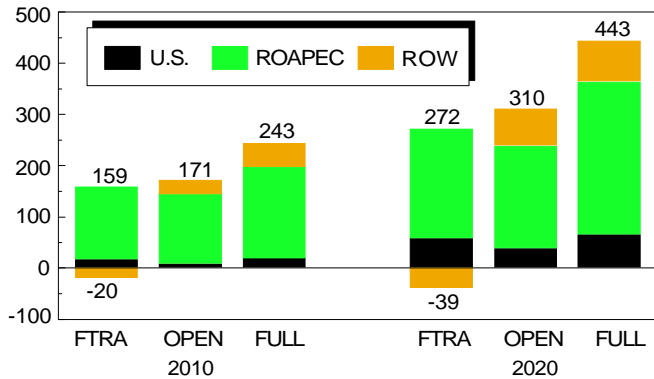
The three scenarios revealed several important outcomes:

- ***Welfare rises regardless of liberalization approach.***

The results from the recursive dynamic CGE analysis show that with all three liberalization approaches—an exclusive free trade area, open regionalism, and multilateral free trade—the overall welfare impacts are positive. They vary somewhat in magnitude, with global gains smallest for the APEC free trade area option and largest for multilateral free trade (fig. 1). Increases in welfare in the United States and the rest of APEC from open regionalism are somewhat less than both the free trade area and multilateral options, but the differences are small (fig. 2). According to the simulation results, APEC welfare rises in the range of \$144-\$197 billion above baseline levels for the three options in 2010 (a 0.64- to 0.88-percent increase) and from \$238 - \$363 billion in 2020 (a 0.78- to 1.19-percent increase) (fig. 3). The jump between 2010 and 2020 is explained by the elimination of

Figure 1
Global economy: Welfare impacts of APEC trade liberalization

Real consumption (Billion 1992 US\$)



the higher protection levels in the developing APEC economies and the liberalization-induced higher rates of economic growth from 2010 to 2020. The range of our welfare estimates (\$144-\$363 billion) are somewhat larger than the results (\$130-\$300 billion) from other APEC free trade simulations based on similar policy coverage because of the dynamic features of our model that account for the accumulating effect of rising income and investment levels from trade liberalization.⁶ Nevertheless, our results show that the percentage welfare gains for APEC and the world under all three simulations are still quite modest (table 2, left panel, Real Consumption).

- **Agriculture makes a major contribution to overall gains in all three alternatives.** According to our simulations, agriculture contributes 55 to 70 percent of the total welfare gains from liberalizing merchandise trade in APEC. For the United States, the share is even higher at 75 to 85 percent.⁷ The large share from agriculture is mainly due to high initial protec-

⁶Peter A. Petri, “Computable General Equilibrium Studies of APEC: Preliminary Review,” unpublished paper distributed at the PECC XII meeting in Santiago, Sept. 29, 1997.

⁷Based on additional simulation that decomposes the welfare contribution from agriculture.

tion rates for food and agricultural products in East Asia. Agriculture is a major sector of unfinished business from the Uruguay Round (table 3, fig. 4). With the freer play of comparative advantage after APEC trade liberalization, more efficient resource allocation across the region would lead to significant increases in import demand for food and agricultural products, particularly in East Asia.

Figure 2
U.S. economy: Welfare gains under different scenarios

Billion 1992 US\$

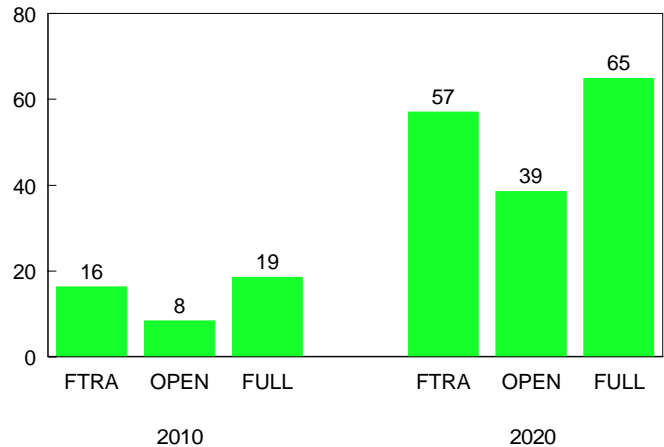


Figure 3
APEC: Welfare gains under different scenarios

Billion US\$ (change from base)

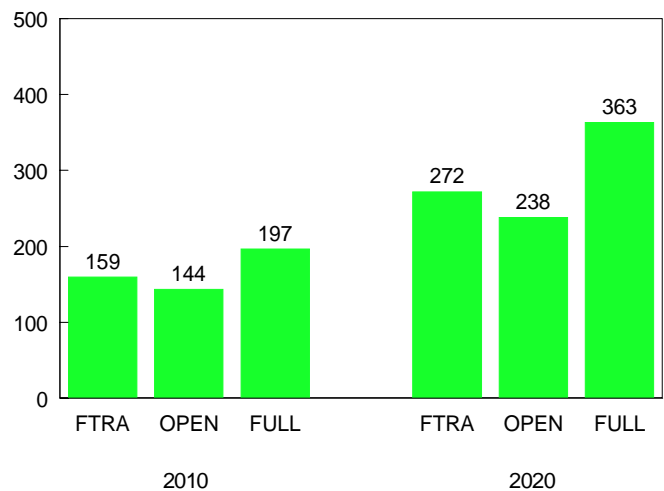
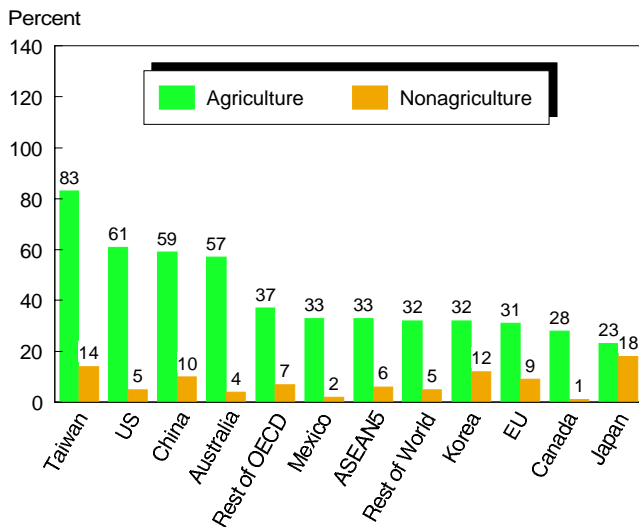


Figure 4
Average protection rates faced by selected economies in APEC and elsewhere, post UR and NAFTA



Notes and data source Calculated from the 1992 multi-regional SAM estimated by the authors from version 3 GTAP database (Hertel, 1997). The import protection rates for the food and agricultural sectors in China and South Asia were negative in version 3 GTAP. They reflected government consumer price subsidies on living necessities in those countries. We eliminated all negative protections and treated them as consumer price subsidies in the global SAM. Protection rates for food and agricultural sectors in China and South Asia are based on an earlier version of the GTAP database except China's crop sectors, which are tariff equivalent of non-tariff barriers based on Zhang, et al., 1997.

- **Trade creation dominates trade diversion in three liberalization scenarios.**⁸ As expected, trade diversion occurs in the case of the APEC free trade area, \$107 billion in 2010 and \$162 billion in 2020, but trade creation still dominates. In the case of the APEC free trade area, total real exports increase significantly for all APEC members, but decline for non-APEC economies. Economies within APEC trade more among themselves. Within APEC, trade increases 24 percent from the base scenario in 2010 and 32 percent in 2020. But trade between APEC

⁸Trade creation is the replacement of expensive domestic production by cheaper imports from free-trade-area (FTA) members, resulting from a reduction in trade impediments among FTA members. Trade diversion is the replacement of cheaper initial imports from non-FTA members by more expensive imports from FTA members.

and non-APEC economies declines by 4 and 5 percent, respectively.⁹ Trade diversion is not an issue with open regionalism except for North America, which imports slightly less from non-APEC economies because the initial barriers for APEC members are somewhat higher than in the EU and other OECD economies.

- **ROW unable to “free ride” on trade expansion from APEC’s open regionalism.** Under open regionalism, exports from non-APEC economies to the APEC region increase by just 4 and 5 percent in 2010 and 2020 (\$49 and \$87 billion), less than the APEC to non-APEC export expansion of 9 and 14 percent (\$120 and \$262 billion). Total exports from non-APEC economies would actually fall, except for slight growth in the EU (table 2, right panel, Exports). If non-APEC economies were to liberalize their markets also, then their exports would expand almost as fast as in the APEC economies. The remaining protection in the non-APEC region taxes their own production and exports, thus reducing their competitiveness in world markets under open regionalism. This would furnish an incentive for non-APEC economies to follow APEC’s lead in liberalizing their own markets.
- **U.S. agricultural exports would rise in all three cases, the least under open regionalism.** The increase in U.S. net agricultural exports would be 18 percent higher under the multilateral option than under open regionalism, and 30 percent higher under the free trade area scenario. Australia and Canada, the other major net agricultural exporters in the APEC region, would experience a similar pattern of benefits. Net agricultural exporters outside the region would benefit from open regionalism and from multilateral liberalization even more because some important non-APEC economies have relatively more abundant agricultural land resources than APEC members in East Asia. The free trade area option would divert from exporters outside the region to APEC economies agricultural trade worth about \$19 billion in 2010 and \$41 billion in 2020.

⁹Numbers are derived from table 5, divided by baseline numbers.

- *U.S. agriculture would benefit from freer trade conditions regardless of approach.* U.S. farm production and exports would expand under all three options because of the further realization of comparative advantage under freer trade conditions. All major sectors of U.S. agriculture would expand,

with food grain production expanding the most, more than 20 percent in 2010 and more than 45 percent in 2020, under each of the three options (fig. 5 and table 4, right panel). Feed grain and livestock production would expand by similar rates in both 2010 and 2020. The labor-intensive textile and

Table 2--The impact of alternative scenarios on APEC trade liberalization

	Real consumption						Exports					
	2010			2020			2010			2020		
	FTRA	OPEN	FULL	FTRA	OPEN	FULL	FTRA	OPEN	FULL	FTRA	OPEN	FULL
<i>Percent change from base scenario</i>												
United States	0.17	0.09	0.19	0.45	0.31	0.51	11.0	13.4	13.6	10.0	11.8	12.2
Canada	-0.01	-0.10	-0.04	0.28	0.16	0.30	1.3	2.7	2.3	0.2	1.8	1.2
Mexico	-0.16	-0.32	-0.28	-0.35	-0.60	-0.53	1.4	2.9	2.2	3.6	6.4	5.6
Japan	1.39	1.36	1.68	1.67	1.59	1.99	18.2	16.6	18.6	20.4	18.3	20.6
Australia	0.82	0.49	0.71	1.68	1.09	1.58	9.4	11.1	10.8	7.5	9.5	9.1
Korea	1.59	1.61	2.24	2.04	1.91	3.05	28.7	31.5	33.9	30.5	32.6	37.0
Taiwan	2.14	1.78	1.84	3.11	2.49	2.65	19.0	20.3	20.3	21.2	21.8	22.0
China	1.74	1.86	2.18	1.24	1.54	2.05	29.1	34.6	36.0	47.4	56.0	57.9
ASEAN5	0.23	0.08	0.85	-0.29	-0.35	1.08	6.8	9.2	10.4	17.6	21.8	24.5
APEC	0.71	0.64	0.88	0.89	0.78	1.19	14.1	16.2	17.1	19.5	22.4	23.9
EU	-0.07	0.18	0.45	-0.06	0.31	0.86	-1.8	0.7	11.8	-2.5	0.8	12.9
Rest of OECD	0.16	0.47	0.61	0.23	0.76	1.10	-1.7	-1.6	3.6	-2.9	-2.6	2.9
Rest of the World	-0.21	0.01	-0.17	-0.31	0.14	-0.51	-2.9	-0.7	16.5	-3.5	-1.0	30.9
Total	0.33	0.41	0.58	0.41	0.54	0.77	7.2	9.2	15.1	10.2	13.0	22.3

Table 3--Trade average protection rate faced by each region's exports, post UR and NAFTA

	Merchandise average			Agricultural products			Non-agricultural products		
	APEC	Non-APEC	World	APEC	Non-APEC	World	APEC	Non-APEC	World
<i>Percent</i>									
United States	9.28	7.53	8.47	60.57	20.80	43.57	4.68	9.32	6.66
Canada	2.64	6.52	3.23	28.09	15.26	24.06	0.80	5.86	1.41
Mexico	3.95	4.94	4.13	32.79	31.63	32.66	2.16	6.22	2.76
Japan	16.32	14.99	15.86	22.89	25.32	23.44	17.69	17.12	17.49
Australia	16.20	8.42	13.77	57.48	17.00	43.83	3.72	6.40	4.55
Korea	11.42	17.45	13.39	32.14	19.07	29.73	12.32	19.05	14.59
Taiwan	15.71	7.87	13.78	82.67	16.15	79.23	13.81	8.65	12.53
China	12.34	10.96	11.76	59.31	19.51	43.10	9.92	13.76	11.43
ASEAN 5	7.52	12.57	9.40	32.75	27.18	30.12	5.68	13.39	8.23
European Union	7.62	9.77	8.89	30.73	25.25	27.07	9.26	11.27	10.49
Rest of OECD	7.82	3.72	4.55	36.99	31.73	33.47	6.97	3.31	4.03
Rest of World	6.42	7.08	6.77	32.17	32.93	32.67	4.96	3.54	4.23

Data source: Calculated from the 1992 multi-regional SAM estimated by the author from version 3 GTAP database (Hertel, 1997). The import protection rates for the food and agricultural sectors in China and South Asia were negative in version 3 GTAP. They reflected government consumer price subsidies on living necessities in those countries. We eliminated all negative protections and treated them as consumer price subsidies in the global SAM. Protection rates for food and agricultural sectors in China and South Asia are based on an earlier version of the GTAP database except China's crop sectors, which are tariff equivalence of non-tariff barriers based on Zhang, et al., 1997.

apparel and light manufacturing sectors would decline by about the same percentage in 2010 and 2020 under all three options.

- *U.S. farm prices and incomes would rise.* U.S. farm prices would rise under all three options in both

2010 and 2020. U.S. farm income also rises because of both higher prices and more efficient use of production resources (fig. 6).

Figure 5
The U.S. economy: Changes in production

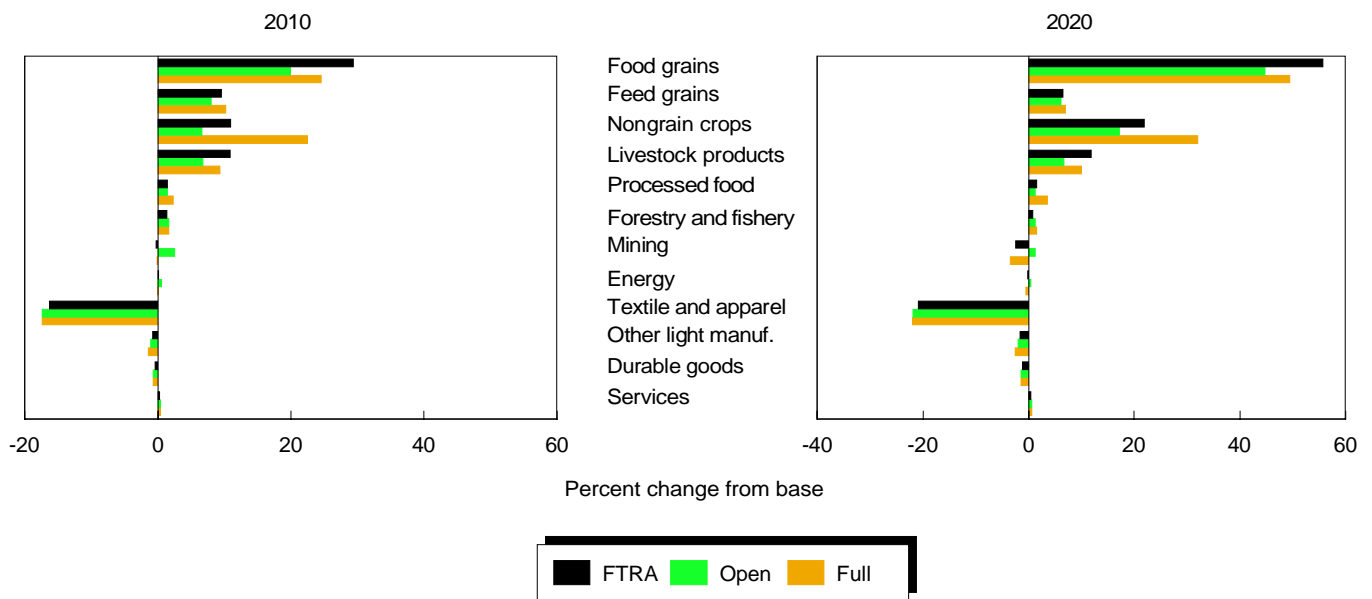
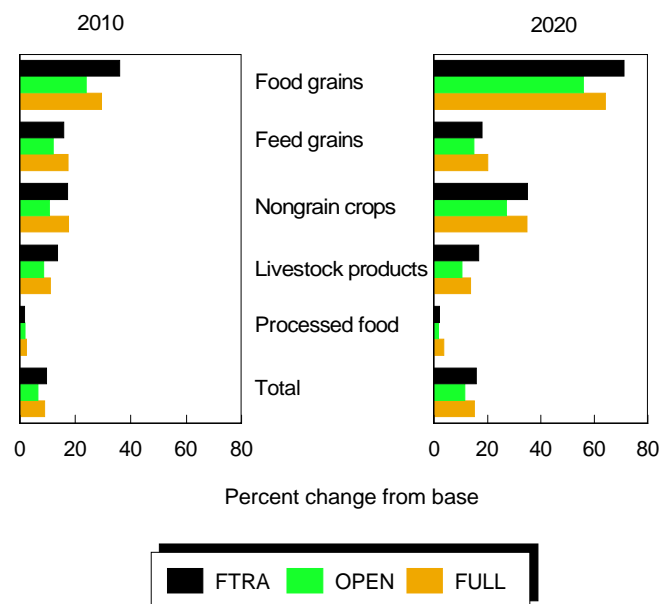


Table 4--Impact of alternative scenarios on APEC trade liberalization on structure of U.S. economy

	Real consumption						Production					
	2010			2020			2010			2020		
	FTRA	OPEN	FULL	FTRA	OPEN	FULL	FTRA	OPEN	FULL	FTRA	OPEN	FULL
	<i>Percent change from base scenario</i>											
Food grains	0.00	0.00	0.00	-0.73	-0.73	-0.73	29.4	20.0	24.6	55.8	44.8	49.5
Feed grains	0.00	0.00	0.00	0.00	0.00	0.00	9.8	8.1	10.3	6.6	6.2	7.1
Non-grain crops	0.20	0.61	0.54	0.03	0.43	0.37	11.0	6.7	22.6	22.0	17.3	32.1
Livestock products	-0.08	-0.03	-0.05	-0.15	-0.10	-0.11	10.9	6.8	9.4	11.9	6.8	10.1
Processed food	0.05	0.12	0.15	0.09	0.16	0.22	1.5	1.5	2.4	1.6	1.3	3.6
Agriculture	0.03	0.12	0.13	0.02	0.11	0.14	7.0	4.7	8.1	9.7	6.9	11.1
Forestry and fishery	0.21	0.15	0.29	0.59	0.43	0.69	1.4	1.7	1.7	0.9	1.3	1.6
Mining	0.00	0.00	0.00	0.00	0.00	0.00	-0.2	2.6	-0.1	-2.4	1.3	-3.4
Energy	0.05	-0.18	0.11	0.45	0.05	0.69	0.2	0.6	0.1	-0.1	0.5	-0.5
Textile and apparel	5.20	5.77	5.99	7.70	8.30	8.82	-16.2	-17.3	-17.3	-20.9	-21.9	-22.0
Other light manufactures	0.71	0.75	0.93	1.34	1.30	1.66	-0.8	-1.1	-1.4	-1.6	-2.0	-2.5
Durable goods	0.29	0.24	0.34	0.56	0.45	0.66	-0.6	-0.7	-0.7	-1.2	-1.4	-1.4
Services	-0.06	-0.19	-0.09	0.17	-0.02	0.15	0.3	0.5	0.5	0.5	0.7	0.7
Total	0.17	0.09	0.19	0.45	0.31	0.51	0.2	0.2	0.3	0.2	0.1	0.3

Figure 6
The U.S. economy: Changes in farm income



Conclusions

It may be too early to assess APEC’s bold free-trade plan because of its distant target dates and uncertain implementation. However, the plan could give APEC a

much more visible role in encouraging future regional integration across the Pacific Rim.

All three options raise global and U.S. welfare above baseline levels. The multilateral option is the best from both a global and a U.S. perspective. The open regionalism approach is second best for global welfare, but the least attractive for the United States. However, the differences in welfare gains for the United States from the three options are not large. The impacts of the three options on U.S. agriculture also vary, but by little.

Ironically, the economically least attractive option for the United States, open regionalism, may be the best choice when both economics and politics are considered. Economically, it provides benefits not much less than the other two options and the adjustment cost to the U.S. economy is almost the same. Politically, open regionalism has the advantage of being nondiscriminatory with regard to non-APEC members. It is a more acceptable, less threatening option from the perspective of the non-APEC world. It also has the advantage of being an agreement among only 21 parties, not 132 as would be the case for multilateral liberalization under the auspices of the WTO.

Table 5--Impact of alternative scenarios in APEC trade liberalization on U.S. food and agricultural trade

	Real exports						Real imports					
	2010			2020			2010			2020		
	FTRA	OPEN	FULL	FTRA	OPEN	FULL	FTRA	OPEN	FULL	FTRA	OPEN	FULL
	<i>Percent change from base scenario</i>											
Food grains	46.3	31.2	36.2	76.1	61.2	67.1	6.9	5.3	6.0	20.7	17.5	19.3
Feed grains	11.3	15.2	25.8	-2.3	6.1	9.9	-2.7	-12.8	-9.2	5.7	-10.3	-7.1
Non-grain crops	43.0	41.0	53.6	57.1	52.3	61.8	44.7	72.5	76.6	59.6	83.4	91.5
Livestock products	93.2	66.2	76.7	78.8	50.4	61.8	9.8	28.3	24.7	12.8	30.5	26.1
Processed food	9.5	11.5	17.2	9.9	9.5	24.5	6.1	6.7	11.4	12.4	11.9	18.3
Agriculture	39.5	33.6	42.9	44.2	37.0	47.3	19.3	32.4	35.1	27.1	37.7	42.2
Forestry and fishery	12.3	15.5	16.5	10.1	14.3	17.2	1.4	1.6	2.8	2.9	2.6	4.0
Mining	2.5	11.3	5.8	-1.0	10.0	2.9	2.0	-1.0	3.2	3.9	-0.1	7.3
Energy	4.4	11.1	8.5	2.1	10.1	4.7	1.9	-1.1	3.3	4.5	0.1	8.6
Textile and apparel	11.3	15.6	19.9	1.5	5.0	13.1	39.9	44.1	45.6	47.4	51.1	53.9
Other light manufactures	-0.2	0.0	-3.0	-4.8	-4.9	-9.9	9.2	10.9	12.1	13.4	14.9	17.1
Durable goods	9.8	12.4	12.3	6.3	8.4	8.3	13.4	16.2	16.9	14.9	17.1	18.8
Services	1.4	7.0	3.2	-2.2	4.9	-0.2	0.4	-3.6	-0.8	3.2	-2.1	1.5
Total	11.0	13.4	13.6	10.0	11.8	12.2	12.8	14.5	16.1	15.2	16.0	18.9

A key point is that the open regionalism scenario assumes that the rest of the world does not offer reciprocal reforms. In reality, as APEC pursues a course of open regionalism, the rest of the world would likely not stand still and “free ride,” given the widespread interest of many countries to participate more fully in global markets. According to the simulation results, non-APEC economies would be unable to take advantage of free access to the APEC region because the remaining distortions in their own markets would act as a tax, limiting production efficiency and reducing exports. Non-APEC economies would have an incentive to follow the lead of APEC in liberalizing their own markets so as to remain competitive with the APEC economies. Therefore, the United States might be better off under open regionalism than our results indicate, depending on the policy response from the non-APEC world. This analysis suggests that APEC’s open regionalism could very well be a vehicle for promoting not only regional but also global trade liberalization.

Finally, the results also point out the critical role of agricultural policy reforms to the overall gains in welfare in the APEC region, particularly for the United States. Without liberalization in the region’s agriculture, the United States would have much less incentive to participate in APEC’s overall liberalization program.

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Enlargement of the European Union to Central and Eastern Europe: Obstacles and Possible Consequences of Policy Harmonization

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Abstract

Ten Central and Eastern European countries (CEEC) have applied for membership in the European Union (EU). This chapter analyzes three factors that are expected to influence how EU farm programs will evolve as the EU expands. First, the wide disparities between EU and CEEC agriculture, in terms of institutions, policies, and productivity mean that considerable restructuring will have to occur if integration is to be successful. Second, farm subsidies under the current CAP are likely to be unsustainable as membership expands, creating budget pressures for CAP reform. And, the direction set by the Uruguay Round of the WTO, committing members to more transparent and less trade-distorting farm supports, is also likely to influence the evolution of farm programs in an extended EU. Analysis of the effects of EU expansion under the current program show a likely reduction of the agricultural trade of third countries, including the United States, with the CEE countries. CAP reforms will reduce that trade-diverting impact.

Introduction

Ten Central and Eastern European (CEE) countries¹ have applied for membership in the European Union (EU), which is one of the largest regional trade agreements (RTA). The EU has a single market with no internal agricultural trade barriers and a Common Agricultural Policy (CAP). This prospective enlargement of the European Union to Central and Eastern

Europe could add as many as 100 million new consumers to the EU market and double the number of farmers under the EU subsidy scheme. Since the fall of central planning, most of the CEE's have not had the means to support or insulate their markets to the extent that the EU does. Maintaining current EU agricultural support levels in an enlarged EU could have profound effects on both EU/CEE trade and global (and consequently U.S.) trade.

Here, we discuss three facets of the EU's enlargement. First, we discuss the preparations that the EU and CEE countries have been making toward the anticipated enlargement, and some of the difficulties that they may

¹Poland, Hungary, Czech Republic, Slovakia, Estonia, Latvia, Lithuania, Slovenia, Romania, and Bulgaria.

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face in harmonizing their policies. Second, we describe internal pressures to reform the CAP as the EU expands. Third, we focus on how the World Trade Organization (WTO) monitors the expansion of RTA's and how WTO regulations could limit the increase in trade barriers in the minimally protectionist CEE countries. Last, we provide some quantitative analysis of various EU policy options for enlargement.

Preparations for Enlargement

Since 1993, the EU has been functioning as a single market, with no impediments to the internal movement of goods, services, capital, and people. Regional integration of the CEE countries into the EU is expected to include a harmonization of their domestic farm policies. When the EU admitted the members of the European Free Trade Area (EFTA—Austria, Finland, and Sweden) in 1995, they adopted EU agricultural policies immediately. This differs greatly from the 10-year transition period granted to Spain and Portugal in their 1986 accession to the EU. The EU has yet to decide whether there will be a transition period for the CEE enlargement, though Franz Fischler, European Agricultural Commissioner, recently expressed the possibility of a 3-year phase-in period for compensatory payments, a component of support to EU farmers. Whether the CEE's meet the European Monetary Union's convergence criteria and when to adopt the the Euro currency has also yet to be determined.

By adopting the EU's Common Agricultural Policy (CAP), the CEE countries—which have not had the financial means to provide much financial support to farmers—will become part of a highly protectionist customs union that generously supports its farmers. The CEE countries will benefit from unrestricted access to EU markets, higher prices, and financial support for farmers.

Since implementing the CAP in 1962, the EU has provided a high level of support to farmers. The EU implemented highly protectionist policies to ensure

high internal prices. For example, before implementation of the CAP, the EU was a net importer of wheat. Now it is of the world's larger exporters. Because of high price supports and import protection, internal EU markets have maintained prices above world levels. This has encouraged input-intensive farming that has resulted in high yields. Presently, the EU has some of the highest wheat yields in the world.

However, the CAP has been costly to maintain. Government spending to support agriculture is high. EU consumers support farmers through their taxes, as well as through food prices that are higher than in more market-oriented economies, like the United States.

The situation in the CEE's (post-central planning) is far different. Incomes are far lower than in the EU. Except for Slovenia, the governments cannot afford to support agriculture as the EU has in the past. Many of the CEE countries have huge agricultural sectors that despite the advances of recent years, are generally less developed than those of the EU.

With completely open borders between EU and CEE countries, the CEE agro-food sector may find it difficult to compete with Western European firms, particularly the food processing industry. Some CEE food processors have modernized sufficiently to meet EU product standards, but for most of the CEE food industry, considerable investment is still needed. Among raw agricultural products, many meat and dairy products will have difficulty competing in the EU market as they do not yet meet EU quality standards.

CEE agricultural sectors will need considerable restructuring for successful integration into the EU. The CEE's need to improve farm productivity, complete the privatization of state farms and agro-industry, simplify their government purchasing and market management practices, increase training in agribusiness and quality control, and implement programs that encourage rural development and structural adjustment.

Agencies created in the Visegrad countries² (Poland's Agency for Agricultural Markets, for example), Romania, and Bulgaria to administer minimum prices, export subsidies, or other measures often operate in a nontransparent way, leading to questions concerning these countries' compliance with World Trade Organization (WTO) regulations on state trading. State policies in Bulgaria and Romania cause significant distortions in their domestic markets. Procurement of bulk commodities is still mainly in the hands of state-owned companies that use their market power to hold down prices. In addition, these governments continue to exert some control over retail prices through limits on processing margins.

The CEE countries will likely be required to adopt all EU legislation immediately upon becoming EU members. This involves setting up structures necessary to make the legislation effective. This alignment of policies requires the CEE's to make adjustments beyond those required by their transition to market economies. In the agricultural sector, these measures will affect the movement of live animals, meat and meat products, fruits, vegetables, and plants, and a wide range of activities in the farming, production, and processing industries. The CEE countries will have to meet EU labeling requirements and quality standards, including veterinary, sanitary, and phytosanitary standards. Restrictions on trade between the current EU-15 and its trading partners will then also apply to imports into the new member countries. This could present problems for U.S. access to CEE-10 countries, particularly for livestock products. Currently, the EU bans the importation of U.S. poultry meat and beef treated with growth hormones. Until these bans are revoked, they will also apply to imports into any CEE country once they join the EU.

The EU has taken a multipronged approach in its preparations for enlargement. It has funded an extensive program of technical assistance for the CEE

region, designing projects to improve agricultural structures and market mechanisms, food production, processing and distribution, and infrastructure. The EU has proposed funds to provide cheap loans, secure loan guarantees, and develop equity participation programs in the CEE countries. The 10 prospective member countries have also signed Association Agreements (Europe Agreements) with the EU. The Europe Agreements provide a framework for preparing the CEE countries for eventual membership, allowing them time to continue their economic and political reforms (see box).

Internal Pressures for Reform

Applying the CAP mechanisms to CEE countries would be very costly to the EU. Extending the generous benefits currently provided to EU producers would significantly increase EU agricultural spending. It would also stimulate CEE agricultural production and raise prices in the CEE countries, increasing their reliance on export subsidies. The EU is already close to meeting its WTO commitments on the permitted volume and value of export subsidies. If the CEE's need to subsidize the exports of many of their commodities, they would certainly exceed their export subsidy constraints. For both of these reasons, the EU has proposed the Agenda 2000 reforms, further reducing price support to farmers (reducing the need for export subsidies) and expanding upon the EU agricultural reforms undertaken in 1992. The United States views the impending reforms as an opportunity for the EU to further liberalize its agricultural policies, building on the accomplishments of the Uruguay Round agreements.

Of the 10 prospective members, 5 have been selected to begin negotiating their accession to the EU—Poland, Hungary, Czech Republic, Estonia, and Slovenia. If the EU were to admit these first-tier countries under the current CAP, agricultural production in those countries could increase dramatically. Currently, due to government policies and poor quality of

²Poland, Hungary, the Czech Republic, and Slovakia.

Europe Agreements

Ten CEE countries—Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia—have signed Association Agreements (Europe Agreements) with the EU and have applied for membership in the EU. EU enlargement is likely to occur in a number of stages, with the Czech Republic, Estonia, Hungary, Poland, and Slovenia invited to join first. The Europe Agreements form the basis for gradual integration of CEE countries with the EU. The agreements cover five main areas: political dialogue, economic cooperation, financial assistance, adoption of EU legislation, and trade liberalization. The first agreements were signed with Poland, Hungary, and Czechoslovakia in 1991, with mutual trade provisions taking effect the following year and the entire agreements taking effect in 1994.

The bilateral trade and cooperation provisions of the Europe Agreements call for most-favored nation (MFN) treatment and gradual elimination of selective quantitative restrictions over a 10-year period, beginning when the agreements go into effect. Separate protocols cover “sensitive sectors,” including agricultural products, clothing, textiles, coal, and steel. For agricultural products, most concessions are phased in within 5 years and involve tariff reductions and quota increases. For example, beef, pork, mutton, poultry, and dairy products are subject to a 20-percent tariff reduction over 3 years, while import quotas will increase 10 percent per year for 5 years. However, trade in some commodity groups, such as grains, has not been liberalized.

The two-way preferences were structured to accelerate liberalization for CEE exports to the EU. Despite this, EU exports to the CEE have far outstripped trade in the opposite direction. In the first years of the agreements, lack of information and lack of familiarity with EU procedures prevented the CEE countries from fully utilizing their allotted quotas. The EU’s quarterly administration of preferential quotas, which hinders full utilization of annual quotas where seasonal commodities are concerned, also limited CEE exports. Finally, the method of administering tariff-rate quotas places CEE countries at a disadvantage—the quotas were allocated to EU importers rather than CEE exporters.

production, prices of agricultural commodities in the Central and Eastern European countries are at, or in many cases, below world prices. At the same time, the CAP supports producer prices for most commodities well above world prices. By adopting the CAP, CEE farmers would experience large price increases for most commodities, making them more profitable. Price differences are the greatest in the livestock sector due to high EU support and poor quality in the CEE’s. Additionally, CEE yields lag far behind EU yields because farmers cannot afford to purchase hybrid seed or apply much fertilizer. As prices rise, farmers will have the incentive to increase production and will have the means to purchase higher quality inputs to ensure higher quality crops. CEE crop quality will need to increase to meet the CAP’s minimum quality requirements for government intervention purchases.

WTO Reduces EU’s Ability To Protect Agriculture

Though the enlargement of the EU is being negotiated between the current EU-15 members and the 10 potential CEE members, the rules of the World Trade Organization will influence the negotiations. The WTO provides a framework for the long-term reform of agricultural trade and domestic policies. The expansion of an RTA is governed by Article XXIV of the GATT. Since the EU is a member of the WTO, it must comply with WTO rules. According to Article XXIV of the GATT, (1) members’ external trade barriers must not increase from levels prior to the formation of the RTA; (2) substantially all internal trade must be covered; (3) the RTA must be implemented in a reasonable amount of time, normally 10 years; and (4) all RTA’s must be reported to the WTO to determine whether these conditions are met (for more on Article XXIV, see the article by Sheffield). The WTO member countries and the Committee on Regional Trade Agreements will closely monitor EU expansion.

The WTO’s Uruguay Round Agreement on Agriculture (URAA) also constrains EU expansion. The URAA,

which took effect in 1995, established limits on export subsidies and domestic support, and set requirements for market access for all members of the WTO. Of the 10 countries that have applied to become EU members, only the 3 Baltic countries (Estonia, Latvia, and Lithuania) are not yet members of the WTO, though they have observer status and seek to become members soon. By the time enlargement occurs, all 10 countries should be members of the WTO. Therefore, they will all have established WTO limits on their use of export subsidies, domestic support, and market access, which should help the WTO and other interested parties make sure that trade barriers to the region are not increased upon EU membership.

Agricultural policy reform is inevitable for the EU, regardless of whether it expands or not. The EU is already close to, at, or over some of its WTO limits for subsidized exports (which will continue to decrease until they reach their final levels in 2000). With enlargement, the WTO limits will play an even larger role. When the EFTA countries joined the EU in 1995, the EU and EFTA countries' WTO commitments were aggregated, netting out all intra-trade between the acceding countries and the EU. It is likely that the United States, and some of the other WTO member countries, will not settle for anything less than that in the upcoming round(s) of EU enlargement. If so, an enlarged EU's WTO export subsidy commitments could be lower than they currently are in the individual countries, benefiting the United States and other agricultural exporters. However, as in the EFTA enlargement, the adoption of EU border measures will likely result in some tariff increases for the CEE's, resulting in some compensation negotiations (under Article XXIV).

How the enlarged EU will meet its WTO subsidized export and minimum import commitments has become clearer since the EU released its revised Agenda 2000 policy proposal package in March 1998. The EU is proposing a cut in support prices for beef (30 percent), dairy products (15 percent), and grains (20 percent). Oilseeds, which receive no support price, will receive

the same compensatory payments as grains (which are lower than those currently in place for oilseeds), resulting in a decline in support to oilseed producers. The EU Commission believes that these price cuts will keep the EU within the bounds of their WTO subsidized-export limits. However, the Agenda 2000 proposals have not been widely embraced by the EU member countries, who ultimately will have to vote whether to adopt the reforms or not. Thus, it is likely that the agricultural policies adopted in the year 2000 could be quite different from the March 1998 Agenda 2000 proposals.

Analysis of Enlargement

Despite much uncertainty as to how the CEE and EU economies may change in the coming decade, some insights into the likely impacts of enlargement can be gained by analyzing some possible outcomes. Our analysis complements the analysis of Liapis and Tsigas (in this report), in that our model has greater agricultural policy detail, provides more detailed results for the agricultural sector, and can analyze differences among the CEE countries, while the Liapis and Tsigas model includes all sectors of the economy, maintains budget constraints, and can measure welfare impacts.

Two different scenarios were analyzed for this study: one where EU policies remain as they are today, and one in which the CAP is fully liberalized. It is likely that actual EU reforms will fall somewhere between these two scenarios. This can be seen in the Agenda 2000 proposals, though it is possible that the EU will need to undertake further agricultural reform prior to enlargement. In both scenarios, we analyze the impact of Poland, Hungary, and the Czech Republic—the three first-tier countries with the largest agricultural sectors—joining the EU. The two other first-tier countries—Slovenia and Estonia—combined produce less than 5 percent of agricultural production in the large first-tier countries.

Current CAP Would Create CEE Livestock Surplus

We assume that the three CEE countries join the EU in 2002 under the current CAP. As in the official USDA baseline projections³ for the EU, the set-aside rate for the CEE's is fixed at 10 percent of arable land. We assumed that the CEE countries would be subject to the EU dairy quota. We fixed the quota at USDA's projected milk production for each of the CEE countries in 2001. The dairy quota also constrains CEE beef production as more than half of the beef produced is a product of the dairy herd. We assume that the EU would not increase intervention purchases and accumulate stocks beyond the historical average—accumulation of intervention stocks is viewed as a short-term strategy for dealing with excess supplies.

We also assumed that the CEE's will receive compensatory payments, set at their current levels and adjusted for inflation. This assumption is subject to some debate. It is possible that upon joining the EU, the CEE producers will be eligible for intervention and export subsidies, but will not receive compensatory payments. These payments were designed to compensate producers for price declines, such as those experienced by EU producers during the 1993-95 support price declines under the 1992 CAP reform and by producers in Austria, Finland, and Sweden upon joining the EU in 1995. However, CEE producers are unlikely to experience price declines upon application of CAP provisions. Yet, some in the EU argue that providing direct aid to farmers in only some member states would violate the EU principle of "cohesion" and exclude CEE's from one of the main income support instruments of the CAP.

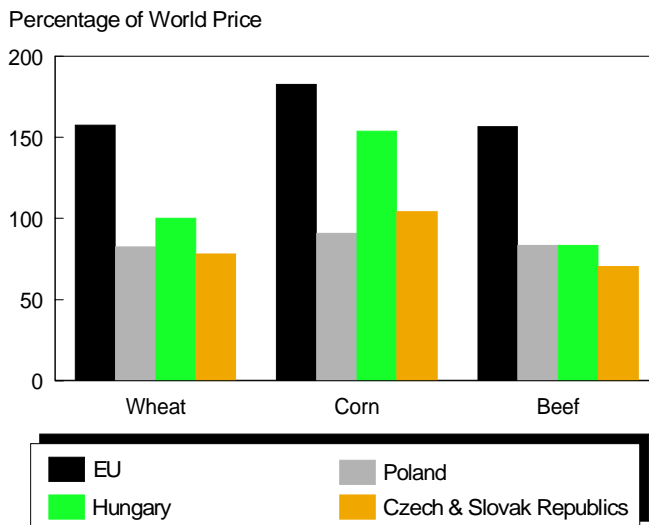
According to our results, under the current CAP, the largest increases in CEE production would take

place in the livestock sector, where pre-accession price differences are the greatest (figs. 1 and 2). Consequently, demand for feed grains would increase in the CEE's as well, particularly for wheat. Grain production in an EU-18 (the current EU-15 plus the Czech Republic, Hungary, and Poland) is expected to decline slightly (less than 1 percent) due to the adoption of the land set-aside by the CEE countries (fig. 3). At the same time, grain consumption (for feed use) is expected to increase by about 2 percent. The EU-18 would continue to be a major wheat exporter since we assume that the EU will be able to export wheat without subsidy by the time the CEE's join. However, due to the expansion of the livestock sector, the enlarged EU would need to increase its imports of other feedgrains such as corn.

We estimate that U.S. wheat exports would decline by about 1 million tons as increased EU-18 production would depress world prices, dampening U.S. production while stimulating consumption. However, we estimate that U.S. corn exports would increase by about 1.5 million tons due to the increase in EU demand.

If the CEE's adopt EU prices, CEE meat consumption would decrease by about 13 percent. Due to the large

Figure 1
Price comparisons for major commodities



³The official USDA projections for EU agricultural production, consumption, and trade for the period 1998-2007. See USDA, "USDA Agricultural Baseline Projections to 2007." Staff Report WAOB-1.

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Figure 2
Potential changes in meat production, consumption, and net surplus

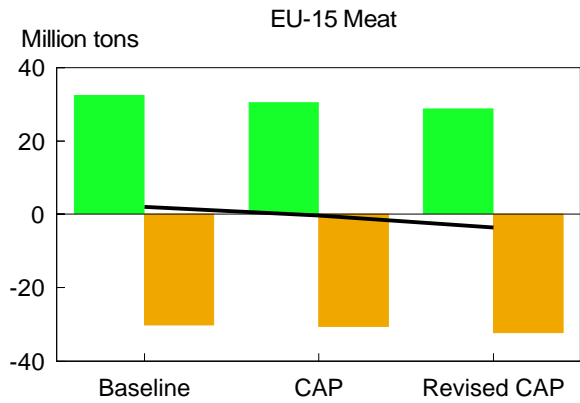
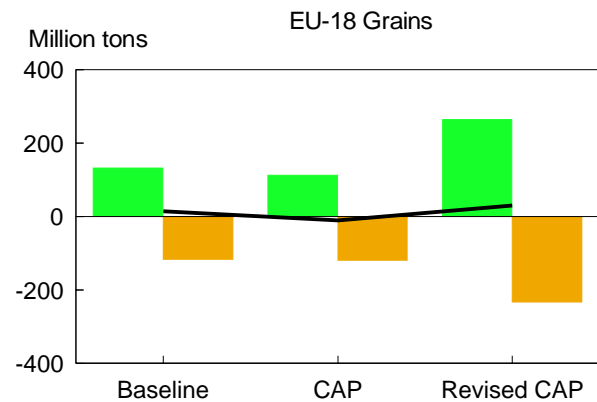
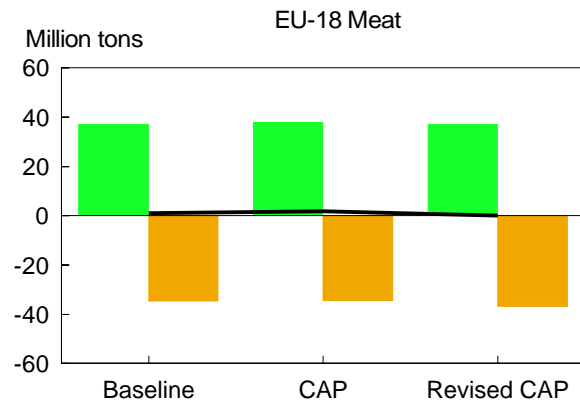
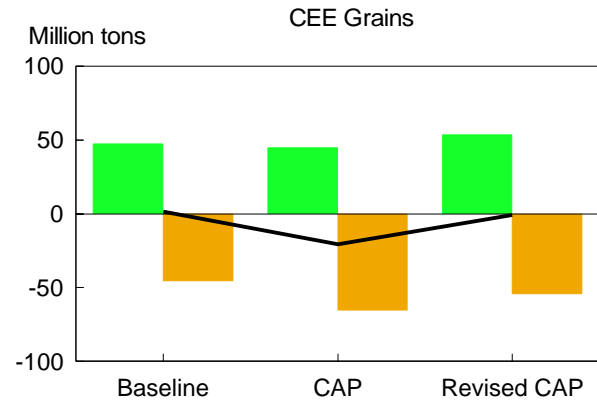
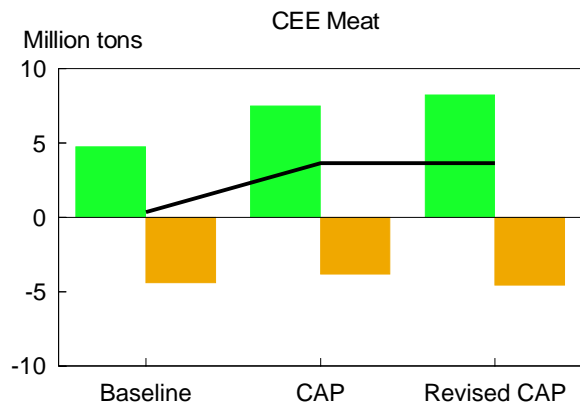
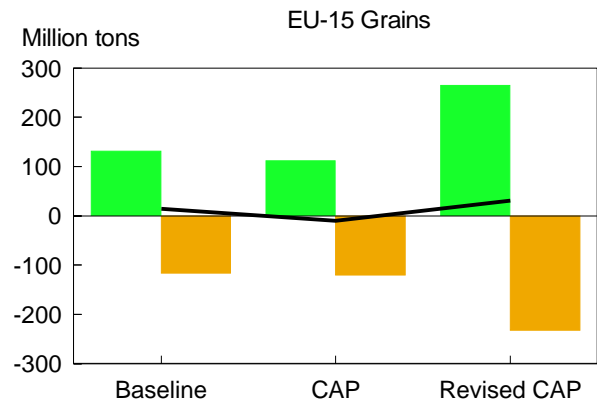


Figure 3
Potential changes in grain production, consumption, and net surplus



Production Consumption Net surplus

Production Consumption Net surplus

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surplus in CEE livestock production and the current EU-15 meat surpluses, internal EU livestock prices will fall. Thus, we find that while production increases in the new CEE member states, EU-15 livestock production declines by 6 percent annually. At the same time, the decline in EU livestock prices will increase EU-15 meat consumption slightly (1 percent annually). The net impact for the EU-18 would be an increase in livestock production of 2 percent and a decline in consumption of about 1 percent. This would result in surplus meat production of about 4 million tons (compared with a deficit of about 2 million tons presently). The bulk of the surplus would consist of poultry, followed by pork. Because of WTO constraints on subsidized exports, it is likely that the enlarged EU will be unable to export all of the excess meat onto the world market, with little impact on third-country livestock markets (including the United States).

World Price Scenario: CEE Livestock Growth Dampened, Grains Increase

In our second scenario, we estimated the impact of first-tier enlargement in the absence of the CAP. We assume that the EU will abolish the set-aside requirements (as proposed under Agenda 2000), that there will be no internal EU price supports, and that the EU will move to world prices for all commodities. We also assume that EU farmers will not receive compensatory payments, including producer payments for oilseeds. The EU may continue to support farmers, but we assume that the support will be completely decoupled from production, that is, support payments will not affect farmers' planting decisions.

By adopting world market prices, prices for EU farmers fall to world levels and CEE prices increase in most sectors, but not to the same extent as they do under the current CAP scenario. Consequently, production gains should be smaller than in the current CAP scenario except in the arable crops sector, where elimination of the set-aside requirement will increase

planted area. Additionally, the EU would no longer be constrained by WTO limits on subsidized exports because they would be producing at world prices.

With the elimination of the CAP, CEE livestock production gains would be less than under the CAP scenario, as CEE price increases would not be as large as when adopting EU prices. Consequently, feed demand would increase less dramatically than under the CAP scenario. At the same time, EU-15 livestock production would decline (and consumption would increase) as EU-15 farmers face lower prices. Overall, our results suggest that as EU-15 and CEE prices converge, livestock production will shift from the former to the latter. The EU-18 would become a net importer of beef, but would have slightly larger exportable surpluses of pork and poultry than ERS projections under current policies suggest. There would be very little impact on U.S. livestock exports because EU-18 trade would change only minimally.

Elimination of the set-aside would raise arable crop production in both the CEE countries and the EU. If the CAP reforms according to this scenario, the enlarged EU could increase wheat exports by nearly 15 million tons. Coarse grain production in the CEE countries is not expected to change, while EU-15 coarse grain production is expected to increase by about 5 million tons, or just more than 5 percent. As the price of grain falls in the EU-18, consumption is expected to increase, particularly in the CEE region due to an increase in grain feeding at the expense of meals. Thus, we do not anticipate any increase in coarse grain exports from the EU-18. In fact, the EU-18 will still need to rely on corn imports.

World wheat prices are projected to decline due to the large expansion of EU-18 wheat exports. Consequently, U.S. wheat exports are projected to decline about 3.5 million tons per year. At the same time, we estimate that the U.S. corn sector could increase its corn exports by about 1.4 million tons per year, though our model is not capable of specifying whether the exports would go to the EU-18. In 1997,

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Table 1--Agriculture's contribution to CEE's and EU-15

	Population	% pop. in ag.	Ag. exports	Ag. imports
EU-15	372,810,000	47.1	\$199,301,500,000	\$201,893,500,000
Czech Republic	10,250,000	10.7	\$1,223,057,000	\$2,184,816,000
Slovakia	5,400,000	11.5	\$417,387,000	\$844,261,000
Hungary	10,200,000	13.5	\$2,679,324,000	\$964,974,000
Poland	38,500,000	22.7	\$2,555,773,000	\$4,013,152,000
Estonia	1,500,000	13.1	\$334,866,000	\$736,177,000
Latvia	2,600,000	13.2	\$115,929,000	\$299,716,000
Lithuania	3,800,000	17.4	\$489,650,000	\$323,299,000
Bulgaria	8,468,000	10.2	\$892,666,000	\$438,342,000
Romania	23,000,000	15.9	\$711,457,000	\$940,346,000
Slovenia	2,000,000	3.8	\$365,281,000	\$831,594,000

the United States exported nearly 1.5 million tons of corn to the EU-18 countries.

Our analysis focused on bulk commodities. However, prospects for U.S. agricultural exports to CEE countries as they integrate with the EU are favorable in the near term, particularly for high-value products. Rising income growth resulting from EU membership should increase overall demand for agricultural products, and U.S. exports could rise as total exports to the CEE region expand. U.S. exports of oilseeds, oilseed products, and some feeds may benefit as the CEE livestock sector expands. An expanding and modernizing farm sector may also raise demand for U.S. agricultural inputs.

Conclusions

As a customs union, the EU favors the importation of products from member countries over those from third countries. However, EU expansion will be closely watched by members of the WTO to make sure that it complies with WTO rules.

Much work remains before EU expansion can take place. CEE agricultural sectors will need to restructure for successful integration into the EU. Quality discrepancies between EU and CEE agricultural products could be problematic for the CEE's. Significant investment is still needed to improve farm productivity, complete the privatization of state farms and agro-industry, simplify government purchasing and market management practices, increase training in agribusiness and quality control, and implement programs that encourage rural development and structural adjustment. Further institutional reform will also be needed before EU integration is feasible. Because the EU has been functioning as a single market since 1992, the CEE countries will have to harmonize all of their legislation with that of the EU.

Within an enlarged EU, the absence of trade barriers between existing and new members will likely lead to trade creation among members. For countries outside the EU, including the United States, trade with the CEE countries will likely diminish after accession as new members adopt the CAP, including veterinary,

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sanitary, and phytosanitary standards, and the EU's border protection, that is, tariff rates. Bans on meat will now apply to new members, effectively blocking nonmember access to the EU market. However, all news may not be bad. EU integration will likely improve the economic situation of the CEE's and increase overall purchasing power to a level where the CEE's may import more than they would otherwise.

External and internal changes are pressuring the EU to modify the protectionist policies of the CAP. Unlike Austria, Finland, and Sweden, which entered the EU as net contributors, the CEE countries will most likely

be net recipients, at least initially. The EU must modify the CAP to accommodate the budgetary impact of bringing in several large agriculture-producing countries and to meet its Uruguay Round/WTO commitments. The most recent EU reform proposal, Agenda 2000, reduces price support and increases direct payments to producers. Externally, the URAA requires all WTO members to reduce export subsidies and domestic support and to increase import access over a 5-year period (1995-2000). This multilateral agreement effectively constrains the EU's ability to lend limitless support to its agricultural sector, despite a potential increase in the size of the EU.

Western Hemisphere Trading Blocs and Tariff Barriers for U.S. Agricultural Exports

James V. Stout and Julieta Ugaz-Pereda

Abstract

We examine the tariff structure of recent western hemisphere trade agreements which have excluded the United States, and discuss how they may be favorable or unfavorable to third-country agricultural exporters such as the United States. The MERCOSUR agreement, which includes the two largest economies in South America, namely Brazil and Argentina, has introduced the most favorable trade regime vis-a-vis third-country agricultural exporters of any of the agreements examined. The other agreements examined—the Andean Pact, the Central American Common Market (CACM), and Chile’s numerous Economic Complementarity Agreements—are more problematic for third-country exporters. The Andean Pact and the CACM have adopted common external tariffs with escalating tariffs in agriculture. Chile’s numerous bilateral agreements give preference to U.S. competitors in the Chilean market.

Introduction

In recent years, a considerable number of regional trade agreements (RTA’s) that do not include the United States have been established in Central and South America: Mercado Comun del Sur (MERCOSUR), the Andean Pact, the Central America Common Market (CACM), the Caribbean Common Market (CARICOM) and the G-3 agreement among Venezuela, Colombia, and Mexico. In addition, Chile has established its own agreement with MERCOSUR, as well as a long list of other bilateral agreements. In fact, every major country in Central and South America is a party to at least one regional or bilateral trade agreement (see map on following page).

Agriculture has often been a particularly sensitive area of negotiation in these agreements, and there is some concern that disadvantages to third-country agricultural exporters such as the United States have been intentionally or unintentionally introduced by these agreements.

In a free trade area, preferential tariffs are granted to members of the agreement and tariffs on third-country exports remain unchanged. Free trade areas offer few potential benefits for outside countries and are disadvantageous in several respects. The most fundamental concern of third-country exporters is that they face stiffer competition with suppliers from within the bloc whose exports now enjoy a preferential tariff rate, which forces price reductions and/or sales reductions (trade diversion). Formation of a free trade area allows

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Main RTA's in the Western Hemisphere



member countries to keep tariffs high for third-country exporters; in a free trade area there is no need for negotiation and compromise around a common external tariff (CET) as in a customs union.

When one country is simultaneously a member of several free trade areas, this raises additional concerns. Transshipment schemes may be set up to circumvent additional tariffs to the further disadvantage of third-country exports. Of course, rules of origin that establish the conditions under which products are to be eligible for free trade help reduce the impact of this effect, but the documentation requirements that accompany the rules of origin regulations also introduce a new set of transaction costs that must be borne by all exporters.

Customs unions tend to be less disadvantageous for third-country exporters. Customs unions grant preferential tariffs to members of the agreement but also change third-country tariffs by establishing a common external tariff (CET). In most cases, tariffs are reduced in the CET; thus there may be improvement, or at least less deterioration, in third-country export prospects. GATT Article XXIV stipulates that, in establishing the CET, no member of the agreement may raise its *overall* tariff level. In spite of this provision, the possibility remains, however, that certain tariffs may remain high or even be raised by the CET, so long as other tariffs are reduced enough to lower the overall average.

Even though the CET tariff structure of a customs union must reduce overall tariff levels to comply with WTO provisions, countries may sometimes skew the structure of the new tariff regime in the pursuit of domestic objectives. One common example of this is the case of tariff escalation, in which countries strive to protect value-added industries by allowing imports of raw and unprocessed primary products at extremely low tariff rates but charge higher rates on further processed products, a scheme which can severely constrain imports of processed products.

All of the potential problems described above are present in recent agreements in the western hemi-

sphere. The most significant free trade areas which exclude the United States are Chile's bilateral agreements and the G-3 agreement between Mexico, Colombia, and Venezuela; the most significant customs unions are MERCOSUR, the Andean Pact, and the CACM. This paper examines the impact of these agreements on tariffs faced by third-country agricultural exporters such as the United States.

MERCOSUR

From the standpoint of U.S. agriculture, the most significant RTA in the Western Hemisphere other than NAFTA is the MERCOSUR agreement among Argentina, Brazil, Uruguay, and Paraguay.

The formation of MERCOSUR on January 1, 1995, marked the culmination of a process that entailed a significant reduction in tariffs faced by agricultural products. MERCOSUR established a CET ranging from 0-20 percent for products coming from third countries and a zero-percent tariff for products traded within the bloc (with a few exceptions).

Free trade agreement talks between Argentina and Brazil began in earnest in the early 1980's, and both countries have been making strides toward harmonization of their respective tariff regimes since at least the mid-1980's. Finally, in 1991, Argentina, Brazil, Paraguay, and Uruguay signed the Treaty of Asunción, formally creating MERCOSUR, and agreeing that the common market would be established by December 1994 for Argentina and Brazil and by 1995 for Uruguay and Paraguay.

Figure 1 shows Argentina's applied tariffs on agricultural products in 1987, about the time of the beginning of discussions with Brazil of the formation of MERCOSUR. As can be seen from the graph, Argentina imposed significant tariffs across a wide range of agricultural products. Tariffs ranged from 0 to 38 percent ad valorem, with about half of the agricultural products facing a tariff above 20 percent and the

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other half below 20 percent. Higher tariffs tended to be charged on processed products such as meat, animal offal or animal blood sausages, prepared or preserved fish, crustaceans and mollusks, chocolate, and other food preparations, with all of these products facing a tariff above 30 percent. The average tariff rate in 1987 was 20 percent.

Figure 3 shows Brazil's applied tariffs on agricultural products in 1986. Brazil's tariffs were much higher than Argentina's, ranging from 0 to 105 percent ad valorem, with most products facing a tariff above 40 percent. As in Argentina, higher tariffs tended to be charged on processed products such as prepared or preserved meat or meat offal, prepared or preserved fish, crustaceans and mollusks, prepared or preserved vegetables and fruits, beer, grape must, and wine made from fresh grapes, with all of these products facing a tariff above 100 percent. The average tariff rate in 1986 was 58 percent.

Figures 2 and 4 show CET tariffs applied to countries outside MERCOSUR such as the United States as of 1995. By the time the MERCOSUR agreement went into effect in 1995, Argentina and Brazil had lowered their average applied tariff levels by 50 and 82 percent, respectively. Argentine tariffs on consumer-oriented agricultural products such as dairy products, processed fruits and vegetables, and fruit and vegetable juices, among others, ranged from 20 to 38 percent during the 1980's. In 1995, when MERCOSUR went into effect, tariffs on these products dropped to an average of 14 percent. In Brazil these products had faced a tariff above 100 percent, but in 1995 the average tariff faced by these products went down to 16 percent with the establishment of MERCOSUR.

Recently (December 1997), in response to trade concerns arising from the Asian financial crisis, the MERCOSUR countries agreed to allow a temporary 3-percent increase in tariffs on most products in the CET. Given MERCOSUR's track record of success in negotiating considerable reductions in tariffs, it seems likely that this measure will prove to be temporary and

will be removed on or before the year 2000 as has been promised.

The MERCOSUR trading bloc is also important because of its potential to expand to include additional members from the rest of the American continents and to negotiate with such powers as the European Union.

MERCOSUR has signed a bilateral agreement with Chile (see below), and another one with Bolivia, making these two countries associate members of MERCOSUR. The Bolivia-MERCOSUR Economic Complementarity Agreement (ECA) went into effect January 1, 1997. It anticipates the eventual formation of a free trade area between Bolivia and the MERCOSUR countries in 10 years through a gradual tariff elimination process.

After Bolivia became an associate member of MERCOSUR, the rest of the Andean Pact became interested in signing a bilateral agreement with MERCOSUR, and talks and negotiations are on the way to establish a MERCOSUR-Andean Pact agreement.

The MERCOSUR group is also having talks with Mexico to see if a bilateral agreement between these two parties would be possible.

Chile's Regional Agreements

Chile has been notable for its more advanced and freer trade policies in comparison with other Latin American countries. In 1988, Chile's tariffs were reduced from 26 percent to 15 percent, and in 1990, when democratic government resumed, tariffs were slashed further to 11 percent. It is due to its freer trade policies that Chile has pursued signing bilateral agreements rather than joining RTA's. If it were to join an RTA in the Western Hemisphere, Chile would be required to raise its low tariffs to the CET set by the RTA.

Chile's need for export markets led to the negotiation of the ECA with MERCOSUR, five bilateral ECA's

Figure 1--ARGENTINA 1987 Applied Tariffs

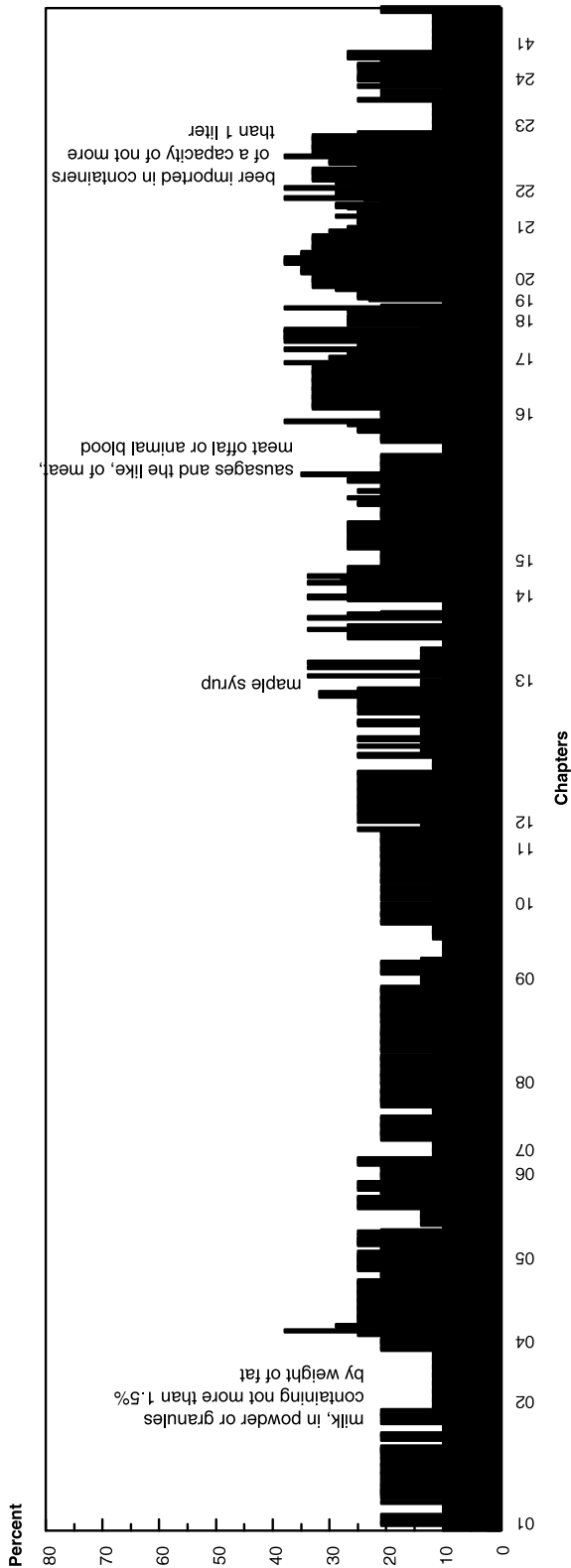


Figure 2--ARGENTINA 1995 Applied Tariffs

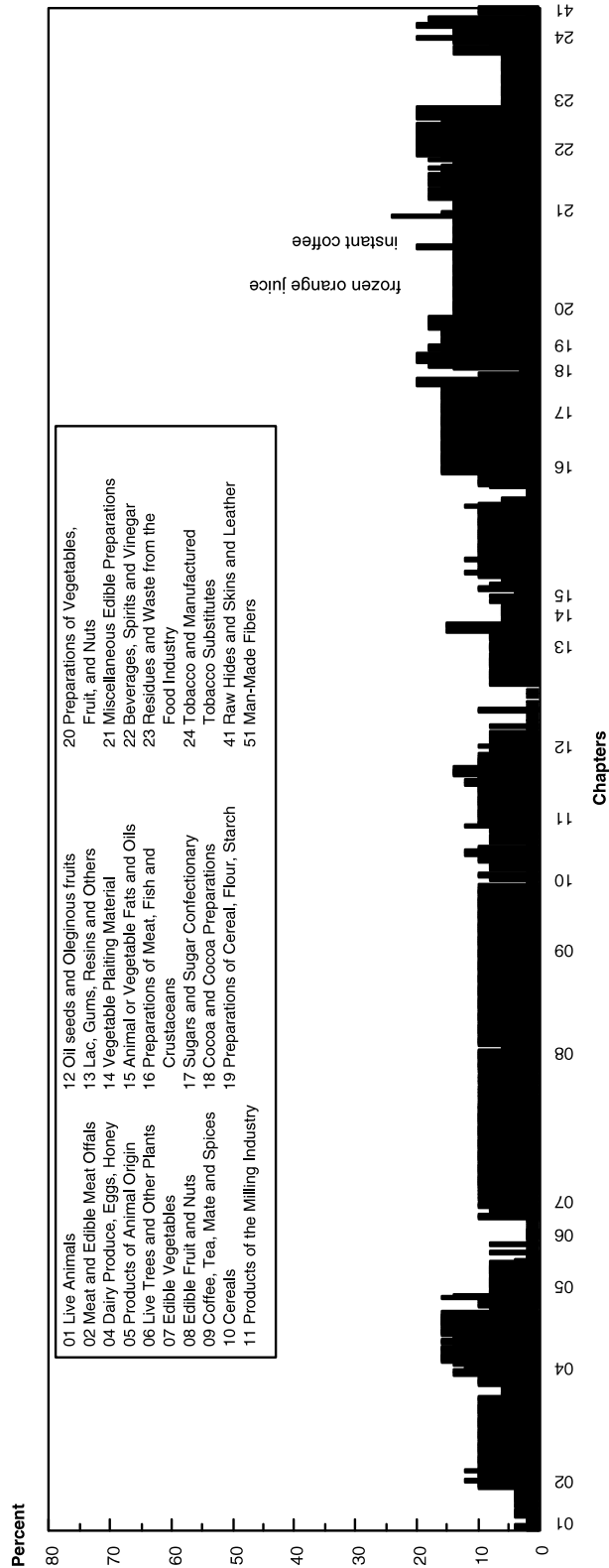


Figure 3--BRAZIL 1986 Applied Tariffs

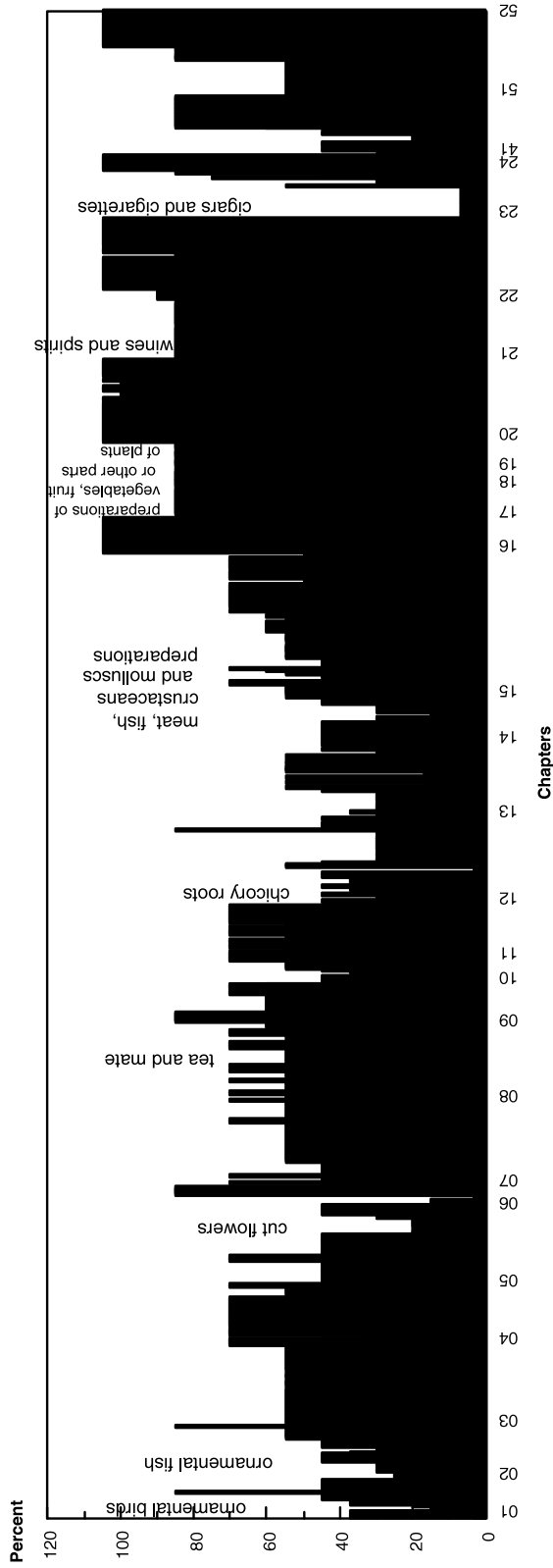
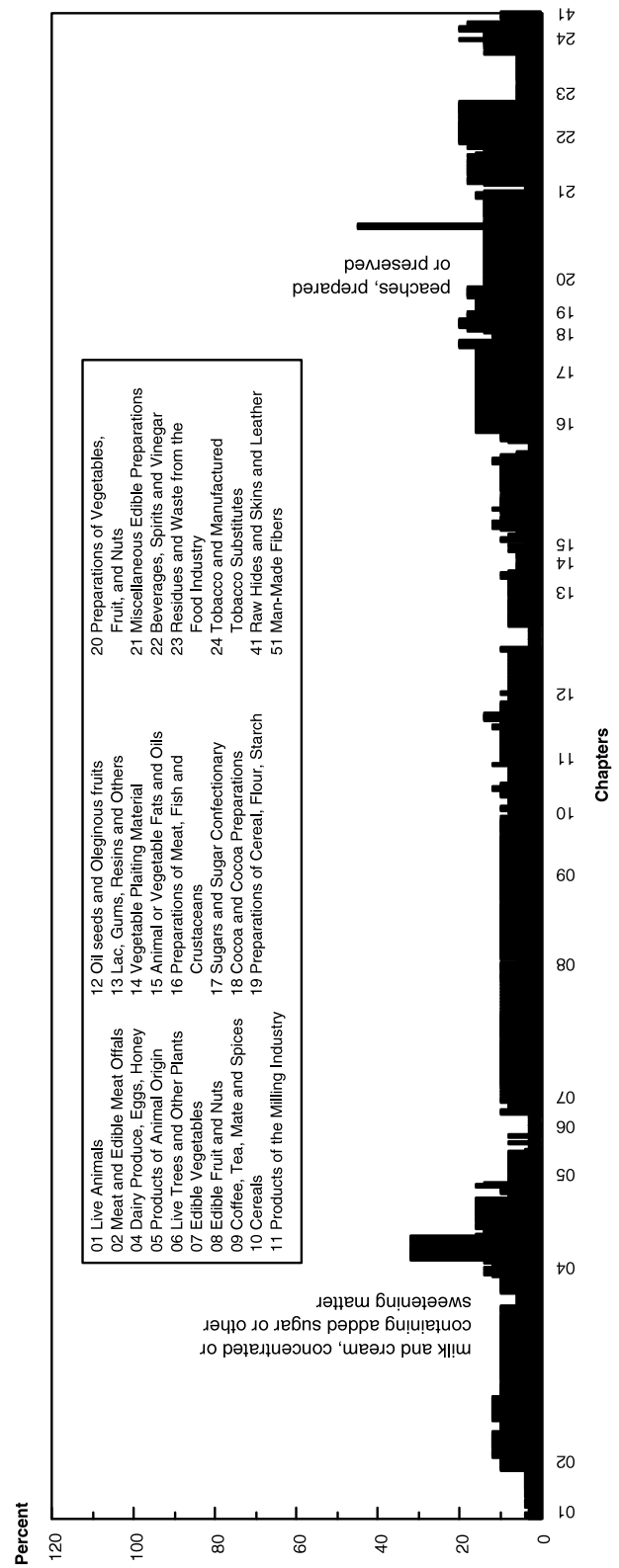


Figure 4--BRAZIL 1995 Applied Tariffs



with other Latin American countries (Mexico (1992), Venezuela (1993), Bolivia (1993)¹, Colombia (1994), and Ecuador (1995)), and a very recent agreement with Canada (1997).

These agreements lower tariffs on trade among the parties and eliminate many nontariff barriers but have no effect on tariffs faced by third countries such as the United States. The biggest U.S. agricultural concern regarding Chile's bilateral agreements is with regard to the recent agreement with Canada. As a result of this agreement, Canada enjoys more favorable tariff rates than the United States for such products as wheat, vegetable oil, and potatoes.

Another U.S. concern regarding the multiple and overlapping set of agreements that have been entered into by countries like Chile,² is that schemes may be set up to use this criss-crossing of agreements to "unfair" advantage. It is conceivable, for example, that processing may be set up in Chile for products that use some freely imported inputs from Canada, and some domestic Chilean inputs to produce products that qualify for tariff-free status for export to MERCOSUR. Wheat or potatoes, for example, might be imported by Chile from Canada (or Bolivia, or Peru, etc.), processed and packaged as bread or as french fries, and then exported into lucrative MERCOSUR markets. Of course, all agreements contain domestic-content requirements that somewhat restrict the wholesale avoidance of all duties through such arrangements, but some potential for loss of U.S. market opportunities due to existence of such strategies inevitably remains.

¹Chile's agreement with Bolivia does not establish a free trade area, but rather involves partial trade liberalization with relative reciprocity and cooperation in the area of energy.

²Another example is the G-3 agreement between Venezuela and Colombia, which are also members of the Andean Pact, and Mexico, which is also a NAFTA member.

The ECA between Chile and MERCOSUR went into effect on October 1, 1996. It provides for the gradual elimination of mutual trade barriers, but does not require Chile to adopt MERCOSUR's *higher* Common External Tariff. Chile's uniform 11 percent tariff rate continues to apply to all third-country agricultural products except vegetable oils, sugar, wheat, and wheat flour, which are under price band mechanisms.

The ECA will eventually phase out all tariffs on trade between Chile and MERCOSUR countries according to a schedule consisting of four product categories: "general" with tariffs reaching zero by the year 2004; "sensitive" with tariffs phasing to zero by the year 2006; "especially sensitive" with tariffs phasing to zero by the year 2008; and "major sensitivity." Many agricultural products fall in the category of "major sensitivity" for which tariff reduction will not begin until 2006. Tariffs on these products will be phased down to zero over 5 years, beginning in 2006. Some of Chile's "major sensitivity" products are wines, raisins, apples, fresh grapes, and ice cream, and for MERCOSUR, soybean oil, sunflower oil, boneless meat, soybean cake, and rice (for more details on Chile's regional trade agreements see USDA, 1996 in references).

The Andean Pact

The Andean Group was first established in 1969 with Bolivia, Colombia, Ecuador, Peru, and Venezuela as its members. The agreement was not very effective in the early years, but in the early 1990's the Group members decided to revive and implement the policies created under the Andean Pact. A CET was designed which consists of four levels of tariffs: 5, 10, 15, and 25 percent. But Bolivia has requested and been granted permission to apply only two tariff rates of 5 percent and 10 percent, and Peru, currently engaged in a dispute over the CET, has left the group temporarily and is applying only two tariff rates—15 percent and 25 percent. Therefore, the only countries of the group applying the CET rates are Colombia, Ecuador, and Venezuela.

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The agreement has four annexes with Annex I establishing the tariff levels for all traded goods; this is the main list of products applying the CET. Annex II lists those products from Annex I for which Ecuador is permitted to charge a tariff rate 5 percentage points lower. Annex III contains a short list of health and education products that may enter all three countries duty-free. Annex IV lists all those products for which each country has requested special treatment with respect to the tariff levels indicated in the CET (exceptions). Ecuador has 400 products in this list, Colombia and Venezuela over 200. However, each country has agreed to reduce its list of exceptions each year, with the objective of eliminating Annex IV within a 4-year period ending in 1999.

One aspect of the Andean Pact agreement of concern to third-country exporters is the tendency of the CET structure to be disadvantageous to processed products. In contrast to the MERCOSUR agreement, which has less tendency to protect agricultural processed products in its CET structure than had existed previously under individual countries' tariff schedules, the Andean Pact has been criticized for establishing a CET that has steeply escalating tariffs for processed products (Tavares de Araujo, 1995). A basic tenet of the Andean Pact CET schedule is to apply low (5 percent) tariffs on raw materials, with progressively higher rates for value-added industries as follows: 10 percent for basic inputs, 15 percent for intermediate goods, and 20 percent for most final goods.

Using Ecuador as a representative country, Tavaros de Araujo calculates that the CET tariff structure translates into an effective rate of protection for Ecuador's food and beverage industry ranging from 23 percent for malt beverages and soft drinks to as high as 125 percent for flour products. Similar rates would be expected to apply for other Andean Pact countries since value-added coefficients are likely to be similar across countries.

Tariff escalation within the CET structure means that although the United States may enjoy the benefits of

low tariffs and enhanced export opportunities for bulk commodities like wheat, corn, and soybeans, processed products and high-value products—that have provided the source of much of the U.S. export growth in regions like Asia in recent years—may not develop to their full potential in the Andean Pact countries.

A second area of concern regarding the Andean Pact tariff regime is its failure to abolish price bands. Price bands act as variable-rate surcharges, effectively setting a floor on the import price of third-country products. As a result of price bands, the United States and other third-country exporters will find their trade displaced by intra-Andean Pact trade whenever such trade can occur at less than the floor price. The products covered by price bands under the Andean Pact CET are palm oil, soybean oil, rice, sugar, barley, milk, corn, soybeans, wheat, chicken, and pork.

The Central American Common Market (CACM)

The CACM³ was established in 1960 by El Salvador, Guatemala, Honduras, and Nicaragua and joined later in 1963 by Costa Rica. The agreement was not fully implemented due to political, military, and economic difficulties, and was revived in the early 1990's.

As with the CET of the Andean Pact, the CACM CET tariff structure tends to provide a high rate of protection for many of the processed products that the United States might seek to export. Exports of products like wheat, corn, and soybeans are not likely to be sharply reduced by tariffs on the order of 5-10 percent, but further-processed products from the United States will have difficulty competing with intermediate and final consumer products that use competitively priced primary products and CACM country processing facilities.

³Belize and Panama participate in CACM summits but not in regional trade integration.

In October 1993, the CACM presidents signed the Protocol to the General Treaty on Central American Economic Integration (known as the Guatemala Protocol) as an addition to the original treaty. The Guatemala Protocol allows greater commercial exposure and diminishes the protectionist nature of the original 1960 CACM agreement.

The agreement provides for free trade for goods originating within the region except for those products listed in Annex A of the agreement, and a Common External Tariff (CET) for products coming from third countries such as the United States, with some exceptions.

As with many other international trade negotiations, agricultural commodities are the most sensitive commodities under discussion within the CACM. This is not surprising, considering the importance of agriculture to the Central American region, where the low-income population depends on near-subsistence agricultural production for their livelihoods.

One of the main goals of the CACM nations today is to revise the list of products exempted from the agreement in order to eventually eliminate Annex A. If successful, Central America will one day achieve a full customs union. To date, these revisions have been very successful. In the early 1960's, Annex A included about 30 agricultural products, and special tariff rates and import quotas were negotiated on a bilateral basis among member countries. After the last revision of Annex A on September 1, 1995, only 7 agricultural products are still exempt from the Common External Tariff. This illustrates the continuing movement toward greater integration of the Central American Common Market.

For a limited number of agricultural commodities, complete liberalization does not appear likely over the next few years. One example of this is Costa Rica's dairy industry; another is in Honduras, which applies price bands on corn-based products.

The CET structure was significantly revised by the Guatemala protocol in 1993. The CET is composed of

three parts. Section I lists products that share the CET—about 979 agricultural products can be found here. Section II shows products still under negotiation (including about 27 agricultural products), for which each country is allowed to maintain its own tariff rate. Section III lists Costa Rica's national tariff rates for sensitive products, with nine agricultural products.

The CET has four levels of tariff rates for products in Section I: 5 percent, 10 percent, 15 percent, and 20 percent. About half of the 979 agricultural products are subject to the highest 20-percent tariff rate. Most vegetables are subject to a 15-percent tariff. Products in Sections II and III that are not yet subject to the CET are subject to various tariffs.

Since February 1996, the Central American Common Market has been making efforts to fully harmonize tariffs and trade policy. One of its main goals is to reduce the CET levels on most finished goods to a ceiling of 15 percent and reduce tariffs on raw materials to zero. El Salvador has been the most determined to lower tariffs and Costa Rica one of the most reluctant. Under its economic liberalization program, El Salvador envisioned reducing tariffs, and it will do so independently of other CACM members. Costa Rica has said it will reduce its CET levels in a gradual manner starting in 1997. Honduras, Guatemala, and Nicaragua have not yet defined their respective time frames for reducing tariff levels. The separate CET reductions that each member country plans to implement individually will cause CACM members to temporarily apply different levels of the CET. The Secretary for Central American Economic Integration (SIECA) believes that full tariff harmonization and reduction could take 3 to 4 years.

Conclusion

We examined the tariff structure of the most significant Western Hemisphere trade agreements and discussed their impacts on tariff regimes faced by third-country agricultural exporters such as the United States.

Western Hemisphere Trading Blocs and Tariff Barriers for U.S. Agricultural Exports

The MERCOSUR agreement, which includes the two largest economies in South America, namely Brazil and Argentina, has introduced the most favorable trade regime vis-a-vis third-country agricultural exporters of any of the agreements examined. Although MERCOSUR does, of course, introduce tariff preferences for parties to the agreement, the CET, established in 1995, also represented a significant reduction in tariffs faced by third-country agricultural exporters. The recently enacted 3-percent increase in most MERCOSUR CET rates in response to the Asian financial crisis hopefully does not set a precedent, but rather represents a reasonable temporary measure in response to a very special set of circumstances.

The other agreements examined are more problematic for third-country exporters. Both the Andean Pact and the CACM CET's include steeply escalating common external tariff structures that are disadvantageous to processed products and high-value products from third-country exporters such as the United States. In addition, the Andean Pact's price band mechanism for certain important agricultural products restricts third-country exports in times of falling prices. Chile's numerous

Economic Complementarity Agreements allow partner countries preferential tariff rates without reducing tariffs faced by third-country exporters such as the United States. This may prove particularly important to the United States, for example, with respect to the recent trade agreement between Chile and Canada.

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Appendix: Model Documentation

The model-based analyses in this report use computable general equilibrium (CGE) models and a partial equilibrium model. Beginning with the NAFTA negotiations, CGE models have become a widely used tool for evaluating the effects of trade policy reforms in both regional and multinational initiatives (U.S. International Trade Commission, 1992; Francois and Shiells, 1994; Martin and Winters, 1995). While economic theory identifies how policy changes will affect economic variables, it does not define the size of the impact and, in the case of RTA's, leaves the net effect ambiguous. CGE models provide an empirical foundation for policy analysis that can quantify the magnitudes of the effects identified by theory, and suggest the likely net effect, whether trade creating or trade diverting, of an RTA.

Each CGE model is described below, including discussion of sectoral structure, factor markets, macro closure, data sources, and any innovative features of the model, such as dynamic behavior and international labor migration.

One of the two analyses of European enlargement used a partial equilibrium model, the European Simulation Model (ESIM). This model has more disaggregation of EU agriculture than is now available in a CGE model, and includes detailed modeling of EU farm programs. ESIM is described below.

NAFTA CGE Model *(Mary Burfisher, Sherman Robinson, and Karen Thierfelder)*

The NAFTA-CGE model is composed of three single-country models of the United States, Mexico, and Canada, linked by trade and labor migration flows. The model updates and extends the U.S.-Mexico CGE model built at ERS in 1991 to include Canada. The U.S.-Mexico CGE model is documented in Robinson, Burfisher, Hinojosa, and Thierfelder (1991) and Burfisher, Robinson, and Thierfelder (1994).

The NAFTA-CGE model follows the standard neoclassical specification of trade-focused CGE models. Each sector produces a composite commodity that can be transformed according to a constant elasticity of transformation (CET) function into a commodity sold on

the domestic market or into an export. Output is produced according to a constant elasticity of substitution (CES) production function in primary factors and fixed input-output coefficients for intermediate inputs. The model simulates a market economy, with prices and quantities assumed to adjust to clear markets. All transactions in the circular flow of income are captured. Each country model traces the flow of income (starting with factor payments) from producers to household, government, and investors, and finally back to demand for goods in product markets.

Consumption, intermediate demand, government, and investment are the four components of domestic demand. Consumer demand is based on Cobb-Douglas utility functions, generating fixed expenditure shares. Households pay income taxes to the government and save a fixed proportion of their income. Intermediate demand is given by fixed input-output coefficients. Real government demand and real investment are fixed exogenously.

The model includes six primary factors and associated factor markets: rural labor, urban unskilled labor, urban skilled labor, professional labor, capital, and agricultural land. Land is disaggregated into irrigated and nonirrigated land in Mexico. Full employment for all categories is assumed, and aggregate factor supplies are set exogenously. In the experiments reported here, we assume that all factors are fully mobile. However, labor markets are segmented. For example, rural labor does not work in the industrial sectors and urban labor does not work in agriculture. Labor markets are linked through migration equations.

There are three key macro balances in each country model: the government deficit, aggregate investment and savings, and the balance of trade. Government savings is the difference between revenue and spending, with real spending fixed exogenously, and revenue depending on a variety of tax instruments. The government deficit is therefore determined endogenously. Real investment is set exogenously and aggregate private savings is determined residually to achieve the nominal savings-investment balance. The balance of trade for each country (and hence foreign savings) is set exogenously and valued in world prices.

Each model solves for the relative domestic prices and factor returns that clear the factor and product markets, and for an equilibrium real exchange rate which brings aggregate export supply and import demand into balance, given the exogenous aggregate trade balance of each country.

Agricultural trade policies and domestic farm programs are modeled explicitly, rather than as fixed ad valorem wedges. Policies include tariffs, tariff rate quotas, import and production quotas, input subsidies to producers and consumers, fixed guaranteed and target prices, export subsidies, and direct payments, including U.S. deficiency payments and PROCAMPO payments.

The model has 25 sectors, including 20 farm and food processing sectors and 5 nonagricultural sectors. The model base year is 1993. Data for each country are drawn from national income and product accounts, and were built into social accounting matrices by ERS under a National Research Initiative grant from CSREES/USDA. Trade data are from the United Nations. Tariff data are from the WTO. Domestic agricultural policy data are from OECD.

APEC CGE Model *(William Coyle and Zhi Wang)*

This model is a recursive, dynamic, computable general equilibrium model of world production and trade. The model divides the world into 12 regions, and classes all goods and services into 12 sectors, produced by five production factors—agricultural labor, unskilled labor, skilled labor, land, and capital.

There are four sources of economic growth in the model: labor force growth, accumulation of physical capital, changes in the skill composition of the labor force, and total factor productivity (TFP) growth. The labor force growth rate is set exogenously. It was calculated from the International Labor Office's population and labor force projections from 1990 to 2020, which take the demographic structure and labor force participation rates into consideration. Capital stock in each 1-year simulation period equals the last period's capital stock plus total investment minus depreciation. No optimal behavior is assumed for investment and capital accumulation. All net investments in the previous period are assumed to become new production capital in the next period.

Agricultural labor and urban unskilled labor are not substitutable in production, but are linked by rural-urban migration flows, which are endogenous in the model and driven by the rural-urban wage differential and structural changes in production and trade. The increase in the skilled labor force is based on the growth in the stock of tertiary educated labor in each region estimated by the World Bank (Ahuja and Filmer, 1995), which provides an indication of changes in the numbers of those qualified for employment as professional and technical workers. TFP growth rates are obtained from econometric estimates by the World Bank (Vinod and Wang, 1993, Martin and Mitra, 1996).

The major data source for the model is the Global Trade Analysis Project (GTAP) database, version 3. The model was implemented in General Algebraic Modeling System (GAMS) software. Detailed description of the structure and algebraic specification of the model can be found in Wang (1997) and Wang and Schuh (forthcoming).

FTAA Model *(Xinshen Diao, Agapi Somwaru, and Terri Randy)*

The model is based on neoclassical growth theory. It is a global, intertemporal (dynamic) CGE model with 10 countries/regions and 7 production sectors. The data used for calibrating the base-run are GTAP database, version 3. It is different from a static CGE model in which firms make production decisions for only one period at given level of factor endowments. In the intertemporal dynamic model, firms of each region have intertemporal optimization behavior, i.e., besides employing labor, capital and land, as well as intermediates to conduct production, firms also make investment decisions to maximize their intertemporal profits. Thus, capital accumulates over time endogenously. On the other hand, the representative consumer of each region maximizes an intertemporal utility function by making consumption and savings decisions. Thus, another difference from a static CGE model is that a country's savings is endogenously determined. This implies that the model not only captures bilateral commodity trade flows, but also financial capital flows among countries/regions over time. The intertemporal budget constraint for each country/region is equivalent to the macro-closure in the static model, but along transition, international borrowing/lending, trade deficits/surplus, and hence the accumulation of foreign debt/assets in each region

are endogenously determined. Thus, economic adjustments due to an RTA take time, and the entire transitional path to the steady state can be solved from the model.

The model also captures the linkage between trade and TFP growth by introducing *technological spillovers*. That is, if a country becomes more open in trade to other countries, it is more likely to learn and adopt advanced technologies embodied in international trade, which will improve its factor productivity, so more outputs can be produced using the same amount of productive resources. The technological spillover elasticity is borrowed from econometric studies (Coe and Helpman, 1995; Coe, Helpman and Hoffmaister, 1997; and Wang and Xu, 1997). The detailed description of the model can be found in Diao and Somwaru (forthcoming).

EC-CEEC Model **(Peter Liapis and Marinos Tsigas)**

To analyze the impact of CEEC accession to the European Union (EU) we extended the Global Trade Analysis Project (GTAP) framework developed by Hertel (1997). GTAP is a global trade applied general equilibrium framework documented in Hertel and Tsigas (1997); Huff, *et al.* (1997); and Gehlhar, *et al.* (1997).

The model is calibrated to 1992 macro and trade data. GTAP has domestic and international data for 30 single-country and composite regions, and 37 commodity aggregates (McDougall, 1996). We aggregated those data to 8 regions and 16 traded commodities.

The GTAP data have tariffs and export subsidies established by the Uruguay Round Agreement (URA), and domestic support rates for 1992 (McDougall, 1996). For the EU, however, the URA commitments do not reflect the lower domestic prices which resulted from the 1992 reform of the Common Agricultural Policy (CAP). To reflect the impact of the CAP reform, we used recent border policies for agriculture in the EU and CEEC-7 (Hertel, *et al.* 1997).

GTAP is a comparative static model with price-taking behavior for all economic agents and full employment of resources. Land is employed in agriculture only, and it is imperfectly mobile across sectors. All sectors employ labor and capital, which are perfectly mobile across sectors in a region. Households maximize

utility derived from consumption and savings subject to regional income, which consists of primary factor payments and net tax collections. International trade clears commodity markets, with each commodity being differentiated by its place of origin. Regional investment is financed by domestic savings and net capital inflow from all other regions. A price index for global savings is the numeraire.

To consider impacts on the costs of the CAP, we modified the GTAP model by including a budget component for the CAP. We determine CAP expenditures, given our policy assumptions, and an income tax rate needed to generate the necessary revenue to finance those expenditures.

Global CGE Model **(Mark Gehlhar)**

This analysis uses the GTAP model as described above (see Liapis and Tsigas). To simulate the effects of multiple RTA's throughout the world, the standard GTAP model was used with a 10-region/country aggregation. This regional breakdown consists of the individual NAFTA countries, the MERCOSUR, Chile, other APEC countries, the EU, Central and Eastern European Countries, and the rest of the world. The sectoral breakdown consisted of a 6-sector aggregation which was aggregated from the 37-sector GTAP database.

ESIM Model

The European Simulation models (ESIM) are linear, time-dependent, constant elasticity, partial equilibrium models. ERS currently has five individual country/region ESIM models (EU-15, the Czech Republic, Hungary, Poland, and Slovakia) and the EU-18 model used for this analysis (EU-15 plus the Czech Republic, Hungary, and Poland). ESIM covers 18 major commodities in the agricultural sector: wheat, corn, barley, other coarse grains, soybeans, rapeseed, sunflowerseed, soymeal, rapemeal, sunmeal, soyoil, rapeoil, sunoil, other oils, fluid milk, beef and veal, pork, and poultry. ESIM also includes 12 feeds and a detailed feeding scheme. It was developed by Jan Blom of LEI/DLO in the Netherlands.

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