Regionalism and Trade in Agrifood Products
by
Crescenzo dell'Aquila,
Rakhal Sarker, and Karl D. Meilke*

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*Dr. Crescenzo dell'Aquila is a Researcher at the National Institute of Agricultural Economics at the University of Bari, Italy. Dr. Rakhal Sarker is an Assistant Professor and Dr. Karl D. Meilke is a Professor in the Department of Agricultural Economics and Business at the University of Guelph in Canada.

Correspondence regarding this paper should be addressed to:

Dr. Karl D. Meilke
Department of Agricultural Economics and Business
University of Guelph
Guelph, Ontario N1G 2W1
CANADA
Phone: 519-824-4120 EXT: 2769
Fax: 519-767-1510
EM: meilke@agec.uoguelph.ca

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REGIONALISM AND TRADE IN AGRIFOOD PRODUCTS[*]

Crescenzo dell'Aquila
Researcher
National Institute of Agricultural Economics
University of Bari, Italy

Rakhal Sarker
Assistant Professor

Karl D. Meilke
Professor

Department of Agricultural Economics and Business
University of Guelph
Guelph, Ontario

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Abstract

The objective of this paper is to provide quantitative information on the degree of regionalism in raw and processed agrifood trade and the trends in regional trading patterns between 1965 and 1994. The analysis shows that world agrifood trade is currently more regionalized than it was in the second half of the 1960's and is moving towards even more regional concentration. However, for processed agrifood products, increasing regionalism is a dimension of growing openness and multilateral interdependence. Conversely, for raw products the pattern of regionalism has been significantly affected by domestic and trade policies, with welfare losses borne mainly by the European Union and other exporting regions.

1.0 Introduction

The two fundamental characteristics of the WTO based multilateral trading system are: 1) the principle of non-discrimination which implies the extension of most-favoured-nation treatment to all WTO members; and 2) the principle of balanced, mutual and reciprocal concessions to each other to foster free trade globally. These principles were enshrined to create a rule based global trading system so that all countries could share in the gains from trade. The WTO permits departures from these two basic principles for customs unions and free trade areas under Article XXIV. This exception allows a subset of WTO member countries the freedom to increase mutual trade through the negotiation of regional integration agreements (RIA).[1]

Article XXIV states that WTO members can form regional trading blocks, and engage in preferential and discriminatory trading practices if the agreements: 1) involve free trade (the elimination of all tariffs) within the block for substantially all products; and 2) there is no increase in external trade barriers against non-member countries. Most existing regional integration agreements fall short of these two requirements. The inherent ambiguities in the meaning of the term "substantially" and the speed with which tariffs are eliminated, have led to the formation of a wide variety of regional integration agreements (RIA) that are different from those envisioned by the GATT signatories. While most trade policy analysts and most empirical work suggests that regional integration agreements have been trade creating rather than trade diverting, other analysts argue that regional trading blocks are stumbling blocks rather than

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[1] The term regional integration agreement is used to refer to both custom unions and free trade areas. A customs union has a common external tariff which applies to all non-member countries while members of a free trade area maintain their own external tariffs.

building blocks for multilateral free trade (Bhagwati 1993, Bhagwati and Panagariya 1993, Burfisher and Jones 1998, Krugman 1991 and 1993, Panagariya 1998, Robinson and Thierfelder 1998). This debate has intensified in recent years with the renewed interest in regional trading blocks. The revival of regionalism since the mid 1980s has raised a number of interesting analytical and empirical questions regarding the formation, structure, role, duration and welfare effects of trading blocks.

The objective of this paper is to provide quantitative information on the degree of regionalism in agrifood trade and the trends in regional trading patterns between 1965 and 1995. The agrifood trade data is disaggregated into trade in raw and processed agricultural products. The results are complementary to the analysis of Anderson and Norheim (1993) who analyzed the regional trading patterns for total merchandise trade.

There are many reasons to expect that the trading patterns for agrifood products will differ from those for general merchandise trade. First, domestic agricultural policies in most developed countries have protected their farmers and food processors from international competition. Second, the level of border protection for agrifood products is much higher than for manufactured products. Third, agricultural trade is governed by different international rules, even following the Uruguay Round, than for manufactured goods (IATRC 1994, Meilke and Sarker 1997). Finally, agriculture has often been excluded or only partially included in regional integration agreements. While these conditions create a different trading environment for raw and processed agricultural products than for manufactured goods, it is unclear if they imply that agrifood trade is becoming more or less regionalized. This is the question this paper answers.

In section 2.0 the growth in regional integration agreements is reviewed and the treatment of agriculture in the various regional integration agreements is highlighted in section 3.0. Section 4.0 reviews the debate over the welfare effects of regional integration agreements. In section 5.0 the empirical measures used to evaluate the regionalization of agrifood trade are presented while section 6.0 describes the data used in the study. Section 7.0 contains the empirical results and concluding comments are offered in section 8.0.

2.0   Regional Integration Agreements and Agriculture

In the *Western Hemisphere*, the United States and Canada negotiated a bilateral free trade agreement (CUSTA) in 1989. In 1993, the formation of the North American Free Trade Agreement (NAFTA) brought Mexico, Canada and the United States into a regional agreement. For the first time, a developing country was united with two developed economies in a regional trading block. The NAFTA is likely to expand through the Free Trade Area for the Americas initiative to include many more countries in Latin and South America.

In *Latin America*, Argentina and Brazil signed a bilateral trade agreement in 1986 which led to a larger regional grouping in 1991 when Paraguay and Uruguay joined and the MERCOSUR was created. The Andean Pact consisting of Bolivia, Colombia, Ecuador, Peru and Venezuela and the Central American Common Market (CACM) consisting of El Salvador, Guatemala, Honduras and Nicaragua were revived in the 1980s with a new spirit of greater regional cooperation, policy harmonization and trade.

In *Western Europe*, the regional integration which began in the 1960s with the formation of the European Economic Community, evolved into a much deeper economic, monetary and political union in the 1990s. An accelerated process of deepening regional integration in Western Europe was initiated in January 1993 with the introduction of the Single European Market program and the Maastricht Treaty. The aim was to achieve the free movement of capital, goods, people and services across member states through the removal of all non-tariff barriers. The Maastricht Treaty also provided the framework for the establishment of a monetary union leading to a single European currency in January 1999 (WTO 1995).

The 1990s marked the beginning of the gradual integration of the European Free Trade Area (EFTA) into the EU. The fall of communism in Eastern Europe and the disintegration of the former Soviet Union has led to the demise of the COMECOM, the Socialist trading block established in 1949 by Bulgaria, Czechoslovakia, Hungary, Poland, Romania and the USSR (Albania and East Germany joined later). Most of the countries in Eastern Europe are going through a painful process of transition from command-based to market-based economic systems. In the spirit of greater European economic integration, the EU has entered into bilateral trade agreements with some of these transition economies.

The renewed interest in regional trading blocks in the Americas and in Western Europe has had a ripple effect on the countries in the Asia/Pacific region. The Association of Southeast Asian Nations (ASEAN), formed in 1967, became more active in fostering economic cooperation in the region during the 1980s. It launched the ASEAN Free Trade Agreement (AFTA) in January 1993. Vietnam joined the ASEAN in

1995. In South Asia, the South Asian Association for Regional Cooperation (SAARC) was formed in 1985 and finalized the South Asian Preferential Trade Agreement in 1995. The Asia Pacific Economic Cooperation (APEC) forum, a consultative body rather than a trading block, was also formed in the 1990s. While a strong regional trading block has not yet emerged in Asia, the theme of greater regional trade and economic cooperation is now well received.

Two important features of the recent propagation of regional integration agreements are worth noting. First, the conversion of the United States from a strong opponent, to an active participant in preferential trade agreements, through CUSTA, NAFTA and a bilateral trade agreement with Israel. Second, the incorporation of economies at different stages of development, size and growth potential into regional integration agreements. As a result, many trade economists believe that the recent regional integration agreements will be more durable than those formed in the 1960s.

Despite the progress made during the Uruguay Round, liberalization of agrifood trade remains an elusive goal (IATRC 1994, Josling 1993, 1998). Issues related to trade in agrifood products have been difficult to deal with during negotiations for preferential trade arrangements, and with the exception of the EU's Common Agricultural Policy, agriculture has only been partially integrated into most regional agreements. While the causes, extent and costs of agricultural protectionism have been investigated for decades, only a few studies deal with trade liberalization and trade conflicts in the light of regionalism (Loyns, Knutson and Meilke 1995, 1998, Loyns, Meilke and Knutson 1996, Loyns, Knutson, Meilke and Sumner 1997, McCalla 1992, Josling 1993). Little empirical analysis exists to show that the integration of

agriculture into regional integration agreements has been welfare-enhancing (Robinson and Thierfelder 1998).

3.0   The Treatment of Agriculture in Regional Integration Agreements

Agriculture is characterized by massive public intervention (OECD 1998). Although the Uruguay Round Agreement on Agriculture required member countries to convert all agrifood nontariff barriers into their tariff equivalents, agriculture maintains numerous exceptions from general WTO rules (IATRC 1994, Josling 1998, Meilke and Sarker 1997, Meilke and Larivière 1999).

The treatment of agriculture in regional agreements varies widely across trading blocks and free-trade areas. In most cases, countries participating in regional blocks carefully craft their free-trade agreements so that they do not interfere with the autonomy of domestic farm programs and national agrifood policies. In some cases, agriculture is totally excluded because it was deemed too difficult to negotiate. The only exception to this norm is the treatment of agriculture in the European Union where a highly protectionistic agricultural policy facilitated integration . A brief overview of the treatment of agriculture in the major regional integration agreements is given below.

When the Canada-US Free Trade Agreement was negotiated in the late 1980s attempts to bring agriculture fully under the agreement proved to be difficult (Warley 1988). As a result, some issues relating to farm programs and agrifood trade policies were side-stepped. The final agreement included scheduled reductions in tariffs and the removal of export subsidies on intra-FTA trade. Existing nontariff barriers in the beef and cereal markets were removed and the domestic content requirements for

foreign wine sold in provincial retail outlets in Canada were curbed. CUSTA also introduced new safeguard provisions for fruits and vegetables and a new set of sanitary and phytosanitary regulations (Josling 1993, Meilke and van Duren 1996). However, Canada's supply managed sectors (dairy, poultry and eggs) and the dairy, sugar, tobacco and peanut programs in the United States were effectively excluded from the agreement. The overall results of the agreement were much less liberalizing for trade in agrifood commodities than for trade in industrial goods (Hart 1990).

Agriculture fared slightly better in the NAFTA. However, NAFTA is not a trilateral agreement as far as the agrifood sector is concerned. Instead, the agricultural provisions consist of three bilateral agreements (Canada-United States, United States-Mexico and Canada-Mexico) with major differences among them (Meilke and van Duren 1996). For example, Canada and the United States agreed not to use export subsidies on their bilateral agrifood trade, but no such agreement was reached with Mexico.

Market access is improved by the provisions of the US-Mexico and the Canada-Mexico access agreements for agrifood products, and by a specific time schedule for the reduction and elimination of any remaining trade barriers. However, there are some discrepancies in the market access provisions. The bilateral agreement between the US and Mexico suggests that by the year 2010 all tariffs and nontariff barriers on US-Mexico trade will be phased out leading to a free internal market for grains, oilseeds, meat and horticultural products (Josling 1993). The same is not true for Canada-US trade or for Canada-Mexico agrifood trade where tariff rate quotas will still apply to some commodities. Although the NAFTA was overshadowed by the final phase of the Uruguay Round negotiations, it reflects the political sensitivity of

agriculture in North America and the problems of negotiating free trade in this sector (Josling and Barichello 1993, Lee 1995).

In Latin America, the regional integration agreements negotiated during the 1970s were focussed exclusively on industrial products. The focus of more recent regional integration agreements is broader, in that they include some provisions for agricultural trade liberalization. However, even these recent agreements contain numerous exceptions for agrifood products. The progress in agrifood trade liberalization in Latin America results primarily from the general move towards unilateral trade liberalization rather than as a result of regional integration agreements (Lee 1995, Harmsen and Leidy 1994).

The list of exemptions for agriculture in regional integration agreements is often long, and sometimes the exceptions are difficult to ascertain. In MERCOSUR, agricultural exceptions range from oranges and cotton in Argentina, to wheat, wool and peaches in Brazil. In addition, each country is allowed up to 300 temporary exceptions to the common external tariff. Finally, many Latin American regional integration agreements are using a common external tariff, with price band systems for basic imported commodities. The price bands trigger supplementary duties when import prices are low and rebates when they are high (Lee 1995). While the price bands respond to legitimate concerns for market stability, allowing member states the right to modify tariffs on an individual basis makes the common external tariff rather ineffective.

The attempts to integrate agriculture into regional integration agreements in Western Europe has a long and interesting history. Even for small countries like Belgium and Luxembourg, harmonization of national agricultural policies proved to be

difficult when they formed an Economic Union in 1922. At that time, agricultural protection was much higher in Luxembourg than in Belgium. An initial attempt to provide side payments to farmers in Luxembourg out of the customs receipts of the Union did not work and Luxembourg opted for imposing restrictions on agrifood imports.

When the Benelux Union was formed, in 1948, to bring Belgium, Luxembourg and the Netherlands into an economic union, the farmers from Belgium complained about cheap imports from the Netherlands. The solution was a substantial exclusion of agriculture from the agreement. Members were allowed to determine the minimum prices for their farmers and to use border measures (with a degree of preference for other members) to sustain their domestic farm policies (Tracy 1990). Similarly, in the Stockholm Treaty establishing the European Free Trade Association (EFTA) in 1960, agriculture was left out because the United Kingdom, one of the most influential members of the group, did not want to weaken the preferential trading arrangements it had with the other Commonwealth countries. During the last 38 years of EFTA's existence, no significant attempt was made to modify Articles XXI and XXVI of the Stockholm Treaty which exclude agriculture and fisheries from trade liberalization (Tracy 1990, Josling 1993).

More than a decade after the formation of the EFTA, the EFTA-EC bilateral trade agreement was signed following the accession of the United Kingdom and Denmark to the EC in 1973. Once again, agriculture was left out of the final agreement. The special treatment of agriculture in European regional integration agreements resurfaced in the recent negotiations between the EFTA and EC countries leading to

the creation of the European Economic Area (EEA) in 1992. Instead of integrating agriculture into the EC/EFTA internal market, a series of preferential quotas were included in the EEA to serve the divergent interests of many agrifood commodity groups in the EFTA countries (Josling 1993).

The treatment of agriculture in the EU represents the only case of full integration of this sector in a regional trading block. Of course, the EU has grown into more than a regional block and is now a common economic and monetary union. The Common Agricultural Policy (CAP) is one of the institutional cornerstones of the EU both in terms of its supranational character and its importance in the EU's budget. Although Article XXXIX of the Treaty of Rome (1957) laid down the basic principles for the development of the CAP, the successful completion of a common market for agrifood products in the EC required the development of a complex policy environment involving various instruments and institutions.

The CAP consists of a complex system of price supports, border protection and export subsidies which vary substantially by commodity (Agra Europe 1996). The objective of supporting farm income at a politically acceptable level has been pursued under the CAP using two instruments. First, common levies and customs duties are charged at the EU border so that imported agrifood commodities cannot be sold in the internal market at below their target prices. Second, to support internal market prices, any surplus production is bought at a minimum guaranteed price (also known as the intervention price). When world market prices are below the internal market prices in the EU (which has generally been the case), producers are paid an export subsidy to enable them to export their products abroad. These export subsidies depress world

market prices even further. The CAP has also used the agrimonetary system to maintain a common price level throughout the EU and to ensure the effectiveness of the intervention mechanism[2]. Since the financial burden of the CAP is shared equitably among the member states, an individual country finds it easier to meet the demands coming from various domestic producer groups. Consequently, farm protection is often harmonized at a higher level than could be justified on purely domestic grounds (Josling 1993). Despite the reform of the agrimonetary system in 1984 and 1995, the introduction of budget stabilizers in 1988, the MacSharry reform in 1992 and the Uruguay Round disciplines, the CAP remains the most protectionist farm policy in the world. If the Agenda 2000 proposal tabled by the EU Commission is accepted European agricultural prices could move much closer to world market levels (Tangermann 1999).

Regional integration agreements are less structured in the Asia/Pacific region than elsewhere. Since national agricultural policies and agricultural trade policies are often less protectionist than those in Western Europe or North America, regional constraints on domestic farm policy are less relevant. The ASEAN agreement is concerned with food security rather than agricultural protection. Thus, except for a provision for sharing rice stocks in times of food shortage, the ASEAN and its renegotiation into AFTA has had little agricultural content. The Closer Economic Relations (CER) Treaty between Australia and New Zealand is the only FTA that fully incorporates agriculture. Although provisions for agricultural trade liberalization are generally included in African regional integration agreements, the use of different types

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[2] Common intervention prices have been maintained across the EU only when prices are converted at "green rates". At times, green exchange rates have departed markedly from market exchange rates (Meilke and de Gorter 1988).

of import duties along with para-statal control over many export commodities make agrifood trade much less free in regional blocks in Africa (Josling, 1993).

4.0   The Welfare Debate Over Regional Integration Agreements

The major economic objective of a regional trading block is to increase trade among its members through preferential trading arrangements. Since the countries within a regional integration agreement can trade among themselves at lower tariffs than non-members, the emergence of a regional integration agreement can have adverse welfare effects on both members and non-members. In Viner's pioneering work he described the positive and negative effects of a customs union, on member countries, as "trade creation" and "trade diversion". According to Viner (1950), trade diversion occurs when discriminatory trade liberalization results in member countries importing from suppliers who are not the lowest cost producer, thus reducing welfare in member countries. Depending on the relative size of the trade creation and trade diversion effects, the overall impact of a regional integration agreement can be welfare enhancing or welfare reducing for member countries.

The work of Viner focused economists attention on the ambiguous welfare effects of a customs union. The flood of theoretical research that followed Viner's led managed to sign the welfare effects of a customs union only under special circumstances (Lipsey 1960, Pomfret 1986a, Kowalczyk 1992). Kemp and Wan (1976) show that preferential trading blocks can always be formed, in principle, so they result is welfare gains over the initial/pre-union situation. The sufficiency conditions for a welfare improving regional integration agreement depends on a number of key parameters. In particular, detailed knowledge of possible complementarities between

goods traded internally and externally, the pattern of trade flows, trade distortions, and relevant elasticities are required to provide an empirical answer to the question of the welfare effects of a customs union. However, a new regional integration agreement will not worsen welfare in the rest of the world as long as the volume of trade with countries outside the regional integration agreement does not fall (McMillan 1993). If the volume of intra-regional trade increases, it is also welfare improving for the member countries.

The empirical evaluation of a regional integration agreement involves the establishment of linkages between border policy changes and a set of relevant endogenous variables (Francois and Shiells 1994). Since other factors are changing in an economy while a regional integration agreement is being implemented, the major challenge faced by an empirical researcher is how to isolate the effects of preferential trade policies from the other changes influencing the economy. An ideal approach would involve: 1) the specification of a complete world model based on relevant microeconomic theory, 2) the estimation of all parameters simultaneously using internationally consistent data, and 3) the counter factual evaluation of the regional integration agreement based on the estimated parameters. In reality, the computational burden and the insurmountable data limitations of this approach render it infeasible. Consequently, all empirical studies involve trade-offs between theoretical rigor, statistical procedures and data availability.

The empirical approaches used to assess the impacts of regional integration agreements can be grouped into three general categories: 1) econometric, 2) computable general equilibrium and 3) descriptive. The econometric approach involves estimating simple trade models and focusing on a few endogenous variables. Theoretical restrictions are used in the econometric approach to estimate the relevant

parameters. The model is then used to estimate potential trade flows. The value of

potential trade is then compared to actual trading patterns and the impacts of

resistance variables such as distance and trade policies, etc. are determined (Leamer

1988, Saxonhouse 1993).

Computable general equilibrium models are rooted in economic theory but

generally rely on economic parameters estimated in diverse econometric studies and

often assume simple production and consumption structures (Hertel 1990, 1997). In

addition, the computable general equilibrium models typically represent economic

policies only through tariff equivalents. The welfare effects of trading blocs are

evaluated by removing tariffs between members of the regional integration agreement.

The descriptive approach avoids the problems of developing complex data sets

which are required for the previous two methods. Instead, trade flows are taken as

given and various indicators are used to measure the regional concentration of trade.

The descriptive method is simple and less data intensive making it particularly suitable

for evaluating the effects of trade regionalization on a world scale and for broad

classes of commodities. The major weakness of this approach is that there is only an

indirect link to economic welfare.

Since the formal testing of hypothesis is not central to this research, the

descriptive approach is used. The descriptive approach is capable of detecting,

through changes in the volume of trade, the effects of both tariff and nontariff barriers

to trade including contingent protection measures.[3] The central issue addressed is

whether regionalism in agriculture has led to a less open trading system and welfare

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[3] The descriptive method relies on a static framework and the results are dependent on the level of aggregation.
Consequently, changes in the terms of trade due to changes in the relative trade importance of members and outsiders,
as well as declines in the volume of trade for a single commodity included in a broader class cannot be detected.

losses. Instead of using a counter factual trade model to determine the welfare effects

of regional integration agreements, a broad assessment of the welfare impacts are

derived from trade volume changes and conventional measures of openness such as

the "trade-to-GDP" ratio. The trade-to-GDP ratio shows whether the formation of a

regional integration agreement contributed to increased openness. A non-decreasing

volume of external trade (rather than its share) from a region, or a non-decreasing

trade-to-GDP ratio imply that a regional integration agreement is welfare enhancing

(Anderson and Norheim 1993)[4].

5.0   The Empirical Model

The share of a region's trade that is intra-regional or extra-regional has often

been used to assess the regional concentration of world trade (Anderson and Norheim

1993, Erzran and Yeats 1992, and Lloyd 1992). Trade shares are simple to calculate

and capable of providing a preliminary assessment of the potential for strategic

behaviour in the design of a regional integration agreement. However, changes in the

spatial distribution of a regions trade do not provide any disaggregation of the

historical, geographic and economic forces influencing a regions trading relationships.

Moreover, intra-regional trade shares can be misleading since they vary according to

the number and the size of the countries in the region. The larger the number of

countries in a   region, the larger the region's intra-regional trade share, *ceteris paribus*

(Anderson and Norheim 1993)[5].

The traditional index of trade intensity between country i and country j can

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[4] Since the analysis is focused only on argifood trade, it can say nothing about global welfare changes.
[5] The intra-regional trade share is also biased upwards if one of the countries in the region is relatively large.

measure more accurately the trend in the distribution of trade, while avoiding the interpretation problems affecting the intra-regional trade shares.

Following Drysdale and Garnaut (1982), an intensity index for country i's exports to country j can be defined as,

(1) $I_{ij} = (x_{ij} / x_i) / [m_j / (WM - m_i)] = X_{ij} / M_j$

where,

      x_{ij} = intra-regional exports from i to j, x_i = total exports from i

      m_j = total imports by j, m_i = total imports by i

      WM = total world imports, X_{ij} = share of i's exports going to j

      M_j = share of j in world imports (net of i's imports).

This index compares the share of country i's exports going to a member country j relative to j's share in world imports net of i's imports. It takes values between zero and infinity, with a value of unity indicating geographically unbiased trade flows. With minor adjustments, equation (1) can also provide an index of intensity of trade when country i is a regional block rather than a single country. Anderson and Norheim (1993) modified equation (1) to derive an intensity index of extra-regional trade and its counterpart, an index of intra-regional trade. The intensity index of extra-regional exports is:

(2) $\quad I_{AR} = (\sum x_{iR} / \sum x_i) / [RM/[WM - (\sum m_i)/n]] = X_{AR} / M_R$

where,

   $i = 1,2,......,n$ are countries that belong to region A;

   R = rest of the world (i.e., countries that do not belong to region A);

   x_{iR} = extra-regional exports from country i;

   RM = total imports by the rest of the world;

   X_{AR} = share of region A's exports going to the rest of the world; and

   M_R = share of the rest of the world in world imports (net of 1/n of A's imports)[6].

The intensity index of extra-regional imports for region A is obtained by switching exports for imports in equation (2) and the intensity index of extra-regional trade is obtained as an average of the export and import indices. The same procedure is followed to calculate the intensity index of intra-regional trade.

The establishment of a regional integration agreement may generate so much additional trade that even if the share or the intensity index of trade with other regions fall, there could still be an increase in trade with other regions, generating positive welfare effects for countries outside of the regional integration agreement. Thus, in the controversy surrounding the welfare effects of regional integration agreements an increase in the volume of external trade (rather than its share) or an increase in the regions trade-to-GDP ratio are considered benchmark measures of openness. If these indicators trend upward, the welfare effects of a regional integration agreement are expected to be positive. However, a regions trade-to-GDP ratio is affected by its

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[6] The adjustment of total world imports by subtracting 1/n of A's imports is designed to take into account the existence of trade between countries belonging to region A. By using 1/n of the regional flow it is assumed that all countries in region A have the same total imports. Using this assumption single country data is not needed and the value of the index still approaches unity when there is no regional trade bias (Anderson and Norheim 1993, footnote 7).

resource base, history, geography, stage of economic growth and government policies (Perkins and Syrquin 1989, Anderson and Norheim 1993). Moreover, changes in economic policies will affect the trade-to-GDP ratio directly by influencing the terms of trade, and indirectly through changes in the commodity composition of trade. Consequently, trade-to-GDP ratios are not comparable across regions. In view of these inadequacies, Anderson and Norheim (1993) propose a measure which combines the effects of geographic bias, as measured by the index of trade intensity (2), and overall openness to trade, into a single index, the index of the propensity to trade extra-regionally.

Following Anderson and Norheim (1993), the index of the propensity to export extra-regionally, for region A is:

$$(3) \qquad P_{AR} = (\Sigma x_{iR} / \Sigma GDP_i)/M_R = (\Sigma x_i / \Sigma GDP_i) * (X_{AR} / M_R) = T_A * I_{AR}$$

where,

GDP$_i$ = country i's GDP, and T$_A$ is the ratio of region A's total exports to its GDP.

The propensity to trade extra-regionally is an average of the propensities to export and import. Analogously, the index of the propensity to trade intra-regionally can be obtained from equation (3). This index is more useful because it captures the effects of policy changes on both I$_{AR}$ and T$_A$. The intensity as well as the propensity indices to trade are used in this study to examine the regional bias in agrifood trade that can be attributed to RIAs.

6.0   The Data

There is no ideal disaggregation of the world into regions for the purpose of examining the changing patterns of regional concentration in agrifood trade. Since both national boundaries and the membership in regional integration agreements have changed over time, the definition of regions for an empirical study is a challenging task. For an empirical exercise the length of comparable data sets is important. If regions are based on the exact membership in all regional integration agreements, it would require an enormous effort to collect the relevant data. Judged against the enormity of the potential data gathering task, the country, regional and commodity breakdowns used by the United Nations provide an appealing alternative (United Nations, 1986). The UN Statistics Division identifies seven major geographic regions, which cover most of the important regional integration agreements. The regions are: 1) CUSTA, 2) Latin America, 3) Western Europe, 4) Eastern Europe and the former USSR, 5) Asia/Pacific, 6) developing Africa, and 7) the Middle East (United Nations (a)).

Agrifood products are traded in at least two different forms: raw and processed. The policy environment governing trade in raw and processed agrifood products have been quite different over the past three decades. Consequently, the dynamics of regional trade for raw and processed agrifood products are examined separately, for each of the seven selected regions. Processed and raw products are defined as:

➢ Processed products include: food and live animals (SITC, 0), plus beverages and tobacco (SITC, 1), plus animal and vegetable oils, fats and waxes (SITC, 4), minus cereals (SITC, 041-045);

➢ Raw products include: cereals (SITC, 041-045), plus oilseeds and oleaginous fruit (SITC, 22), plus textile fibres (SITC, 26).

The value of agrifood trade in current US dollars, both in raw and processed form, from 1965 to 1994 were obtained from United Nations sources. Regional trade flows for 1965-72 were collected from various issues of the UN *Yearbook of International Trade Statistics*, i.e., from a special table of region-to-region aggregate trade flows for several broad commodity groups. Comparable data for 1973-94 was obtained via a special request from the Statistics Division of the United Nations. Two important adjustments were made to obtain a complete matrix of regional trade flows from 1965 to 1993. They are: 1) trade flows for Spain (1965-1972), Portugal (1965-1972), and Greece (1969) were obtained from the Comtrade data base and used to make the EU(12)'s country composition consistent over the entire period; and 2) trade flows for a few minor regions for 1965-72 were obtained through extrapolation, based on the data available for 1973-94 and other relevant information.

The data on agricultural GDP in current US dollars was obtained from the World Bank (1994). This information was complemented with data and estimates from the UN *National Account Statistics: Main Aggregates and Detailed Tables*. Finally, in a few cases, agricultural GDP or the regional share of agricultural GDP were obtained through extrapolations.

7.0   The Results

This section provides an empirical assessment of the tendency towards regionalization of world agrifood trade for processed and raw agricultural products. Estimated values of regional trade shares, indices of intra-regional and extra-regional trade intensities and propensities are presented. The trade intensities and propensities indirectly capture the welfare effects of changes in volume and terms of trade for

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selected geographic regions. The results for the world as a whole are presented first, followed by those for the selected regions.[7]

The indicators of regionalization for the world as a whole suggest some common characteristics as well as substantial differences in the patterns of trade integration for processed and raw agrifood products. Since the beginning of the 1980s, there has been a sharp increase in the share of world trade that is intra-regional for both raw and processed agrifood products (Figure 1). As, the index of intra-regional trade has increased, the index of extra-regional trade has declined (Figure 2 and Figure 3). However the propensities to trade paint a different picture for raw and processed products (Figure 4 and Figure 5).

For processed agrifood products, the share of world trade that is intra-regional increased relatively slowly from 1965 to 1982 and then more rapidly during the last decade (Figure 1). Consistent with the pattern of intra-regional trade shares, the intensity of extra-regional trade has declined over the past three decades (Figure 3). This suggests that the trading relationships with outsiders, in global terms, have weakened. The weak trend in the intensity of trade inside the regions is also upward since 1979 (Figure 2). The growing trend towards the regionalization of world trade in processed goods, reflected in trade shares and intensities, does not necessarily mean that openness in these regions has worsened. The propensity to trade intra-regionally indicates that there has been steady growth in the openness of national agrifood systems to trade, rising from 0.59 in 1965 to 1.40 in 1993 (Figure 4), while the extra-regional index points towards a less strong but significant increase in openness to trade (Figure 5). The weak integration of agriculture in regional integration agreements

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[7] A complete set of results is contained in dell'Aquila (1996)

and the trend in the propensities to trade suggest that, for the world as a whole, trade integration in processed products has grown among both members in regional integration agreements and simple neighbors.

Trade in raw agrifood products, when compared with processed goods, is more affected by the presence of location specific factors (such as land) and less by economies of scale. As a result, the values of the world intra-regional trade shares and the intensity of trade are likely to be lower, and the extra-regional intensity of trade is likely to be higher than those for processed products. The data confirm that trade in raw commodities is less concentrated regionally than for processed goods. The aggregate indicators for the world suggest a definite break in the early trend, at the beginning of the 1980s, for raw products. The first period (1965-82) is characterized by progress in extra-regional trade integration and a declining geographical bias (Figure 1 and Figure 2). This indicates a desirable pattern of global openness in raw product trade and describes a world trading system where location specific factors define production and trade patterns. The second period (1982-93) is characterized by a more regional trading system with a sharp decline in openness.

The evolution of the propensity to trade raw products is more difficult to interpret (Figure 5). The supply and demand situation for raw agricultural products is characterized by declining terms of trade and sharp declines in world prices, over the first half of the 1980s. The openness measures include the complex interaction among market conditions and domestic and trade policies. While the propensities to trade intra- and extra-regionally remain fairly stable during the first period, both indices drop substantially during the second period. These results suggest: 1) that from 1965 to 1982 trade integration in raw products on a multilateral basis was relatively strong; and

2) that between 1982 and 1993 both measures of geographic bias and openness indicate increasing integration on a regional basis. However, due to the decline in world prices, over the second period, and the consequent ambiguity of the trade-to GDP ratio, welfare losses may have occurred not only for outsider countries but also for exporting countries in general. We turn now to a more detailed discussion of the data for individual regions.

CUSTA: Trade between Canada and the United States accounted for about one-fifth of North American trade in processed agrifood products in 1965. The regional trade share declined slowly until 1979, but this was followed by an impressive recovery during the late 1980s (Table 1). By 1993, the intra-regional trade share rose to 28 percent (Table 1). The intensity of intra-regional trade grew unabated over the past three decades. The value of the intra-regional trade index grew from 2.47 in 1965 to 2.69 in 1979 and to an impressive 4.35 in 1993 (Table 2). In the early period, the increase in the intensity of Canada-US trade was driven by the reduction in their importance in world trade, which dropped from 14.9 percent in 1965 to 11.5 percent in 1979. During the later years, their reduced share of world trade coupled with a significant increase in intra-regional trade made the trading relations between Canada and the US more intense than those in any other major trading region analyzed.

On the extra-regional side, CUSTA's bias is less apparent. Despite a modest decline during the second period, this region has always had the highest extra-regional trade intensity among the major trading regions (Table 2). Finally, in spite of changes in the importance of the rest of the world as a trading partner and the reduction of CUSTA's extra-regional trade share, its share of agricultural GDP that is internationally traded has increased. Strong growth in exports increased the propensity to trade extra-

regionally as well as the propensity to trade intra-regionally (Table 3).

Canada and the United States play a bigger role in world trade in raw products than in processed products. Together they have accounted for 19 – 25 percent of total world trade in raw products over the past three decades (Table 4). Both Canada and the United States are important international exporters of raw agricultural commodities. For this reason, the share of intra-regional trade in raw products is lower than that for processed products. The intra-regional trade share declined steadily during the early time period, but trended upward during the second time period (Table 4). Accordingly, the intra-regional trade intensity index dropped from 3.04 in 1970 to 1.88 in 1982 (Table 5), then the index then goes up gradually to reach 2.60 in 1993.

The extra-regional trade intensity index is also the highest among the major trading regions, and is quite stable relative to the intra-regional trade intensity index (Table 5). The middle of 1980s represents the turning point for trade shares as well as intensities for CUSTA. The low prices in international commodity markets during this period are reflected in the sharp upturn in the intra-regional intensity, a slow downward trend in the extra-regional index and a decline in the trade-to-GDP ratio. The drop in the trade-to-output ratio between 1982 and 1985 is particularly interesting (Table 4). It was the declining terms of trade, and not the volume of trade that was largely responsible for this drop. Finally, the propensities to trade intra- and extra-regionally have declined consistently since 1982 (Table 6). These results suggest that although agriculture is not fully integrated into CUSTA, the regionalization of agrifood trade has been growing in North America, particularly during the second period. This may be associated with welfare losses for exporting countries, in the case of raw products, given the trends in the share of GDP traded and the propensities to trade.

European Union: In Western Europe, particularly in countries forming the European Union, trade in both processed and raw agricultural products showed significant growth in regional integration over the past three decades. These are reflected in both trade shares and the intensity indices. In processed products, the share of the EU's intra-regional trade increased from about 50 percent in 1965 to just over 71 percent in 1993 (Table 1). Similarly, in raw products, the trade share that is intra-regional rose from about 30 percent in 1965 to 62 percent in 1993 (Table 4). While the dynamics of integration for processed and raw products are different, the impressive growth in the EU's intra-regional trade is a direct result of the integration of national agrifood policies and programs under the Common Agricultural Policy (CAP).

The phenomenal growth of intra-regional trade combined with a steady increase in the trade importance of Western Europe pushed the EU's share of world trade, in processed products, from just over 37 percent in 1965 to 47 percent in 1993 (Table 1). The intra-regional trade intensity index has been remarkably stable, compared with other regional blocks, while the extra-regional trade intensity index has declined slowly over the past three decades (Table 2). The EUs trade-to-GDP ratio just about tripled over the study period, from 0.55 in 1965 to 1.62 in 1993 (Table 1). The growth has been stronger for exports than for imports and it has been strong enough to overcome the decline in the intensity of extra-regional trade. Hence, the propensity to trade extra-regionally has grown as has the propensity to trade intra-regionally (Table 3). Thus, in global terms, trade creation has been stronger than trade diversion during this period.

The contribution of the EU to the world trend of growing geographical bias is somewhat exceptional for raw products. The EUs share of world trade in raw products has remained fairly stable during the last three decades, except for 1982 (Table 4).

The intensity of intra-regional trade grew steadily from 1.69 in 1965 to 2.50 in 1982. Since 1982 the intra-regional index has remained fairly stable. The extra-regional trade intensity index declined gradually from 0.77 in 1965 to 0.50 in 1993 (Table 5). These values suggest that a strong regional bias in raw product trade has developed in the EU during the past three decades. This bias can be attributed to the remarkable growth of the EU's intra-regional trade share, from 29.5 percent in 1965 to 61.6 percent in 1993 (Table 4). The share of agricultural GDP traded appears to be on the decline in the 1980s, after a long period of relative stability (Table 4).

The EU's propensity to trade raw products intra-regionally grew steadily from 0.34 in 1965 to 0.71 in 1985 and then fell gradually to 0.49 (Table 6). The propensity to trade extra-regionally remained stable at around 0.15 between 1965 and 1985 and then declined gradually (Table 6). The declining terms of trade for raw products, rather than changes in openness, played a major role in shaping the behaviour of the propensity to trade extra-regionally. The competitive subsidization of raw agrifood products by the United States and the EU on extra-regional markets led to declining world prices in the 1980s which affected both the US and the EU. However, the effectiveness of the EU's price support policies prevented their trade-to-GDP ratio from falling as fast as in the US. In the EU, the downward trend in the propensity to import began in 1976, when the domestic and trade policies of the EU moderated the rate of decline in the trade-to-GDP ratio. However, the EU's propensity to export extra-regionally began to decline much later, in 1985, which can again be linked to the crisis in world commodity markets. The data suggest that for raw products, domestic farm policies had a significant influence on the development of geographic bias. The role of the CAP in shaping and strengthening regionalism in the EU is consistent with the

results of other studies finding substantial trade diversion in EC agrifood trade (Balassa 1974, Thornbecke and Pagoulatos 1975, Pomfret 1986b, Demekas et al., 1988, McCalla 1992).

In the Asia/Pacific region, which includes a diverse set of countries and has undergone considerable trade integration since the 1980s, almost 60 percent of the regions trade in processed agrifood products is intra-regional. The intra-regional trade share has increased gradually from 34.2 percent in 1965 to 57.1 percent in 1993 (Table 1). The trend resembles that in the EU, although there is no CAP to harmonize national farm policies or to induce trade creation among members at the expense of non-members. While the share of trade with Asia has grown between 1965 and 1993, the trade weight of the region, 19.2 percent in 1993, is still relatively low compared to other large regions. This low trade weight generates high values of the index of intra-regional trade intensity (Table 2). The index of extra-regional trade intensity dropped from 0.71 in 1965 to 0.59 in 1976, and then remained fairly stable for the rest of the period. However, the trade-to-GDP ratio increased and, as a result, the propensities to trade both intra- and extra-regionally have increased consistently over the entire period (Table 3).

The share of Asia's trade in raw agrifood products that is intra-regional is also relatively high; it declined from 41.7 percent in 1965 to 34.2 percent in 1982 and then recovered to reach 50.2 percent in 1993 (Table 4). The indices of intra- and extra-regional trade intensities, however, move erratically between 1965 and 1982, mostly due to changes in Asia's share of world trade (Table 5). Since 1982, both indicators point towards growing regionalization and the process is propelled by the growth in the share of trade that is intra-regional. Since this growth has been stronger than the

growing importance of Asia in world trade, the index of intra-regional trade intensity

rose to 1.96 while that of extra-regional intensity dropped to 0.64 in 1993 (Table 5).

Finally, since the share of GDP traded has remained relatively stable, the propensities

to trade intra- and extra-regionally hovered around 0.17 and 0.07 respectively, during

the entire period (Table 6).

Thus, for the Asia/Pacific region, the growth in agrifood trade liberalization was

driven, not only by the harmonization of national agrifood policies but by making

domestic agrifood systems increasingly open to trade, both intra- and extra-regionally.

Particularly for raw product trade, the remarkable stability of the sectoral share of GDP

traded, and the absence of any agricultural trade agreement suggest that the dynamics

of development as well as volatile international commodity markets were the main

forces influencing trade in agrifood products in the Asia/Pacific region since the 1980s.

Latin America: The various Latin American trade agreements of the 1970s

focussed on industrial products. Some agricultural provisions are included in the more

recent agreements but they would only affect geographic bias and the measures of

openness in 1993. In *processed products* Latin America's share was about one- tenth

of world trade from 1965 until the middle of the 1980's, after which it declined to 7.7

percent in 1993 (Table 1). Intra-regionally Latin America's trade has had an uncertain

trend. From 1965 until the end of the 1970's the intra-regional share of trade was

growing, perhaps boosted by preferential trade agreements that increased regional

protection in several processing industries (Table 1). The end of the import-substitution

strategy resulted in a drop in the intra-regional trade share from 12.3 to 10.4 percent

between 1979 and 1985. In the second half of the 1980's intra-regional trade grew

again, reaching 18.7 percent in 1993.

Trade intensities follow the trend of the intra- and extra-regional trade shares. Intra-regionally, the intensity index grew slowly and continuously until the end of the 1970's, from 1.39 in 1965 to 1.88 in 1979, while extra-regionally the index declined for about two decades, from 0.95 in 1965 to 0.90 in 1979 (Table 2). In the later years, Latin America's changing world trade share strengthened the previous trends. The intra-regional intensity increased to 3.20, and the extra-regional intensity declined to 0.82, by 1993. The trade-to-GDP ratio increased slightly from 1965 to 1979 and decreased in the following period (Table 1). These trends say less about Latin America's reduced openness to trade than its increasing difficulty in accessing developed markets. The propensity to trade extra-regionally follows the same pattern as the share of GDP traded, growing from 0.32 to 0.45 in the first period, and declining to 0.30 by the end of the second period (Table 3).

In *raw products* Latin America shows remarkable stability in its share of world trade, about 7.5 percent from 1965 to 1990 (Table 4). Therefore, the trends in the intensity of intra- and extra-regional trading relationships are determined by the shares of trade which are intra- and extra-regional. The intra-regional share of trade declined from 1965 to 1982; from an initial value of 20 percent to 12.9 percent, with the exception of a spike in 1976 (Table 4). Starting in 1985, there is a strengthening of the intra-regional trade bias and a rise in the related trade share to 33 percent in 1993. Trade intensities move accordingly, showing that for Latin America the first half of the 1980s is characterized by a sharp turn towards more regional trading relationships (Table 5). The intra-regional index declined from 3.60 in 1965 to 1.71 in 1982, and then rose gradually during the 1980's to reach a value of 4.05 in 1993. Conversely, extra-regional trade intensities grew from 0.79 in 1965 to 0.94 in 1982; then fell back to 0.73

in 1993. The share of agricultural GDP traded in raw products has been constant, with a negligible decline over the eighties (Table 4). As a consequence, propensities to trade intra- and extra-regionally have followed the trend of the respective intensities. Considering the limited and/or recent involvement of agriculture in trade agreements in Latin America, the trends in regionalism are explained mostly by market driven initiatives reflected in the indices of intra-regional trade integration. Extra-regionally, the lack of access to developed markets has influenced the outcome of regionalism in Latin America (Josling 1995, Valdes 1995).

Developing Africa and Middle East: Developing Africa and the Middle East account for a negligible share of world agrifood trade and it has declined over time. The decline in Africa's trade share has been from 6.3 percent to 2.8 percent for processed agrifood products, and from 5.3 percent to 4.1 percent for raw products (Table 1 and Table 4). The African continent shows an intensity of extra-regional trade close to unity for both classes of products (Table 2 and Table 5). In such a large region, where many countries are importers, the unit value suggests dependence on extra-regional providers. The same is true for the Middle East, but only in raw products.

In *processed products*, the intra-regional intensity index in both Developing Africa and the Middle East tends to decline from 1965 to 1979 and to grow in the following years (Table 2). The change is particularly evident for Developing Africa, where the intra-regional trade intensity increased from 1.37 in 1979 to 3.69 in 1993, due to both a significant drop in their world trade share and an increase in the share of trade that is intra-regional (Table 1). The Middle East is different in that it has very high values for the intra-regional intensity index, which suggests strong regional trading patterns in the absence of formal regional trade agreements.

For *raw products* the intra-regional intensities show opposite trends in Developing Africa and the Middle East (Table 5). Developing Africa tends to have a stable and low intra-regional intensity (average 1.1) until the beginning of the 1980s, then it rapidly increases. The Middle East shows a downward trend until the end of the 1970s, then a stable index hovering around 3.0. For both regions and both classes of products, the propensities to trade intra-regionally follow the values of the intensity; while extra-regionally the dynamics depend on the trade-to-GDP ratio (Table 3 and Table 6). The trade-to-GDP ratio, in the case of processed products, is stable (Table 1). For raw products, the share of agricultural GDP traded tends to decline over the three decades for the Middle East, while, for Africa, it increases slightly beginning in second half of the 1980s (Table 4).

Eastern Europe and the former USSR: The core of the former COMECON region starts from a highly regional pattern of trade and moves toward a reduction in geographic bias, especially in raw products. This is opposite to the trends in other regions. Although the reliability of the trade and agricultural GDP data for Eastern Europe and the FSU is questionable, most of the data is consistent with strong regional trading preferences until the middle of the 1980's.

For *processed products* (Table 1) from 1965 to 1990 a decline in both the share of trade which is intra-regional and the world trade share is observed (from 47.8 to 21.7 percent and from 9.4 to 4.2 percent, respectively). These trends result in relatively stable trade intensities (Table 2). Intra-regionally they hover around 6.0 until the end of the 1970's, and 6.6 in the following period; while extra-regional intensities have a slight tendency to increase, from 0.57, in 1965, to 0.79, in 1990. The agricultural trade-to-

GDP ratio stays rather low over the entire period, first growing and then declining[8]

For *raw products* the tendency towards less regionalism is stronger than for processed products, as the core of the former COMECON moves from high intra-regional and low extra-regional intensities (5.99 and 0.55 respectively, in 1965) to the opposite scenario (Table 5). Behind these trends there is a sharp decline in the share of trade that is intra-regional, from 41.9 percent in 1965 to 16.3 percent in 1990 (Table 4). The share of world trade is stable until the 1990s. For raw products the agricultural trade-to-GDP ratio is low and has the same pattern as for processed products. This gives the extra-regional propensities the same trend as for processed products, while intra-regionally it is the relevant reduction of geographic bias that prevails (Table 6).

8.0   Conclusions

World agrifood trade is currently more regionalized than it was in the second half of the 1960's and is becoming increasingly so. This result holds for all indicators of geographic bias (trade shares and intensities) and is common to both raw and processed agricultural products. However, this is the only characteristic shared by the two types of agricultural goods.

Processed agrifood products show a pattern of regionalism consistent with the results obtained in previous studies that focussed on either global merchandise or global agrifood trade (Anderson and Norheim 1993, Lloyd 1992). For processed products, increasing regionalism is a dimension of growing openness and multilateral interdependence. The EU and most of the other geographic regions, have lower trade

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[8] The sharp increase in the propensity to trade intra- and extra-regionally in 1993 is due to a change in the composition of the region.

shares and intensities of trade with outsiders than they had thirty years ago. The only exception is the former Socialist Bloc. However, for processed agricultural products the growth in the propensity to trade extra-regionally shows that, in the aggregate, openness has prevailed on a geographic basis. This does not deny the possibility of further gains from trade stemming from multilateral trade liberalization. Simply put, trade creation has been stronger than trade diversion.

The same conclusion does not hold for raw agricultural products. For raw products, there is clear evidence of the impact of trade and domestic policies on regional trading patterns. Raw products reveal a geographic bias generally less strong than for processed products, probably because of a stronger role of location specific factors. Furthermore, from 1965 to the end of the 1970s the geographic bias in trading raw products seems to have declined in all of the regions, with the exception of the EU. At that time, high world prices characterized a period of increasing extra-regional trade in most regions; even though the EU was substituting internal for external trade. The role of the CAP is strong enough to be apparent in boosting both the EU's geographic bias and the diversion of trade. This is most evident before the crisis of the 1980's, when the EU's reduction of imports made its pattern of regionalization run counter to the trend in other regions.

The 1980s mark a severe break in world trends. When world prices declined sharply, many regions joined the EU in turning to more intense intra-regional trading relationships. The share of agricultural GDP traded in raw products declined in aggregate. This was especially true for the US and the EU, who were involved in competitive subsidization. For raw products the pattern of regionalism has been significantly affected by domestic and trade policies, with welfare losses borne mainly

by the EU and other exporting regions.

Preferential trading arrangements are playing a growing role in the international trading system. Depending on how regional and national policies are reinstrumented, the process can be beneficial to multilateral efforts for moving agrifood trade beyond the outcome defined by the Uruguay Round. In Europe, regionalism means further enlargement toward the CEECs and changes in the nature of the CAP. Decoupled direct payments to producers, different systems for distributing the financial burden of agricultural policies, and reduced impacts on global welfare may emerge. In the other regions, where agriculture is being gradually included in regional trade agreements, the outcome of regionalism is a case by case matter. The welfare effects depend on: 1) whether, and to what degree agriculture is included in regional trade agreements; 2) if freedom of market access between members is strictly observed; and 3) on the level of protection against third parties. The WTO negotiations, whose primary goal is multilateral trade liberalization, may also be helpful in removing some of the obstacles to the inclusion of agrifood in regional trade agreements. Further regional integration will be enhanced by less trade-distorting domestic policies. The results presented in this paper suggest that this task is more important for raw products, where domestic and trade policies play a stronger role than for processed agrifood products.

Figure 1: World - Intra-Regional Share of Trade

Figure 2: World - Intensity of Intra-Regional Trade

Figure 3: World - Intensity of Extra-Regional Trade
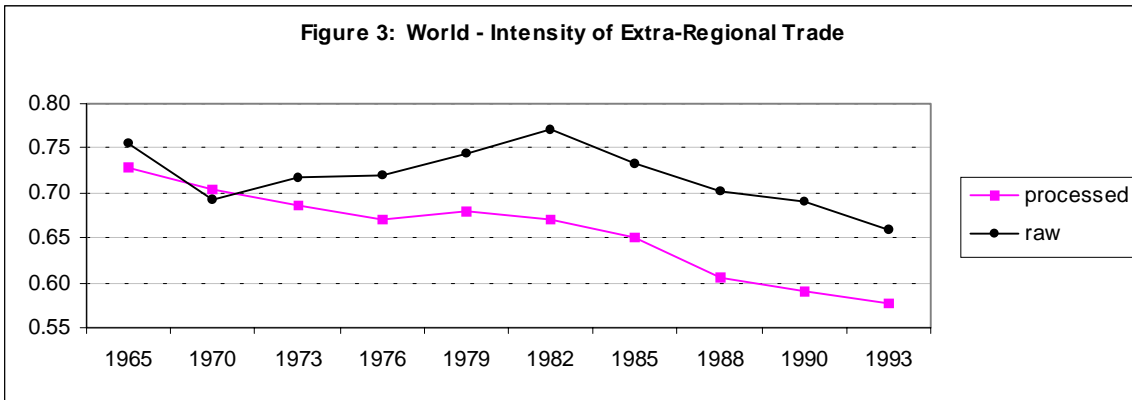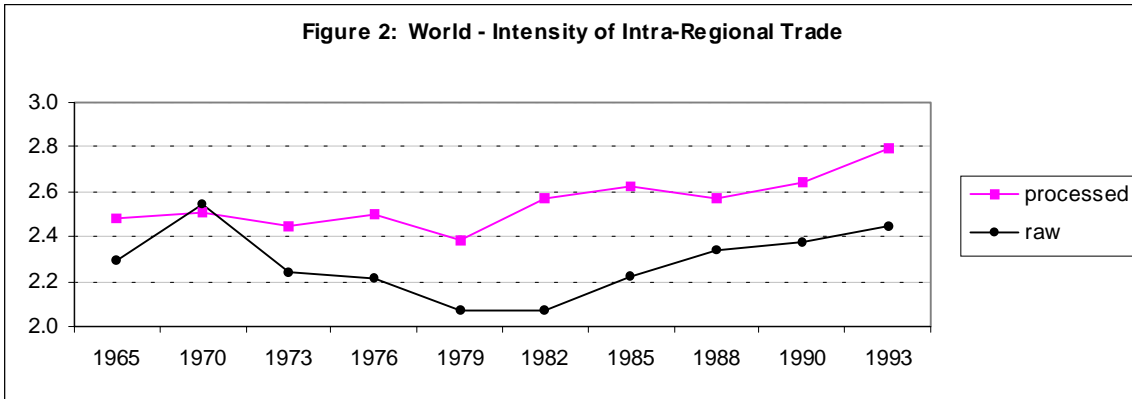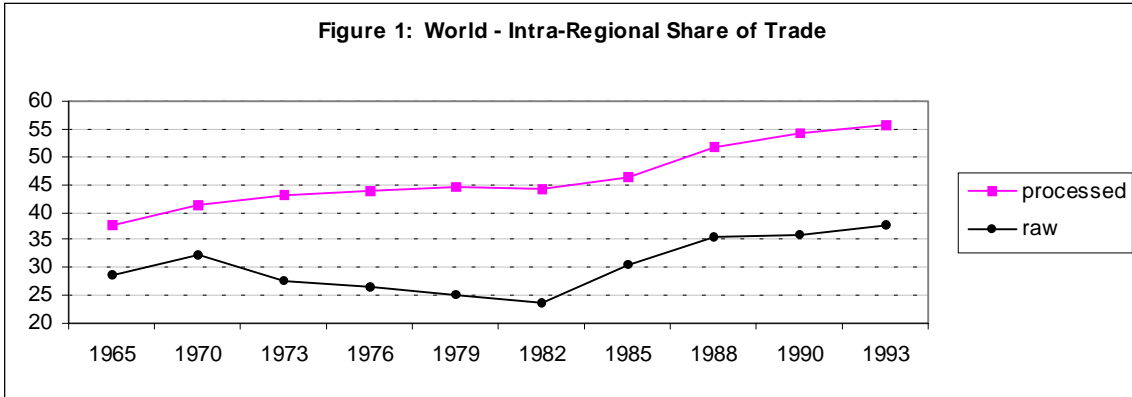
Figure 4: World - Propensity to Trade Intra-Regionally
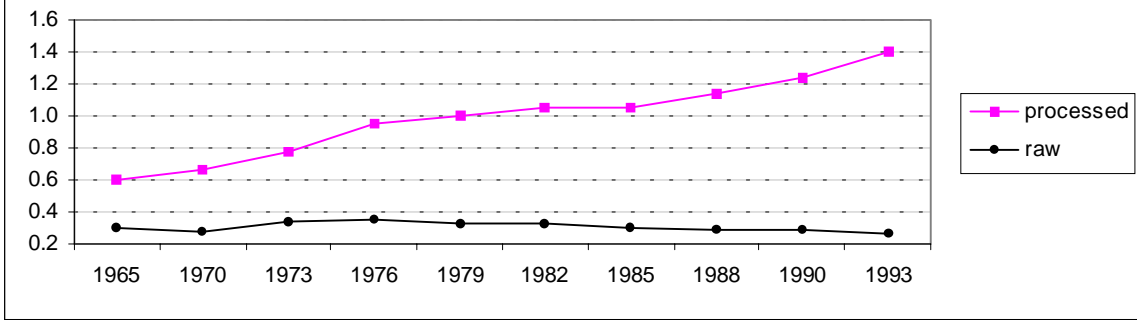
Figure 5: World - Propensity to Trade Extra-Regionally

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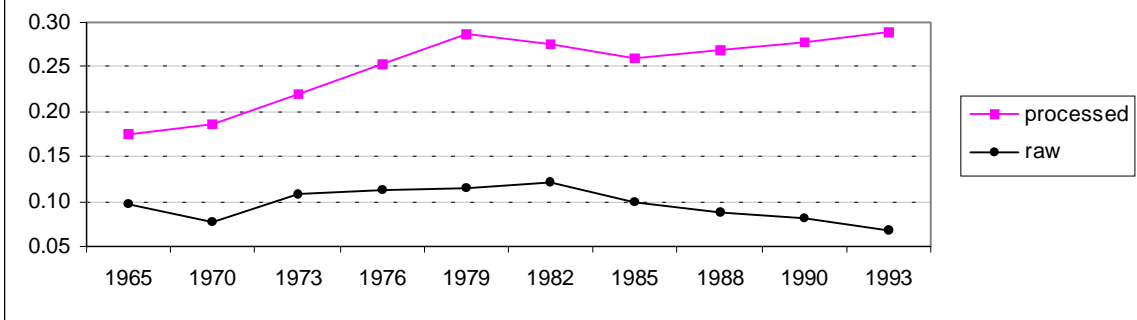
Table 1: Trade Shares and the Share of Agricultural GDP Traded: Processed Products, 1965-1993

	1965	1970	1973	1976	1979	1982	1985	1988	1990	1993
Share of World Trade										
CUSTA	14.9	14.9	13.3	11.8	11.5	11.7	12.5	11.3	11.6	12.1
Latin America	10.7	10.6	10.1	10.9	10.7	10.3	9.8	8.1	7.7	7.7
America, total	25.6	25.5	23.4	22.7	22.2	22.1	22.3	19.4	19.4	19.8
EU-12	37.3	39.0	40.9	40.5	42.2	39.6	40.9	45.2	46.8	46.5
Western Europe	42.2	44.1	45.4	44.4	46.0	43.4	44.7	49.1	50.7	50.2
Eastern Europe & f/USSR	9.4	7.9	7.4	7.7	6.3	7.8	6.3	5.2	4.2	3.7
Europe, total	51.7	52.0	52.8	52.2	52.3	51.2	51.1	54.4	54.9	53.9
Asia/Pacific, total	12.4	13.1	14.0	14.4	14.9	15.5	16.3	17.8	18.1	19.2
Dev. Africa	6.3	5.7	5.3	5.8	5.5	5.3	4.8	3.6	3.2	2.8
Middle East	2.1	1.9	2.6	3.1	3.5	4.5	3.9	3.2	3.1	3.2
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Intra-regional Share of Trade										
CUSTA	19.4	19.2	18.6	18.5	16.3	19.2	19.9	20.2	24.3	28.0
Latin America	9.2	11.1	10.9	11.6	12.3	11.6	10.4	10.9	14.6	18.7
America, total	46.9	45.9	42.8	42.6	42.5	41.2	43.9	40.7	43.3	47.5
EU-12	49.3	55.6	59.9	62.3	63.1	62.9	64.9	69.9	71.1	71.2
Western Europe	56.8	62.2	65.4	66.6	67.4	66.8	68.9	74.3	75.6	75.7
Eastern Europe & f/USSR	47.8	42.8	38.2	37.8	30.9	32.4	35.3	29.5	21.7	18.4
Europe, total	64.1	66.9	69.4	68.2	68.3	67.6	69.2	73.9	76.2	78.2
Asia/Pacific, total	34.2	40.5	44.3	47.9	49.2	50.4	51.5	54.3	55.5	57.1
Dev. Africa	11.5	9.7	8.7	7.9	7.3	8.4	8.5	9.2	10.5	10.2
Middle East	24.4	21.4	17.8	15.2	13.9	21.3	21.9	17.6	19.1	23.7
World	37.8	41.1	43.2	43.8	44.4	44.2	46.2	51.8	54.2	55.5
Trade to AG-GDP ratio										
CUSTA	0.30	0.34	0.32	0.38	0.44	0.44	0.44	0.48	0.50	0.56
Latin America	0.33	0.38	0.39	0.44	0.51	0.46	0.45	0.45	0.43	0.37
America, total	0.32	0.36	0.35	0.41	0.47	0.45	0.45	0.47	0.47	0.47
EU-12	0.55	0.70	0.87	1.03	1.16	1.30	1.43	1.47	1.55	1.62
Western Europe	0.51	0.66	0.80	0.91	1.04	1.15	1.27	1.31	1.39	1.47
Eastern Europe & f/USSR	0.13	0.11	0.14	0.21	0.21	0.25	0.18	0.14	0.13	0.18
Europe, total	0.34	0.38	0.49	0.60	0.71	0.74	0.72	0.73	0.80	0.98
Asia/Pacific, total	0.09	0.10	0.13	0.16	0.18	0.17	0.19	0.22	0.24	0.25
Dev. Africa	0.23	0.23	0.26	0.27	0.27	0.25	0.22	0.24	0.25	0.25
Middle East	0.20	0.19	0.27	0.28	0.32	0.31	0.21	0.23	0.23	0.25
World	0.24	0.26	0.32	0.38	0.42	0.41	0.40	0.44	0.47	0.50

See notes following table 6.

Table 2: World Indices of Intensity to Trade: Processed Products, 1965-1993

	1965	1970	1973	1976	1979	1982	1985	1988	1990	1993
Intensity of Intra-regional Trade										
CUSTA	2.47	2.53	2.74	3.04	2.69	3.09	3.06	3.39	3.95	4.35
Latin America	1.39	1.68	1.74	1.86	1.88	1.73	1.83	2.15	2.71	3.20
America, total	1.93	1.87	1.91	2.03	2.09	2.05	2.11	2.27	2.41	2.57
EU-12	1.48	1.55	1.58	1.65	1.59	1.68	1.68	1.63	1.60	1.61
Western Europe	1.46	1.49	1.51	1.56	1.52	1.59	1.59	1.56	1.53	1.55
Eastern Europe & f/USSR	5.85	6.27	5.94	5.81	6.16	5.29	6.72	6.83	6.43	6.66
Europe, total	1.31	1.34	1.36	1.35	1.34	1.35	1.39	1.39	1.41	1.48
Asia/Pacific, total	3.11	3.31	3.36	3.52	3.46	3.39	3.29	3.16	3.17	3.07
Dev. Africa	2.15	2.06	1.80	1.42	1.37	1.67	1.80	2.59	3.35	3.69
Middle East	13.48	13.16	8.27	6.70	5.77	6.98	7.80	7.31	7.88	9.46
World	2.48	2.51	2.45	2.50	2.39	2.57	2.63	2.57	2.64	2.79
Intensity of Extra-regional Trade										
CUSTA	0.87	0.87	0.87	0.86	0.89	0.86	0.85	0.85	0.81	0.77
Latin America	0.95	0.92	0.92	0.89	0.90	0.92	0.91	0.90	0.86	0.82
America, total	0.69	0.71	0.73	0.70	0.70	0.71	0.69	0.70	0.67	0.62
EU-12	0.73	0.67	0.63	0.60	0.61	0.59	0.57	0.53	0.52	0.52
Western Europe	0.66	0.62	0.59	0.57	0.58	0.57	0.55	0.49	0.48	0.47
Eastern Europe & f/USSR	0.57	0.61	0.66	0.65	0.70	0.69	0.67	0.72	0.79	0.82
Europe, total	0.65	0.64	0.61	0.62	0.63	0.64	0.61	0.55	0.51	0.46
Asia/Pacific, total	0.71	0.66	0.63	0.59	0.59	0.58	0.57	0.55	0.54	0.53
Dev. Africa	0.92	0.94	0.96	0.97	0.98	0.96	0.96	0.94	0.92	0.92
Middle East	0.77	0.80	0.83	0.84	0.85	0.75	0.75	0.82	0.81	0.76
World	0.73	0.70	0.69	0.67	0.68	0.67	0.65	0.61	0.59	0.58

See notes following table 6.

Table 3: World Indices of Propensity to Trade: Processed Products, 1965-1993

	1965	1970	1973	1976	1979	1982	1985	1988	1990	1993
Index of Propensity to Trade Intra-regionally										
CUSTA	0.75	0.87	0.89	1.16	1.17	1.35	1.35	1.61	1.99	2.45
Latin America	0.46	0.64	0.67	0.81	0.95	0.80	0.83	0.97	1.15	1.18
America, total	0.61	0.67	0.67	0.82	0.97	0.92	0.94	1.06	1.14	1.20
EU-12	0.82	1.09	1.37	1.70	1.85	2.20	2.41	2.40	2.48	2.62
Western Europe	0.74	0.98	1.21	1.42	1.58	1.83	2.02	2.04	2.13	2.28
Eastern Europe & f/USSR	0.77	0.69	0.86	1.20	1.29	1.31	1.21	0.97	0.84	1.19
Europe, total	0.44	0.50	0.66	0.82	0.95	1.00	1.01	1.02	1.13	1.45
Asia/Pacific, total	0.27	0.33	0.44	0.57	0.62	0.59	0.62	0.70	0.76	0.77
Dev. Africa	0.50	0.48	0.46	0.39	0.36	0.41	0.39	0.63	0.83	0.93
Middle East	2.72	2.52	2.23	1.87	1.84	2.18	1.62	1.70	1.80	2.33
World	0.59	0.66	0.78	0.94	1.00	1.05	1.05	1.14	1.24	1.40
Index of Propensity to Trade Extra-regionally										
CUSTA	0.27	0.30	0.28	0.33	0.39	0.38	0.37	0.40	0.41	0.43
Latin America	0.32	0.35	0.36	0.39	0.45	0.42	0.41	0.41	0.37	0.30
America, total	0.22	0.25	0.25	0.29	0.32	0.32	0.31	0.33	0.31	0.29
EU-12	0.40	0.47	0.55	0.62	0.71	0.77	0.82	0.77	0.81	0.84
Western Europe	0.34	0.41	0.48	0.52	0.60	0.66	0.69	0.64	0.67	0.70
Eastern Europe & f/USSR	0.07	0.07	0.10	0.13	0.15	0.17	0.12	0.10	0.10	0.15
Europe, total	0.22	0.24	0.30	0.38	0.45	0.47	0.44	0.40	0.41	0.45
Asia/Pacific, total	0.06	0.07	0.08	0.10	0.10	0.10	0.11	0.12	0.13	0.13
Dev. Africa	0.21	0.22	0.25	0.27	0.26	0.24	0.21	0.23	0.23	0.23
Middle East	0.16	0.15	0.22	0.23	0.27	0.24	0.16	0.19	0.18	0.19
World	0.17	0.19	0.22	0.25	0.29	0.27	0.26	0.27	0.28	0.29

See notes following table 6.

Table 4: Trade Shares and the Share of Agricultural GDP Traded: Raw Products, 1965-1993

	1965	1970	1973	1976	1979	1982	1985	1988	1990	1993
Share of World Trade										
CUSTA	20.1	18.5	22.7	23.4	24.7	24.8	20.6	18.9	19.1	19.2
Latin America	7.6	6.7	6.8	7.4	7.6	7.8	7.8	6.3	7.1	8.5
America, total	27.7	25.2	29.6	30.7	32.3	32.6	28.4	25.2	26.3	27.7
EU-12	24.9	27.0	25.6	26.0	24.1	21.4	24.5	27.0	27.4	27.2
Western Europe	27.5	29.5	27.7	27.9	25.8	23.3	26.6	28.9	29.3	28.7
Eastern Europe & f/USSR	9.5	9.5	8.0	9.4	9.1	10.3	9.7	8.4	7.0	5.6
Europe, total	37.0	39.1	35.8	37.3	35.0	33.6	36.3	37.3	36.3	34.3
Asia/Pacific, total	26.3	24.5	24.5	22.3	23.1	23.2	24.7	28.0	27.5	27.1
Dev. Africa	5.3	5.7	4.5	4.3	4.0	4.4	4.4	3.8	4.0	4.1
Middle East	1.9	2.5	2.8	3.1	3.2	3.9	4.2	3.9	4.0	4.2
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Intra-regional Share of Trade										
CUSTA	11.8	13.4	5.8	4.6	3.4	3.3	3.9	4.8	6.0	9.2
Latin America	20.0	17.7	13.6	15.9	14.6	12.9	19.8	21.7	26.4	33.0
America, total	23.2	24.5	21.7	19.7	23.2	23.9	27.1	26.0	28.2	37.9
EU-12	29.5	40.9	42.8	43.8	46.5	46.0	54.3	60.9	62.1	61.6
Western Europe	34.9	45.3	46.5	46.1	48.4	47.7	55.5	62.0	63.3	63.3
Eastern Europe & f/USSR	41.9	49.6	31.6	27.1	19.2	20.4	23.2	24.4	16.3	13.1
Europe, total	44.7	53.5	50.0	48.2	48.9	48.4	57.5	62.3	62.9	66.5
Asia/Pacific, total	41.7	39.9	38.9	38.5	36.7	34.2	42.2	45.6	45.7	50.2
Dev. Africa	4.1	5.5	4.3	5.1	3.9	5.3	5.4	8.2	10.0	7.1
Middle East	8.5	10.4	9.2	5.8	5.1	7.8	5.6	5.6	5.7	7.4
World	28.8	32.2	27.6	26.7	25.0	23.5	30.3	35.5	35.9	37.7
Trade to AG-GDP ratio										
CUSTA	0.22	0.18	0.26	0.31	0.35	0.36	0.24	0.23	0.21	0.19
Latin America	0.13	0.10	0.13	0.12	0.13	0.13	0.12	0.10	0.10	0.08
America, total	0.18	0.15	0.21	0.23	0.25	0.26	0.19	0.17	0.16	0.14
EU-12	0.20	0.20	0.26	0.27	0.25	0.27	0.29	0.25	0.23	0.20
Western Europe	0.18	0.18	0.23	0.24	0.22	0.24	0.25	0.22	0.20	0.17
Eastern Europe & f/USSR	0.07	0.06	0.07	0.10	0.11	0.13	0.09	0.06	0.05	0.06
Europe, total	0.13	0.12	0.16	0.18	0.17	0.19	0.17	0.14	0.13	0.13
Asia/Pacific, total	0.10	0.08	0.11	0.10	0.10	0.10	0.09	0.10	0.09	0.07
Dev. Africa	0.11	0.10	0.10	0.08	0.07	0.08	0.07	0.07	0.08	0.08
Middle East	0.10	0.10	0.14	0.11	0.11	0.11	0.07	0.08	0.08	0.07
World	0.13	0.11	0.15	0.16	0.16	0.16	0.13	0.12	0.12	0.10

See notes following table 6.

Table 5: World Indices of Intensity to Trade: Raw Products, 1965-1993

	1965	1970	1973	1976	1979	1982	1985	1988	1990	1993
Intensity of Intra-regional Trade										
CUSTA	1.90	3.04	2.29	2.22	2.02	1.88	1.99	2.12	2.33	2.60
Latin America	3.60	3.18	2.12	2.42	2.00	1.71	2.63	3.60	3.85	4.05
America, total	1.39	1.73	1.62	1.58	1.58	1.56	1.77	1.90	1.87	1.97
EU12	1.69	1.96	2.12	2.20	2.36	2.50	2.47	2.47	2.47	2.47
Western Europe	1.77	1.92	2.06	2.06	2.21	2.31	2.25	2.28	2.28	2.33
Eastern Europe & f/USSR	5.99	6.24	5.14	4.09	3.58	3.42	3.85	4.24	3.81	2.79
Europe, total	1.60	1.61	1.68	1.60	1.71	1.71	1.76	1.79	1.85	2.02
Asia/Pacific, total	1.64	1.73	1.77	1.91	1.75	1.64	1.79	1.71	1.76	1.98
Dev. Africa	1.04	1.20	1.00	1.21	1.10	1.52	1.67	2.82	3.15	2.21
Middle East	5.17	4.76	4.09	2.49	2.37	3.59	2.88	2.94	2.89	3.50
World	2.29	2.55	2.24	2.21	2.07	2.07	2.22	2.34	2.38	2.45
Intensity of extra-regional Trade										
CUSTA	0.89	0.76	0.80	0.80	0.82	0.85	0.87	0.87	0.83	0.80
Latin America	0.79	0.85	0.92	0.89	0.92	0.94	0.87	0.83	0.79	0.73
America, total	0.83	0.72	0.67	0.66	0.62	0.64	0.63	0.65	0.64	0.59
EU-12	0.77	0.65	0.63	0.59	0.59	0.62	0.56	0.50	0.49	0.50
Western Europe	0.69	0.60	0.59	0.58	0.58	0.61	0.56	0.50	0.49	0.49
Eastern Europe & f/USSR	0.55	0.52	0.69	0.72	0.77	0.75	0.73	0.74	0.82	0.91
Europe, total	0.59	0.57	0.59	0.60	0.59	0.62	0.56	0.53	0.52	0.48
Asia/Pacific, total	0.78	0.77	0.75	0.74	0.78	0.81	0.75	0.73	0.72	0.64
Dev. Africa	1.00	0.99	1.00	0.99	1.00	0.98	0.97	0.93	0.91	0.95
Middle East	0.93	0.92	0.92	0.96	0.96	0.91	0.93	0.93	0.93	0.90
World	0.75	0.69	0.72	0.72	0.74	0.77	0.73	0.70	0.69	0.66

See notes following table 6.

Table 6: World Indices of Propensity to Trade: Processed Products, 1965-1993

	1965	1970	1973	1976	1979	1982	1985	1988	1990	1993
Index of Propensity to Trade Intra-regionally										
CUSTA	0.42	0.54	0.60	0.69	0.70	0.67	0.48	0.48	0.49	0.48
Latin America	0.46	0.31	0.27	0.30	0.27	0.23	0.32	0.35	0.38	0.34
America, total	0.26	0.25	0.34	0.36	0.40	0.40	0.34	0.32	0.30	0.27
EU-12	0.34	0.39	0.55	0.60	0.58	0.68	0.71	0.61	0.57	0.49
Western Europe	0.32	0.35	0.48	0.49	0.48	0.55	0.57	0.50	0.46	0.41
Eastern Europe & f/USSR	0.43	0.34	0.38	0.42	0.40	0.43	0.35	0.27	0.21	0.16
Europe, total	0.21	0.19	0.26	0.29	0.30	0.32	0.30	0.25	0.25	0.26
Asia/Pacific, total	0.16	0.13	0.19	0.20	0.18	0.17	0.17	0.17	0.16	0.15
Dev. Africa	0.11	0.12	0.10	0.10	0.08	0.12	0.11	0.20	0.24	0.17
Middle East	0.51	0.50	0.58	0.28	0.25	0.38	0.21	0.24	0.22	0.24
World	0.30	0.28	0.34	0.34	0.32	0.33	0.30	0.29	0.28	0.26
Index of Propensity toTrade Extra-regionally										
CUSTA	0.20	0.13	0.21	0.25	0.28	0.30	0.21	0.19	0.18	0.15
Latin America	0.10	0.08	0.12	0.11	0.12	0.13	0.10	0.08	0.08	0.06
America, total	0.15	0.10	0.14	0.15	0.16	0.16	0.12	0.11	0.10	0.08
EU-12	0.15	0.13	0.16	0.16	0.15	0.17	0.16	0.12	0.11	0.10
Western Europe	0.12	0.11	0.14	0.14	0.13	0.15	0.14	0.11	0.10	0.09
Eastern Europe & f/USSR	0.04	0.03	0.05	0.07	0.09	0.10	0.07	0.05	0.04	0.05
Europe, total	0.08	0.07	0.09	0.11	0.10	0.12	0.10	0.07	0.07	0.06
Asia/Pacific, total	0.08	0.06	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.05
Dev. Africa	0.11	0.09	0.10	0.08	0.07	0.08	0.06	0.07	0.07	0.07
Middle East	0.09	0.10	0.13	0.11	0.10	0.10	0.07	0.08	0.07	0.06
World	0.10	0.08	0.11	0.11	0.12	0.12	0.10	0.09	0.08	0.07

Notes for table 1 through table 6.

1. Trade refers to the average of imports and exports in calculating shares or intensity indices.
   The share of agricultural GDP traded and propensity indices refer to imports plus exports.
   All values are measured in current US dollars.
2. Western Europe includes the EU-12, EFTA and the former Yugoslavia.
3. Eastern Europe and the former USSR includes the former GDR as one country until 1989.
   Beginning in 1992, Eastern Europe and the former USSR does not include the Asiatic countries
   of the former USSR, who are included in the Asia/Pacific region.
4. The Middle East does not include Israel.
5. World values of intra-regional shares and indices of trade intensity and propensity to trade
   intra- and extra-regionally are obtained as weighted averages of the corresponding values for
   the seven regions (North America, South America, Western Europe, Eastern Europe and
   Former USSR, Asia, Africa, and Middle East). The regions are weighted by the shares
   of world trade of each region when calculating world intra-regional trade and intensities of trade.
   For propensities to trade the regional weights are the regions share of world agricultural GDP.

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