

**Does Mercosur's Trade Performance Raise Concerns About
the Effects of Regional Trade Arrangements?**

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January 30, 1997

Foreword

As regional trading arrangements (RTAs) have spread, enlarged and deepened over the last decade, they have posed challenges to economists on both intellectual and policy levels. On the former, do RTAs stimulate growth and investment, facilitate technology transfer, shift comparative advantage towards high value-added activities, provide credibility to reform programs, or induce political stability and cooperation? Or do they, on the other hand, divert trade in inefficient directions and undermine the multilateral trading system?

The answer is probably "all of these things, in different proportions according to the particular circumstances of each RTA." This then poses the policy challenge of how best to manage RTAs in order to get the best balance of benefits and costs. For example, should technical standards be harmonized and, if so, how; do direct or indirect taxes need to be equalized; how should RTAs manage their international trade policies in an outward-looking fashion?

Addressing these issues is one important focus of the research program of the International Trade Division of the World Bank. It has produced a number of methodological innovations in the traditional area of trade effects of RTAs and is now starting to tackle four new areas of research: the dynamics of regionalism (e.g., convergence, growth, investment, industrial location and migration), deep integration (standards, tax harmonization), regionalism and the rest of the world (including its effects on the multilateral trading system), and certain political economy dimensions of regionalism (e.g., credibility and the use of RTAs as tools of diplomacy).

In addition to thematic work, the program includes a number of studies of specific regional arrangements, conducted in collaboration with the Regional Vice Presidencies of the Bank. Several EU-Mediterranean Association Agreements have been studied and a joint program with the staff of the Latin American and Caribbean Region entitled "**Making the Most of Mercosur**" is under way. Future work is planned on African and Asian regional integration schemes.

Research findings from the Regionalism and Development program have been and will be released in a number of research outlets to foster widespread comment and debate. While they inform policy debate within the World Bank, they do not define Bank policy. Recent World Bank Policy Research Working Papers include:

Glenn Harrison, Tom Rutherford and David Tarr, "Economic Implications for Turkey of a Customs Union with the European Union," (No. 1599).

Maurice Schiff, "Small is Beautiful, Preferential Trade Agreements and the Impact of Country Size, Market Share, Efficiency and Trade Policy," (No. 1668).

L. Alan Winters, "Regionalism versus Multilateralism," (No. 1687).

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Planned future issues in this series include:

- (i) Eric Bond, "An Operational Model for Assessing Preferential Trading Arrangements"
- (ii) Sherry Stephenson, "Standards, Conformity Assessments and Developing Countries"
- (iii) Maurice Schiff and L. Alan Winters, "Regional Integration as Diplomacy"
- (iv) Anthony Venables and Diego Puga, "Trading Arrangements and Industrial Development"
- (v) L. Alan Winters and Won Chang, "Integration and Non-Member Welfare: Measuring the Price Effects"
- (vi) Glenn Harrison, Thomas Rutherford and David Tarr, "Trade Policy Options for Chile: A Quantitative Evaluation"

In addition, **Making the Most of Mercosur** will be issuing papers over the next few months, including:

- (vi) Azita Amjadi and L. Alan Winters, "Transportation Costs and "Natural" Integration in Mercosur"
- (vii) Claudio Frischtak, Danny M. Leipziger and John F. Normand, "Industrial Policy in Mercosur: Issues and Lessons"
- (viii) Sam Laird (WTO), "Mercosur Trade Policy: Towards Greater Integration"
- (ix) Margaret Miller and Jerry Caprio, "Empirical Evidence on the Role of Credit for SME Exports in Mercosur"
- (x) Malcom Rowat, "Competition Policy within Mercosur"

For copies of these papers or information about these programs contact Maurice Schiff, The World Bank, 1818 H Street NW, Washington, D.C. 20433.

An additional major outlet for World Bank-sponsored research on regionalism will be the Annual Bank Conference on Development in Latin America, 1997, Montevideo, June 30-July 2, 1997, organized by the Office of the Chief Economist and the Technical Department for Latin America and the Caribbean Region, with the support of the International Trade Division and the Economic Development Institute.

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Summary

One concern raised in the discussion over regional trade arrangements (RTAs) is whether the discriminatory trade barriers applied in these arrangements encourage high cost imports from member countries at the expense of lower cost goods from non-members. However, evaluations of the actual impact of RTAs have been hampered by a lack of appropriate empirical procedures for assessing their influence on the level and direction of trade.

This study employs a new index for analyzing one aspect of an RTA, - its static trade effects. It examines changes in the regional "orientation" of exports, and shows how this information can be employed in connection with the "revealed" comparative advantage (RCA) index to identify apparent "inefficiencies" in trade patterns. The approach is applied to statistics on Mercosur countries' exports to determine if recent trade is evolving along lines compatible with these countries' comparative advantage. The paper does not comment on the many other possible effects of RTAs such as benefits from political cooperation, enhancing the credibility of reform strategies, or dynamic gains from trade. Nor does it focus directly on changes in trade with non-members which accelerated rapidly due to the 1988-91 liberalization of Mercosur countries trade barriers. Thus, the paper does not address the net welfare effect of trade creation and trade diversion relative to where member countries' trade policies started from in 1988.

The results show the most dynamic (fast growing) products in Mercosur's intra-trade generally are capital intensive goods in which members have not displayed a strong export performance in outside markets. Neither the RCA indices, nor statistics relating to factor proportions, indicate that Mercosur has a comparative advantage in these products. What factors are causing these trade changes? The evidence suggests that Mercosur's own trade barriers are responsible. Most favored nation tariffs on the fast growing products are above the average for all imports and provide Mercosur members with significant preferences. These may also be supplemented by a higher than average incidence of nontariff measures on imports from the rest of the world.

These findings constitute evidence of the potential adverse effects of regional trade arrangements on members and on third countries as judged by some variance in their trade patterns from what would be predicted by current comparative advantage. The counterfactual comparison is with an equivalent degree of liberalization on a non-discriminatory basis. Given the recent proliferation of RTAs, they highlight the need for further empirical research on the domestic and international effects of these arrangements in order to better assess the pros and cons of regionalism.

Does Mercosur's Trade Performance Raise Concerns About the Effects of Regional Trade Arrangements?

Alexander J. Yeats

I. Introduction

The recent proliferation of regional trade arrangements (RTAs) among countries raises several legitimate concerns. Primary among these is the fear that the new regionalism will divert attention from the multilateral negotiation process that GATT (now the World Trade Organization) employed to reduce international trade barriers since 1947. Another is that some regional trade arrangements may raise trade barriers against nonmembers -- a development that could seriously undermine the achievements of the GATT. Third, it is recognized that the discriminatory trade barriers incorporated within regional arrangements may have undesirable effects if they cause sales by members to displace those from more efficient third countries, thereby denying both consumers and producers access to lower cost and superior quality goods. However, assessments of the influence of these arrangements have been hampered by a lack of appropriate and reliable empirical procedures for assessing their actual effects.

This investigation attempts to determine whether two indices, when used jointly, provide insights concerning the extent to which a regional trade arrangement distorts trade from patterns expected on the basis of efficiency conditions and comparative advantage. As a case study, the analysis focuses on the countries of Mercosur. Mercosur was established under the Treaty of Asuncion, signed on 26 March 1991 by the Presidents of Argentina, Brazil, Paraguay and Uruguay. Under the terms of the Treaty staged reductions of tariffs against member's intra-trade were to begin in June 1991 with the objective of removing all tariffs on this exchange by the end of 1994. In fact we start most of our analysis in 1988 because Argentina and Brazil were already implementing some preferential sectoral trade arrangements by

then and also to include the effects of the strong multilateral liberalizations that Mercosur countries initiated around that period.

Mercosur is a good case study for this investigation since it is perhaps the most important recent arrangement involving developing countries, its tariffs on third country suppliers are well above the post-Uruguay Round average for industrial countries (about 3.9 percent), and at least some of the required information on its trade and trade barriers is available. However, data permitting, the procedures developed for this paper can easily be generalized to examine the influence of other discriminatory trade arrangements.

The study proceeds as follows. First, Mercosur countries' trade statistics are analyzed to determine if the direction and composition of members trade has changed significantly during the period when the agreement was being implemented. Unless sizeable changes occurred concerns that trade has actually been diverted from more "efficient" producers would appear to be groundless. Next, the characteristics of a new index which measures the changing regional "orientation" of exports of specific goods is examined and then used to analyze recent shifts in the direction of trade. This index is compared with a measure of "revealed" comparative advantage to show how the two can be employed jointly for analyzing potential inefficiencies in trade patterns. Data drawn from United Nations sources are analyzed to determine whether the changing regional orientation of Mercosur's trade during the period when the agreement was being implemented was consistent with member countries' comparative advantage. Supplemental information on Mercosur countries' tariffs and nontariff barriers are analyzed to determine how they might have influenced trade patterns. The study closes with an overall assessment of the findings and their implications for further research on issues relating to regionalism.

Two other qualifying points should be noted right at the outset. The analysis in this paper focusses on only one aspect of Mercosur -- its static trade effects. Many commentators see other benefits stemming from the agreement such as political cooperation, enhanced negotiating power and better credibility for the

members' general economic reform programs, the possibility of achieving otherwise unattainable economies of scale in production, or dynamic trade gains. These are legitimate objectives which, if achieved, could well more than offset trade distortionary effects. In the present context, however, nothing can be said about them. Second, although there are other possible standards, the counterfactual comparison used in this study is an equivalent degree of liberalization on a nondiscriminatory basis.

II. Mercosur: Recent Trade Trends

Available data indicate that member countries' trade patterns have experienced major changes since the formation of Mercosur.¹ For example, Table 1 provides summary statistics on Mercosur's intra-trade and on exports to destinations such as all OECD countries, NAFTA, or OECD Europe. These data are shown for selected periods from 1979-81 to 1994 in order to help determine when trend changes occurred.² For the earlier intervals three year periods were used to tabulate data in order to reduce the influence of any annual irregular variations in the trade statistics -- such as those that might accompany significant fluctuations in commodity prices. However, statistics for 1993 and 1994 are shown separately in order to more accurately reflect the recent influence of Mercosur on trade flows.³

¹This analysis has been restricted by data availability to exploring trade patterns only up to and including 1994. This is sufficient to identify the effects of preferential trade policies, however, for some preferences were included in the Argentina-Brazilian sectoral agreements at the end of the 1980s and widespread preferences were introduced in the transition period for Mercosur starting in June 1991. However, our exercise clearly sheds no light on events since 1994, such as the further progress towards a Common External Tariff or any progress in the non-trade policy aspects of the agreement. These remain on the agenda for further research

²Globally there has been a long-term decline in the relative importance of the Mercosur countries. According to UN COMTRADE data, in 1950 member countries accounted for 4.6 percent of world exports, yet this figure fell to 1.4 percent in 1992. Since most of the countries ran substantial trade surpluses since the mid-1980s Mercosur's share of world imports is even smaller, i.e., 1.0 percent in 1992.

³A more detailed analysis of the annual trade data used in the construction of Table 1 strongly suggests that 1991 was the year that intra-Mercosur trade began its significant increase in relative importance. In June of 1991 Mercosur began to implement discriminatory tariff preferences on intra-Mercosur trade.

Insert Table 1

The figures reported in Table 1 clearly show the increasing relative importance of Mercosur markets for all four member countries. For example, in 1984-86 under 10 percent of Argentina's exports went to Mercosur countries, yet this share rose to 30 percent by 1994. Although the 1984-86 level was lower (about 4.7 percent), a three fold increase also occurred for Brazil's exports to Mercosur (to 13.7 percent in 1994) while Uruguay's export share rose by almost 20 percentage points (to 46.7 percent). For all member countries taken together, the 1994 share of exports to Mercosur (19.5 percent) was almost three-times the corresponding 1984-86 level. Overall, the data in Table 1 reveal two key trends in the direction of Mercosur's exports over the last decade: (i) a greatly increased relative importance in intra-trade; (ii) a stable, or slight decline, in the relative importance of countries that formed NAFTA and a reduction in the relative importance of Europe.⁴

Given that major shifts occurred in the direction of members' trade toward Mercosur, a related question is what products are most important in this exchange and how has the composition of exports changed? Table 2 lists the value of Mercosur members' exports to each other and also indicates the share accounted for by several broad product groups. On average, about 63 percent of Mercosur's intra-trade now consists of manufactures (this is about 15 percentage points higher than their share in the region's global exports) with Brazil, as expected due to its relative size, having a major influence on the overall average. Over 81 percent of Brazil's exports to Mercosur now consist of manufactured goods --

⁴In contrast to the growing relative importance of Mercosur markets, trade with NAFTA followed a less consistent pattern. Over the last decade the share of Brazil and Uruguay's exports to NAFTA declined by about 5 percentage points, while the trend for Argentina was essentially flat. For all four Mercosur countries the recent trade trends suggest OECD Europe is declining in relative importance -- particularly since 1990-92 -- with the share of both Uruguay and Paraguay's exports to these markets falling by about 5 percentage points. Factors that may have contributed to this decline were further integration efforts within Europe and the extension of trade preferences to the former socialist countries -- all of which worsened the Mercosur countries' competitive position.

Available statistics suggest that European agricultural trade policies had an influence on the declining share of Uruguay's exports. For example, in 1974-75 rice was Uruguay's second largest four-digit SITC export to Europe, but by 1993 these exports had declined to about one-fifth their level in the mid-1970s. Linseed oil, non-wheat flour, bran, wool yarn and fiber, and coffee extracts were also major exports to Europe in the mid-1970s, but by 1993 no trade in these products occurred.

Insert Table 2

this is almost double the corresponding share for Argentina, and more than four times that for Paraguay. Table 2 also documents the overall importance of the transport and machinery group (SITC 7) in Mercosur's intra-trade as these goods comprise about one-third of total trade.

The second largest product category in intra-trade, namely, foods and feeds now accounts for about one-quarter of the goods traded within Mercosur (their share in the region's global exports is about 36 percent) and have been of declining importance since the early 1980s. Both agricultural materials, and ores, minerals and nonferrous metals also declined in relative importance with mineral fuels being the only product group, in addition to manufactures, which increased its relative share. In short, Table 2 shows that manufactures provided the catalyst for the increase in Mercosur's intra-trade with transport and machinery products being the most dynamic sub-sector within this group.

Trade "intensity" indices can provide additional insights into the nature and importance of secular changes in bilateral trade flows such as those occurring for Mercosur.⁵ Specifically, these indices can highlight the relative importance of (seemingly minor) changes in trade between countries that have relatively small global trade shares. If the trade intensity index takes a value above (below) unity the countries have greater (smaller) bilateral trade than would be expected based on the partner's share in world trade. When computed for a given single point of time the measure is of obvious limited utility since it does not incorporate the influence of factors such as distance and languages on trade. However, analysis of changes in these indices over time can show whether two countries are experiencing an increased, or decreased, tendency to trade with each other. In the case of Mercosur, the magnitude of the change in this index can provide a useful "yardstick" for assessing the importance of the expansion of intra-trade.⁶

⁵The intensity of trade refers to a tendency for two countries to trade more or less heavily with each other based on factors such as their global importance in world exports and imports. The measure has been used since the 1940s in numerous analyses of the direction and level of international trade. For illustrative examples see among others Kojima (1964), Drysdale and Garnaut (1982), or Anderson (1983)

⁶The intensity of trade index (I_{ij}) is defined for country i 's exports to country j as the share of i 's exports going to j (X_{ij}/X_i) relative to the share of j 's imports (M_j) in world imports (M_w). That is,

Table 3 reports intensity ratios which were computed using United Nations Series D COMTRADE statistics for Mercosur countries' trade with each other, and with NAFTA members for selected periods from the late 1970s to 1994. The index clearly documents the increased "intensity" of trade between Mercosur members. For example, Argentina's intensity index for trade with Brazil took a value of 39 in 1994 which was more than five times its corresponding level in 1979-81 -- Brazil's index for trade with Argentina more than doubles over the same period. With the exception of those involving Paraguay, where the quality of trade data is a problem, the bilateral intensity index ratios for Mercosur intra-trade were markedly higher in 1994 than in any previous period. These results strongly reinforce the impression provided by the previous comparisons (Tables 1 and 2) that show a major re-orientation of exports toward regional markets has occurred.⁷ A key question is whether these changes are along lines that are consistent with efficiency and the true comparative advantage of member countries.

(1)
$$I_{ij} = (X_{ij}/X_i)/(M_j/M_{wi})$$

Brown (1947) appears to have been the first among many to use this index five decades ago. Some analyses have netted out country *i*'s imports from global imports in the denominator of equation (1).

⁷In contrast to the pattern for Mercosur, no similar results occur for trade with Canada and the United States. With one exception (Brazil's exports to the United States) the index for exports to both Canada and the United States are below unity. Although Mercosur members' trade with Mexico produced index values above unity there is considerable volatility in the numbers (for example, Argentina's index was 6.0 in 1979-81 and 1.5 in 1994) and lower values were generally recorded in 1994 than in the previous periods. The key message is that Mercosur members are typically becoming much more trade dependent with each other and less so with NAFTA countries.

Insert Table 3

III. Assessing to Effects of RTAs

The previous analysis showed that, since the inception of the Mercosur transition period, significant changes occurred in the level, composition and intensity of member countries' trade. Do these changes appear to have positive, or negative, implications? A common approach to considering the effects of RTAs is to focus on changes in import shares -- e.g., Sapir (1992) on the EU. This is useful but it fails to address issues of efficiency in production. This paper, therefore, proposes new measures to supplement such analyses with a different viewpoint based on exports. Specifically, it asks whether the trade changes were consistent with member countries' current comparative advantage -- whether the increased intra-Mercosur trade was in sectors where Mercosur countries had evidenced an ability to compete in markets where they were not shielded by preferential trade arrangements. One way to address this question would be to determine whether Mercosur was also able to successfully export the fastest growing products in intra-trade to third countries. In other words, does the exchange in these goods meet the "test of the marketplace." Several indices are available for addressing this question including measures of global market performance and trade orientation, and those based on the factor (labor and capital) intensities of different products.

The first of these measures used in this context is a "regional orientation" index (R_j) for Mercosur exports of product j which is defined as,

$$(2) \quad R_j = [x_{rj} \div X_{tr}] \div [x_{oj} \div X_{to}] \cdot 100$$

where x_{rj} and x_{oj} represent the value of exports of j in Mercosur's intra-trade and to third countries respectively. Similarly, X_{tr} and X_{to} reflect the total value of member countries' exports within and outside the arrangement. This regional orientation (RO) index takes the ratio of the share of a product in exports to the region to the share of the product in exports to third countries. The index value ranges between zero

and infinity with a value of unity indicating the same tendency to export the good to members and nonmembers, while increasing values indicate a greater tendency to export to regional markets.

Several specific points should be noted with regard to the properties of this index. First, it conveys only limited information about trade patterns if computed for a single point in time. The geographic orientation of trade is determined by various factors such as comparative advantage, transport costs, or trade barriers in alternative markets. However, inter-temporal comparisons of this index over relatively short periods can provide useful information on the way the geographic pattern of trade is changing. Second, in the short to medium-term, changes in comparative advantage, transport costs, or relative tastes should be minimal so index value changes are likely to be more heavily influenced by factors such as differential changes in trade barriers (such as those which accompanied the formation of Mercosur). The reader should also note that, if examined in isolation, the percentage changes in exports of different goods within a regional arrangement can be misleading as to the influence of the arrangement since they convey no indication as to how demand for products in third markets was changing. For example, it is possible that products with the highest growth rates within Mercosur could be reorienting away from the region if exports to third markets were growing even faster. The regional orientation index does not suffer from this defect and can convey useful information about changing trade patterns.

In addition to the RO measure, a second index which reflects "revealed" comparative advantage can also be computed for each country in the arrangement and for each traded product. This measure (C_j) is defined as,

$$(3) \quad C_j = [x_{oj} \div X_{to}] \div [x_{wj}^* \div X_w^*] \cdot 100$$

where x_{wj}^* and X_w^* represent world exports of product j and total world exports *exclusive of the intra-trade* of the RTA member countries. Regional trade is excluded in order to more accurately reflect the

capacity of Mercosur members to compete evenly in markets where discriminatory trade arrangements do not provide an "unnatural" edge.⁸ As such, direct comparisons of the two indices provide an indication of the extent to which Mercosur distorted exports from patterns consistent with comparative advantage. Although they do not measure import diversion directly, they provide closely related information by allowing one to infer whether the additional trade generated by Mercosur was primarily in products in which Mercosur countries had low enough costs to be competitive in third markets. If not, they suggest that the additional trade within Mercosur could have been replaced by more efficient outside suppliers.⁹ This study will test the use of these indices in this context using actual trade data.

Before proceeding, it should be noted that there are additional empirical procedures that can provide useful supplementary information concerning changes in the composition and direction of trade that accompanied the formation of Mercosur. Specifically, Table 4 lists the 30 three-digit SITC processed products that met two separate criteria: (i) they recorded at least one-quarter of a million dollars in intra-trade in 1988 (this lower limit was set to prevent the tests being biased by marginal products, while 1988 was selected as a period prior to the implementation -- and likely the anticipation -- of major preferences); and (ii) that registered the highest 1988-94 compound annual growth rates in trade among Mercosur

⁸RCA indices are generally only computed for processed goods or manufactures because trade in agricultural products is distorted by export incentives and trade barriers which are likely to obscure whether a country has a real comparative advantage, or disadvantage, in these products. The present analysis does not attempt to derive revealed comparative advantage indices for agricultural products and other primary commodities. As such, the present analysis is based on 128 three-digit SITC products that include all manufactured goods as well as a number of processed foodstuffs and processed raw materials. Equation (3) is a modified version of the normal RCA formula in that intra-Mercosur trade is excluded to prevent preferential trade among members from obscuring the true comparative advantage of Mercosur members.

⁹The issue is essentially whether RTAs foster "high cost" imports at the expense of "low cost" ones. The traditional calculations of trade diversion based on import data infer this from the displacement of imports from non-partners by those from partners, implicitly comparing partner and non-partner costs by their relative competitiveness in the pre-RTA regional market. The supplementary view developed here makes inferences about "high" and "low" costs by implicitly comparing the relative competitiveness of partner and non-partner goods in world markets.

Insert Table 4

members. In addition, two other statistics are given. First, the 1988 regional orientation index is shown along with the 1988-94 index change. The intention here is to indicate the extent to which a reorientation of trade toward the region contributed to each product's dynamism. Second an estimate of each product's *relative* labor (capital) intensity in production is also given.¹⁰ This index was drawn from a World Bank study and takes a value of 100 for products whose labor intensity is average relative to all manufacturing activity, while increasing values above this level identify goods that are more capital intensive in production (conversely, the index will decline below 100 for products that are increasingly labor intensive). Since economic theory holds that developing countries do not have a comparative advantage in capital intensive goods the table attempts to determine whether trade has been distorted in this direction.¹¹

Several important points emerge from Table 4. First, much of the dynamism in the intra-trade of these goods is associated with a shift in the regional orientation of exports toward Mercosur. For example,

¹⁰The factor intensity for industry j (L_j) is defined as,

$$(4) \quad L_j = (V_j \div N_j) \div (V_t \div N_t) \cdot 100$$

where V_j and V_t represent value added in industry j and all US manufacturing respectively, while N_j and N_t represent the number of workers in the industry and all manufacturing activity. Two points should be noted. First, studies by the National Bureau of Economic Research (Lary 1968) show that products manufactured by labor intensive processes in the U.S. are also manufactured by relatively labor intensive processes in other countries, although, quite clearly, the levels of use may differ. On this basis Lary justified the use of US Census of Manufactures data for computation of the index. Second, the reader should note that there is an inverse relation between the numeric value of the index and the labor intensity of a given product. That is, the lower the numeric value the higher the labor intensity. See Yeats (1989) for details concerning the computation of the index and the results reported in Table 4.

¹¹Comparative advantage explanations of the composition of trade between developed and developing countries generally focus on factor proportions. That is, countries with a relative abundance of low cost labor should export "labor intensive" products to countries where capital is relatively abundant. Empirical tests by Lary (1968), Tuong and Yeats (1975), and Yeats (1989) confirm the accuracy of factors proportions as a predictor of trade flows. Although theory is less conclusive in explaining the composition of trade between developing countries (Deardorff 1982), the question of how exports of capital intensive goods from one developing country to another can compete with exports from industrial countries has often been raised. Dongues (1987) concludes that preferential trade arrangements among developing countries foster this exchange. Havrylyshyn (1987) and Havrylyshyn and Wolf (1987) also indicate that domestic and trade policy distortions promote these exports while Corbo and Meller conclude that "distortive trade and production policies increase the production of more capital intensive goods for export to other developing countries". Second, although countries may import capital intensive goods from industrial countries and labor intensive goods from developing countries nearly all models suggest exports will be concentrated in one part of the factor intensive spectrum.

in 1988 the trade weighted share of these products within Mercosur was approximately 49 percent higher than that for other destinations (as reflected in an index value of 1.49), yet by 1994 this index value rose more than two-fold to 4.55. Road motor vehicles (SITC 732) played a major role in this overall shift as intra-Mercosur trade in these goods increased by a factor of more than 10, i.e., in value terms from \$207 million to over \$2.1 billion in 1994. Second, it should be noted that 24 out of these 30 "dynamic" products recorded a shift in the regional orientation index toward Mercosur, with half of the 30 products' indices more than doubling.¹²

Although the results are somewhat mixed, a second important point is that the dynamic products generally consist of goods that are relatively capital intensive in fabrication. Overall, the 30 items listed in Table 4 have a factor intensity index ratio of 118 -- which indicates they are 18 percent more capital intensive than average for all manufacturing activity. In contrast, an investigation by Yeats (1989) that employed these same data determined that the recent capital intensity of Hong Kong, Republic of Korea, and Taiwan (China) exports were 20 to 25 percent below average, while Singapore's ratio was about 2 percent higher. This point is troubling since economic theory holds that countries like those in Mercosur should not have a comparative advantage in the production of relatively capital intensive goods such as those that are growing most rapidly in intra-trade.

Table 5 provides a different perspective on the shifts which are occurring in Mercosur's intra-trade, and the efficiency implications of these changes. Shown here are the 30 product groups that experienced the greatest reorientation of trade toward the region (as measured by the RO index) over 1988-94. In addition,

¹²The possibility exists that exports to third markets (particularly of agricultural products) may have been greatly constrained by high tariffs and nontariff measures. In these cases, RO index values could rise because of restrictions in third markets and not the more favorable tariff treatment of member countries in inter-block trade. There is reason to believe, however, that this situation occurs infrequently. World Bank-UNCTAD records show that most of the products listed in Table 4 do not encounter major OECD restrictions (the processed foodstuffs are an exception). In addition, this study shows (see Table 7) that Mercosur provides sizeable trade preferences on intra-trade. It is also possible that idiosyncracies in demand patterns and in the ability to produce certain varieties

the modified 1994 RCA index (based only on trade performance in third markets) for each item is also shown. By comparing the two measures one can determine whether the goods which are assuming a steadily increased importance in intra-trade are among those which Mercosur has been able to export competitively to third countries. In other words, have Mercosur countries shown any evidence of export strength in these goods in "independent" markets where they are not protected by discriminatory trade arrangements.¹³ In addition, we also look at *changes* in the comparative advantage index which can convey useful relevant information about whether Mercosur was becoming more, or less, internationally competitive in these products.

The results reflected in Table 5 clearly are discomfoting. For the 30 groups with the largest regional shift only two (SITC 046 - Wheat Meal or Flour and SITC 042.2 - Glazed Rice) have RCA indices slightly above unity, while the index averages only 0.27 for the other items. These results strongly suggest that Mercosur members experience a strong comparative disadvantage for these goods in markets that do not incorporate discriminatory trade measures against outsiders.¹⁴ Special note should be made

of goods made trade between Mercosur countries increase disproportionately fast as a result of the MFN liberalization. This is sufficiently unlikely, however, that the burden of proof must lie with advocates of this view.

¹³The RO and RCA indices both depend on the shares of each good in Mercosur's total exports. To the extent that these are measured with error the two will be negatively correlated. There is no reason to be particularly worried by this, however, because trade shares are fairly robust at this level. Besides, nearly all our analysis relates changes in RO to the starting level of RCA.

¹⁴Actually, Mercosur countries do receive OECD preferences for some of these products under the Generalized System of Preference (GSP) schemes that were adopted in the early 1970s. These GSP preferences have since been eroded by tariff cuts in the multilateral trade negotiations and now average about one to two percentage points for products which are eligible for such treatment. However, the margins have not changed over the period which is the focus of analysis. In contrast, Table 7 in this study shows that preferences Mercosur countries extend to each other are far higher. Tariff differentials set at these levels clearly have the potential to significantly displace exports from third countries.

Insert Table 5

of the fact that the revealed comparative advantage index averaged only 0.07 for the top 5 products listed in the table.

Analysis of the 1988-94 changes in Mercosur's RCA indices for these products reveals another disturbing pattern. The average index value actually declines from 0.42 to 0.31 over the six year period. Furthermore, the reductions are widely distributed within the group with 21 of the 30 (70 percent) items recording lower RCA values in 1994 than in the earlier period. In short, the evidence suggests that Mercosur is becoming less, rather than more, internationally competitive in products where trade is most rapidly re-orienting toward the region.

A key question is what factors are responsible for this surprising reorientation of trade? Evidence suggests that Mercosur's own trade barriers are the cause. The analysis that follows (see Table 7) will show that goods, such as those listed in Table 5, generally are protected by higher than average discriminatory trade measures. As a result, local producers would have a strong incentive to seek the higher prices available on sales to Mercosur markets. Given the option of selling locally at higher prices, producers would have a strong incentive to divert exports from more competitive foreign markets to less competitive regional markets. As a result, RCA indices would decline for the products which were growing fastest in intra-trade.

Figure 1 provides a graphical view of the major changes that were occurring within the product composition of Mercosur's intra-trade. The upper half of the figure shows aggregate RCA indices for the specific 15 product groups (defined here at the two-digit SITC level) that accounted for almost all (92 percent) of the 1988-94 change in Mercosur's intra-trade on the vertical axis with the width of each product's bar drawn proportional its share of the total increase. As indicated three groups, namely, transport equipment, non-electrical machinery, and electrical machinery accounted for over one-half of the total 1988-94 increase in Mercosur's intra-trade even though the RCA indices for these products were

Insert Figure 1

very low, i.e., in the 0.25 to 0.40 range. To help interpret these data the lower half of the figure plots the matched regional orientation index for each group. For these 15 product groups a consistent pattern of (very) low RCAs and high regional orientation is generally observed. In only one product group (iron and steel), which accounted for only about 3 percent of the intra-trade increase, did Mercosur achieve a revealed comparative advantage index above unity. In short, Figure 1 provides little evidence that Mercosur's intra-trade is evolving along lines consistent with current comparative advantage. Rather the products recording the largest shift toward the region are those for which Mercosur has not demonstrated an ability to export competitively elsewhere.

While the previous discussion (Table 5) focussed on extreme (positive) changes in the regional orientation index, Table 6 provides a composite view of the complete profile of intra-trade changes occurring within Mercosur. Specifically, 1988 and 1994 regional orientation indices for each individual product was computed and ranked in descending order based on changes in this index. Next, this ranked distribution was divided into deciles and 1988 and 1994 average RCA and RO indices were computed for each group. Table 6 shows these average indices and also compares the 1988-94 change in the RO index with Mercosur's average RCA indices.

As before, the results presented in Table 6 reveal a pattern that differs from that expected on the basis of the comparative advantage measure. Specifically, for the first decile products, i.e., those that registered the largest shift toward the region (an average RO index increase of 9.63) the average 1994 Mercosur RCA index was only 0.24. Similarly, for the second decile products the RO index change took a value of 2.64, in spite of the fact that the average RCA index for these goods was under 0.50, and actually declined from its earlier 1988 level. Average RCA index declines occur for the top three decile product groups which indicates Mercosur was becoming less, not more, internationally competitive for goods experiencing the greatest shift toward intra-trade. Since the goods in these three deciles enjoy well above average levels of protection against third countries (see Table 7) domestic producers would have

a strong incentive to divert trade to local markets (which would cause the RCA indices to decline) in order to profit from the higher prices.

Mercosur's regional orientation indices show a fairly consistent tendency to move counter to the revealed comparative advantage measure over the decile ranges. For example, in the sixth through tenth decile products, where the 1994 RCA index ranges between 1.99 and 3.68, the orientation of exports is moving rapidly away from the region.¹⁵ The key point that follows from this complete profile of trade changes is that the regional orientation of exports is growing most rapidly for products where there is little evidence that Mercosur has a current comparative advantage.

IV. Mercosur's Trade Barriers and Recent Trade Changes

What caused the observed pattern of trade changes to diverge so widely from that expected on the basis of efficiency conditions and current comparative advantage? First, it seems highly unlikely that they were due to changes in natural factors such as freight costs. Transport costs can be reduced by the adoption of new shipping technologies, or through major improvements in port and handling facilities, but these are unlikely to occur in a relatively short time period such as that covered by this study. A second possibility is that the discriminatory nature of Mercosur's own trade policies was responsible. The

¹⁵The fairly high index values in the fifth through tenth deciles are in part due to the fact that the distribution of index values is right skewed. That is, the index is bound by zero, but can range (in theory) to infinity. One or two products in a decile group with high RCA index values may have influenced the results for these decile groups.

Insert Table 6

Mercosur countries had been liberalizing imports on a most favored nation basis for several years when, in 1991, they introduced their first widespread set of preferential tariff cuts. This is the year for which the UN COMTRADE records indicate that intra-block trade accelerated sharply. If the most dynamic products in Mercosur's intra-trade, or those that were shifting most rapidly toward the region, had disproportionately high preferences this would suggest that Mercosur trade barriers were a factor in the re-orientation of exports. Evidence relating to this point could come from an analysis of the margins of preference that Mercosur's trade barriers provide member countries. Are these high enough to account for the increases in intra-trade that occurred during the 1991-94 period when tariff preferences on all but a few products were being implemented.

Several, sources of statistics on Mercosur's tariffs and NTBs are available for analyses of these points. First, a cooperative project between UNCTAD and the World Bank, named SMART -- Software for Market Analysis and Restrictions on Trade, compiled statistics on many OECD and developing countries' pre-Uruguay Round trade barriers (see UNCTAD and the World Bank, 1989 for a description of the SMART database and operating system). Since both Brazil and Uruguay's 1988/89 tariffs were included in these records (along with data on Brazil's nontariff measures) they provide partial details on Mercosur's trade barriers at very fine levels of detail. These two countries account for over 60 percent of Mercosur's total imports with the result that the SMART records provide a useful profile of the *structure* of external protection. However, it should be noted that Mercosur countries (particularly Brazil) have subsequently implemented major unilateral MFN tariff reductions so the earlier statistics are not a reliable guide to current levels of protection. For this reason, post-Uruguay tariff data were drawn directly from the World Trade Organization's Integrated Data Base (IDB). Where there were known exceptions and departures from the reported WTO statistics (as was the case with tariffs and nontariff restrictions on automobiles) these were incorporated in the data. These statistics, like those in SMART, are recorded at the national tariff line level so the two sources of information are comparable. Given that patterns of

protection change only relatively slowly, the SMART and IDB records will, together, afford reasonable insight into the patterns ruling over the early 1990s.

As far as intra-block preferences are concerned, Article 5 of the Treaty of Asuncion, which created Mercosur, required "progressive, linear and automatic tariff reductions" be implemented starting in 1991 "with a view to arriving at zero tariffs for the entire tariff area by 31 December 1994." Although there was some slippage in this objective, the World Trade Organization (October 1996) reports "that by the end of 1994 intra-regional trade between Brazil and its Mercosur partners has been duty-free since 1 January 1995 except for 29 tariff line items" (out of 9,107).¹⁶ The same report quotes (p. 23) Brazilian authorities as stating that duty free trade covered close to 95 percent of intra-regional (Mercosur) trade in 1994. From these observations we conclude that the reported external tariffs will be highly correlated with the degree of preferences offered on intra-Mercosur trade.¹⁷ As such, the average levels of current "applied" tariffs were computed and these were taken as a measure of intra-block preferences.¹⁸

A second attempt at identifying discriminatory trade barriers focuses on nontariff barriers. Two measures of the potential importance of NTBs are available. The first, a NTB trade coverage ratio shows the share of all imports (measured in current values) subject to nontariff barriers. The second, often referred to as a "frequency" index, shows the share of all tariff line products covered by one or more

¹⁶Behar (1995) reports that the first preferential reduction in Mercosur's tariffs took place in June of 1991. A 1994 background study for a World Bank country economic memorandum gave the schedule along which tariffs on intra-trade were then being reduced. This schedule set a minimum margin of preference of 47 percent and augmented the margins of preference which already exceeded this minimum (due to previous arrangements) by an additional 7 percent. A 7 percent cut every six months would follow until the zero tariff objective was fulfilled. As noted, in the case of Brazil, this objective was achieved for all but 29 tariff line items.

¹⁷Moreover, if in fact the bulk of the preferences was not implemented until late 1994 the trade reorientation we reported above would have arisen from partial preferences and so one might expect an even larger effect to follow over 1995 and 1996.

¹⁸The 1996 tariff statistics reported in Table 7 are drawn from the WTO's Integrated Data Base and are the average duties actually applied by Argentina, Brazil and Uruguay to imports from non-Mercosur sources. They are based on the lower of the following two rates: (i) the legally bound tariff, or (ii) the current MFN applied rate. Primary products and raw materials, which typically have lower import duties are not included in the tabulations. A description of the methodology used in computing these averages can be found in Finger, Ingco and Reincke (1996, pp. 1-21).

nontariff restrictions.¹⁹ Although these measures have some limitations (see Laird and Yeats, 1990 for a discussion), they show the extent to which nontariff restrictions are available to reinforce the effects of the block preferences. The data refer to 1988 and have been subject to significant change since then. However, again appealing to the normal persistence in patterns of protection and noting that the Treaty of Asuncion provides for the removal of NTBs on intra-bloc trade, the data very likely identify the elements of discrimination. We recognize that this is all a bit tenuous, but we believe there is content in these statistics. Given the tariff data, however, our thesis that discrimination exists does not depend on these NTB measures.

Table 7 summarizes statistics relating to these barriers. The data strongly suggest that tariff preferences, and the protection they provide for intra-trade, have been a major factor behind the recent pattern of trade changes. For example, Mercosur tariffs on the most dynamic products -- the first decile products from Table 6 averaged 18 percent -- about 7 percentage points higher than the average duty on all goods in the ten decile groups. Items falling in the second and third decile groups are protected by

¹⁹The frequency index (F_j) for importing country j shows the percentage of tariff lines covered by some pre-selected group of nontariff measures and is defined by,

$$(5) \quad F_j = (\sum D_i N_i \div N_t) \cdot 100$$

where N_i is tariff line item i , D_i is a dummy variable that takes a value of unity if one or more NTBs is applied to the item or zero otherwise, and N_t is the total number of lines in the product group. The above summation is made over all countries exporting to importing country j . Similarly, the trade coverage index (C_j) is defined as,

$$(6) \quad C_j = ((\sum D_{i,t-m} \cdot V_{i,t-n}) / \sum V_{i,t-n}) \cdot 100$$

where $V_{i,t-n}$ is the value of imports in tariff line item i in year $(t-n)$ and $D_{i,t}$ is a dummy that takes a value of unity if an NTB is applied to the item and zero otherwise. If n and m are zero the index is based on current trade values, otherwise base year weights are used.

The UNCTAD records contain information about the following types of nontariff restrictions which are included in the frequency and coverage ratio tabulations: tariff quotas, anti-dumping duties, restrictive import authorizations, total prohibitions, suspended import authorization licenses, anti-dumping investigations, state monopolies, differential health and safety regulations, differential prohibitions based on non-commercial considerations. The records may understate the current importance of some restrictions like anti-dumping actions since they do not incorporate data on the surge in new cases that occurred in 1992-93.

discriminatory tariffs of about 17 percent,²⁰ after this the margins in the fourth through tenth decile groups typically decline to about 10 to 12 percent. To put these numbers in perspective they are far higher than the average tariff margin provided by the Generalized System of Preference (GSP) (about 2 percentage points) which many developing countries strongly sought to preserve in the Uruguay Round negotiations - on the basis that they strongly enhanced the competitive position of their exports - and also far higher than the average margin within the European Union (below 3 percentage points for industrial goods). Moreover, even if we added in agricultural goods and looked at the Mercosur Common External Tariff for the year 2000, the average margin of preference would be about 10 percentage points.

²⁰In 1995 the average for the second decile would have been 22.4 percent as the Brazilian tariff on autos was raised to 70 percent on some imports. Recent actions within the World Trade Organization accent the importance which member countries attach to the discriminatory trade barriers against third countries in this sector. For example, a recent (November 1, 1996) Journal of Commerce article (entitled "WTO Criticizes Brazil for Straying from Reform") quoted a WTO report which said the auto industry "is the most highly assisted manufacturing activity in the country with effective protection estimated at over 250 percent." The Journal also noted that a strict tariff quota had been set on auto imports and that the United States, Japan, the European Union and South Korea had all filed complaints with the WTO alleging discrimination in Brazil's auto trade regime. Second, the fact that these new protectionist measures had to be introduced, in spite of the major expansion of domestic production, suggest that any scale economies accompanying the regional arrangement are proving very elusive.

Insert Table 7

Similarly, Table 7 shows that nontariff barriers were also structured along lines that would reinforce the trade distorting effects of the agreements preferential tariffs. According to the UNCTAD data, nontariff restrictions were applied to about 21 percent of all tariff line items, which is almost one-half the corresponding ratio (41.9 percent) for Mercosur's first decile products. Similarly, the trade coverage ratio for products falling in the first three deciles averaged almost 60 percent (about 3 times the ratio for all imports) and reached 84 percent for the first decile group.

V. Policy Implications

This paper identified dramatic changes in the Mercosur countries' trade patterns over the period 1988-94 and particularly over its latter half. It also argued that these are substantially due to the changes in trade policy and probably mainly those introduced under Mercosur transitional arrangements. Statements of this kind depend on comparing actual data with a counterfactual. Two natural candidates present themselves. The counterfactual implicit in this paper is that, but for these policy developments, Mercosur's trade patterns would not have changed much and that the shift towards apparently uncompetitive capital-intensive intra-block trade would not have occurred. The implication is that if the Mercosur countries had achieved an equivalent degree of liberalization on a non-discriminatory basis they would have maintained a more efficient import structure, paying less and/or obtaining better goods, and they would have purchased more from their trading partners outside the block.²¹ Given the size of the trade effects identified, the evidence that preferences and the application of industrial policies within RTAs can be distortionary is both compelling and disturbing. It is true that one could imagine other explanations for the trade pattern

²¹The reader should specifically note that trade patterns in 1994 are being compared with those in 1988 and not with some "free-trade" counterfactual. The assumption is that 1994 would have been no more distorted than 1988. We believe that the latter is less distorted geographically because, in the earlier period, trade barriers were applied on a most-favored-nation basis with the exception of a few sectoral arrangements.

changes observed, but none seems nearly so direct, or so likely, as the role of trade policies and preferences.

A separate, albeit related, question based on the second counterfactual is whether Mercosur countries' trade was more distorted in 1994 than in 1988. Unfortunately, analyses of trade data alone cannot answer this question completely. Although the trade pattern is more distorted, it is possible that the efficiency with which domestic and foreign goods in general were traded off against each other (roughly speaking the level of trade) increased sufficiently to offset this. Comparing 1994 with 1988, it is likely that the Mercosur trade arrangements both created and diverted trade, and it is also well to remember that even trade diverting customs unions can improve economic welfare if they lead to declines in producer and consumer prices. Thus, while Mercosur trade policies are distortionary relative to what could have been achieved, they may well have been positive relative to where member countries started from.

This discussion raises an important semantic point: what is Mercosur? Broadly speaking, the sample period for most of the analysis (1988-94) witnessed two classes of policy change: the general liberalization of trade barriers facing all partners, which was stronger over 1988-91 but not restricted to that period, and the preferential intra-block liberalizations, which occurred mainly after the Treaty of Asuncion in 1991. Since data on the precise path and structure of tariffs were not available to us, we had no choice other than to consider only the combined effects of these two liberalizations, which we have loosely referred to as "the effects of Mercosur" rather than "the effects of the trade policies of the Mercosur countries." Thus our estimate of "Mercosur effects" includes, strictly speaking incorrectly, both the effects of the general trade barrier liberalizations over 1988-91 (and any continuing tariff reductions after 1991) that produced an impressive surge in global imports and the effects of the Argentinean-Brazilian bilateral sectoral liberalizations over 1988-91. The former's inclusion will lead us to understate the discriminatory

effects of Mercosur proper and the latter to overstate it.²² We did not pursue the alternative approach of limiting the analysis of trade changes to the period since the Treaty of Asuncion precisely because it was unclear to us how much discrimination was built into 1991 and how much general liberalization after 1991 was strictly due to the Mercosur Agreement. Indeed, given that Mercosur has so little institutional structure outside its members' governments, it did not even seem very meaningful to try to disaggregate trade policy changes into "Mercosur" and "national" components.

Given these observations, however, the findings of this study appear to constitute convincing evidence that regional preferences can affect trading patterns strongly and in ways that can be detrimental to both member and nonmember countries. The changing trade patterns analyzed in this study suggest that Mercosur was not internationally competitive in sectors where intra-trade was growing most rapidly, and that domestic producers were re-orienting exports to local markets in order to charge the higher prices associated with the most restrictive trade barriers. This reduces third countries' potential exports to Mercosur and under many circumstances can reduce their welfare relative to an equivalent non-discriminatory trade liberalization.²³ Moreover, it suggests that consumers in Mercosur's internal markets are being denied access to higher quality and lower priced goods due to discriminatory trade barriers. For example, in one case study involving Mercosur's trade restrictions and regulations governing domestic production and imports of automotive products Chudnovsky et. al (1996) conclude that "the quality of produced (within Mercosur) vehicles continues to be much lower and prices much higher than in other

²²It should also be noted that the restrictive auto regime is strictly a national rather than a Mercosur one. Some commentators on this paper have argued that Mercosur's effect has been to constrain the restrictiveness of this regime.

²³See Winters (1996) for a discussion of the effects of regionalism on third countries. Devlin (1996) attempts to provide an alternative perspective on the trade creation and diversion effects of Mercosur.

producing countries." The authors also note that any "technological externalities" associated with the automotive regulations have been quite limited.²⁴

The findings may also have implications for the World Trade Organization's consideration of RTAs. If Mercosur is consistent with WTO's rules (Article XXIV) for the formation of customs unions -- the working party examining this has yet to report -- the results of this paper might provide a useful input into a review of those rules. The Uruguay Round Understanding on Article XXIV calls for regular reviews of RTAs and, for new arrangements, proposes that trade creation and trade diversion be analyzed. The empirical evidence examined in this study accents the importance of these functions. Given the recent proliferation of RTAs, this study's findings highlights the need for further empirical research on the domestic and international effects of these arrangements in order to better assess the pros and cons of regionalism.

²⁴A forthcoming article by two researchers at the MIT Sloan School and Wharton School downplays the proposition that regional integration arrangements are a useful vehicle for countries to employ for improving their international competitiveness. Specifically, Toulan and Guillen (1996) argue that "some claim that trading blocks can serve as a testing ground for eventual global integration as they allow firms to gradually develop internationalization skills. In many ways this argument is similar to the infant industry protectionist argument, in which barriers are used to protect domestic industries until they develop the skills necessary to compete internationally. Unfortunately, such policies have a fairly poor record in Latin America. The same potential fate could lie in store for firms operating under the protection of Mercosur, in which their level of competitiveness is confined to the demands and pressures of the Mercosur market, rather than the global one. While it is still too early to tell whether firms are in fact viewing Mercosur as a launching pad, interviews with managers do not reveal that they are in fact doing this."

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Table 1. The Destinations of Mercosur Countries Trade: Selected Periods from 1979-81 to 1994 .

		World (\$ millions)	OECD	of which:			No
Exporter	Years			NAFTA	USA	Europe	
		Percent of total exports (%)					
Argentina	1994	15,803.3	40.2	13.1	10.9	25.6	
	1993	13,114.4	43.6	11.9	9.7	29.3	
	1990-92	12,187.1	49.5	14.5	11.7	33.3	
	1984-86	7,785.2	44.9	14.4	11.2	28.3	
	1979-81	8,322.7	45.0	11.4	8.7	32.5	
Brazil	1994	43,355.2	57.4	24.2	20.6	29.0	
	1993	38,679.4	56.1	24.5	20.7	27.6	
	1990-92	32,987.8	63.6	25.2	21.4	32.8	
	1984-86	25,008.6	64.7	29.8	27.2	29.1	
	1979-81	19,556.3	58.2	21.6	18.0	32.7	
Paraguay	1994	816.8	36.3	7.6	7.0	29.1	
	1993	725.2	45.8	8.2	7.3	38.0	
	1990-92	784.1	41.9	5.0	4.7	36.8	
	1984-86	290.3	48.8	3.7	3.6	43.7	
	1979-81	303.6	52.7	6.6	5.7	41.3	
Uruguay	1994	1,918.1	30.4	10.1	6.8	21.7	
	1993	1,603.3	32.6	12.3	9.2	21.9	
	1990-92	1,629.9	38.8	13.1	10.1	26.4	
	1984-86	953.3	41.7	14.9	13.5	25.1	
	1979-81	1,021.0	44.0	9.8	8.5	33.6	
MERCOSUR	1994	61,893.3	51.8	20.7	17.5	27.9	
	1993	54,122.2	52.2	20.9	17.6	28.0	
	1990-92	47,588.9	58.8	21.7	18.3	32.8	
	1984-86	34,037.4	59.5	25.6	23.0	28.9	
	1979-81	29,203.6	53.9	18.2	14.9	32.7	

Source: All data compiled from United Nations COMTRADE records. Trade statistics for Mexico are included in the OECD totals.

Table 2. The Product Composition of Mercosur Countries' Intra-Trade: 1979-81 to 1994.

		All Items (\$ million)	Share in total exports (%)				
			Food and Feeds	Agricultural Materials	Ores and Metals	Mineral Fuels	M
Exporter	Years						
Argentina	1994	4,803.2	36.0	2.6	0.7	16.3	
	1993	3,684.0	34.3	0.8	0.7	18.4	
	1990-92	2,045.5	44.1	1.5	1.2	9.0	
	1984-86	739.3	48.7	1.8	1.5	11.8	
	1979-81	1,112.2	51.3	0.8	1.1	9.3	
Brazil	1994	5,920.0	11.2	0.9	2.8	3.6	
	1993	5,393.7	10.6	1.1	3.2	3.1	
	1990-92	2,564.2	9.7	1.2	5.5	1.4	
	1984-86	1,175.4	13.1	3.3	9.1	4.9	
	1979-81	1,588.1	14.4	3.9	5.0	5.9	
Paraguay	1994	424.8	41.2	38.8	0.5	0.5	
	1993	287.3	23.2	58.9	0.5	0.6	
	1990-92	295.0	32.8	56.2	0.2	0.6	
	1984-86	105.4	48.8	46.1	--	--	
	1979-81	116.7	36.2	45.7	0.2	0.3	
Uruguay	1994	895.7	39.1	2.0	0.8	0.0	
	1993	661.3	39.7	2.4	0.7	0.1	
	1990-92	565.6	45.0	3.3	0.9	0.1	
	1984-86	270.8	51.0	4.4	0.4	1.0	
	1979-81	312.2	49.5	1.7	1.8	--	
MERCOSUR	1994	12,043.6	24.2	3.0	1.7	8.3	
	1993	10,026.3	21.6	2.7	2.0	8.5	
	1990-92	5,482.0	27.4	4.5	3.1	4.1	
	1984-86	2,290.9	30.7	4.9	5.2	6.4	
	1979-81	3,129.2	31.8	4.1	3.1	6.3	

Source: Computed from UN Comtrade records.

Table 3. Trade Intensity Ratios for Mercosur Countries in Intra-Trade and for Trade with North America

		Trading Partner					
		Mercosur				Canada	
Exporter	Year	Argentina	Brazil	Paraguay	Uruguay		
Argentina	1979-81	--	7.4	86.8	27.5	0.3	
	1986-88	--	14.0	40.5	49.2	0.2	
	1994	--	39.2	92.7	89.4	0.1	
Brazil	1979-81	9.0	--	80.7	19.0	0.6	
	1986-88	9.9	--	56.0	31.6	0.6	
	1994	21.7	--	71.5	36.7	0.3	
Paraguay	1979-81	41.7	11.2	--	45.1	0.0	
	1986-88	48.6	41.9	--	48.8	0.0	
	1994	25.2	67.2	--	27.7	0.0	
Uruguay	1979-81	22.7	14.6	52.2	--	0.4	
	1986-88	36.0	33.1	22.2	--	0.2	
	1994	44.7	43.7	36.8	--	0.2	

Source: Trade intensity indices computed from UN COMTRADE statistics.

Table 4. Dynamic Products in the Recent Intra-Trade of Mercosur Countries.

Commodity (SITC)	Exports to Mercosur		RO Index	RO Index Change
	1988	1994	1988	
Non-Alcoholic Beverages (111)	349	26,238	2.35	46.12
Tobacco Manufactures (122)	2,032	112,681	0.95	0.91
Articles of Plastic (893)	4,225	95,535	12.45	-7.52
Alcoholic Beverages (112)	4,137	81,671	1.87	4.61
Perfumes and Cosmetics (553)	4,766	86,282	5.22	8.16
Furniture (821)	3,972	66,213	1.15	-0.10
Iron and Steel Castings (697)	287	3,696	0.30	0.41
Power Machinery Non-Electric (711)	25,140	290,687	0.40	0.79
Road Vehicles Non-Motor (733)	3,118	35,854	2.23	4.65
Wood Manufactures (632)	1,472	16,689	0.43	-0.10
Machines for Special Industries (718)	10,763	120,617	0.93	0.04
Structures and Parts (691)	1,783	19,834	0.72	1.05
Prepared Meat (011-013)	21,934	237,912	0.17	0.23
Road Motor Vehicles (732)	206,996	2,112,750	1.25	3.17
Plywood and Veneers (631)	3,707	35,630	0.20	0.16
Lace and Ribbons (654)	1,386	13,157	3.56	2.29
Special Textile Products (655)	4,945	46,919	0.88	0.59
Prepared Sugar (061-062)	11,456	102,655	0.30	0.07
Prepared Dairy (022-024)	23,495	204,019	4.31	18.17
Metal Manufactures, nes (698)	5,984	51,430	0.90	0.87
Electric Power Machinery (722)	14,278	121,717	1.18	-0.33
Materials of Rubber (621)	3,636	30,780	3.13	3.13
Glassware (665)	5,381	45,017	2.21	2.88
Nails, Nuts and Bolts (694)	3,021	24,782	2.86	0.81
Preserved Fruit (053)	4,486	36,053	0.05	0.08
Domestic Electrical Equipment (725)	12,568	97,322	2.19	3.76
Base Metal Household Equipment (697)	5,592	40,452	2.72	-0.84
Clothing Not of Fur (841)	19,342	138,805	0.63	0.71
Metal Tanks and Boxes (692)	3,960	28,099	2.97	-0.09
Copper (682)	3,001	21,161	0.54	0.05
ALL ABOVE PRODUCTS	417,213	4,344,658	1.49	3.06

*The higher the index the higher the capital intensity of the production process. Industries with a index value of 100 would have a labor/capital intensity that was average information on how the index is derived see Lary (1968) or World Bank (1992).

Source: Derived from United Nations Comtrade Statistics.

Table 5. Products with the Largest Change in Regional Orientation *Toward* Mercosur Markets Over 1988 to 1994

Commodity (SITC)	Exports (\$000)		Regional Orient Index	
	1988	1994	1988	1994
Non-Alcoholic Beverages (111)	349	26,238	2.35	48.4
Lead (685)	642	219	3.03	25.4
Prepared Dairy (022-024)	23,495	204,019	4.31	22.4
Non-Wheat Meal or Flour (047)	4	954	0.05	17.2
Perfumes and Cosmetics (553)	4,766	86,282	5.22	13.3
Wheat Meal or Flour (046)	65	35,051	0.22	5.6
Cork Manufactures (633)	18	721	1.18	6.3
Preserved Vegetables (055)	23,404	48,745	17.66	22.6
Articles of Paper (642)	15,763	72,249	2.16	7.1
Road Vehicles Non-Motor (733)	3,118	35,854	2.23	6.8
Alcoholic Beverages (122)	4,137	81,671	1.87	6.4
Agricultural Machinery (712)	39,608	121,294	2.08	5.8
Domestic Electrical Equipment (725)	12,568	97,322	2.19	5.9
Road Motor Vehicles (732)	206,996	2,112,750	1.25	4.4
Materials of Rubber (621)	3,636	30,780	3.13	6.2
Glassware (665)	5,381	45,017	2.21	5.0
Synthetic Fibers (266)	13,381	21,170	6.28	9.1
Rice Glazed or Polished (042.2)	22,583	148,079	9.28	11.6
Lace and Ribbons (654)	1,386	13,157	3.56	5.8
Food Preparations nes (099)	7,727	45,412	2.10	4.3
Structures and Parts (691)	1,783	19,834	0.72	1.7
Tobacco Manufactures (122)	2,032	112,681	0.95	1.8
Textile Yarn and Thread (651)	26,523	118,120	0.85	1.7
Metal Manufactures nes (698)	5,984	51,430	0.90	1.7
Nails, Nuts and Bolts (694)	3,021	24,782	2.86	3.6
Non-electric Power Machinery (711)	25,140	290,687	0.40	1.2
Nonfur Clothing (841)	19,342	138,805	0.63	1.3
Plumbing and Lighting Equipment (812)	3,819	14,363	2.23	2.9
Electrical Distributing Machinery (723)	6,821	35,775	1.55	2.2
Glass (664)	4,851	25,079	1.27	1.9
ALL ABOVE ITEMS	488,345	4,058,540	2.83	5.9

Table 6. Mercosur's Average Decile Regional Orientation Index and RCA Index Values for 128 Processed Pr

Decile Range	Mercosur Intra-Trade (\$000)		Regional Orientation Index		Percent of Industries in Decile Range with an RCA Over Unity	R 1988
	1988	1994	1988	1994		
First Decile Products	127,939	810,619	3.84	13.47	7.6	0.43
Second Decile Products	325,573	3,033,899	1.63	4.26	7.6	0.64
Third Decile Products	212,759	1,027,964	1.39	1.86	15.4	0.88
Fourth Decile Products	302,175	1,303,419	1.50	1.67	46.1	0.96
Fifth Decile Products	108,996	597,859	1.11	1.16	38.5	2.15
Sixth Decile Products	167,733	840,060	1.33	1.12	38.5	2.65
Seventh Decile Products	287,832	595,436	1.15	0.78	69.2	3.04
Eighth Decile Products	222,842	469,499	1.73	0.96	46.1	2.05
Ninth Decile Products	373,557	516,184	3.48	1.33	46.1	0.86
Tenth Decile Products	226,930	514,461	31.82	10.17	23.1	0.24
	2,356,437	9,709,400				

Source: Computed from the data presented in Appendix Table 1.

Table 7. Tariffs and Nontariff Barriers on Mercosur's Imports

Decile Range	1988-94 Change in Mercosur Intra-Trade (\$000)	Average External Tariff (%)		Nontariff Barrier Ratio	
		1988	1996	Frequency Ratio	Trade Coverage
First Decile Products	682,680	54.4	18.1	41.9	83.5
Second Decile Products	2,708,326	46.9	16.7	24.5*	36.6*
Third Decile Products	815,205	56.1	17.5	42.1	51.8
Fourth Decile Products	1,001,244	46.0	9.6	17.7	28.7
Fifth Decile Products	488,863	46.0	10.3	20.4	8.3
Sixth Decile Products	672,327	43.6	16.7	17.1	4.3
Seventh Decile Products	307,604	38.4	10.9	18.5	27.5
Eighth Decile Products	246,657	39.1	11.7	27.1	31.9
Ninth Decile Products	142,627	38.4	9.0	4.0	5.4
Tenth Decile Products	287,531	40.7	10.9	8.2	28.2

*Includes Brazil's recent restrictions on automobile imports and domestic automobile assembly regulations.

Source: Computed from SMART and the WTO Integrated Data Base.