Intra-industry trade in Latin America and the Caribbean

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Abstract

An increasingly important component of total world trade is intra-industry trade (IIT). The large volume of literature on IIT is reflective of this importance. However, this extensive literature has focused almost completely on explaining the causes of IIT. This focus has left a puzzling gap in the literature. Specifically, it is almost impossible to determine the level of IIT for a particular country or region. Further, there is almost no information on the level of IIT at the industry level either globally or for a region or country. In this paper we provide estimates of IIT for the world and for the countries of the Western Hemisphere. Further, we provide estimates of IIT for ten different SITC product categories on the same basis. The findings of the paper indicate that in most

industries, IIT in Latin America is substantially lower overall than the world average. There are, however, substantial variations observed both by country and by industry. Because the results are the first available for the region as a whole, they should allow researchers to get a better picture of the extent of IIT in Latin America and the Caribbean by country and by industry.

Introduction

One of the more important features of modern international trade is intra-industry trade. Traditional trade theory focuses on differences in factor prices as the primary determinant of international trade. Beginning in the 1960s, the presence of trade among countries within individual product categories became noticed (Grubel, 1967). This intra-industry trade (IIT) has gone from being a curiosity to a major component of international trade. In reaction to this trend, economic research initially proposed explanations based primarily on stylized facts or empirical regularities, and subsequently moved to more formal models of IIT based on product differentiation coupled with economies of scale (Finger, 1975; Lancaster, 1980). More recent models have focused on explaining different types of IIT according to whether or not the product differentiation is horizontal or vertical.[1] Given its prevalence on the global economic stage, it is not surprising that a fairly large number of papers also report empirical assessments of merchandise trade data along lines suggested by many of the theoretical models developed for this branch of the discipline.[2]

For Latin America, much of the research in this area has been conducted for Mexico in response to its accession to the General Agreement on Tariffs and Trade (GATT) and its subsequent inclusion in the North American Free Trade Agreement (NAFTA). Esquivel (1992) and Globerman (1992) document pronounced increases in IIT for Mexico as trade liberalization took hold during the 1980s. Those studies, as well as subsequent NAFTA-era research also show that numerous segments of Mexican industry successfully penetrated the higher-income market of its neighbor to the north.[3] However, not all studies of merchandise trade in other regions of Latin America uncover similar evidence which implies that additional research would be useful.[4] One of the main problems in this regard is that an overall picture of IIT in Latin America does not exist. For reasons outlined next, this is not surprising. The primary purpose of this paper is to provide a first overall assessment of IIT in the region.

Although this branch of the literature has expanded substantially, there is one curious gap with respect to specific kind of information in the existing inventory of studies to date. Virtually no papers present information on the amount of IIT that is actually occurring in the global economy. With respect to the theoretical literature, this is understandable. In the empirical realm, most articles focus on explaining IIT for a particular country for a recent year or period. This practice tends to generate sets of scattered IIT estimates for specific economies for certain years. As a result, getting a picture of the amount of IIT that occurs in the world economy in aggregate, or for a given region apart from the rest of the world, is virtually impossible. This

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[1] See Greenaway, Hine, and Milner (1994), and Fontagne, Freudenberg, and Gaulier (2006).
[2] Balassa (1986), Bernhofen (1998), and Taegi and Oh (2001).
[3] For examples see Buitelaar and Padilla (1996) and Clark, Fullerton, and Burdorf (2001).
[4] See Rodas-Martini (1998); Clark (2009); or Fabian (2008).

circumstance is even worse with regard to IIT by industry. IIT for specific industries is virtually unknown.

Given the state of the literature, the purpose of this paper is twofold. First, regional estimates of the amount of IIT for Latin America and the Caribbean are developed. Second, regional estimates of IIT by industry are developed for this portion of the Western Hemisphere. The next section of the paper presents estimates of IIT for the world economy and for Latin America and the Caribbean. The third section presents estimates of regional Latin American and Caribbean IIT by country and by industry. A final section summarizes the results and offers some tentative conclusions plus suggestions for future research.

Total IIT by Country

IIT calculations are generally completed using a variant of the standard index formula shown in Equation 1.[5]

$$\text{IIT Index} = 1 - \frac{|X - M|}{X + M} \tag{1}$$

As with all IIT calculations, the estimates range from 0 to 1. A calculation of zero indicates no IIT. If either exports or imports are zero, then trade is dominated by the more traditional interindustry trade. On the other hand, the closer the amount of exports and imports are to one another, then the closer trade in the industry approximates IIT. As we will see, calculated IIT numbers tend to vary considerably between 0 and 1 depending on the type of products examined. While this formulation is the common equation used to calculate IIT in the literature, it is not a perfect measure. The principal difficulty associated with it is aggregation bias. As has been documented by Gullstrand (2002), IIT calculations performed at higher levels of aggregation yield inflated estimates of IIT. It is virtually impossible to eliminate this bias completely, so the best procedure is to perform the calculations at as high a level of disaggregation as the data allow. Given that, all IIT calculations herein are performed at the 4-digit Standard International Trade Classification (SITC) level of disaggregation and then averaged up to the 1-digit level for reporting purposes. All of the major SITC categories are listed in Table 1. The averages are calculated using both a simple non-weighted approach as well as a trade-weighted approach. Data was used for the year 2003 as it is far enough past the 2001 collapse in world trade and not yet influenced by the boom and subsequent decline in world trade that characterizes some of the more recent data.

Table 1 contains the overall estimates of IIT for the countries of the Western Hemisphere. In addition, estimates are given for the Americas, Latin America & the Caribbean as a region, and for the world. Estimates of simple and trade-weighted IIT are presented for every country in the Western Hemisphere for which usable data are available. Calculations for Canada and the United States are also included for comparison purposes. At the bottom of Table 1, the aggregate trade-weighted average for the Americas is 0.4883. This figure includes estimates for Canada and the United States. Excluding the estimates for Canada and the United States causes the average for Latin America and the Caribbean to decline to 0.3603. The latter is substantially lower than the world trade-weighted average of 0.5049 and probably reflects the institutional

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[5] For more detail see either Grubel and Lloyd (1975) or Greenaway and Milner (1983).

inertial difficulties of merchandise trade in a region that previously implemented inward-looking import substitution policies during extended periods.[6]

Table 1 about here

The estimates contained in Table 1 exhibit an enormous amount of regional diversity. As is typical for high-income countries, the estimates for Canada and the United States, 0.5883 and 0.5080, respectively, are the highest in the Western Hemisphere. At the other extreme, there are a number of countries for which there is virtually no IIT. These countries include several smaller economies that are clustered around the Caribbean, such as Jamaica, the Bahamas, and Panama. Current account balances in most of those economies are generated in the tourism portion of their services accounts. Bolivia and Venezuela are somewhat larger economies that also exhibit relatively small degrees of export diversification. In spite of its history as a transshipment corridor, Paraguay also has a very low trade weighted average in Table 1.[7]

At the other end of the spectrum, the two countries with the most IIT are Brazil and Mexico. The IIT estimate for Brazil is somewhat high, 0.3243. However, the true outlier in Latin America and the Caribbean is Mexico. Its overall IIT index is 0.4883. The difference between Mexico and its NAFTA trading partners, especially the United States, is fairly small. Given the propensity of free-trade agreements to foster greater volumes of IIT, the high IIT index for Mexico is probably at least partially attributed to NAFTA.[8] The lower index values, relative to Mexico, for Brazil and Argentina may be due to trade diversion and inefficiency effects associated with the participation of those countries in the MERCOSUR trading bloc (Yeats, 1998). The relative paucity of international trade in the southern portions of the hemisphere is easy to observe in Figure 1, where the majority of the histogram observations have trade weighted coefficients of less than 0.30.

Figure 1 about here

IIT by SITC Product Category

While the results above are informative, the data also permit looking at Latin America and the Caribbean, plus the Western Hemisphere, IIT on an industry basis. As noted above, the original calculations were performed at a 4-digit level of disaggregation. While such narrow estimates are interesting, such a large volume of results cannot be presented in the current format. As a compromise, this section presents estimates of IIT at the 1-digit level of disaggregation based on averaging the 4-digit indexes. This level provides substantially more detail than that contained in Table 1 while still keeping the reported results to a reasonable length. The various 1-digit SITC industries are listed in Table 2 below. SITC categories 0 through 4 contain primary-product industries such as agricultural, forest, and mineral products. Such products have historically served as the traditional exports from countries in Latin America and the Caribbean. SITC 5 is chemicals and related products that do not fit neatly into either primary products or other types of manufactured products. SITC 6, 7, 8, and 9 are the heart of world

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[6] For more on this see Felix (1989), Grilli (2006), Taylor (2008), or Toulan (2002).
[7] For more details on Paraguay, see Connolley, Deveraux, and Cortes (1995).
[8] See Clark, Fullerton, and Burdorf (2001).

trade in manufactured products. These industries include manufactured goods, machinery and transport equipment, and miscellaneous transactions not included elsewhere, respectively.

Table 2 about here

To make the results more informative, it would be useful to have some idea of what the IIT trade index is "on average" for each of the nine SITC categories. These results are presented in Table 3. The indexes presented are trade-weighted indexes for each SITC category for all 165 countries in the world for which usable estimates are available. As one might expect, IIT tends to be low for SITC categories 0-4. Since IIT is heavily associated with differentiated products, the index rises considerably for manufactured products. This should be kept in mind when analyzing the results below. Latin America and the Caribbean are traditionally heavy exporters of primary commodities (Leon and Soto, 1995).

Table 3 about here

Latin America and the Caribbean results for SITC product categories 0-9 are given in Tables 4 through 13 below. In SITC 0 (Food and Live Animals, Table 4), the average trade-weighted IIT index for the region of 0.1288 is well below the world average of 0.3765. Only four countries in the region have indexes that are even close to the world average and are noticeably high in comparison to other countries. These are El Salvador, Guatemala, Mexico, and Trinidad & Tobago. A low IIT index for food and live animals for the region is not surprising. Many of the countries of the region export a narrow group of commodities for which they exhibit large comparative advantages. Examples of this include meat, soybeans, and coffee exported from Argentina, Brazil, and Colombia, respectively. This pattern of trade leads to a low IIT index or, put another way, interindustry trade rather than IIT. For SITC 1 (Beverages and Tobacco, Table 5), the IIT indexes for the region are very similar to the "worlds" at 0.2110 and 0.3391, respectively. There are a number of countries in the region where the IIT index for this product category are high even by global standards. These are Bahamas, Barbados, Colombia, El Salvador, Guatemala, St. Vincent, and Venezuela. For these economies, the amount of total trade is quite high. Putting this together with a high IIT index indicates substantial trade in similar, but differentiated products within this category. As shown in Figure 2, the distribution of the trade-weighted coefficients for SITC 1 is skewed to the right of the median value for the region.

Table 4 about here

Table 5 and Figure 2 about here

For SITC 2 (Crude Materials) the overall IIT index for the region and the world as shown in Table 6 are very different. IIT in the region is very low by global standards. Only Guatemala and Mexico have IIT indexes that approach the levels prevalent in international trade in these products. The majority of the Caribbean Basin economies import finished products to support their tourism service exports (Mullings, 2004). Many of those economies do not produce or export any primary commodities in this category. On the other hand, countries that are heavy exporters of single commodities such as copper in Chile or bauxite in Jamaica also generate the

expected low values for the IIT index (for general discussion, see Feenstra and Taylor, 2008). Given those patterns, a very large number of the histogram observations in Figure 3 lie to the extreme left of the median at, or very near, 0.0.

Table 6 and Figure 3 about here

SITC 3 includes mineral fuels such as oil and coal. As one would expect, the IIT indexes in Table 7 for both the region and the world are low. For most countries in the region, the indexes are exceptionally low. However, Brazil and Peru have surprisingly high IIT indexes in this product category even by global standards at 0.6420 and 0.6285, respectively. The Brazilian case is interesting as it imports oil at this time but also exports another fuel, ethanol. Venezuela, as the region's largest oil exporter, shows the expected trade-weighted value for IIT in this category. As illustrated in Figure 4, those values represent clear departures from the rest of the sample. Table 8 presents estimates for SITC 4 (Animal and Vegetable Oils). Globally, the IIT index is low and it is noticeably lower for the region. Only four countries in the region have indexes at or above the global average. The indices for Barbados and Chile are virtually the same as the global average, while those for Guatemala and, especially, Trinidad & Tobago are noticeably high by world standards. World trade in this product category is quite small. Many of these products can be produced domestically, especially in a situation where a large share of economic output is still agricultural in nature. Since this describes much of the region, trade volumes are low. The country for which IIT looks most like the rest of the world is the most developed country of the region, Chile.

Table 7 and Figure 4 about here

Table 8 and Figure 5 about here

The results for SITC product categories 5 through 9 are significantly different than the previous results. Given the prominence of exports from the region that are related to natural resources (Clark, 2007), this is not a surprising result. The results for this group of product categories are shown in Tables 9 through 13 below. In the main, IIT is more important to the extent that product differentiation exists. Since these product categories are dominated by manufactured goods, the calculated IIT indexes rise dramatically. For the world, IIT indexes in these products range from about 0.5 to slightly less than 0.7. In SITC 5 (Chemicals and Related Products), the indexes for the region and the world are 0.3803 and 0.5866, respectively. However, the indexes are similarly high for only two countries, Argentina and Costa Rica. Brazil, Guatemala, and Mexico are the only other countries with index values above 0.4. For a large number of countries in the region the IIT index is extremely low by global standards and probably reflects the emphasis placed on import substitution industrialization policies (ISI) during much of the twentieth century (Auty, 1994). ISI served to reduce overall trade in the region both directly and indirectly. The fundamental objective was to replace imports with domestic production. From the 1950s until the early 1980s, ISI was vigorously pursued in the region. During that period, high tariffs, administrative practices, and the extensive use of quotas choked off a substantial volume of imports from gaining entry into the region. Although, the most extreme forms of ISI have been reduced over the last 20 years, lingering legacies still persist in the guises of relatively high tariffs and distorted industrial structures. Indirectly, ISI

hobbled the development of the sort of labor-intensive industries characteristic of middle-income countries. In both senses, ISI reduced the volume of trade occurring between the region and the rest of the world. This historical legacy reduces both interindustry and IIT.

Table 9 and Figure 6 about here

The pattern is even more pronounced for world trade in manufactured goods classified principally by material (Table 10). The regional simple average IIT index is significantly below the global average. However, only Mexico has a trade-weighted IIT index of 0.4460 which is even close to the trade-weighted average of 0.5157 for the world. Although the distribution shown in Figure 7 is somewhat bi-modal, the majority of the country IIT index values for the region are skewed toward 0.0. In a sense, this is an extension of the patter shown for SITC 2. Trade in both SITC 6 and 2 are based on the possession of some sort of commodity. Given this, it is not surprising that the trade patterns for the region more closely approximate interindustry trade than IIT.

Table 10 and Figure 7 about here

The results are somewhat different for SITC 7 (Machinery & Transport Equipment). Again, the world and regional indexes are very dissimilar. However, within the region, Argentina, Brazil, and Mexico have relatively high IIT indexes. In the cases of Argentina and Mexico, theses indexes are noticeably higher than the world averages. All three of those economies have fairly extensive export industries as well as large domestic markets that allowed achieving production economies of scale in prior decades (James, 1991; Truett and Truett, 1998). Increases in direct foreign investment in sectors such as automobiles, electrical, and nonelectrical machinery, plus trade liberalization policies, have also contributed to greater overall trade volumes for these countries in recent years (Dijkstra, 2000). In particular, Argentina and Brazil are members of MERCOSUR, while Mexico is a member of NAFTA and has trade agreements with other countries in Latin America as well as the EU.[9] As can be seen in Table 11 and Figure 8, Argentina, Brazil, and Mexico are clearly distinct from what is observed elsewhere in the region and account for the trade weighted regional average approximate equality with the world average. This bimodality is clearly observed in Figure 8.

Table 11 and Figure 8 about here

For SITC 8 (Miscellaneous Manufactured Articles), a much different pattern emerges for Latin America and the Caribbean. While 11 countries exhibit trade-weighted IIT indices of 0.1 or smaller, the regional index of 0.4681 is only slightly below the world index of 0.4922 (Table 12 and Figure 9). Four countries in the region have indexes that exceed 0.4. Those are Argentina, Brazil, El Salvador, and Mexico. The trade-weighted index for Mexico, 0.5684, is substantially above the world average. The latter potentially reflects the presence of so many in-bond (maquiladora) assembly products whose output levels, and input requirements, have expanded among those listed for SITC 8 in Table 2 (Truett and Truett, 2007). As was the case with SITC 7, many of the same factors may be increasing IIT for these countries relative to the rest of the region.

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[9] For other examples, see Thompson and Toledo (2001) or Nowak-Hehman and Martinez-Zarzoso (2005).

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Table 12 and Figure 9 about here

Given the variety product categories covered by SITC 9 in Table 2, the IIT patterns shown in Table 13 and Figure 10 are not completely surprising. On average, there is little or no IIT in the region compared to the global trade-weighted average of 0.6760 (Table 13). Four of the smaller economies, Barbados, Belize, Costa Rica, and Honduras, all exhibit trade-weighted IIT coefficients of 0.5 or higher that greatly exceed the 0.044 median value shown in Figure 10. All of these economies have relatively large tourism sectors that occasionally lead to trade in non-monetary coin relics, gold jewelry, nonstandard postal packages, and other potential economic peculiarities that are not internationally widespread (Mullings, 2004; Seidl, Guiliano, and Pratt, 2007).

Table 13 and Figure 10 about here

Conclusion

The objective of this paper is to fill a gap in the literature on IIT. Previous research includes virtually no IIT estimates for the Western Hemisphere or for Latin America and the Caribbean in particular. To partially address this empirical gap in the literature, IIT estimates are developed for each country in this region for which usable data are available. Also developed are more detailed IIT estimates for each of the ten SITC product categories. Trade-weighted coefficients for Latin America and the Caribbean tend to fall substantially below the global IIT average also reported in the tabular data. However, the results obtained are far from uniform. In most product categories, a fair degree of regional heterogeneity can be observed. Further, in a number of cases the trade-weighted IIT values approximate or even exceed their respective global averages. The countries that most frequently exhibit relatively high IIT indexes are Argentina, Brazil, and Mexico.

Information contained herein paints an interesting picture of the IIT regional landscape, but also raises a number of questions. A substantial amount of literature has been devoted to explaining IIT. In particular, the respective roles of policy stances and geo-physical characteristics peculiar to the region at-large have yet to be investigated in this regard. The question of whether natural resource exports, and/or natural resource tourism, may depress IIT relative to what occurs in more resource constrained countries merits some attention. Lingering effects of import-substitution policies and path dependency trends may also contribute to the coefficient distributions described above. Finally, the manners in which both multilateral and bilateral trade barriers have been reduced, or left in place, may influence regional trade and industrialization patterns as well. As those issues are examined, the results discussed in this paper may help clarify questions regarding IIT in this region of the global economy.

References

R.M. Auty, 1994, "Industrial Policy Reform in 6 Large Newly Industrializing Countries – The Resource Curse Thesis," *World Development* 22, 11-26.

B. Balassa, 1986, "The Determinants of Intra-Industry Specialization in United States Trade," *Oxford Economic Papers* 38, 220-233.

D.M. Bernhofen, 1998, "Intra-Industry Trade and Strategic Interaction: Theory and Evidence," *Journal of International Economics* 45, 77-96.

R.M. Buitelaar and R. Padilla, 1996, "El Comercio Intraindustrial de México con sus Principales Socios Comerciales," *Estudios Económicos* 11, 77-116.

D. P. Clark, 2009. "Adjustment Problems in Developing Countries and the U.S.-Central America-Dominican Republic Free Trade Agreement," *International Trade Journal* 23, 31-53.

D.P. Clark, T.M. Fullerton, Jr., and D. Burdorf, 2001, "Intra-Industry Trade between the United States and Mexico: 1993-98," *Estudios Económicos* 16, 167-183.

D.P. Clark, 2007, "Intraindustry Specialization and the United States – Central American – Dominican Republic Free Trade Agreement," *Developing Economies* 45, 491-506.

M. Connolly, J. Deveraux, and M. Cortes, 1995, "The Transhipment Problem – Smuggling and Welfare in Paraguay," *World Development* 23, 975-985.

Dijkstra, A. G., 2000, "Trade Liberalization and Industrialization in Latin America," *World Development* 28, 1567-1582.

G. Esquivel, 1992, "Una Nota sobre el Comercio Intraindustrial México-Estados Unidos," *Estudios Económicos* 7, 119-137.

L. B. Fabian, 2008. "Marginal Intra-industry Trade: The Case of Jamaica's Trade with CARICOM," *International Trade Journal* 22, 415-456.

D. Felix, 1989, "Import Substitution and Late Industrialization – Latin America and Asia Compared," *World Development* 17, 1455-1469.

R.C. Feenstra and A.M. Taylor, 2008, *International Economics*, New York, NY: Worth Publishers.

J.M. Finger, 1975, "Trade Overlap and Intra-Industry Trade," *Economic Inquiry* 13, 581-589.

L. Fontagne, M. Freudenberg, and G. Gaulier, 2006, "A Systematic Decomposition of World Trade into Horizontal and Vertical IIT," *Weltwirtschaftliches Archiv-Review of World Economics* 142, 459-475.

S. Globerman, 1992, "North American Trade Liberalization and Intra-Industry Trade," *Weltwirtschaftliches Archiv-Review of World Economics* 128, 487-497.

D. Greenaway and C. Milner, 1983, "On the Measurement of Intra-Industry Trade," *Economic Journal* 93, 900-908.

D. Greenaway, R. Hine, and C. Milner, 1994, "Country-Specific Factors and the Pattern of Horizontal and Vertical Intraindustry Trade in the UK," *Weltwirtschaftliches Archiv-Review of World Economics* 130, 77-100.

E. Grilli, 2006, "Political Economy and Economic Development in Latin America during the Second Half of the 20th Century," *Journal of Policy Modeling* 27, 1-31.

H.G. Grubel, 1967, "Intra-Industry Specialization and the Pattern of Trade," *Canadian Journal of Economics & Political Science* 37, 374-388.

H.G. Grubel and P. J. Lloyd, 1975, *Intra-Industry Trade: The Theory and Measurement of International Trade in Differentiated Products*, London, UK: Macmillan.

J. Gullstrand, 2002, "Does the Measurement of Intra-Industry Trade Matter?" *Weltwirtschaftliches Archiv-Review of World Economics* 138, 317-339.

D.D. James, 1991, "Capital Goods Production and Technological Learning – The Case of Mexico," *Journal of Economic Issues* 25, 977-991.

K. Lancaster, 1980, "Intra-Industry Trade under Perfect Monopolistic Competition," *Journal of International Economics* 10, 151-175.

J. Leon and R. Soto, 1995, "Terms of Trade in Latin America – Quantification of the Prebisch-Singer Hypothesis," *El Trimestre Económico* 62, 171-199.

B. Mullings, 2004, "Globalization and the Territorialization of the New Caribbean Service Economy," *Journal of Economic Geography* 4, 275-298.

D. Nowak-Lehmann and I. Martinez-Zarzoso, 2005. "MERCOSUR-European Union Trade: How Important Is EU Trade Liberalization for MERCOSUR's Exports?" *International Trade Journal* 19, 31-66.

P. Rodas-Martini, 1998, "Intra-Industry Trade and Revealed Comparative Advantage in the Central American Common Market," *World Development* 26, 337-344.

A. Seidl, F. Guiliano, and L. Pratt, 2007, "Cruising for Colones: Cruise Tourism Economics in Costa Rica," *Tourism Economics* 13, 67-85.

K. Taegi and K.Y. Oh, 2001, "Country Size, Income Level, and Intra-Industry Trade," *Applied Economics* 33, 401-406.

Taylor, T. G., 2008. "Export Diversification in Latin America and the Caribbean," *International Trade Journal* 22, 101-128.

H. Thompson and H. Toledo, 2001. "Bolivia and South American Free Trade," *International Trade Journal* 15, 113-126.

O. N. Toulan, 2002. "Measuring the Impact of Market Liberalization on Export Behavior: The Case of Argentina," *International Trade Journal* 16, 105-128.

D.B. Truett and L.J. Truett, 1998, "A Cost Function Analysis of the Mexican Nonelectrical Machinery Industry," *Applied Economics* 30, 1027-1035.

D.B. Truett and L.J. Truett, 2007, "NAFTA and the Maquiladoras: Boon or Bane?" *Contemporary Economic Policy* 25, 374-386.

A.J. Yeats, 1998, "Does Mercosur's Trade Performance raise Concerns about the Effects of Regional Trade Arrangements?" *World Bank Economic Review* 12, 1-28.

Table 1
Intra-Industry Trade by Country
Total Trade

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.3741	33,197,512	0.2666
2	Bahamas	0.0129	2,153,123	0.0350
3	Barbados	0.0562	1,356,121	0.1029
4	Belize	0.0109	688,393	0.2873
5	Bolivia	0.1102	3,332,133	0.1069
6	Brazil	0.3814	123,907,947	0.3243
7	Canada	0.4969	511,743,250	0.5883
8	Chile	0.1960	37,451,185	0.1388
9	Colombia	0.2584	26,971,154	0.2059
10	Costa Rica	0.2093	13,186,268	0.2540
11	Cuba	0.0482	6,224,480	0.0313
12	Dominica	0.0201	161,278	0.0480
13	Dominican Rep.	0.0873	6,308,159	0.1046
14	Ecuador	0.1370	12,570,076	0.1301
15	El Salvador	0.1650	5,633,662	0.2638
16	Grenada	0.0145	274,323	0.0261
17	Guatemala	0.2229	9,350,483	0.2546
18	Guyana	0.0495	1,013,764	0.0434
19	Honduras	0.1051	4,369,847	0.1412
20	Jamaica	0.0560	4,624,278	0.0691
21	Mexico	0.4012	336,685,048	0.5128
22	Nicaragua	0.0679	2,416,908	0.0799
23	Panama	0.0444	3,921,264	0.0619
24	Paraguay	0.0682	2,379,460	0.0610
25	Peru	0.1728	17,161,311	0.1711
26	St. Kitts - Nevis	0.0158	213,330	0.0601
27	St. Vincent	0.0218	228,006	0.0482
28	Suriname	0.0275	1,003,709	0.0320
29	Trinidad & Tobago	0.1500	7,510,471	0.2687
30	U.S.	0.5416	1,956,418,603	0.5080
31	Uruguay	0.1504	4,385,861	0.1834
32	Venezuela	0.1859	33,330,155	0.0781
	Americas Average	0.1518	3,170,171,562	0.1715
			Americas Trade Weighted Average	0.4883
	Latin American & Caribbean Average	0.1274	702,009,709	0.1464
			Latin American & Caribbean Weighted Average	0.3603
	World Average	0.1824	14,333,451,863	0.2187
			World Trade Weighted Average	0.5049

Table 2

Detailed Structure of the
Standard Industrial Trade Classification System

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SITC Code   Product Description

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0 -	Food and live animals
00 -	Live animals other than animals of division 03
01 -	Meat and meat preparations
02 -	Dairy products and birds' eggs
03 -	Fish (not marine mammals), crustaceans, mollusks and aquatic invertebrates, and preparations thereof
04 -	Cereals and cereal preparations
05 -	Vegetables and fruit
06 -	Sugars, sugar preparations and honey
07 -	Coffee, tea, cocoa, spices, and manufactures thereof
08 -	Feeding stuff for animals (not including unmilled cereals)
09 -	Miscellaneous edible products and preparations
1 -	Beverages and tobacco
11 -	Beverages
12 -	Tobacco and tobacco manufactures
2 -	Crude materials, inedible, except fuels
21 -	Hides, skins and furskins, raw
22 -	Oil-seeds and oleaginous fruits
23 -	Crude rubber (including synthetic and reclaimed)
24 -	Cork and wood
25 -	Pulp and waste paper
26 -	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)
27 -	Crude fertilizers, other than those of division 56, and crude minerals (excluding coal, petroleum and precious stones)
28 -	Metalliferous ores and metal scrap
29 -	Crude animal and vegetable materials, n.e.s.
3 -	Mineral fuels, lubricants and related materials
32 -	Coal, coke and briquettes
33 -	Petroleum, petroleum products and related materials
34 -	Gas, natural and manufactured
35 -	Electric current
4 -	Animal and vegetable oils, fats and waxes
41 -	Animal oils and fats
42 -	Fixed vegetable fats and oils, crude, refined or fractionated
43 -	Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.

Table 2 (Continued)

Detailed Structure of the
Standard Industrial Trade Classification System

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SITC Code　　　　　Product Description

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SITC Code	Product Description
5 -	Chemicals and related products, n.e.s.
51 -	Organic chemicals
52 -	Inorganic chemicals
53 -	Dyeing, tanning and colouring materials
54 -	Medicinal and pharmaceutical products
55 -	Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations
56 -	Fertilizers (other than those of group 272)
57 -	Plastics in primary forms
58 -	Plastics in non-primary forms
59 -	Chemical materials and products, n.e.s.
6 -	Manufactured goods classified chiefly by material
61 -	Leather, leather manufactures, n.e.s., and dressed furskins
62 -	Rubber manufactures, n.e.s.
63 -	Cork and wood manufactures (excluding furniture)
64 -	Paper, paperboard and articles of paper pulp, of paper or of paperboard
65 -	Textile yarn, fabrics, made-up articles, n.e.s., and related products
66 -	Non-metallic mineral manufactures, n.e.s.
67 -	Iron and steel
68 -	Non-ferrous metals
69 -	Manufactures of metals, n.e.s.
7 -	Machinery and transport equipment
71 -	Power-generating machinery and equipment
72 -	Machinery specialized for particular industries
73 -	Metalworking machinery
74 -	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.
75 -	Office machines and automatic data-processing machines
76 -	Telecommunications and sound-recording and reproducing apparatus and equipment
77 -	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)
78 -	Road vehicles (including air-cushion vehicles)
79 -	Other transport equipment

Table 2 (Continued)

Detailed Structure of the
Standard Industrial Trade Classification System

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SITC Code　　　　　Product Description

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8 -　　　　　　　Miscellaneous manufactured articles
　　81 -　　　　Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.
　　82 -　　　　Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings
　　83 -　　　　Travel goods, handbags and similar containers
　　84 -　　　　Articles of apparel and clothing accessories
　　85 -　　　　Footwear
　　87 -　　　　Professional, scientific and controlling instruments and apparatus, n.e.s.
　　88 -　　　　Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks
　　89 -　　　　Miscellaneous manufactured articles, n.e.s.
9 -　　　　　　　Commodities and transactions not classified elsewhere in the SITC
　　91 -　　　　Postal packages not classified according to kind
　　93 -　　　　Special transactions and commodities not classified according to kind
　　96 -　　　　Coin (other than gold coin), not being legal tender
　　97 -　　　　Gold, non-monetary (excluding gold ores and concentrates)

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Table 3

Intra-Industry Trade by SITC Classification
For All Countries

All Countries	SITC Group	Simple Average	Total Trade 2003	Trade Weighted Average
	0	0.1739	831,863,042	0.3765
	1	0.2130	134,837,033	0.3391
	2	0.1372	469,424,296	0.2715
	3	0.1101	1,384,453,072	0.2203
	4	0.1195	59,378,882	0.2628
	5	0.1794	1,583,640,543	0.5866
	6	0.1956	1,955,892,623	0.5157
	7	0.1840	5,646,457,259	0.5817
	8	0.2153	1,771,651,199	0.4922
	9	0.2760	494,811,142	0.6760
	Total	0.1824	14,333,451,863	0.5049

Table 4
Intra-Industry Trade by SITC Industry
Group 0, Food and Live Animals

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.1766	8,427,449	0.0410
2	Bahamas	0.0212	353,178	0.0215
3	Barbados	0.0931	193,955	0.1301
4	Belize	0.0515	118,269	0.0161
5	Bolivia	0.1008	479,723	0.0677
6	Brazil	0.2762	17,142,936	0.0872
7	Canada	0.4669	29,137,138	0.4649
8	Chile	0.2660	6,124,772	0.1035
9	Colombia	0.2831	3,312,919	0.1446
10	Costa Rica	0.3131	2,132,484	0.1774
11	Cuba	0.0596	1,567,121	0.0239
12	Dominica	0.0450	34,843	0.0650
13	Dominican Rep.	0.1843	757,641	0.1479
14	Ecuador	0.2128	2,887,847	0.0778
15	El Salvador	0.2368	1,017,885	0.2746
16	Grenada	0.0263	59,055	0.0212
17	Guatemala	0.3158	1,810,021	0.2177
18	Guyana	0.0630	295,769	0.0248
19	Honduras	0.1906	1,239,082	0.1563
20	Jamaica	0.1694	671,110	0.1624
21	Mexico	0.3011	15,720,417	0.2659
22	Nicaragua	0.1221	598,643	0.1387
23	Panama	0.0814	1,062,600	0.0698
24	Paraguay	0.0693	362,134	0.0470
25	Peru	0.1848	2,525,874	0.0986
26	St. Kitts - Nevis	0.0334	33,849	0.0246
27	St. Vincent	0.0605	63,454	0.0642
28	Suriname	0.0563	134,498	0.0793
29	Trinidad & Tobago	0.2112	412,227	0.2912
30	U.S.	0.4807	87,802,175	0.4470
31	Uruguay	0.1531	1,248,285	0.0606
32	Venezuela	0.1491	1,238,391	0.1076
	Americas Average	0.1705	188,965,744	0.1288
			Americas Trade Weighted Average	0.3308
	Latin American & Caribbean Average	0.1503	72,026,431	0.1069
			Latin American & Caribbean Weighted Average	0.1348
	World Average	0.1739	831,863,042	0.1710
			World Trade Weighted Average	0.3765

Table 5
Intra-Industry Trade by SITC Industry
Group 1, Beverages and Tobacco

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.3780	339,881	0.1613
2	Bahamas	0.1531	100,809	0.5565
3	Barbados	0.1114	58,510	0.3136
4	Belize	0.0000	4,588	0.0000
5	Bolivia	0.2287	10,856	0.2246
6	Brazil	0.3132	1,291,364	0.0823
7	Canada	0.4450	2,816,680	0.6218
8	Chile	0.3439	733,484	0.0264
9	Colombia	0.3153	182,962	0.4851
10	Costa Rica	0.1763	47,023	0.2408
11	Cuba	0.1755	300,279	0.0576
12	Dominica	0.1306	4,143	0.3003
13	Dominican Rep.	0.4307	106,927	0.5070
14	Ecuador	0.0426	54,821	0.0745
15	El Salvador	0.1878	84,333	0.6637
16	Grenada	0.0282	5,465	0.0714
17	Guatemala	0.4422	106,855	0.7973
18	Guyana	0.1861	20,876	0.0892
19	Honduras	0.1755	67,729	0.1961
20	Jamaica	0.2587	94,873	0.2192
21	Mexico	0.4552	2,422,257	0.2351
22	Nicaragua	0.0592	43,912	0.2362
23	Panama	0.1950	39,979	0.2944
24	Paraguay	0.1736	122,216	0.2613
25	Peru	0.2789	49,423	0.3047
26	St. Kitts - Nevis	0.0522	5,332	0.1819
27	St. Vincent	0.1641	6,426	0.5039
28	Suriname	0.0249	16,476	0.0306
29	Trinidad & Tobago	0.1256	121,804	0.2238
30	U.S.	0.3920	17,234,317	0.3072
31	Uruguay	0.2685	49,606	0.2190
32	Venezuela	0.3414	201,691	0.5915
	Americas Average	0.2204	26,745,897	0.2837
	Americas Trade Weighted Average			0.3162
	Latin American & Caribbean Average	0.2072	6,694,900	0.2716
	Latin American & Caribbean Weighted Average			0.2110
	World Average	0.2130	134,837,033	0.2471
	World Trade Weighted Average			0.3391

Table 6
Intra-Industry Trade by SITC Industry
Group 2, Crude Materials, Inedible, except Fuels

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.2280	2,858,122	0.1230
2	Bahamas	0.0678	68,734	0.1022
3	Barbados	0.0966	35,557	0.0373
4	Belize	0.0000	5,346	0.0000
5	Bolivia	0.1072	382,693	0.1621
6	Brazil	0.2493	13,847,193	0.1365
7	Canada	0.3729	25,908,413	0.3062
8	Chile	0.1541	5,386,012	0.0648
9	Colombia	0.1953	1,313,918	0.0631
10	Costa Rica	0.1409	337,450	0.1464
11	Cuba	0.0986	590,468	0.0127
12	Dominica	0.0000	3,692	0.0000
13	Dominican Rep.	0.0837	211,772	0.0461
14	Ecuador	0.0994	477,354	0.0743
15	El Salvador	0.1400	136,481	0.1154
16	Grenada	0.0000	6,839	0.0000
17	Guatemala	0.1948	246,519	0.2411
18	Guyana	0.0544	48,463	0.0084
19	Honduras	0.1163	333,906	0.1151
20	Jamaica	0.0687	773,158	0.0033
21	Mexico	0.2559	6,963,225	0.2677
22	Nicaragua	0.0881	55,259	0.0498
23	Panama	0.0569	45,716	0.1269
24	Paraguay	0.0761	473,895	0.0221
25	Peru	0.1816	1,653,908	0.0705
26	St. Kitts - Nevis	0.0000	5,057	0.0000
27	St. Vincent	0.0000	6,274	0.0000
28	Suriname	0.0787	329,871	0.0095
29	Trinidad & Tobago	0.0747	132,974	0.0922
30	U.S.	0.4323	54,606,954	0.3768
31	Uruguay	0.1108	473,529	0.1211
32	Venezuela	0.1360	548,257	0.0439
	Americas Average	0.1237	118,267,009	0.0918
	Americas Trade Weighted Average			0.2838
	Latin American & Caribbean Average	0.1051	37,751,642	0.0752
	Latin American & Caribbean Weighted Average			0.1340
	World Average	0.1372	469,424,296	0.1289
	World Trade Weighted Average			0.2715

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Table 7
Intra-Industry Trade by SITC Industry
Group 3, Mineral Fuels, Lubricants and Related Materials

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.1544	3,297,630	0.0774
2	Bahamas	0.0000	292,740	0.0000
3	Barbados	0.0000	195,701	0.0000
4	Belize	0.0000	57,721	0.0000
5	Bolivia	0.0243	620,449	0.0566
6	Brazil	0.2265	11,810,504	0.6420
7	Canada	0.3561	58,871,393	0.5042
8	Chile	0.1744	3,751,478	0.2250
9	Colombia	0.1057	5,113,232	0.0900
10	Costa Rica	0.0762	596,464	0.0945
11	Cuba	0.0000	369,101	0.0000
12	Dominica	0.0000	13,793	0.0000
13	Dominican Rep.	0.0826	1,368,133	0.1875
14	Ecuador	0.1470	3,275,755	0.1355
15	El Salvador	0.0739	684,591	0.1832
16	Grenada	0.0000	17,440	0.0000
17	Guatemala	0.0989	1,136,855	0.0737
18	Guyana	0.0000	136,273	0.0000
19	Honduras	0.0395	620,263	0.0100
20	Jamaica	0.0157	656,774	0.0872
21	Mexico	0.0796	24,202,000	0.1321
22	Nicaragua	0.0264	294,435	0.0435
23	Panama	0.0036	371,551	0.0289
24	Paraguay	0.0019	41,201	0.0083
25	Peru	0.1852	2,125,332	0.6285
26	St. Kitts - Nevis	0.0000	14,137	0.0000
27	St. Vincent	0.0000	19,707	0.0000
28	Suriname	0.0385	60,170	0.0845
29	Trinidad & Tobago	0.0876	3,327,493	0.1641
30	U.S.	0.4215	176,942,945	0.1347
31	Uruguay	0.1185	515,785	0.1332
32	Venezuela	0.1608	20,697,471	0.0029
	Americas Average	0.0843	321,498,517	0.1165
			Americas Trade Weighted Average	0.2145
	Latin American & Caribbean Average	0.0640	85,684,179	0.1030
			Latin American & Caribbean Weighted Average	0.1803
	World Average	0.1101	1,384,453,072	0.1413
			World Trade Weighted Average	0.2203

Table 8
Intra-Industry Trade by SITC Industry
Group 4, Animal and Vegetable Oils, Fats and Waxes

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.1669	2,062,603	0.0080
2	Bahamas	0.0000	3,410	0.0000
3	Barbados	0.0818	6,988	0.2624
4	Belize	0.0000	1,489	0.0000
5	Bolivia	0.0850	125,522	0.0068
6	Brazil	0.2328	1,527,804	0.0727
7	Canada	0.3566	899,571	0.3350
8	Chile	0.1716	119,655	0.2659
9	Colombia	0.0812	219,156	0.1653
10	Costa Rica	0.1404	76,496	0.1357
11	Cuba	0.0003	56,359	0.0007
12	Dominica	0.0000	4,148	0.0000
13	Dominican Rep.	0.0893	62,599	0.0038
14	Ecuador	0.0802	99,417	0.0728
15	El Salvador	0.0803	92,480	0.0990
16	Grenada	0.0000	768	0.0000
17	Guatemala	0.1564	144,941	0.3175
18	Guyana	0.0000	3,159	0.0000
19	Honduras	0.1020	139,306	0.0720
20	Jamaica	0.0000	22,511	0.0000
21	Mexico	0.2114	697,334	0.1515
22	Nicaragua	0.0187	60,642	0.0560
23	Panama	0.0391	25,726	0.0524
24	Paraguay	0.1553	80,643	0.0529
25	Peru	0.0605	250,261	0.0063
26	St. Kitts - Nevis	0.0000	656	0.0000
27	St. Vincent	0.0000	585	0.0000
28	Suriname	0.0000	6,350	0.0000
29	Trinidad & Tobago	0.1437	16,412	0.4698
30	U.S.	0.3551	3,652,900	0.2667
31	Uruguay	0.1241	36,305	0.1566
32	Venezuela	0.0041	257,413	0.0271
	Americas Average	0.0918	10,753,609	0.0955
			Americas Trade Weighted Average	0.1575
	Latin American & Caribbean Average	0.0742	6,201,138	0.0818
			Latin American & Caribbean Weighted Average	0.0674
	World Average	0.1195	59,378,882	0.1497
			World Trade Weighted Average	0.2628

Table 9
Intra-Industry Trade by SITC Industry
Group 5, Chemicals and Related Products

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.4504	4,814,711	0.5193
2	Bahamas	0.0345	231,560	0.0189
3	Barbados	0.0504	145,410	0.1953
4	Belize	0.0023	42,314	0.0008
5	Bolivia	0.0298	317,857	0.0474
6	Brazil	0.4620	15,431,970	0.4334
7	Canada	0.5288	41,676,888	0.5551
8	Chile	0.2566	3,640,938	0.2818
9	Colombia	0.3089	4,274,021	0.3765
10	Costa Rica	0.2415	1,514,826	0.4934
11	Cuba	0.0411	600,029	0.0665
12	Dominica	0.0505	36,419	0.1077
13	Dominican Rep.	0.0856	660,524	0.1013
14	Ecuador	0.1116	1,222,465	0.1843
15	El Salvador	0.1662	853,033	0.3666
16	Grenada	0.0123	17,654	0.0710
17	Guatemala	0.2525	1,626,590	0.4431
18	Guyana	0.0429	68,716	0.0947
19	Honduras	0.0772	686,815	0.1362
20	Jamaica	0.0715	416,768	0.1854
21	Mexico	0.3965	24,167,661	0.4254
22	Nicaragua	0.0627	346,787	0.0718
23	Panama	0.0359	462,507	0.0826
24	Paraguay	0.0708	325,816	0.0954
25	Peru	0.1871	1,628,679	0.1999
26	St. Kitts - Nevis	0.0000	14,767	0.0000
27	St. Vincent	0.0151	17,230	0.0146
28	Suriname	0.0186	58,516	0.0213
29	Trinidad & Tobago	0.1422	930,528	0.1112
30	U.S.	0.6493	192,970,248	0.6416
31	Uruguay	0.2040	613,931	0.3397
32	Venezuela	0.2004	2,514,754	0.2217
	Americas Average	0.1643	302,330,932	0.2158
			Americas Trade Weighted Average	0.5712
	Latin American & Caribbean Average	0.1360	67,683,796	0.1902
			Latin American & Caribbean Weighted Average	0.3803
	World Average	0.1794	1,583,640,543	0.2225
			World Trade Weighted Average	0.5866

Table 10
Intra-Industry Trade by SITC Industry
Group 6, Manufactured Goods Classified chiefly by Material

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.3877	4,294,519	0.3334
2	Bahamas	0.0000	295,587	0.0002
3	Barbados	0.0493	203,842	0.1316
4	Belize	0.0034	64,011	0.0066
5	Bolivia	0.0695	447,189	0.0461
6	Brazil	0.4587	19,066,059	0.3101
7	Canada	0.5291	70,424,793	0.5758
8	Chile	0.2270	8,524,778	0.1196
9	Colombia	0.3338	3,924,339	0.3202
10	Costa Rica	0.2135	1,607,782	0.2823
11	Cuba	0.0473	833,798	0.0480
12	Dominica	0.0000	20,359	0.0000
13	Dominican Rep.	0.0704	1,028,653	0.0573
14	Ecuador	0.1762	1,190,519	0.2237
15	El Salvador	0.1909	1,011,892	0.3187
16	Grenada	0.0188	49,545	0.0658
17	Guatemala	0.2521	1,445,613	0.3066
18	Guyana	0.0430	141,322	0.0387
19	Honduras	0.1227	844,934	0.2541
20	Jamaica	0.0163	464,048	0.0180
21	Mexico	0.4227	39,721,037	0.4460
22	Nicaragua	0.0666	286,048	0.1036
23	Panama	0.0453	546,989	0.0942
24	Paraguay	0.0544	308,562	0.0618
25	Peru	0.2135	2,916,680	0.1327
26	St. Kitts - Nevis	0.0140	41,305	0.0333
27	St. Vincent	0.0225	40,658	0.0543
28	Suriname	0.0156	91,797	0.0233
29	Trinidad & Tobago	0.1315	933,860	0.1503
30	U.S.	0.5637	199,137,617	0.5274
31	Uruguay	0.1385	709,138	0.2544
32	Venezuela	0.2257	3,286,992	0.1742
	Americas Average	0.1601	363,904,265	0.1723
			Americas Trade Weighted Average	0.4841
	Latin American & Caribbean Average	0.1344	94,341,855	0.1470
			Latin American & Caribbean Weighted Average	0.3242
	World Average	0.1956	1,955,892,623	0.2241
			World Trade Weighted Average	0.5157

Table 11
Intra-Industry Trade by SITC Industry
Group 7, Machinery and Transportation Equipment

|	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.4742	5,455,150	0.5849
2	Bahamas	0.0000	517,682	0.0000
3	Barbados	0.0248	325,848	0.0438
4	Belize	0.0027	104,157	0.0084
5	Bolivia	0.1462	590,574	0.1908
6	Brazil	0.4073	35,687,360	0.4057
7	Canada	0.5595	212,012,894	0.6885
8	Chile	0.1095	6,311,331	0.1167
9	Colombia	0.1428	5,694,043	0.1433
10	Costa Rica	0.1450	5,009,366	0.1741
11	Cuba	0.0355	1,341,546	0.0276
12	Dominica	0.0030	28,158	0.0011
13	Dominican Rep.	0.0096	1,635,300	0.0134
14	Ecuador	0.0727	2,610,970	0.1127
15	El Salvador	0.0617	1,073,377	0.0896
16	Grenada	0.0000	76,426	0.0000
17	Guatemala	0.0877	1,950,195	0.0895
18	Guyana	0.0206	133,934	0.0417
19	Honduras	0.0588	326,642	0.0525
20	Jamaica	0.0050	1,044,023	0.0039
21	Mexico	0.4558	178,637,124	0.6160
22	Nicaragua	0.0494	429,095	0.0274
23	Panama	0.0025	917,954	0.0019
24	Paraguay	0.0190	467,988	0.0160
25	Peru	0.0779	2,466,996	0.0613
26	St. Kitts - Nevis	0.0116	70,488	0.1201
27	St. Vincent	0.0019	49,188	0.0021
28	Suriname	0.0188	193,309	0.0270
29	Trinidad & Tobago	0.1012	1,361,398	0.1361
30	U.S.	0.6680	839,682,131	0.5904
31	Uruguay	0.0978	406,996	0.2347
32	Venezuela	0.1932	3,656,503	0.2561
	Americas Average	0.1270	1,310,268,146	0.1524
	Americas Trade Weighted Average			0.5907
	Latin American & Caribbean Average	0.0945	258,573,121	0.1199
	Latin American & Caribbean Weighted Average			0.5117
	World Average	0.1840	5,646,457,259	0.2245
	World Trade Weighted Average			0.5817

Table 12
Intra-Industry Trade by SITC Industry
Group 8, Miscellaneous Manufactured Articles

	Country	Simple Average	Total Trade 2003	Trade Weighted Average
1	Argentina	0.4818	1,216,471	0.4790
2	Bahamas	0.0007	261,567	0.0011
3	Barbados	0.0669	184,003	0.0968
4	Belize	0.0014	40,598	0.0024
5	Bolivia	0.2014	271,724	0.1959
6	Brazil	0.3972	6,546,114	0.2927
7	Canada	0.4981	48,326,180	0.5922
8	Chile	0.1808	1,980,376	0.2046
9	Colombia	0.3212	2,269,548	0.3191
10	Costa Rica	0.2311	1,834,772	0.4089
11	Cuba	0.0449	563,912	0.0274
12	Dominica	0.0175	15,723	0.0177
13	Dominican Rep.	0.1215	428,129	0.1823
14	Ecuador	0.1697	738,420	0.1821
15	El Salvador	0.2446	663,368	0.4037
16	Grenada	0.0234	41,119	0.0243
17	Guatemala	0.2873	881,919	0.4237
18	Guyana	0.0934	71,540	0.2284
19	Honduras	0.0877	111,158	0.2685
20	Jamaica	0.0645	425,002	0.0948
21	Mexico	0.5631	42,659,493	0.5684
22	Nicaragua	0.0400	223,905	0.0602
23	Panama	0.0681	445,090	0.1054
24	Paraguay	0.1391	196,561	0.1197
25	Peru	0.2301	1,522,879	0.2330
26	St. Kitts - Nevis	0.0184	27,739	0.0420
27	St. Vincent	0.0124	24,484	0.0458
28	Suriname	0.0245	49,376	0.0263
29	Trinidad & Tobago	0.2484	267,046	0.4057
30	U.S.	0.4246	304,583,139	0.4124
31	Uruguay	0.2131	312,015	0.3259
32	Venezuela	0.1714	888,317	0.2150
	Americas Average	0.1778	418,071,687	0.2189
	Americas Trade Weighted Average			0.4419
	Latin American & Caribbean Average	0.1589	65,162,368	0.2000
	Latin American & Caribbean Weighted Average			0.4681
	World Average	0.2153	1,771,651,199	0.2468
	World Trade Weighted Average			0.4922

Table 13
Intra-Industry Trade by SITC Industry
Group 9, Commodities and Transactions Not Elsewhere Classified in the SITC

	Country	Simple Avg.	Total Trade 2003	Trade Weighted Avg.
1	Argentina	0.1287	430,976	0.2841
2	Bahamas	0.0000	27,856	0.0000
3	Barbados	0.8765	6,307	0.8765
4	Belize	0.3891	249,900	0.7781
5	Bolivia	0.1312	85,546	0.2545
6	Brazil	0.0005	1,556,643	0.0002
7	Canada	0.4124	21,669,300	0.4425
8	Chile	0.1814	878,361	0.1497
9	Colombia	0.0029	667,016	0.0007
10	Costa Rica	0.4624	29,605	0.6633
11	Cuba	0.0000	1,867	0.0000
12	Dominica	NA	0	NA
13	Dominican Rep.	0.0310	48,481	0.0286
14	Ecuador	0.0000	12,508	0.0000
15	El Salvador	0.0560	16,222	0.0556
16	Grenada	0.0000	12	0.0000
17	Guatemala	0.0595	975	0.0595
18	Guyana	0.3220	93,712	0.0055
19	Honduras	0.3750	12	0.5000
20	Jamaica	0.0000	56,011	0.0000
21	Mexico	0.3311	1,494,500	0.3115
22	Nicaragua	0.0117	78,182	0.0130
23	Panama	0.1095	3,152	0.1821
24	Paraguay	0.0000	444	0.0000
25	Peru	0.0000	2,021,279	0.0000
26	St. Kitts - Nevis	NA	0	NA
27	St. Vincent	NA	0	NA
28	Suriname	0.2851	63,346	0.0440
29	Trinidad & Tobago	0.0513	6,729	0.0892
30	U.S.	0.7145	79,806,177	0.6729
31	Uruguay	0.0000	20,271	0.0000
32	Venezuela	0.0062	40,366	0.0125
	Americas Average	0.1703	109,365,756	0.1870
			Americas Trade Weighted Average	0.5876
	Latin American & Caribbean Average	0.1412	7,890,279	0.1596
			Latin American & Caribbean Weighted Average	0.1229
	World Average	0.2760	494,811,142	0.2910
			World Trade Weighted Average	0.6760

Figure 1
Total Intra-Industry Trade
Trade-Weighted Averages
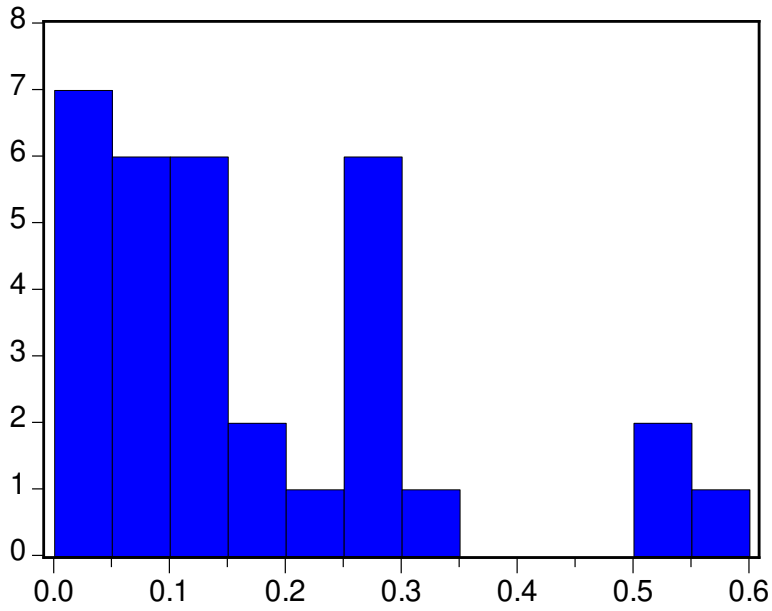
	Series: TTWG
	Sample 1 32
	Observations 32
	Mean 0.171481
	Median 0.118500
	Maximum 0.588300
	Minimum 0.026100
	Std. Dev. 0.149114
	Skewness 1.329418
	Kurtosis 4.088547
	Jarque-Bera 11.00579
	Probability 0.004075

Figure 2
SITC 1, Beverages and Tobacco
Trade-Weighted Averages
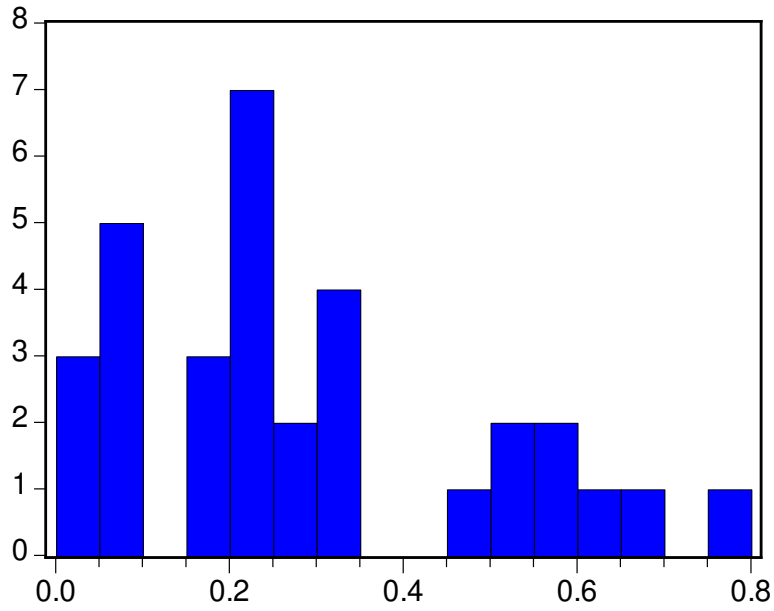
Series: G1WG	
Sample 1 32	
Observations 32	
Mean	0.283697
Median	0.235650
Maximum	0.797300
Minimum	0.000000
Std. Dev.	0.206144
Skewness	0.754944
Kurtosis	2.757936
Jarque-Bera	3.117806
Probability	0.210367

Figure 3
SITC 2, Crude Materials
Trade-Weighted Averages
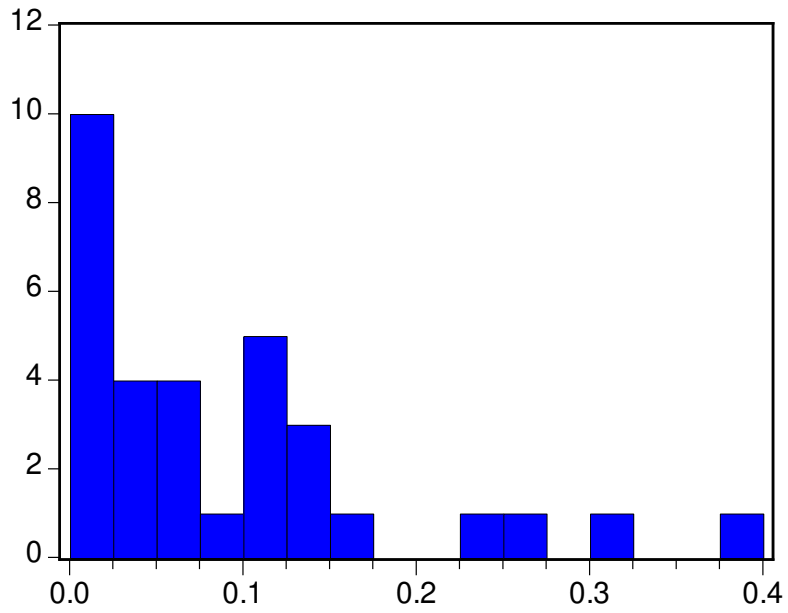
Series: G2WG	
Sample 1 32	
Observations 32	
Mean	0.091828
Median	0.067650
Maximum	0.376800
Minimum	0.000000
Std. Dev.	0.095184
Skewness	1.347074
Kurtosis	4.380566
Jarque-Bera	12.21919
Probability	0.002221

**Figure 4
SITC 3, Mineral Fuels
Trade-Weighted Averages**
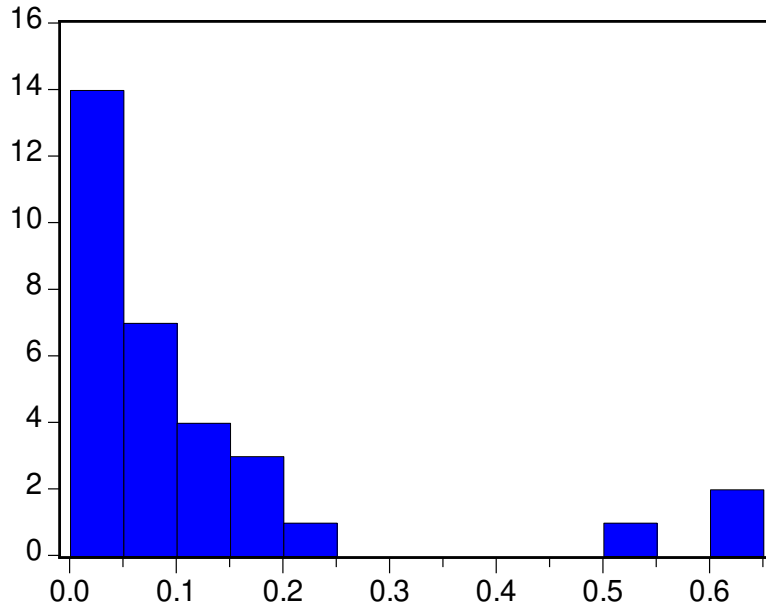
Series: G3WG
Sample 1 32
Observations 32

Mean	0.116484
Median	0.075550
Maximum	0.642000
Minimum	0.000000
Std. Dev.	0.169865
Skewness	2.140078
Kurtosis	6.798494
Jarque-Bera	43.66439
Probability	0.000000

Figure 5
SITC 4, Animal and Vegetable Oils
Trade-Weighted Averages
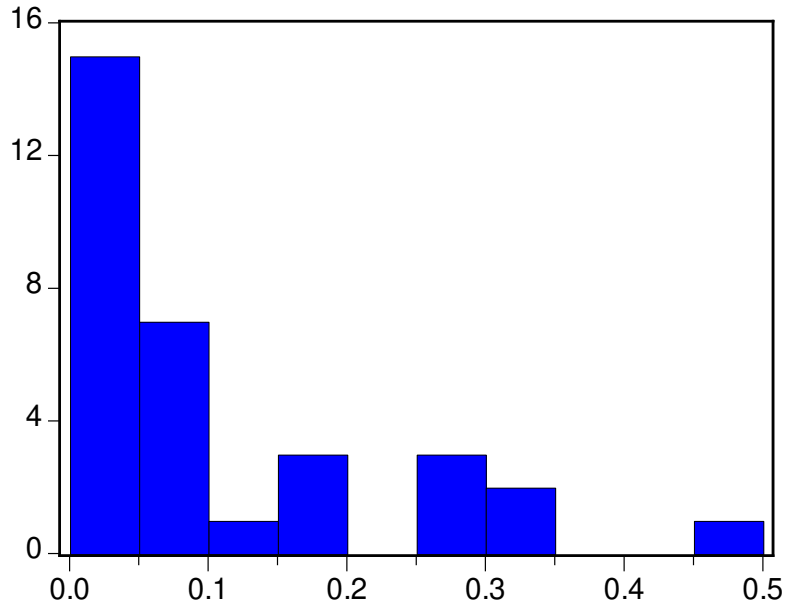
Series: G4WG	
Sample 1 32	
Observations 32	
Mean	0.095528
Median	0.052650
Maximum	0.469800
Minimum	0.000000
Std. Dev.	0.124534
Skewness	1.364104
Kurtosis	4.012380
Jarque-Bera	11.29070
Probability	0.003534

Figure 6
SITC 5, Chemicals and Related Products
Trade-Weighted Averages
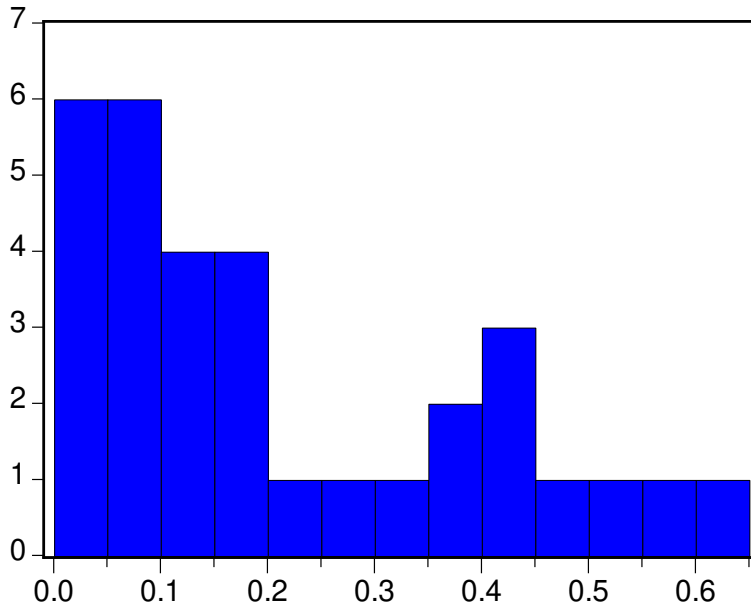
Series: G5WG	
Sample 1 32	
Observations 32	
Mean	0.215747
Median	0.160250
Maximum	0.641600
Minimum	0.000000
Std. Dev.	0.185842
Skewness	0.710712
Kurtosis	2.264477
Jarque-Bera	3.415257
Probability	0.181295

Figure 7
SITC 6, Manufactured Goods Classified chiefly by Material
**Trade-Weighted Averages**
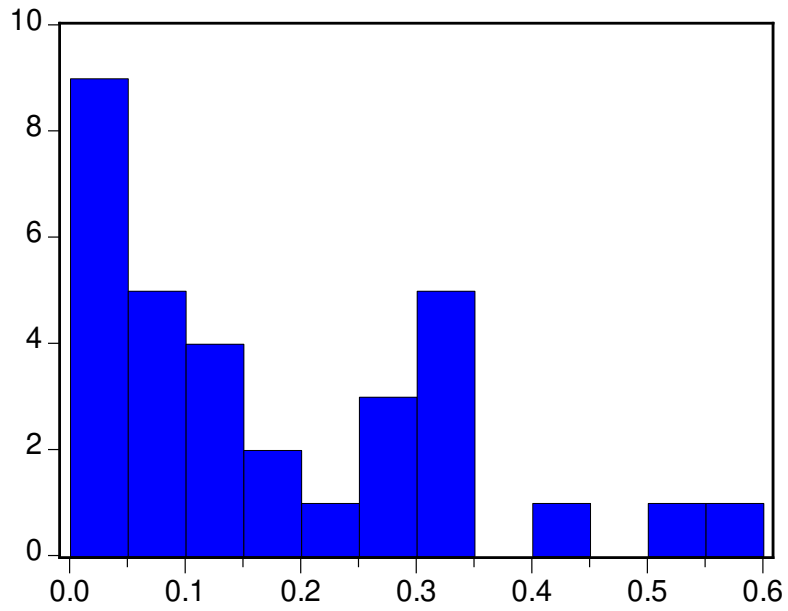
Series: G6WG	
Sample 1 32	
Observations 32	
Mean	0.172259
Median	0.125600
Maximum	0.575800
Minimum	0.000000
Std. Dev.	0.157358
Skewness	0.939349
Kurtosis	3.044251
Jarque-Bera	4.708617
Probability	0.094959

Figure 8
SITC 7, Machinery and Transportation Equipment
Trade-Weighted Averages
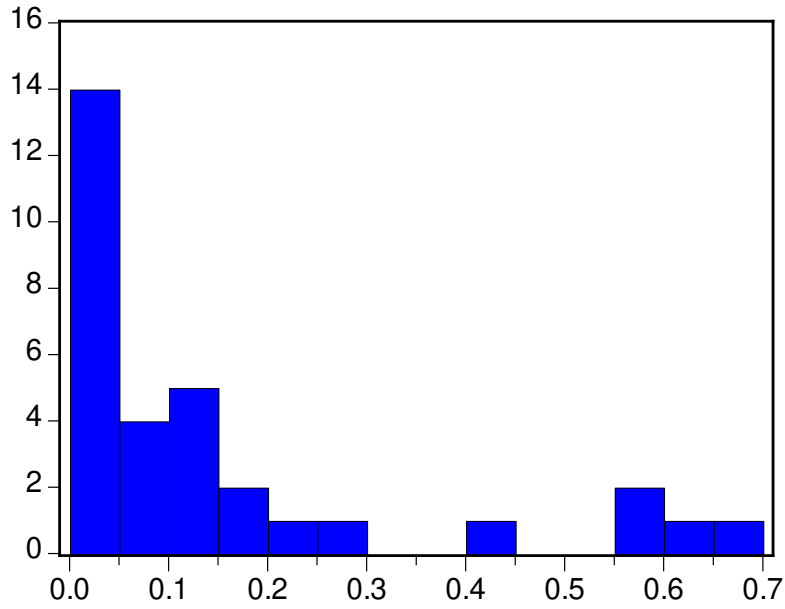
Series: G7WG	
Sample 1 32	
Observations 32	
Mean	0.152416
Median	0.075400
Maximum	0.688500
Minimum	0.000000
Std. Dev.	0.201731
Skewness	1.584294
Kurtosis	4.229080
Jarque-Bera	15.40078
Probability	0.000453

Figure 9
SITC 8, Miscellaneous Manufactured Articles
Trade-Weighted Averages
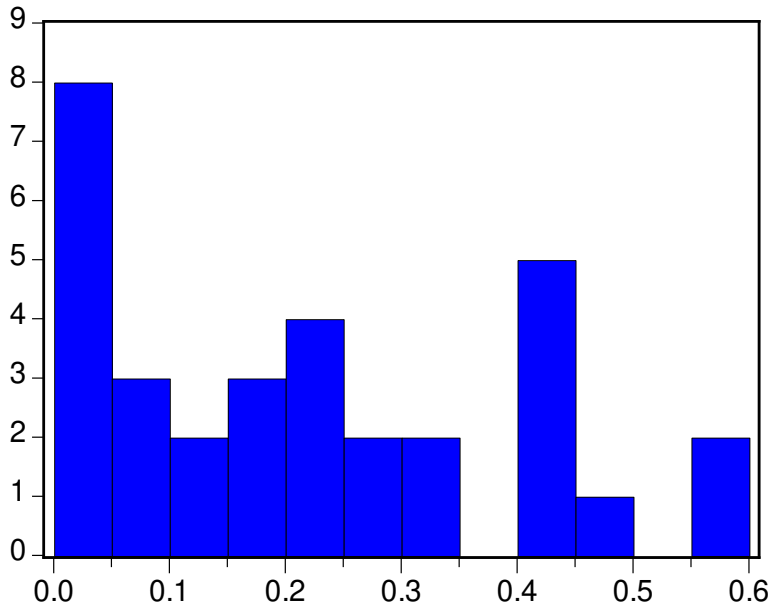
Series: G8WG	
Sample 1 32	
Observations 32	
Mean	0.218919
Median	0.200250
Maximum	0.592200
Minimum	0.001100
Std. Dev.	0.173458
Skewness	0.498456
Kurtosis	2.188807
Jarque-Bera	2.202491
Probability	0.332457

Figure 10
SITC 9, Special Commodities and Transactions
Trade-Weighted Averages
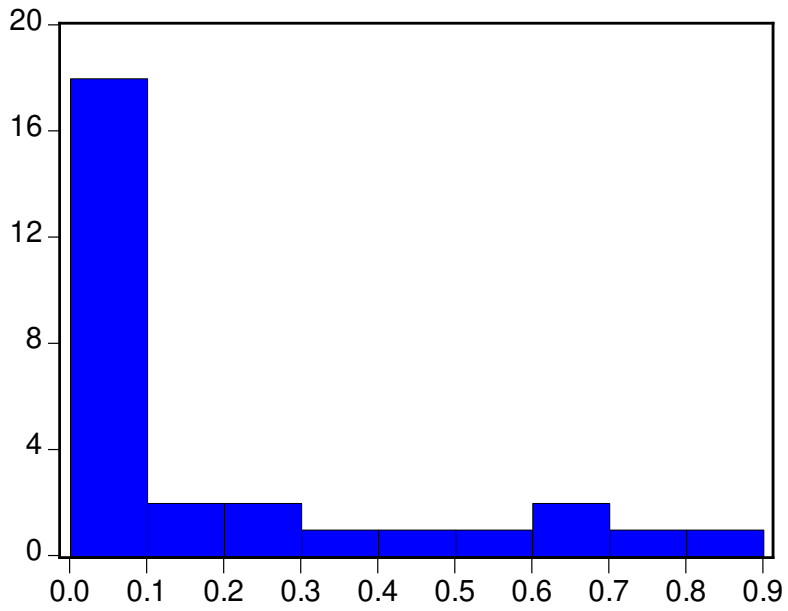
Series: G9WG	
Sample 1 32	
Observations 29	
Mean	0.187034
Median	0.044000
Maximum	0.876500
Minimum	0.000000
Std. Dev.	0.268166
Skewness	1.344382
Kurtosis	3.477976
Jarque-Bera	9.011648
Probability	0.011044