A SHIFT-SHARE ANALYSIS OF SERVICE EXPORTS OF THE COUNTRIES OF LATIN AMERICA & CARIBBEAN

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ABSTRACT

Increased market globalization on the one hand, and rapid advances in telecommunications and information technology on the other, have given a boost to the volume of services marketed across national borders in recent years. This paper analyzes the relative progress made by the countries of Latin America & Caribbean for a share in this expanding sector of the international market over a 15-year period, from 2002 to 2017. A shift-share analysis was carried out to identify the winners and the losers in the market during the study period. Results show that major winners of market share in terms of total service exports were Brazil, Panama, Argentina, Peru, and Colombia in order of magnitude. The major losers of market shares, in order of magnitude (of losses), were Mexico, Dominican Republic, Chile, The Bahamas, and Jamaica. Policy implications of these results for the countries of Latin America & Caribbean are discussed.

INTRODUCTION

The volume of services marketed across national borders in the last decades have dramatically expanded, thanks in part to increased liberalization, market globalization, and rapid advances in telecommunications and information (Bhattacharya & Bhattacharya, 2013; Hongchindaket et al., 2013). Back in 1995, the World Bank predicted that the internationalization of services was expected to continue apace (World Bank, 1995). It has - services have now become a major component of world trade. While service exports stood at US$1,371 billion in 1997, ten years later they more than double growing to US$3,486 billion in 2007! And by the year 2017, the figures rose further to US$5,593 billion, accounting for more than 24% of total world exports for the year (World Bank, 2021). Understandably, countries and regions of the world are competing for a share of this growing revenue. Who are the winners and the losers in the global market for services? What are the public policy implications for the countries and regions involved? This paper analyzes the competition among the developing countries of Latin America & Caribbean for a share in this expanding international market for services over a 15-year period, from 2002 to 2017. A shift-share analysis was carried out to identify the winners and the losers in the market during the study period.

In the past services were thought to be unmarketable across national boundaries. It was even the Marxist prescription and Communist practice to omit them entirely from national income accounts (Bhagwati, 1984). This treatment of services was borne out of the so-called "haircut view." Due to the simultaneous production and consumption characteristic of services, it was argued that one

could not have a haircut long distance. The client and the barber must physically be present at the same place to render and consume the haircut service (Bhagwati, 1991). Thus, international marketing of services was considered not as important as international marketing of physical goods. With advances in technology however, services formerly considered to be unmarketable across national boundaries are now actively traded. This is especially true of, but not limited to, financial services, communications services, and data transmission (Dávila-Vargas-Machuca et al., 2014; Pilat, 1998). It has been said that; "Any activity that can be conducted through a screen and a telephone, from writing software to running a secretarial service, can be carried out anywhere in the world" (The Economist, 1996, p. S33).

Increased service components of manufacturing also gave a boost to international trade in services (Lodefalk, 2013, 2014; Hassan & Nassar, 2018). To be more competitive, manufacturers are shifting more and more to service differentiation, as against tangible product differentiation (Bas, 2014). Most of these service inputs into production are outsourced internationally to cut down costs (World Bank, 1995). International marketing of services was given a further boost by including services in the GATT's Uruguay Round of talks launched in 1986 (I.T.F., 1996). The Uruguay Round extended multilateral disciplines and negotiations to international trade in services for the first time. Services have also been included in recent initiatives of several regional integrations. These include USMCA, the Australia-New Zealand Closer Economic Relations Agreement, the Gulf Cooperation Council, Mercosur, and the European Union. Thus, it was speculated: "the internationalization of services will likely lead the next stage of economic globalization" (World Bank, 1995, p. 3). In view of this development, it is important to examine how developing countries of Latin America & Caribbean are competing in the world market for services. Which countries are benefiting the most from this growing phenomenon? Are some countries being left behind in this era of economic globalization? Who are they (if any), and in which service sector(s) are they lagging behind? What are the managerial and public policy implications of this? These questions of great importance to companies and national governments of these countries are addressed in this paper.

THE LITERATURE

Although rapidly growing in importance in world economy, relatively little research has been done on service exports compared to exports of physical goods (Bhattacharya et al., 2012; Chan & Coulthard, 2005; Jalali, 2013). As far back as 1988, Green et al. (1988, p. 208) called on marketing academics to "begin to study the international dimension of services marketing in greater depth." In 1997, Coviello et al. (1998, p. 8) also bemoaned the fact that "most studies" on export performance issues, "focus on manufacturing firms, with little attention given to service organizations." A few authors have responded to this call for more work on international marketing of services. For example, in their survey of Australian firms, Patterson and Cicic (1995) developed new criteria for classifying services that would be better for strategic international marketing of services. Their criteria classified services into four cells defined according to organizational demographics, and international practices. Likewise, empirical research of Edvardsson et al. (1993) examined foreign market entry strategies of service companies. Useful as these studies are, they do not deal with service export performance, or with developing countries like those of Latin

America & Caribbean. Winsted and Patterson (1998) studied service export performance and prospects, but again, with a focus on developed countries alone. They concluded that most developed countries were not exporting services to their full potential. Through their study of engineering consulting firms in the U.S., they identified barriers to service exports by developed countries. Malhotra et al. (1994) compared the international services marketing of developed and developing countries. However, the basis of their comparison was service quality, not service export performance of the two groups of countries. In a series of essays, Bhagwati (1984, 1987, & 1991) wrote on developing countries and international marketing of services. He argued that developing countries have good prospects for international marketing of services due to what he christened "splintering" and "disembodiment" of services. He thus strongly encouraged developing countries to participate actively in the Uruguay Round of multilateral negotiations in services rather than boycotting them as some developing countries wanted to do. While his essays are enlightening, they are more conceptual than empirical, thus leaving room for validation.

Some other authors have also tried to respond to the call for more research on service exports, however their efforts are often limited to just one service category, and/or concentrated on just one country. For example, Jalali (2013) studied engineering services unveiling six barriers to the international market faced by exporters of that category of services. Lu et al. (2012). studied professional business services discovering factors that contribute to success of exporters, which include management attitude, resource commitment and international experience, among others. In their own study, Tadesse and White (2012) examined tourism services and reported that immigrants significantly enhance exports of such services in the US. Bhattacharya and Bhattacharya (2013) studied software services in India and found that exports of that service category had unidirectional causality to economic growth during the study period. A few other authors have studied exports of a broad range of services, but again, they often concentrate on a single country. These include Minondo (2014) who focused on Spain; Hongchindaket et al. (2013) on Thailand; Lodefalk (2013, 2014) on Sweden; Fryges et al. (2015) on Germany; Castellacci (2014) on Norway; Sahoo and Dash (2014) on India; Sudarsan and Karmali (2011) also on India; and White et al. (2013) on the US. Of particular relevance to the present research is the study of Oyewole (2003). The study covered all the major sectors of service exports and covered several developing countries. However, the study was limited to the region of Sub-Saharan Africa. A further attempt by Oyewole (2016) studied all the major sectors of service exports, covering all the 7 regions of the world. However, the study was an aggregate at regional level, with no direct information on individual countries in each region. Such direct information is needed for effective formulation of public policies at national government level. This is the type of information provided by the current study on the developing countries of the region of Latin America & Caribbean.

METHODOLOGY: THE TECHNIQUE OF SHIFT-SHARE ANALYSIS

This paper used the robust technique of shift-share analysis. First developed in the field of regional economics in the 1940s (Markusen et al., 1991), several applications of shift-share analysis have been reported in the marketing literature. As far back as 1967, Huff and Sherr (1967) used it to determine regional growth rates of markets. Shift-share analysis was used by Yandle (1978) to

assess brand performance. Green and Allaway (1985) used it to identify export opportunities for companies trading with the OECD countries. Likewise, Green and Larsen (1986) used the technique to assess the impact of sudden marketing environmental changes (economic, political, and/or social) on export markets. Oyewole (2003, 2016) used it to study service exports of the countries of Sub-Saharan Africa, and of the seven regions of the world, respectively.

The technique of shift-share analysis consists of disaggregating the growth (or change) in an indicator of interest (say employment, or exports) from one period to the other into three main components. These components are referred to as the (i) the national growth component, (ii) the industrial mix component, and (iii) the competitive share component (Sirakaya et al., 1995). This disaggregating is done for the region(s) being studied within a country of interest. The "national growth component" is the expected growth in a region had that region grown at the same rate as the nation over the study period. The "industrial mix component" shows the portion of the growth in a region that is due to its sectoral make-up compared to that of the nation. Thus, if a region had relatively more of the fast-growing industrial sectors than is the average for the nation, this component would be positive, indicating relative structural strength. The inverse would be the case if the region had less of the fast-growing sector(s) (Hustedde et al., 1993). The third component, "competitive share component," shows what portion of the growth in a region is attributable to the strengths or weaknesses of firms located within that region relative to firms within the same industry located elsewhere in the country. The sum of the second and third components is termed the "net shift." It shows what growth (or change) has taken place in the indicator of interest within a given region independent of the general growth (change) in the nation. The proportion of the net shift accounted for by an individual sector within a region is termed the "% net shift."

As adapted from Sirakaya et al. (1995), the shift-share model could be summarized by the equation:

$$e_{ij}^{t} - e_{ij}^{t-1} = \Delta e_{ij} = NG + IM + CS$$

Where:
i = the ith sector in the benchmark economy
j = the jth region of the benchmark economy
Δe_{ij} = total change in sector i, in the jth region
e_{ij}^{t} = value of indicator of interest for sector i in region j at time t
NG = national growth component
IM = industrial mix component
CS = competitive share component.

For a region j, each of these components could be computed as follows:

$$NG = \Sigma\ e_i^o E^t/E^o - \Sigma\ e_i^o$$
$$IM = \Sigma(\ e_i^o E_i^t/E_i^o - e_i^o\ E^t/E^o)$$
$$CS = \Sigma(\ e_i^t - e_i^o E_i^t/E_i^o)$$

Where:
$e = \Sigma\ e_i$ = sum of the indictor of interest across sectors i's in the region
$E = \Sigma E_i$ = sum of the indicator of interest across sectors i's in the benchmark economy

t = final year of the study period
o = beginning year of the study period

Over the years, various adjustments have been proposed to the shift-share analysis (e.g., Nazara & Hewings, 2004; Marquez et al., 2009; Zaccomer & Mason, 2011), but the basic original technique remains adequate for the purpose of the present paper, hence used. Although shift-share analysis was developed for examining regional development within a country, it has been shown that it could also be applied to study regional development within a much larger area such as a continent, sub-continent, or even the world as a whole (Dinc & Haynes, 1998a, 1998b; Markusen et al., 1991; Noponen et al., 1998; Sihag & Mcdonough, 1989). Following this reasoning, the shift-share analysis is here applied to studying relative development of the countries within the region of Latin America & Caribbean with regards to their service export performance. When applied to the world as the benchmark economy, the national growth component of the shift-share analysis could be termed the world growth effect (Sihag & Mcdonough, 1989). By the same token, that component will be termed "*regional growth effect*" in this study.

DATA SOURCE

The data for this study were obtained from the World Bank's World Development Indicators (World Bank, 2021). The source gives values of service exports for the Latin America & Caribbean region, and for individual countries in the region, in current U.S. dollars, from 2002 to 2017. Due to serious data gaps for several countries during this period, some 9 countries were removed from the total of 42 countries of Latin America & Caribbean. Thirty-three (33) countries in the region have complete data for the study years. These are the only countries retained for analysis in this this paper. All monetary figures in the paper are given in millions of current US dollars ($m). The World Development Indicators data provide information that break up services exports into four major categories, namely: (i) Transport services; (ii) Travel services; (iii) Insurance and financial services; and (iv) Communications, computer, information, and other services.

The four service categories are defined by World Bank (2021) as follows:

Communications, computer, information, and other services cover international telecommunications; computer data; news-related service transactions between residents and nonresidents; construction services; royalties and license fees; miscellaneous business, professional, and technical services; personal, cultural, and recreational services; manufacturing services on physical inputs owned by others; and maintenance and repair services and government services not included elsewhere.

Insurance and financial services cover various types of insurance provided to nonresidents by resident insurance enterprises and vice versa, and financial intermediary and auxiliary services (except those of insurance enterprises and pension funds) exchanged between residents and nonresidents.

Transport covers all transport services (sea, air, land, internal waterway, pipeline, space, and electricity transmission) performed by residents of one economy for those of another and involving the carriage of passengers, the movement of goods (freight), rental of carriers with crew, and related support and auxiliary services. Also included are postal and courier services. Excluded are freight insurance (included in insurance services); goods procured in ports by nonresident carriers (included in goods); maintenance and repairs on transport equipment (included in maintenance and repair services n.i.e.); and repairs of railway facilities, harbors, and airfield facilities (included in construction).

Travel covers goods and services acquired from an economy by travelers for their own use during visits of less than one year in that economy for either business or personal purposes. Travel includes local transport (i.e., transport within the economy being visited and provided by a resident of that economy) but excludes international transport (which is included in passenger transport. Travel also excludes goods for resale, which are included in general merchandise.

In this paper, "Insurance and financial services" will be referred to as "Financial services" henceforth for brevity. Likewise, "Communications, computer, information, and other services" will be referred to as "Communications services" for the same reason.

RESULTS

Figure 1 shows that in 2002, the total service export of the entire region of Latin America & Caribbean was $63,329m. Of this figure, 48% ($30,645m) were exports of Travel services, followed by exports of Communications services with 28% ($17,910m), Transport services with 18% ($11,099m) and lastly Financial services with 6% ($3,676). A decade and a half later, in 2017, the volume of total service exports for the region rose nearly 300% to $189,500m. Interestingly, there was no marked change in structure from 2002. Travel services export maintained its lead with 48% ($90,550m), followed by Communications services with 29% ($55,597m), Transport services with 16% ($30,243m), and lastly Financial services with 7% ($13,109). Nonetheless, albeit tiny, Communications, and Financial services gained 1% in relative market shares from 2002 to 2017; while Transport services lost 2% in market share over the same period. Travel services had no change from the 48% market share of 2002.

Figure 2 presents the relative proportion of each country's total service exports in the total exports for Latin America & Caribbean in 2002 and 2017. In 2002, Mexico led all other countries with 19.81% of the total service exports, followed by Brazil with 13.57%, Dominican Republic with 7.56%, Chile with 6.93%, and Argentina with 5.40%, to name the top five. The country with the least proportion was Suriname with 0.06%. By the year 2017, Brazil took the lead with 18.19%, pushing Mexico to the second place now with 14.59%, followed by Argentina, that shot up from the 5th place to the 3rd place, with 7.78%, then Panama with 7.03%, and Chile with 5.38%. The country with the least proportion in 2017 remained Suriname with 0.07% of the regional total service exports.
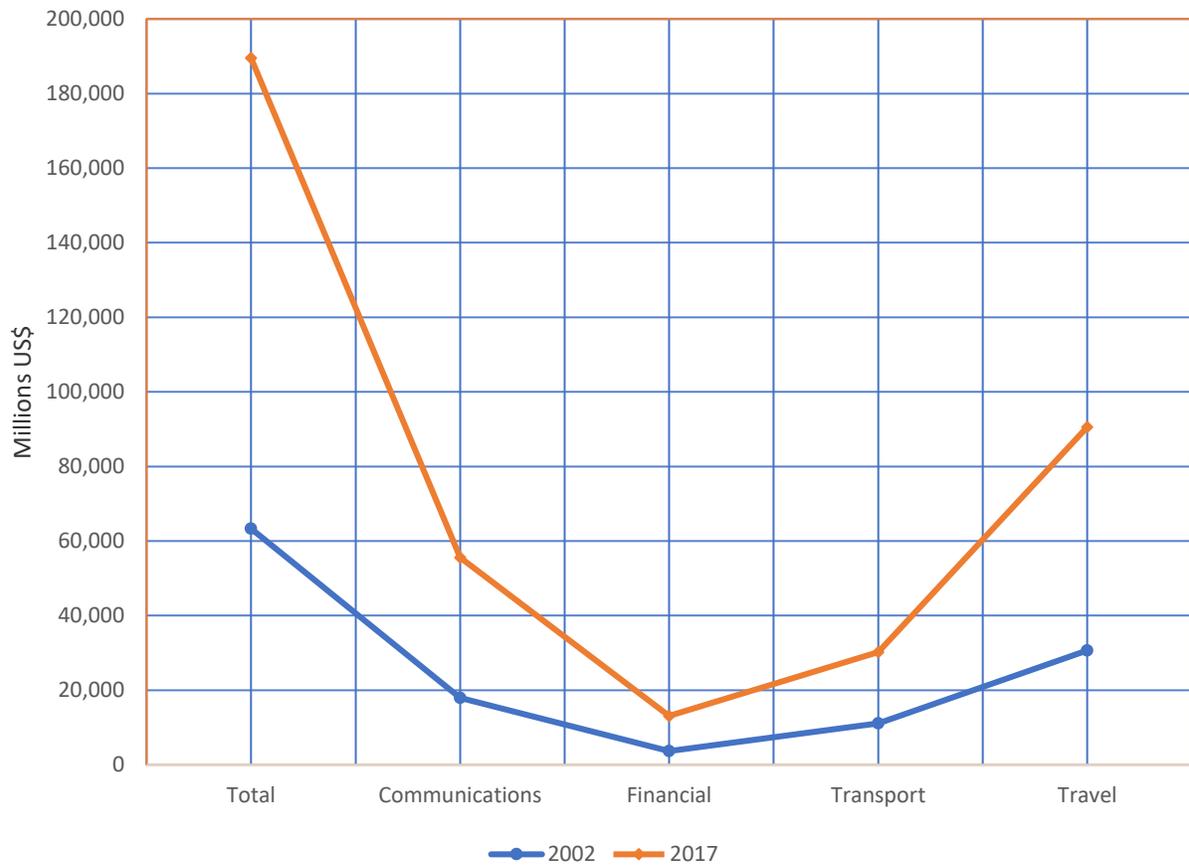
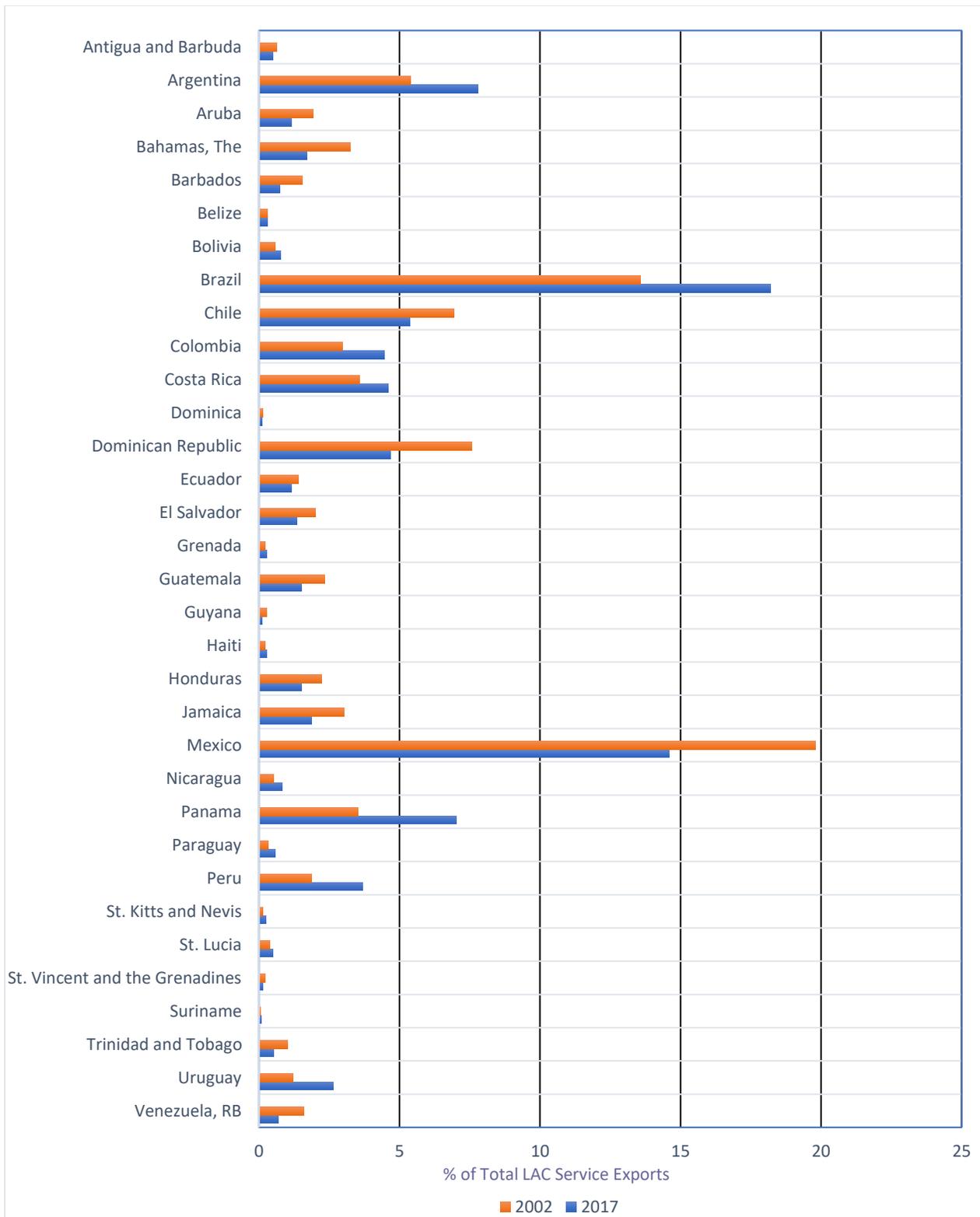**FIGURE 1: LATIN AMERICA & CARIBBEAN SERVICE EXPORTS: 2002-2017 (MIILIONS OF US$)**

FIGURE 2: STRUCTURE OF TOTAL LATIN AMERICA & CARIBBEAN (LAC) SERVICE EXPORTS BY COUNTRY (%): 2002-2017

While the foregoing analysis is informative it does not reveal the full breakdown of the relative progress (or otherwise) made by individual countries in the region over the 15-year period. This is important for effective policy actions to be recommended, and hopefully taken, for the future of these countries in the international market for services going forward. To fully reveal these details, a shift-share analysis was carried out, with the results discussed below.

Table 1 shows the regional growth effect of the shift-share analysis. The entries indicate the expected change in the volume of service exports from 2002 to 2017 if a country was growing at the same rate as the growth of the regional's total service exports. Table 2 shows the industrial mix component, while Table 3 shows the competitive share component of the shift-share analysis. The sum of the corresponding entries in the two tables gives the net shift presented in Table 4. The net shift is the difference between the actual change in the volume of service exports from 2002 to 2017, and the expected change presented in Table 1. The net shift thus effectively indicates the gainers and the losers of market share among the countries in the region during the study period.

TABLE 1. REGIONAL GROWTH COMPONENT OF THE SHIFT-SHARE ANALYSIS, 2002-2017 (MILLIONS OF $US)

		Total	Communi-cations	Financial	Transport	Travel
1	Antigua and Barbuda	785.41	70.50	17.71	151.76	545.44
2	Argentina	6,814.05	2,180.89	1.79	1,572.98	3,058.39
3	Aruba	2,440.53	703.18	3.94	71.12	1,662.29
4	Bahamas, The	4,107.70	487.04	0.00	114.61	3,506.05
5	Barbados	1,937.95	377.19	208.25	41.83	1,310.69
6	Belize	367.07	88.49	0.14	36.43	242.00
7	Bolivia	739.08	324.85	87.16	126.86	200.21
8	Brazil	17,120.19	8,884.32	1,187.06	3,068.27	3,980.54
9	Chile	8,740.62	2,234.67	323.72	4,393.88	1,788.34
10	Colombia	3,744.80	646.39	81.97	1,089.94	1,926.50
11	Costa Rica	4,515.79	1,415.02	9.26	506.18	2,585.33
12	Dominica	158.51	52.88	4.15	10.77	90.71
13	Dominican Republic	9,538.51	3,912.87	0.00	185.88	5,439.76
14	Ecuador	1,773.98	397.35	0.85	484.85	890.94
15	El Salvador	2,549.94	1,346.59	66.94	647.70	488.71
16	Grenada	261.41	49.44	9.76	19.94	182.27
17	Guatemala	2,970.80	1,444.14	110.84	181.41	1,234.42
18	Guyana	343.27	203.21	23.31	18.53	98.22
19	Haiti	292.21	77.02	0.00	0.00	215.19
20	Honduras	2,825.15	2,064.17	37.06	124.32	599.60
21	Jamaica	3,809.79	591.91	75.23	734.56	2,408.09
22	Mexico	24,994.99	3,117.59	2,415.38	1,814.30	17,647.72
23	Nicaragua	671.40	337.69	4.58	60.96	268.16
24	Panama	4,442.82	418.18	592.91	2,409.68	1,022.05

25	Paraguay	429.76	118.54	48.01	139.29	123.92
26	Peru	2,377.90	65.76	213.79	529.59	1,568.77
27	St. Kitts and Nevis	179.85	41.56	4.47	19.99	113.83
28	St. Lucia	497.83	47.33	9.11	22.99	418.39
29	St. Vincent and the Grenadines	273.12	69.94	3.24	18.63	181.32
30	Suriname	76.70	17.87	0.87	50.55	7.41
31	Trinidad and Tobago	1,270.49	186.08	198.83	403.44	482.14
32	Uruguay	1,536.72	152.59	141.94	543.08	699.11
33	Venezuela, RB	2,026.16	529.95	1.99	629.57	864.66

The industrial mix component presented in Table 2 indicates the relative strength and weakness of the sectoral structure in each country. The table shows that overall (see the "Total" column), 21 of the 33 countries have weaker sectoral structure than the region as a whole. These are Chile, Panama, Argentina. Colombia, Jamaica, Venezuela, Ecuador, The Bahamas, Uruguay, Peru, Costa Rica, Antigua and Barbuda, Suriname, St. Lucia, Belize, St. Kitts and Nevis, El Salvador, St. Vincent and the Grenadines, Paraguay, Grenada, and Aruba. All these countries have negative entries under Total service exports. Their slowest growing sectors were Transport services and Travel services, where Table 2 also shows negative entries for them over the 15-year study period. The Implication is that these countries have relatively more of the weaker (such as Transport), but less of the stronger (such as Communications) service sectors, resulting in overall weaker (negative) sectoral structure. Although all other countries (except Haiti) also show negative entries under these two sectors, these were more than made up with their having relatively more of the stronger sectors in the region (Communications and Financial), resulting in positive entries for their Total services.

TABLE 2. INDUSTRIAL MIX COMPONENT OF THE SHIFT-SHARE ANALYSIS, 2002-2017 (MILLIONS OF $US)

		Total	Communi-cations	Financial	Transport	Travel
1	Antigua and Barbuda	-21.55	3.96	5.10	-20.36	-10.25
2	Argentina	-145.47	122.57	0.52	-211.07	-57.49
3	Aruba	-0.13	39.52	1.13	-9.54	-31.25
4	Bahamas, The	-53.91	27.37	0.00	-15.38	-65.91
5	Barbados	50.93	21.20	59.98	-5.61	-24.64
6	Belize	-4.42	4.97	0.04	-4.89	-4.55
7	Bolivia	22.58	18.26	25.10	-17.02	-3.76
8	Brazil	354.68	499.33	341.89	-411.71	-74.82
9	Chile	-404.37	125.60	93.24	-589.59	-33.62
10	Colombia	-122.53	36.33	23.61	-146.25	-36.21
11	Costa Rica	-34.32	79.53	2.67	-67.92	-48.60
12	Dominica	1.02	2.97	1.19	-1.45	-1.71
13	Dominican Republic	92.72	219.92	0.00	-24.94	-102.25
14	Ecuador	-59.23	22.33	0.24	-65.06	-16.75

15	El Salvador	-1.13	75.68	19.28	-86.91	-9.19
16	Grenada	-0.51	2.78	2.81	-2.68	-3.43
17	Guatemala	65.54	81.17	31.92	-24.34	-23.20
18	Guyana	13.80	11.42	6.71	-2.49	-1.85
19	Haiti	0.28	4.33	0.00	0.00	-4.05
20	Honduras	98.73	116.01	10.67	-16.68	-11.27
21	Jamaica	-88.90	33.27	21.67	-98.57	-45.27
22	Mexico	295.69	175.22	695.66	-243.45	-331.73
23	Nicaragua	7.08	18.98	1.32	-8.18	-5.04
24	Panama	-148.29	23.50	170.76	-323.34	-19.21
25	Paraguay	-0.53	6.66	13.83	-18.69	-2.33
26	Peru	-35.28	3.70	61.57	-71.06	-29.49
27	St. Kitts and Nevis	-1.20	2.34	1.29	-2.68	-2.14
28	St. Lucia	-5.66	2.66	2.62	-3.08	-7.86
29	St. Vincent and the Grenadines	-1.05	3.93	0.93	-2.50	-3.41
30	Suriname	-5.67	1.00	0.25	-6.78	-0.14
31	Trinidad and Tobago	4.53	10.46	57.27	-54.14	-9.06
32	Uruguay	-36.56	8.58	40.88	-72.87	-13.14
33	Venezuela, RB	-70.37	29.78	0.57	-84.48	-16.25

The competitive share component presented in Table 3 indicates the relative *efficiency* of each service sector in each country. It thus shows where a country has high competitive advantage (positive entries in the Table), and where it has low competitive advantage (negative entries in the Table). Table 3 shows that two countries, namely: Peru and Panama have high competitive advantage in all 4 service sectors as indicated by their positive entries in the Table. By contrast, five countries have low competitive advantage in all four sectors as indicated by their negative entries. These countries are Jamaica, Honduras, Trinidad and Tobago, Guyana, and surprisingly Mexico! A closer look at the Table shows that Brazil has the highest competitive advantage (with the largest entry of $7,661.21m) in the Communications sector, followed by Argentina ($3,742.68m), and Costa Rica ($2,257.46m), to name the top three. In the Financial services sector, the country with the highest competitive advantage is Peru (with the largest entry of $877.27m), followed by Panama ($421.96m), and then Argentina ($198.00m). The country with the highest competitive advantage in the Transport services sector is Panama (with $3,153.98m entry), followed by Brazil ($1,593.47m), and then Peru ($758.29m). Finally, in the Travel services sector, Panama again has the highest competitive advantage (with $2,897.17m), but now followed by Colombia ($2,063.45m), and then Uruguay ($1,674.70m). The two strongest sectors for the Latin America & Caribbean region are Travel, and Communications. Panama took the competitive lead in the former, while Brazil took the competitive lead in the latter.

TABLE 3. COMPETITIVE SHARE COMPONENT OF THE SHIFT-SHARE ANALYSIS, 2002-2017 (MILLIONS OF $US)

		Total	Communi-cations	Financial	Transport	Travel
1	Antigua and Barbuda	-226.52	-42.64	0.60	-85.23	-77.69
2	Argentina	4,663.06	3,742.68	198.00	-204.13	926.50
3	Aruba	-1,494.40	-1,060.65	10.33	42.00	-486.08
4	Bahamas, The	-2,857.95	-576.72	0.00	-77.03	-2,204.20
5	Barbados	-1,547.40	-542.18	-345.87	22.99	-682.34
6	Belize	34.59	-18.10	5.33	-20.43	67.79
7	Bolivia	306.69	-277.44	-151.51	245.69	489.95
8	Brazil	8,410.32	7,669.21	-757.89	1,593.47	-94.46
9	Chile	-2,528.25	-232.47	-47.85	-3,029.63	781.70
10	Colombia	2,959.53	729.01	-50.12	217.19	2,063.45
11	Costa Rica	1,970.52	2,257.46	75.04	-239.08	-122.90
12	Dominica	-47.71	-56.07	-3.24	-13.90	25.49
13	Dominican Republic	-5,562.13	-5,187.78	115.27	358.40	-848.02
14	Ecuador	-408.05	-421.62	36.43	-249.55	226.68
15	El Salvador	-1,271.39	-991.70	-22.02	-404.08	146.40
16	Grenada	144.79	-49.33	-10.85	-12.53	217.50
17	Guatemala	-1,673.59	-1,438.27	-123.59	153.37	-265.11
18	Guyana	-323.09	-280.58	-16.03	-7.77	-18.71
19	Haiti	95.49	-48.20	3.39	0.00	140.30
20	Honduras	-1,474.45	-1,195.75	-62.53	-41.66	-174.52
21	Jamaica	-2,114.30	-435.71	-122.40	-798.89	-757.31
22	Mexico	-10,193.58	-4,549.34	-229.16	-577.31	-4,837.77
23	Nicaragua	542.12	124.03	-2.00	-22.68	442.78
24	Panama	6,798.68	325.57	421.96	3,153.98	2,897.17
25	Paraguay	472.40	193.06	-57.44	151.50	185.28
26	Peru	3,471.61	452.75	877.27	758.29	1,383.30
27	St. Kitts and Nevis	209.91	17.64	17.42	-10.17	185.02
28	St. Lucia	199.48	-35.05	-8.78	-18.26	261.56
29	St. Vincent and the Grenadines	-159.18	-93.19	1.93	-13.29	-54.64
30	Suriname	29.93	20.58	2.63	-28.63	35.35
31	Trinidad and Tobago	-936.71	-181.39	-296.37	-197.11	-261.83
32	Uruguay	2,747.29	1,482.34	-103.72	-306.03	1,674.70
33	Venezuela, RB	-1,687.79	-619.74	14.43	-273.09	-809.40

Table 4 shows the net shift of the shift-share analysis. The Table reveals that overall (see the Total column), 17 of the 33 countries lost market share in total service exports between 2002 and 2017 as indicated by their negative entries. In order of magnitude, these were Mexico, Dominican Republic, Chile, The Bahamas, Jamaica, Venezuela, Guatemala, Barbados, Aruba, Honduras, El Salvador, Trinidad and Tobago, Ecuador, Guyana, Antigua and Barbuda, St. Vincent and the

Grenadines, and lastly, Dominica. Total service exports of these countries grew slower than those of the Latin America & Caribbean region as a whole. In order words, they did not meet expectations. The other 16 countries gained market shares as indicated by their positive entries in Table 4 (see the Total column). In order of magnitude of gains, these countries were Brazil, Panama, Argentina, Peru, Colombia, Uruguay, Costa Rica, Nicaragua, Paraguay, Bolivia, St. Kitts and Nevis, St. Lucia, Grenada, Haiti, Belize, and lastly, Suriname. Total service exports of these countries grew at a faster rate than those of the Latin America & Caribbean region as a whole during the study period. In order words, they beat expectations.

As further shown in Table 4, the greatest winners in Communications services were Brazil, Argentina, and Costa Rica with positive net shifts of 8,168.53, 3,865.25, and 2,336.99 respectively (see Column 4). In Financial services, the greatest winners, in order of magnitude of net shifts, were Peru, Panama, and Mexico, with net shifts of 938.84, 592.73, and 466.50 respectively (see Column 5). The top winners in Transport services were Panama, Brazil, and Peru, with net shifts of 2,830.64, 1,181.76, and 687.22 respectively (see Column 6). In Travel services, the greatest were Panama, Colombia, and Uruguay, with net shifts of 2,877.96, 2,027.24, and 1,661.56 respectively (see Column 7).

Dominican Republic, Mexico, and Guatemala were the greatest losers in Communications services, with negative net shifts of -4,967.86, -4,374.12, and -1,357.10 respectively (see Column 4). Likewise, the greatest losers in Financial services were Brazil, Barbados, and Trinidad and Tobago, with negative net shifts of -416.00, -285.89, and -239.11 respectively (see Column 5). For Transport services, the greatest losers were Chile, Jamaica, and Mexico, with net shifts of -3,619.21, -897.45, and -820.76 respectively (see Column 6). And finally, in Travel services, the top three losers were Mexico, The Bahamas, and Dominican Republic, with net shifts of -5,169.50, -2,270.10, and -950.28 respectively (see Column 7). Overall, Panama, and Peru performed outstandingly well, in that they were the only two countries with positive net shift entries in *all* four sectors of the service exports of the Latin America &Caribbean region during the 2002-2017 study period.

TABLE 4. NET SHIFT (ACTUAL-EXPECTED CHANGE) 2002-2017
(MILLIONS OF $US)

#	Country	Total	Communi-cations	Financial	Transport	Travel
1	Antigua and Barbuda	-226.52	-38.68	5.70	-105.59	-87.94
2	Argentina	4,517.59	3,865.25	198.52	-415.19	869.01
3	Aruba	-1,494.54	-1,021.13	11.46	32.45	-517.33
4	Bahamas, The	-2,911.86	-549.35	0.00	-92.41	-2270.10
5	Barbados	-1,496.47	-520.98	-285.89	17.38	-706.98
6	Belize	30.17	-13.13	5.38	-25.31	63.24
7	Bolivia	329.26	-259.19	-126.41	228.67	486.19
8	Brazil	8,765.00	8,168.53	-416.00	1,181.76	-169.29
9	Chile	-2,932.62	-106.88	45.39	-3,619.21	748.08
10	Colombia	2,837.00	765.34	-26.51	70.94	2,027.24

11	Costa Rica	1,936.20	2,336.99	77.71	-307.00	-171.50
12	Dominica	-46.70	-53.09	-2.05	-15.34	23.79
13	Dominican Republic	-5,469.41	-4,967.86	115.27	333.46	-950.28
14	Ecuador	-467.28	-399.29	36.68	-314.61	209.93
15	El Salvador	-1,272.52	-916.01	-2.74	-490.99	137.22
16	Grenada	144.28	-46.55	-8.03	-15.21	214.07
17	Guatemala	-1,608.05	-1,357.10	-91.67	129.03	-288.31
18	Guyana	-309.29	-269.16	-9.31	-10.25	-20.56
19	Haiti	95.77	-43.87	3.39	0.00	136.25
20	Honduras	-1,375.72	-1,079.74	-51.86	-58.34	-185.79
21	Jamaica	-2,203.19	-402.44	-100.73	-897.45	-802.57
22	Mexico	-9,897.88	-4,374.12	466.50	-820.76	-5169.50
23	Nicaragua	549.20	143.01	-0.68	-30.86	437.74
24	Panama	6,650.40	349.07	592.73	2,830.64	2,877.96
25	Paraguay	471.87	199.72	-43.61	132.81	182.95
26	Peru	3,436.33	456.45	938.84	687.22	1,353.81
27	St. Kitts and Nevis	208.71	19.98	18.70	-12.85	182.88
28	St. Lucia	193.82	-32.39	-6.16	-21.34	253.70
29	St. Vincent and the Grenadines	-160.23	-89.26	2.87	-15.79	-58.05
30	Suriname	24.26	21.58	2.88	-35.41	35.21
31	Trinidad and Tobago	-932.18	-170.93	-239.11	-251.25	-270.90
32	Uruguay	2,710.73	1,490.91	-62.84	-378.91	1,661.56
33	Venezuela, RB	-1,758.16	-589.95	15.01	-357.57	-825.66

TABLE 5. % NET SHIFT (ACTUAL-EXPECTED CHANGE) 2002-2017

#	Country	Communi-cations	Financial	Transport	Travel
1	Antigua and Barbuda	-16.66	100.00	-45.47	-37.87
2	Argentina	78.36	4.02	-100.00	17.62
3	Aruba	-66.37	26.10	73.90	-33.63
4	Bahamas, The	-18.87	0.00	-3.17	-77.96
5	Barbados	-34.41	-18.89	100.00	-46.70
6	Belize	-34.15	7.83	-65.85	92.17
7	Bolivia	-67.22	-32.78	31.99	68.01
8	Brazil	87.36	-71.08	12.64	-28.92
9	Chile	-2.87	5.72	-97.13	94.28
10	Colombia	26.73	-100.00	2.48	70.80
11	Costa Rica	96.78	3.22	-64.16	-35.84
12	Dominica	-75.33	-2.90	-21.77	100.00
13	Dominican Republic	-83.94	25.69	74.31	-16.06
14	Ecuador	-55.93	14.87	-44.07	85.13
15	El Salvador	-64.98	-0.19	-34.83	100.00

16	Grenada	-66.70	-11.51	-21.79	100.00
17	Guatemala	-78.13	-5.28	100.00	-16.60
18	Guyana	-87.03	-3.01	-3.32	-6.65
19	Haiti	-100.00	2.43	0.00	97.57
20	Honduras	-78.49	-3.77	-4.24	-13.50
21	Jamaica	-18.27	-4.57	-40.73	-36.43
22	Mexico	-42.20	100.00	-7.92	-49.88
23	Nicaragua	24.62	-2.16	-97.84	75.38
24	Panama	5.25	8.91	42.56	43.27
25	Paraguay	38.74	-100.00	25.76	35.49
26	Peru	13.28	27.32	20.00	39.40
27	St. Kitts and Nevis	9.02	8.44	-100.00	82.54
28	St. Lucia	-54.08	-10.28	-35.64	100.00
29	St. Vincent and the Grenadines	-54.73	100.00	-9.68	-35.59
30	Suriname	36.16	4.83	-100.00	59.01
31	Trinidad and Tobago	-18.34	-25.65	-26.95	-29.06
32	Uruguay	47.29	-14.23	-85.77	52.71
33	Venezuela, RB	-33.27	100.00	-20.17	-46.56

Table 5 presents the % net shift of the shift-share analysis. The entries indicate the relative proportion of gain or loss of market share that comes from each service sector in a given country. The table shows that all the losses of shares by Haiti (-100%) were in Communications. Likewise, all the losses of shares by Colombia (-100%), and Paraguay (-100%) were in Financial services; while all the losses of shares by Argentina (-100%), St. Kitts and Nevis (-100%), and Suriname (-100%) were in Transport services. On the other hand, all the gains in shares by Antigua and Barbuda (100%), Mexico (100%), St. Vincent and the Grenadines (100%), as well as Venezuela (100%) were in Financial services. All the gains in shares by Barbados (100%), and Guatemala (100%) were in Transport service, while all the gains in shares by El Salvador (100%), and Grenada (100%) were in Travel services. All the other countries spread their gains and losses of shares over several service sectors as indicated by their % net shift entries (positive or negative) in Table 5. For example, the gains in shares of Brazil were spread over Communications (87.36%) and Transport services (12.64%), while its losses were spread over Financial (-71.08%) and Travel services (-28.92%). Another example is Jamaica that spread its losses (with no gains at all) over all the four service sectors, namely: Communications (-18.27%), Financial services (-4.57%), Transport services (-40.73%), and (-36.43%). Its greatest loss could be seen to be in Transport services with -40.73% net shift, while its smallest loss was in Financial services with -4.57% net shift.

CONCLUSIONS AND POLICY IMPLICATIONS

The shift-share analysis revealed who the winners and losers of market shares in the international market for services were, during the 15-year study period, among the countries of Latin America & Caribbean. Surprisingly, the region was practically divided into two halves: with one half as winners, and the other half as losers! In order of magnitude, results show that the five major

winners, in terms of Total service exports, were Brazil, Panama, Argentina, Peru and Colombia. Following these five are 11 other countries who gained some market shares in much smaller amounts, such as Costa Rica, Haiti, and Suriname. On the other hand, the 5 major losers of market shares, in order of magnitude (of losses), were Mexico, Dominican Republic, Chile, The Bahamas, and Jamaica. Following these five are 12 other countries who also lost some market shares but in smaller amounts, such as Venezuela, Honduras, and St. Vincent and the Grenadines. As once suggested for Sub-Saharan African countries by Oyewole (2003), the losing countries identified in this study should learn from the good practices of the winners and embark on policies that will promote service exports in general (Nwachukwu, 2011), but especially Communications sector in particular. This is the fastest growing sector in the world market for services. It will be important for all the countries but especially the losing countries to adopt appropriate national educational policies that favor expansion of computer literacy and of information technology skills in the general labor force. Nyahoho (2010) for example, found that human capital is clearly related to exports of computer and information services. Thus, school curricula should include courses in basic computer usage and data/information processing (Lopez, 2020). Incentives (such as tax deductions) could also be given to companies to train or retrain their employees in these areas. With appropriate information technology skills, the developing countries of Latin America & Caribbean would be able to take advantage of their relatively low wages in providing labor-intensive long-distance services in the Communications sector.

In addition to targeted education policies, adequate infrastructure and institutional development are essential for effective implementation of any service export expansion initiatives in these countries. For example, there should be 24-hour provision of electricity to operate any installed telecommunications networks if they will work to full capacity. Likewise, institutional building will be necessary to give backbone support to government policies. For example, as once suggested by Oyewole (2001) for developing countries in general, there may be a need for creation of a Department of Special Education in Information Technology, as well as a Department of Trade in Services in these countries.

The losing countries of Latin America & Caribbean region could also learn a lot from the example of India in the region of South Asia. As once noted by Oyewole (2016), India of the South Asia region has been surging in recent decades in the international market for service exports. Apart from increased world demand, the key factors for this surge have been found to include: "human capital, tele-density, financial development, physical infrastructure, and institutions, … exchange rate and foreign direct investment" Sahoo and Dash (2014, p. 1082). Another factor reported by Sudarsan and Karmali (2011, p. 73) was "value of service sector in GDP." All these point to several possible policy initiatives for the countries of Latin America & Caribbean in general, and especially, for the losing countries. For example, there is a need for public policies to increase the share of service sector as % of GDP within these countries. As noted by Bas (2014), while the share of services in GDP in developed countries is 70%, it is only 50% in developing countries of which the countries of Latin America & Caribbean are a part. This % needs to go up as is in India, which enjoys a 60% share of GDP (Bas, 2014). Liberalization and reform policies should be put in place to enhance domestic competition among service firms. This in turn will strengthen their competitiveness in the international market for services.

The countries of Latin America & Caribbean should also consider policies of liberalization of FDI (Foreign Direct Investment) regime in services as was done in India in the 1990s. According to Sudarsan and Karmali (2011), India allows automatic 51% foreign equity in FDI in most services, with provision for approval of up to 74% foreign equity in the case of some special service sectors (e.g., nonconventional energy generations and distribution). The essence of this liberalization is to give automatic controlling power to the foreign investor thus enhancing influx of FDI's in services (Hassan & Nassar, 2017). The countries of Latin America & Caribbean will need this type of influx to supplement government resources needed to implement their policies of increasing % share of services in GDP, which in turn could greatly boost their competitiveness in the international market for exports of services.

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