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Employment Situation in Latin America and the Caribbean

Global supply chains and decent work

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Employment Situation in Latin America and the Caribbean is a twice-yearly report prepared jointly by the Economic Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC) and the Office for the Southern Cone of Latin America of the International Labour Organization (ILO), headed by Daniel Titelman and Fabio Bertranou, respectively. Work on the document was coordinated by Gerhard Reinecke, Senior Expert on Employment Policies of ILO, and Jürgen Weller, Chief of the Employment Studies Unit of the Economic Development Division of ECLAC.

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Contents

Foreword

The first half of 2016 saw an intensification of the so-called "slow motion crisis" in Latin American and Caribbean labour markets that was diagnosed in December 2015 by the International Labour Organization (ILO, 2015c) and has manifested itself in a substantial rise in the unemployment rate and a general worsening of labour market indicators. At the same time, differences between countries and subregions have widened, with the deteriorating situation in the South American countries, especially Brazil, contrasting with far more positive trends in those of Central America.

On the latest projections, regional GDP will contract by 0.9% during 2016 (ECLAC, 2016). The urban employment rate fell by 0.6 percentage points between the first half of 2015 and the first half of 2016, and its average for the year will probably be close to that of 2010 if the current trend continues. In the group of countries for which monthly or quarterly employment information is available, this decline in the employment rate, combined with a rise in the participation rate, translated into a substantial increase in the unemployment rate (1.6 percentage points) between the first half of 2015 and the first half of 2016, taking the indicator up to 9.2%. Although this negative performance has been heavily influenced by developments in Brazil and the country's large share in the weighted average, unemployment rates also rose in every other country of South America with information available, except Peru. Conversely, unemployment rates dropped in all the Central American and Caribbean countries except Panama and Trinidad and Tobago.

This marked heterogeneity across countries and subregions can also be observed in the indicators available for employment quality, year-on-year changes in registered employment and changes in real wages for formal employment.

For the region as a whole, it is estimated that the average annual unemployment rate will rise from 7.4% in 2015 to 8.6% in 2016.

The disparities between the trends of the different countries and subregions show that the economies of South America, heavily dependent as they are on commodity exports, have been affected by the ending of the supercycle of high prices, while economies that depend more on manufacturing supply chains trading with the United States have performed better.

Global supply chains and their impact on productive employment and decent work are the subject of the second part of this report. Information on the Latin American and Caribbean countries' participation in global supply chains indicates that they play a smaller role in these than do countries in other regions. Furthermore, the exports of the region's countries generate few backward linkages, reflecting the fact that the products sold abroad are, on average, not highly processed. Forward linkages are deeper and more plentiful, since the products exported serve as intermediate inputs for other branches of production.

Although linkages are relatively weak, the impact of exports on employment is significant. Exports were directly or indirectly responsible for about 25 million jobs in South America in 2005, or 15% of total employment. Disaggregating this reveals that the indirect employment generated by forward and backward linkages is greater than the direct employment. The preponderance of indirect employment is particularly marked in certain sectors, such as mining and food production. This suggests that generating more linkages would be an effective way of increasing the impact of exports on employment.

The report also analyses some examples of countries in the region that have achieved economic upgrading in global supply chains, which in turn can translate into social upgrading via increased creation of high-quality jobs with higher wages and greater formality. It is found, though, that this link is not automatic, since the results in terms of productive, decent employment also depend

on whatever other economic, employment, education and vocational training policies accompany this process. An example of an important policy is a workplace inspection regime designed to prevent competitiveness in global supply chains being achieved by the flouting of employment regulations. Also important are policies for training the human resources needed to participate in the more sophisticated links of supply chains and to increase value added.

Lastly, the study points to two interesting and growing developments in the region's countries. First, there has been an expansion of corporate social responsibility initiatives and voluntary initiatives in the context of global supply chains, something that used to be seen mainly in the most advanced economies. Second, there have been found to be some instances of successful social dialogue contributing to social advancement and the creation of decent work in supply chains.

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I. Introduction

The contraction of regional output in 2015 affected the labour market performance of Latin America and the Caribbean. By contrast with 2014, not only did the regionwide employment rate fall that year but, for the first time since 2009, the urban unemployment rate increased as well.[1] The evolution of economic activity in the first half of 2016 indicates that the slowdown that began in 2011 has not yet begun to go into reverse. In fact, there has been an even greater deterioration, and a further contraction of 0.8% in regional GDP is projected for 2016, representing a drop of almost 2% in per capita GDP.[2] Such prolonged negative economic performance is inevitably affecting labour markets. This part of the report examines the evolution of these markets in the region during the first half of 2016, bringing to light a large deterioration in the main employment variables at the regional level, but also great heterogeneity across subregions.

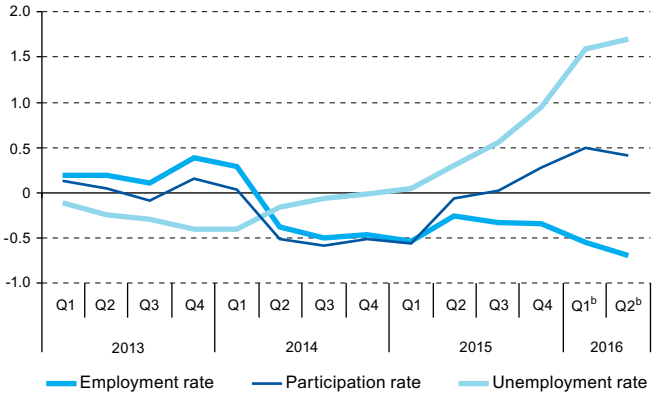
A. The main regional employment and unemployment indicators worsened in the first half of 2016

The year-on-year decline in the urban employment rate that began in the second quarter of 2014 accelerated in the first half of 2016 (after easing slightly in 2015 because of an increase in own-account work) with a year-on-year drop of 0.6 percentage points; this compares with average declines of 0.2 percentage points in 2014 and 0.3 percentage points in 2015.[3] If the size of the year-on-year drop in the first half of the year held steady for the year as a whole, the regionwide urban employment rate would fall back to a level close to that of 2010.

In 2014 and, to a lesser extent, 2015, reflecting the slightly procyclical behaviour commonly seen at the start of an economic slowdown, a falling participation rate (-0.3 and -0.2 percentage points, respectively) cushioned the impact that the drop in the employment rate had on open unemployment. By contrast, the labour force participation rate recovered by almost 0.5 percentage points during the first half of 2016. It must be assumed that the factors which bore down on the participation rate in 2014 particularly (chief among them being increased resilience in the face of low demand thanks to earlier progress on employment and incomes, plus the social policies applied in this period) weakened as the poor performance of the region's economy persisted and weighed on labour demand.[4]

As a result of this continued deterioration, the urban open unemployment rate, after rising moderately in 2015 (to an average of 7.4% from 7.0% in 2014), surged in the first half of 2016.[5] As figure I.1 shows, the year-on-year increase in the unemployment rate, which had been rising since the first quarter of 2015, accelerated significantly in early 2016, leaving it 1.6 percentage points higher in the first half of that year than in the same period of 2015. Comparing the average for the period between the third quarter of 2014 and the second quarter of 2015 with the average for the four quarters ending in the middle of 2016 shows that the unemployment rate rose sharply in the group of countries mentioned, from 7.2% to 8.4%.

Figure I.1
LATIN AMERICA AND THE CARIBBEAN (12 COUNTRIES): YEAR-ON-YEAR CHANGES IN THE EMPLOYMENT, PARTICIPATION AND UNEMPLOYMENT RATES, FIRST QUARTER OF 2013 TO SECOND QUARTER OF 2016[a]
(Percentage points)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official figures.
[a] The countries included are Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Paraguay, Peru and Uruguay. Some figures are estimates.
[b] Preliminary data.

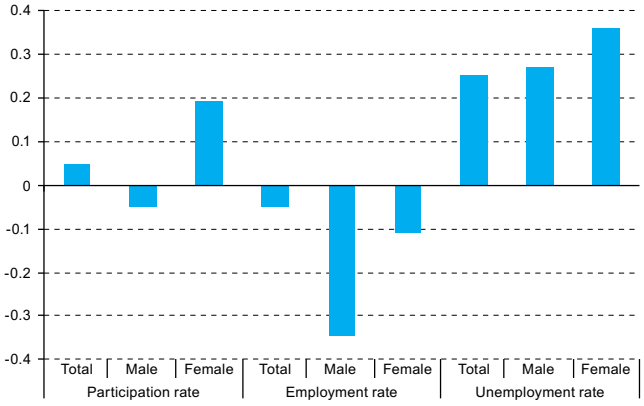
[1] See ECLAC/ILO (2016) for an analysis of the region's performance in 2015.
[2] See ECLAC 2016.
[3] The data for the first half of 2016 cited in this paragraph relate to a limited group of countries for which quarterly information is available (Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Paraguay, Peru and Uruguay), while those for 2014 and 2015 have fuller coverage, and thus are not strictly comparable. For some variables, it has been possible to include information on the Bahamas, Barbados, Belize, the Dominican Republic, Nicaragua, Panama and Trinidad and Tobago.
[4] See ECLAC/ILO (2015) for an analysis of the atypically strong concentration of the labour supply in 2014.
[5] As already announced (ECLAC/ILO, 2016), starting with this edition of the joint report by the Economic Commission for Latin America and the Caribbean (ECLAC) and the International Labour Organization (ILO), the regional series will reflect the incorporation of new surveys (in Brazil) and new coverage (in Colombia, the Dominican Republic and Mexico), and thus will not be comparable with information published previously.

Regional data tend to mask large variations, and differences between Latin American and Caribbean subregions in the evolution of the urban unemployment rate were very marked in the first half of 2016. Of the countries of South America, only Peru did not record a major year-on-year shift in the open unemployment rate for the first half of the year, while the other countries considered (Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador and Uruguay) experienced a greater or lesser deterioration in their unemployment situation (see annex table A1.1.[6] The greatest increase in unemployment was in Brazil (over 3 percentage points). Considering that country's weight in the regional average, this obviously had a great impact on the rate for Latin America and the Caribbean as a whole.

By contrast, the unemployment rate fell in three of the four countries of the northern subregion for which information is available (Costa Rica, the Dominican Republic and Mexico), with only Panama recording an increase. The situation in the Caribbean was similar, with the unemployment rate falling in Barbados, Belize and Jamaica, while it rose in the Bahamas and remained practically unchanged in Trinidad and Tobago.

To analyse the trend in the evolution of the main employment variables separately for men and women, figure I.2 presents the median year-on-year change in participation, employment and unemployment rates in the countries for which information is available.[7] As can be seen, median participation in 14 countries rose slightly, with a decline in the rate for men more than offset by a larger increase for women. The drop in the regional employment rate can also be observed in the median for the countries, being much sharper for men than for women. Lastly, and despite this, the unemployment rate rose more among women, as they entered the labour market in larger numbers.

Figure I.2
LATIN AMERICA AND THE CARIBBEAN (14 COUNTRIES): YEAR-ON-YEAR CHANGES IN THE PARTICIPATION, EMPLOYMENT AND UNEMPLOYMENT RATES, BY SEX, FIRST HALF OF 2016, MEDIANS[a]
(Percentage points)

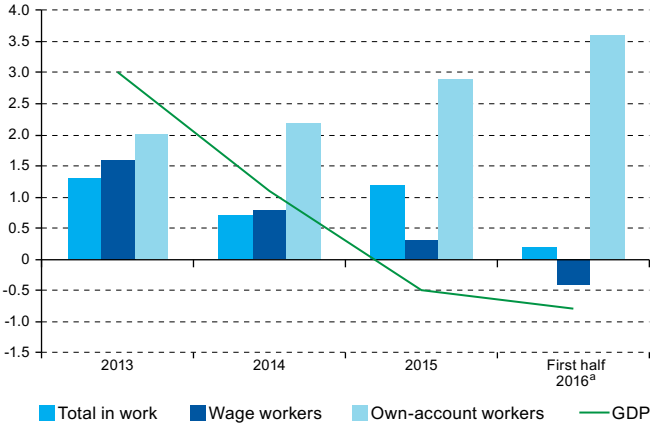


Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official figures.
[a] The countries included are the Bahamas, Barbados, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Peru and Uruguay.

B. The composition of employment is still deteriorating

Despite negative economic growth, the urban employment rate contracted by less in 2015 than in 2014, as already pointed out, owing to a larger rise in own-account work, while the evolution of wage employment reflected the weakness of labour demand. In the first half of 2016, wage employment across the region (weighted average) contracted by 0.4% relative to the same period the previous year, owing mainly to the drop in the number of wage earners in the Bolivarian Republic of Venezuela and Brazil. However, while labour demand was weak in all 10 countries with information available, this contraction was not the rule. The median for these countries yields a weak 0.4% rise in wage employment (see figure I.3).

Figure I.3
LATIN AMERICA AND THE CARIBBEAN (NINE COUNTRIES): YEAR-ON-YEAR CHANGES IN NUMBERS EMPLOYED, BY OCCUPATIONAL CATEGORY AND GDP GROWTH, 2013 TO FIRST HALF OF 2016
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official figures.
[a] The employment data are preliminary. The 2016 GDP growth figure is a projection.

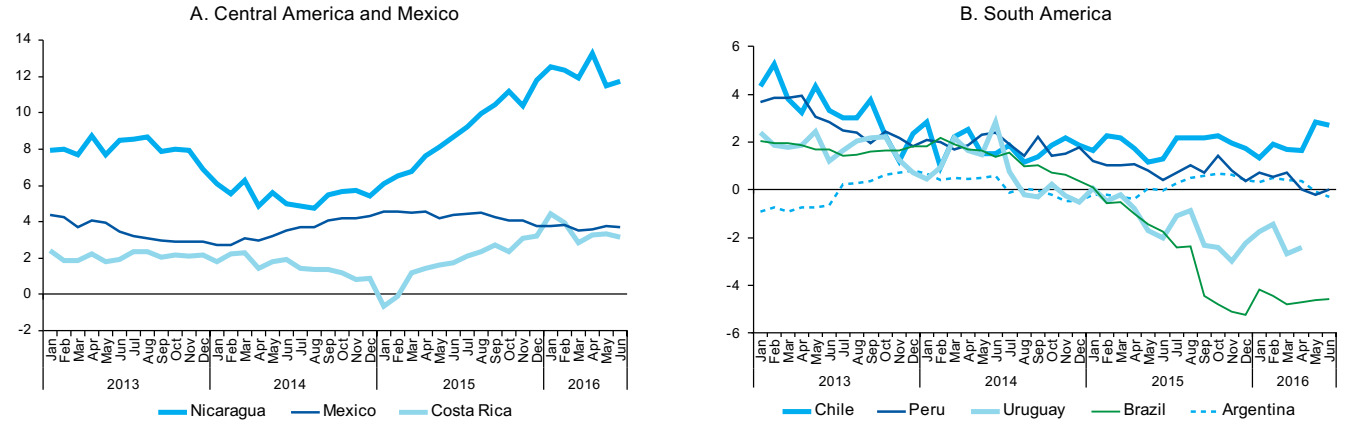
[6] Argentina's National Institute of Statistics and Censuses (INDEC) has brought out the results of the Permanent Household Survey for the second quarter of 2016, leaving the results for the fourth quarter of 2015 and the first of 2016 still unpublished. In addition, INDEC has announced that it is reviewing the survey findings for the previous quarters. Pending official review of these data, the present report uses the official information published at the time. It may be noted here that labour market information has also been published with a greater lag than in the past in the Bolivarian Republic of Venezuela and Paraguay.

[7] The information presented in figure I.2 incorporates national totals for countries whose household surveys have this coverage and totals for more restricted areas in the other cases.

Own-account work expanded more widely. The median growth rate for this category was 3.5%, with the weighted average being 3.6%. It thus cushioned the decline in wage employment, albeit without spurring a dynamic increase in the numbers in work, the weighted average rise being a mere 0.2% year-on-year (median of 1.4%). By contrast with this region-level trend, wage employment increased its share of the total in three of the four countries for which information is available in the subregion formed of Mexico, Central America and the Spanish-speaking Caribbean (namely Costa Rica, the Dominican Republic and Mexico), Panama being the exception in this group.

The weakness of labour demand is also manifested in the evolution of registered employment. Although this is influenced not only by job creation or destruction but by the formalization of informal jobs or the informalization of formal ones, it is still a good indicator of shifts in labour demand. As figure I.4 shows, registered employment growth slowed, especially in the countries of South America, in some of which it even turned negative in absolute terms.

Figure I.4
LATIN AMERICA AND THE CARIBBEAN (SELECTED COUNTRIES): YEAR-ON-YEAR CHANGES IN REGISTERED EMPLOYMENT, JANUARY 2013 TO JUNE 2016
(Percentages)



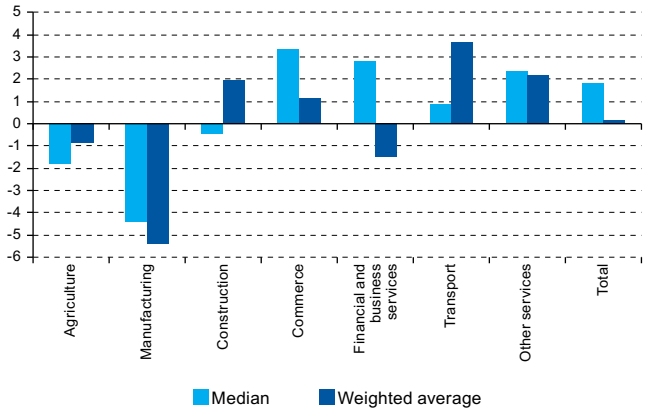
Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official figures.

In Mexico and the two Central American countries for which data are available, by contrast, registered employment expanded by over 3%, reflecting economic growth that is likewise stronger than in most of South America. Particularly in Nicaragua and, to a lesser degree, Mexico, programmes to formalize informal employment contributed to this outcome.

The tertiary sector accounted for most of what weak employment growth there was, while manufacturing employment contracted sharply. As figure I.5 shows for 10 countries, the contraction was widespread, showing up in both the weighted average and the median. The main exception was Mexico, where employment in this branch of activity increased by 4.0% year-on-year. Agricultural employment contracted on both measures, although not to the same extent as manufacturing employment. Employment in construction also contracted in most of the countries, reflecting the weakening of domestic demand. Thanks to the large rise in such employment in Mexico, however, the weighted regional average rose moderately.

On both measures, employment rose in the branches of commerce, hotels and restaurants, and communal, social and personal services, which usually account for the bulk of informal employment. Taking the weighted average, transport is the activity that expanded most, although its growth was modest if the median of national rates is taken. Lastly, on the weighted average, financial, real-estate and business services were the only branch of the tertiary sector in which employment contracted, owing to its sharp decline in Brazil. On the median, though, this sector experienced the second-highest growth.

Figure I.5
LATIN AMERICA AND THE CARIBBEAN (10 COUNTRIES): CHANGES IN EMPLOYMENT BY BRANCH OF ACTIVITY, FIRST HALF OF 2015 TO FIRST HALF OF 2016, WEIGHTED AVERAGES AND MEDIANS OF NATIONAL RATES OF CHANGE[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official figures.

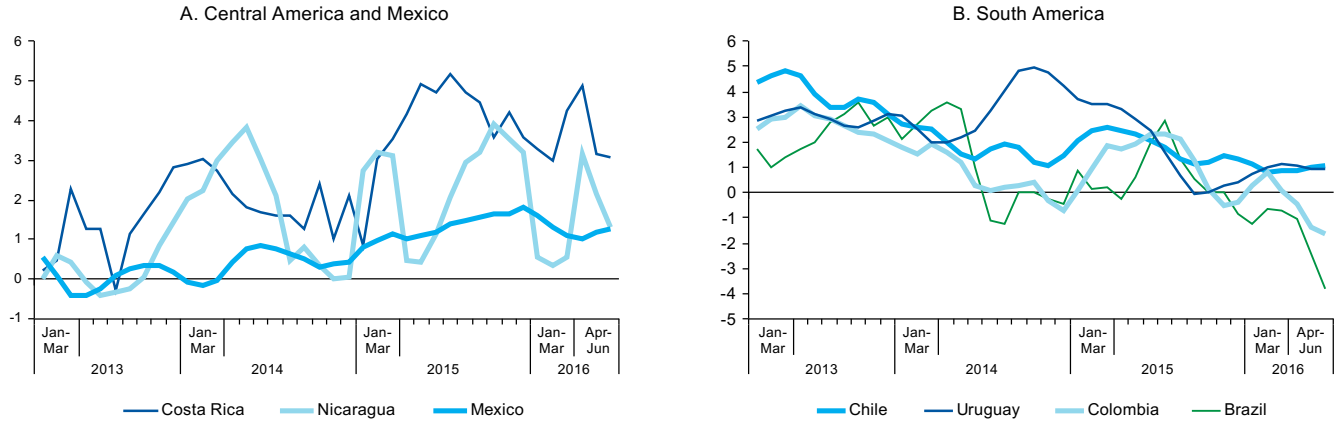
[a] The countries included are Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, Jamaica, Mexico, Panama and Peru.

The evolution of underemployment by hours in the few countries that measure this indicator of weakness in labour demand was mixed. Those registering a rise in this variable included particularly Argentina, Ecuador and Uruguay, with increases of more than a percentage point. Meanwhile, Costa Rica and, to a lesser extent, Colombia and Mexico reported a drop in the share of people in employment who were involuntarily working part-time and willing to work more hours. In Barbados, the rate of underemployment by hours held steady.

C. Wages are being affected by the weakness of labour demand

The weakness of job creation affected wage growth. As figure I.6 shows, year-on-year increases in the average real wages of registered workers as of the latter part of the first half of 2016 tended to be very restrained in the countries with information available, at about 1%. Wages rose by roughly this amount in Chile, Mexico, Nicaragua and Uruguay, with a larger increase seen only in Costa Rica.[8] Meanwhile, real wages in Brazil and Colombia (manufacturing) fell by 1.5% and 4.0%, respectively, in a context of rising inflation in both countries accompanied by a sharp contraction in labour demand in the case of Brazil.[9] When the available series are compared from a subregional perspective, a slowdown in pay growth is found to be the prevalent trend, especially among the countries of South America.

Figure I.6
LATIN AMERICA (SELECTED COUNTRIES): YEAR-ON-YEAR CHANGES IN FORMAL WORKERS' REAL WAGES, ROLLING QUARTERS, JANUARY-MARCH 2013 TO APRIL-JUNE 2016
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official figures.

D. The employment situation is not expected to improve in the second half of the year

No significant improvement in the employment situation is expected at the regional level during the second half of 2016. Rather, contracting output and the impact of this on labour demand is likely to mean that the year-on-year drop in the employment rate seen during the first half will continue. The expansion of informal jobs, and particularly own-account working, should cushion the impact in quantitative terms, but will entail a deterioration in job quality.

At the same time, moderate growth in labour force participation can be expected to continue. In the context of weak job creation, this is one factor continuing to push up the unemployment rate. An increase of some 1.2 percentage points is estimated for 2016 as a whole. This is similar to the 2009 increase and would return the regional rate to a level similar to that of 2007 (8.6%).

The weakness of labour demand will carry on influencing the evolution of nominal wages. At the same time, inflation rates have begun to decline in a number of South American countries (Brazil, Chile, Peru and Uruguay being examples), which is tending to stabilize the purchasing power of workers' households. Accordingly, real wages can be expected to go on rising, albeit modestly, in most of the countries.

[8] In the case of Peru, which does not have a monthly wage series, data generated from the Permanent Employment Survey indicate that employees' real wages in Metropolitan Lima were up 0.9% in the first half of 2016 over the same period the year before.

[9] Although not all the relevant information is available, partial data indicate that real wages also contracted in Argentina and the Bolivarian Republic of Venezuela.

II. Global supply chains and their impact on decent employment

Introduction

It has been noted over recent decades that goods and services production in the global economy has been increasingly fragmenting between countries along global supply chains (GSCs) or global value chains.[10] Some 80% of international trade passes through GSCs, and developing countries' participation in these represents 28% of their GDP (UNCTAD, 2013).

The importance of these linkages is also reflected in labour markets. The number of jobs tied to GSCs has grown considerably over the last few decades. According to estimates from the International Labour Organization (ILO), the number of jobs in GSCs in 40 countries with information available rose from 296 million in 1995 to 453 million in 2013, representing 20.6% of all employment. However, all this growth came about in the period prior to the international financial crisis of 2009, and in recent years international trade has stagnated and some jobs offshored by developed countries' economies have returned to them (Kizu, Kühn and Viegelahn, 2016; ILO, 2015a).

This employment growth in GSCs was driven mainly by emerging countries and the service sector, where jobs are more and more likely to be exported because of the development of information technologies. According to international trade statistics, around 20% of global exports are of services, but these data underestimate their true scale for methodological reasons. Furthermore, manufacturing exports require a great quantity of services, so that part of the services exported are incorporated into manufacturing exports, a phenomenon known as the "servicification" of manufacturing (Lanz and Maurer, 2015; National Board of Trade of Sweden, 2012). Lanz and Maurer (2015) estimate that almost a third of the gross value of developed countries' manufacturing exports is made up of services value added. The percentage for developing countries is somewhat lower (26%) but still remarkably large. ILO has estimated that 96.6 million people, or 4.5% of all those in employment in 40 countries with information available, were working in services dependent on demand from manufacturing sectors as of 2011, or almost twice as many as in 1995 (49.8 million). These jobs in the manufacturing-linked services sector grew more quickly than jobs in the service sector as a whole (Kizu, Kühn and Viegelahn, 2016).

A. Economic and social upgrading in chains

Analysis of GSCs provides an integrated framework for examining the range of activities (generally known as links in the chain) needed to develop a particular product from conception through to final use and beyond, the firms and workers involved, and the specific location where the work is carried out. This conceptual framework serves to analyse both economic and social advances (Gereffi, Bamber and Fernandez-Stark, 2016).

Economic upgrading is the process whereby firms withdraw from low-value activities and engage in others of greater value in GSCs, so that the value generated by a country's participation in the chain increases, taking the firm or industry as the unit of analysis.

Social upgrading is the gradual process leading to decent work in GSCs. The concept of social upgrading balances that of economic upgrading and is of a piece with the four "inseparable, interrelated and mutually supportive" strategic objectives of the ILO Decent Work Agenda, namely employment, social protection, social dialogue and rights at work, along with gender equality and non-discrimination as cross-cutting objectives.

It has often been assumed that economic upgrading would necessarily lead to social upgrading. However, empirical research based on sectoral case studies has shown that this relationship is neither automatic nor inevitable: there may be economic upgrading without social advancement necessarily taking place, and social upgrading in GSCs can either facilitate or hinder economic upgrading (Lee, Gereffi and Barrientos, 2011; Milberg and Winkler, 2013; Bernhardt and Pollak, 2016). The challenge, rather, is to use elements such as policy and social dialogue to establish the conditions for ensuring that economic upgrading in GSCs in Latin America and the Caribbean leads to social upgrading and decent work.

According to the findings of recent worldwide research by ILO, a sector's participation as a supplier in GSCs is statistically associated with higher labour productivity, but not higher wages. Consequently, participation in GSCs appears to be associated with an erosion of the total wage share of output (Kizu, Kühn and Viegelahn, 2016; ILO, 2015a).

Chains are usually dominated by certain lead firms possessing some know-how for which other firms have no easy substitute. The lower links of these chains are dominated, conversely, by

[10] In this report, "global supply chain" and "global value chain" are treated as synonyms.

activities that have low barriers to entry, so that firms there are in a weaker bargaining position (ECLAC, 2014a). The distribution of value added throughout the chain is determined, first, by the productivity of the different firms participating in it, that is, by the economic dynamics generated by the combination of different production factors, and, second, by the governance of the chain and power relationships that enable some actors in it to shape dealings between firms to their advantage. In other words, economic and social factors interact in the distribution of value added.

B. The participation of Latin America and the Caribbean in global supply chains: general background

The available evidence on the role of the Latin American and Caribbean countries in GSCs shows that they participate less than countries in other regions (ECLAC, 2014a and 2014b; Durán and Zaclicever, 2013; Hernández, Martínez-Piva and Mulder, 2014). Taken all together, the region's participation in GSCs, calculated by a participation index expressed in percentages of gross exports from six countries of Latin America (Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico) between 2000 and 2011, is low compared with that of Asia and other regions and countries of the world, especially if Mexico is excluded (see table II.1).

Table II.1
SELECTED REGIONS AND COUNTRIES: BACKWARD AND FORWARD PARTICIPATION IN GLOBAL SUPPLY CHAINS, 2000 AND 2011
(Percentages of total gross exports)

Country or region	Year	Backward participation[a]	Forward participation[b]	Global value chain participation index
Latin America (6 countries)[c]	2000	24.8	14.1	38.9
	2011	20.1	21.0	41.2
Latin America (5 countries)[d]	2000	12.5	18.8	31.3
	2011	13.0	24.7	37.7
Mexico	2000	34.3	10.4	44.8
	2011	31.7	15.1	46.8
Asia	2000	24.4	20.2	44.6
	2011	28.6	22.5	51.1
China	2000	25.0	21.3	46.3
	2011	30.4	21.1	51.5
United States	2000	37.2	10.8	47.9
	2011	32.1	15.6	47.7
European Union	2000	12.5	24.4	37.0
	2011	15.0	24.9	39.8
World	2000	22.0	21.0	43.1
	2011	25.4	23.3	48.8

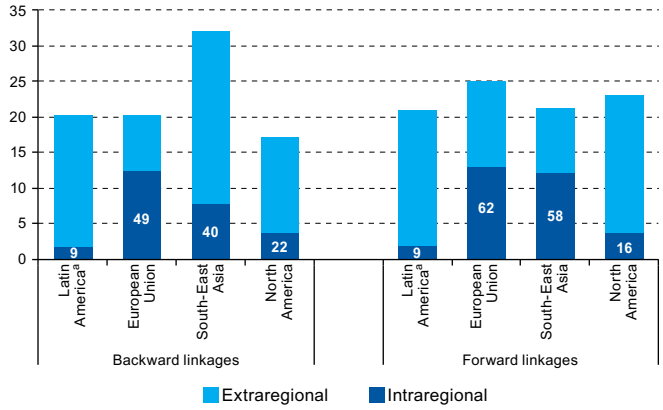
Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from Organization for Economic Cooperation and Development (OECD)/World Trade Organization (WTO), Trade in Value Added Database (TIVA) [online] http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm.
[a] Foreign value added as a share of gross exports. This "upstream" measure indicates backward participation.
[b] Value added in the country as a share of other countries' exports. This "downstream" measure indicates forward participation.
[c] Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico.
[d] Argentina, Brazil, Chile, Colombia and Costa Rica.

A disaggregated analysis of participation in GSCs by the contribution of intraregional trade showed the proportion of intraregional linkages to be very low in Latin America (9% of both backward and forward links), certainly compared with other regions of the world. In South-East Asia, for example, participation is from 4 to 6 times as great (40% in backward linkages and 58% in forward linkages) (see figure II.1).

Case studies based on industry- and firm-level research by country reveal that the region's role in GSCs is quite heterogeneous. The different countries in the region participate in a wide range of GSCs, from agriculture to mining, manufacturing and services, with varying results.

Costa Rica and Mexico are the countries most entwined in the North American value chain led by the United States. The greatest participation by Mexican firms is in the automotive, electronics, medical equipment and telecommunications sectors. In the case of Costa Rica, the electronics and medical equipment industries are the leaders, while the other Central American countries have substantial involvement in the North American textile and apparel value chain, a sector that accounts for almost 50% of the total combined exports of El Salvador, Guatemala, Honduras and Nicaragua.

Figure II.1
SELECTED REGIONS AND COUNTRIES: DECOMPOSITION OF THE GLOBAL VALUE CHAIN PARTICIPATION INDEX, 2011
(Percentages of total gross exports)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of J. López, "Trade policy implications of global value chains", presentation at the Asia-Pacific Economic Cooperation (APEC) Public Private Dialogue on Regional and Global Value Chains in Latin America and the Caribbean, Lima, 2016 [online] http://www.cepal.org/sites/default/files/events/files/3_javier_lopez.pdf.

[a] Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico.

The available evidence seems to show that there are intraregional systems of shared production chains in a limited group of sectors between countries forming part of the same integration mechanism, be this the Southern Common Market (MERCOSUR), the Andean Community or the Central American Common Market. These are still very incipient and have potential for development in the case of the Caribbean Community (CARICOM) countries (Durán and Zaclicever, 2013; ECLAC, 2014a).

Particularly noteworthy are the cases of Argentina, Brazil and Uruguay in MERCOSUR; Ecuador, Colombia and Peru in the Andean Community; Costa Rica, Guatemala and Honduras in the Central American Common Market; and bilateral trade relations between Mexico and Brazil and among the members of the Pacific Alliance. As for the Caribbean countries, although inter-industry trade relationships predominate there, it is possible in some cases to find trading relationships with potential intraregional linkages in the trade of Barbados, Dominica, Jamaica and Suriname with their CARICOM partners (ECLAC, 2014a).

Different ECLAC studies have concluded that the greatest linkages where heavy industries are concerned are in the chemical and petrochemical, metallurgy, and automotive and vehicle parts sectors, and it has been noted that there is great potential in some light industries, such as food, drinks and tobacco, paper and cardboard, textiles and apparel, and pharmaceuticals (Durán, 2016).

A number of factors help to explain the differences in participation between the region's countries, one being natural resource endowments. The wealth of natural resources in a number of countries of South America (such as Chile and Peru) and the Caribbean (such as Jamaica and Trinidad and Tobago) has contributed to the development of supply chains based on these (in export agriculture and mining, for instance), while holding back the development of other chains. Conversely, proximity to the United States as a manufacturing centre and market has given rise to linkages based on the assembly of manufactured products in Central American countries such as Mexico, Costa Rica and Nicaragua.

Another element crucial to participation in industrial production networks is the quality of road, port, bridge and airport infrastructure and the availability of appropriate logistics, transport and telecommunication services. The degree of development of such infrastructure and the way it is regulated directly impact transport and communication times and costs. They also influence the scope for investment in important segments of the service sector, such as logistics (in Panama) and contact centres (in Uruguay and other countries of the region). Lastly, the availability and quality of human resources are also factors in GSC participation.

C. Estimates of participation in national and regional supply chains in South America in 2005

1. The importance of forward and backward linkages

Given a lack of databases for analysing the participation of all the region's countries in GSCs, what will now be presented are indices of forward and backward linkages for 2005 calculated from information in the national input-output matrices (IOMs) available for 10 countries of South America and Mexico.[11] Both sectoral spillover capacities in each country (domestic linkages) and the aggregate spillover resulting from intra-South American trade ties are considered.[12]

Backward linkages are a basis for measuring a sector's potential direct spillover effects on other sectors linked to it by its demand for intermediate consumption goods, driving activity in these sectors. A typical example of this type of linkage is production in the automotive sector, which dynamizes countless other sectors.

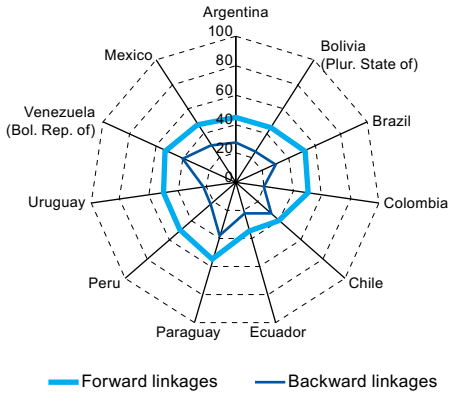
[11] Mexico is included so that the country's domestic sectoral linkages can be compared with those of the South American countries. It was not possible to include regional spillover effects in the Mexican case because the country's IOM is not interconnected with the IOMs of the South American countries.

[12] The matrices considered in the case of the South American countries are uniformly divided into 40 sectors, and intermediate use is disaggregated into domestic products and products imported from a variety of origins, including intermediate inputs originating in intra-South American trade. See ECLAC/IPEA (2016) for further details.

Forward linkages, meanwhile, measure a sector's ability to drive other sectors by its supply capacity, i.e., through sales of products that in turn are intermediate inputs for other industries.

Taking the South American countries together, 19 sectors with mainly forward linkages were identified and just 11 with mainly backward linkages (see figure II.2). The conclusion from analysing domestic linkages is that there are more forward linkages and very few backward linkages.

Figure II.2
SOUTH AMERICA (10 COUNTRIES) AND MEXICO: DOMESTIC FORWARD AND BACKWARD SECTORAL LINKAGES, 2005
(Percentages)



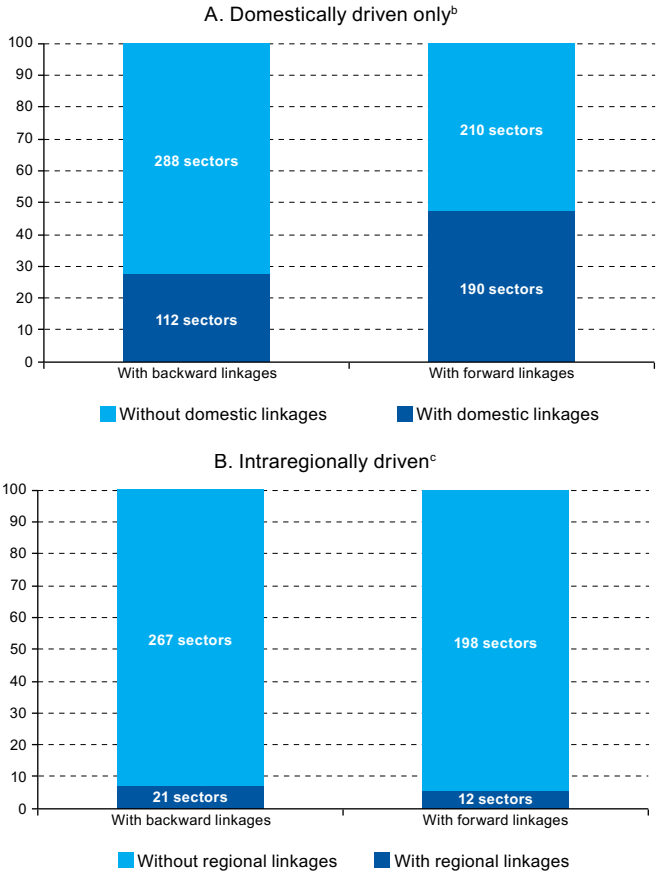
Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the input-output matrices of the countries of South America for 2005 and the Mexican input-output matrix for 2003.

Almost half of the sectors in the countries of South America have more forward than backward linkages. Specifically, these are sectors that supply intermediate inputs needed for other sectors to produce. Predominant among these sectors are farming and stockbreeding, minerals, wood and paper, basic chemicals, rubber and plastic, non-metallic minerals and mineral and steel products, in the case of goods, and electricity, transport, telecommunications, finance and business services, in the case of services.

As for backward linkages, the sectors driving these are rather few in number. Chief among them are the agriculture and forestry sector, sectors producing other food products and drinks, and the vehicle production, construction, transport and other services sectors, which require intermediate inputs from different sectors. Although those listed here are the ones found in most of the countries, there are some particular sectors that also have substantial backward linkages as a result of sectoral comparative advantages leading to the establishment of ties with other industries. This is the case with the backward linkages from the beef industry in Argentina, Brazil and Uruguay and the apparel industry in Colombia and Peru.

Of all the sectors considered in the IOM for South America (400), only 190 are found to have forward linkages and 112 backward linkages (see figure II.3A). To obtain a rough measure of the potential spillover effects deriving from the forward or backward linkages of the intersectoral purchases and sales of the other South American trading partners, the linkage indicators were recalculated, but this time only for sectors without linkages, to check whether this had the effect of increasing the level of linkage. In this way, it was found that only a small number of sectors were driven by the greater South American subregion (see figure II.3B).

Figure II.3
SOUTH AMERICA (10 COUNTRIES): DOMESTIC FORWARD AND BACKWARD LINKAGES, 2005[a]
(Numbers of sectors and percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of the Latin American countries' input-output matrices for 2005.

[a] The data cover the following countries: Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, the Plurinational State of Bolivia and Uruguay.

[b] National input-output matrices (400 sectors).

[c] Input-output matrices for South America (288 and 210 sectors).

The sectors where relationships with the rest of South America have the greatest potential are manufacturing industries in Argentina and Brazil, which drive backward linkages in the iron and steel, metal products, machinery and equipment and electrical machinery and appliances sectors, plus the electricity and financial sectors. Links within MERCOSUR are to the fore, especially purchases of intermediate inputs

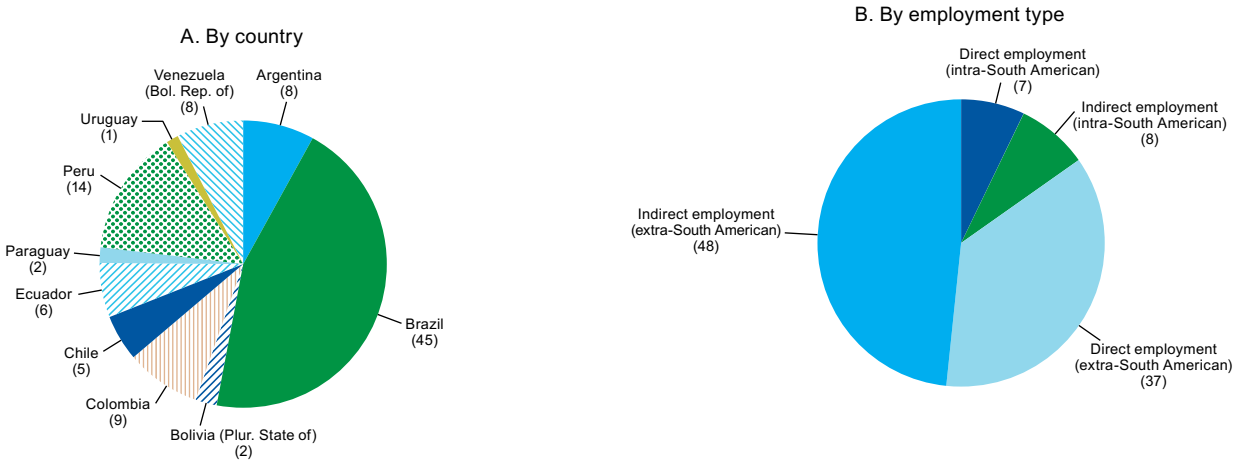
traded bilaterally between Argentina and Brazil, countries with great potential for intra-industry trade in manufacturing sectors (Durán and Zaclicever, 2013). As for the countries of the Andean Community, milling and pastas, textiles, and refined oil and coke are the leading sectors in Peru, with analysis of intraregional trade drivers showing an increase in backward linkages. In the case of Chile, potential can be found in the non-energy mining sector, the textile sector and the other services sector, also with backward linkages. Where forward linkages are concerned, few sectors show potential, the most promising being the other food products sector, especially in Paraguay, the Plurinational State of Bolivia and Uruguay. Nonetheless, the proportion of intraregional trade is found to be above average in these sectors, and a very substantial amount of indirect employment is generated (see tables A3.1, A3.2 and A3.3 in annex A3).

It is estimated that the links thus created by intraregional trade participation are still confined to just a handful of sectors, being concentrated in well-defined and limited relationships within groups of countries, such as the intra-industry relationships (with potential for development) arising from trade between Colombia, Ecuador and Peru in the case of the Andean Community; between Argentina, Brazil and Uruguay in the case of MERCOSUR; and between Chile, Colombia and Peru, all of which are South American countries in the Pacific Alliance (Durán and Cracau, 2016; ECLAC, 2014c).

2. The direct and indirect impact of global participation on employment

The information in the IOMs can also be used to estimate the impact of exports on employment (see annex A2 for a summary of the methodology). On the basis of direct and indirect employment requirements for each country in South America, together with employment linked to exports within and beyond South America, with exports per partner being taken, it was determined that the exports of South America were responsible for about 25.6 million jobs, or 15.4% of total South American employment in 2005. By country, the largest shares were for Brazil and Peru, while decomposing exports by destination showed that the intra-South American market accounted for 15% of all export-linked employment, equivalent to 3.9 million jobs (see figure II.4).

Figure II.4
SOUTH AMERICA (10 COUNTRIES): ESTIMATES OF EMPLOYMENT LINKED TO GOODS AND SERVICES EXPORTS, BY COUNTRY AND EMPLOYMENT TYPE, 2005
(Percentages of the total)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the Latin American countries' input-output matrices for 2005.

As regards employment type, indirect employment predominates heavily over direct employment, which is most in evidence in a group of manufacturing sectors, especially the production of food, drinks and tobacco.

The sectors generating the most export employment are agro-industry (farming, stockbreeding and fisheries), mining and oil, and food, drinks and tobacco, accounting for about 56% of the total (see table II.2). The ratio between indirect and direct employment reveals the importance of linkages. If the ratio is greater than one, it means that more indirect than direct employment is generated. Consequently, one additional unit of production in a sector creates more employment outside it than within it. Not only do the mining and oil sector and the food, drinks and tobacco sector account for a large share of export employment, but this is largely comprised of indirect employment, which shows how important it is to foment exporting in sectors with deeper linkages.

Table II.2
SOUTH AMERICA (10 COUNTRIES): STRUCTURE OF EXPORT-LINKED EMPLOYMENT, BY MAJOR SECTORS AND EMPLOYMENT TYPE, 2005[a]
(Thousands of people and percentages)

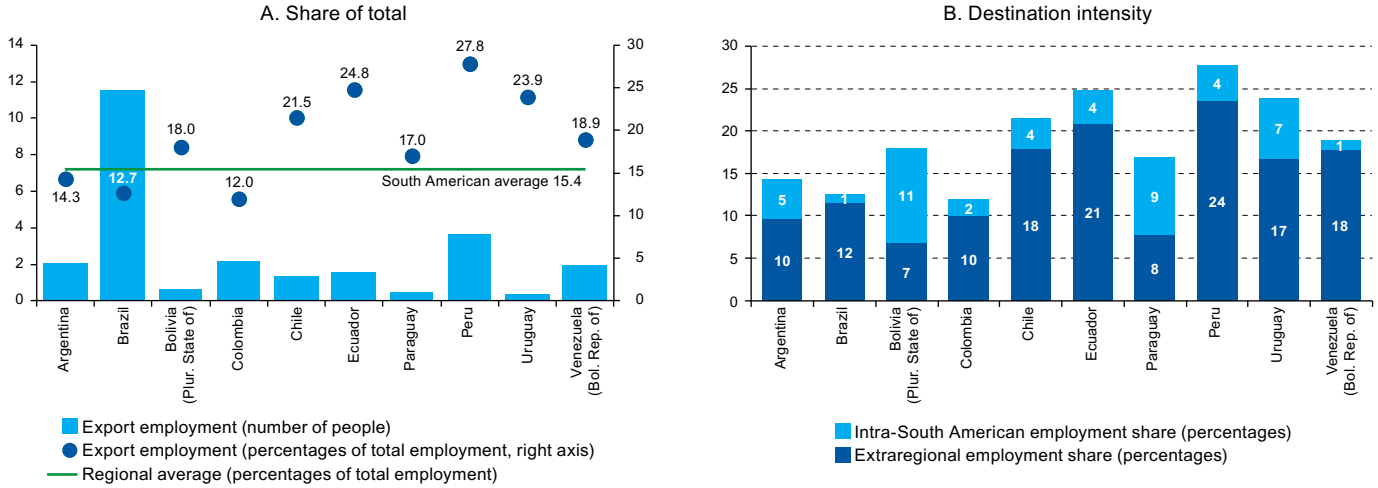
Major sectors	Export-linked employment						Ratio of indirect to direct employment
	Thousands of people			Percentages			
	Direct	Indirect	Total	Direct	Indirect	Total	
Farming, stockbreeding, hunting and fishing	4 281	757	5 038	38.3	5.2	19.7	0.2
Mining and oil	563	3 219	3 782	5.0	22.3	14.8	5.7
Food, drinks and tobacco	1 231	4 261	5 492	11.0	29.5	21.4	3.5
Textiles, apparel and footwear	921	285	1 206	8.3	2.0	4.7	0.3
Wood and paper	501	218	719	4.5	1.5	2.8	0.4
Chemicals and pharmaceuticals	171	947	1 118	1.5	6.6	4.4	5.6
Rubber and plastic	63	40	103	0.6	0.3	0.4	0.6
Non-metallic minerals	116	35	151	1.0	0.2	0.6	0.3
Metals and derivatives	270	622	892	2.4	4.3	3.5	2.3
Machinery and equipment	281	243	523	2.5	1.7	2.0	0.9
Motor vehicles and their parts	230	495	725	2.1	3.4	2.8	2.2
Other manufactures	298	156	454	2.7	1.1	1.8	0.5
Electricity, gas and water	12	12	24	0.1	0.1	0.1	1.1
Construction services	37	31	68	0.3	0.2	0.3	0.8
Transport services	362	278	640	3.2	1.9	2.5	0.8
Postal and telecommunication services	21	11	33	0.2	0.1	0.1	0.5
Financial and business services	863	1 393	2 256	7.7	9.6	8.8	1.6
Other services	945	1 439	2 384	8.5	10.0	9.3	1.5
Total employment	**11 165**	**14 443**	**25 608**	**100.0**	**100.0**	**100.0**	**1.3**

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the Latin American countries' input-output matrices for 2005.
Note: The partial figures may not add up to the totals because of rounding.
[a] The data cover the following countries: Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, the Plurinational State of Bolivia and Uruguay.

If the country data are examined and the seven countries where export-linked employment is highest as a share of the total are identified, it is found that some are small and medium-sized, with Peru, Ecuador and Uruguay at the head of the ranking. At the other extreme are Argentina, Brazil and Colombia, whose shares are below the average. Intraregional trade is also found to be a much greater driver of employment in some of the less developed South American countries, particularly Paraguay and the Plurinational State of Bolivia, both of whose production and export structures depend more on MERCOSUR than on the rest of the world.

Argentina and Uruguay are in an intermediate situation, but are likewise strongly linked to Brazil. Conversely, the export structures of the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador and Peru still have few intraregional trade links with the other South American partners (see figure II.5).

Figure II.5
SOUTH AMERICA (10 COUNTRIES): ESTIMATES OF EMPLOYMENT LINKED TO GOODS AND SERVICES EXPORTS, 2005
(Millions of people and percentages of total employment)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the South American countries' input-output matrices for 2005.

Value chains and employment are directly linked. The deeper a chain is, the more employment can be generated per unit of output, mainly because of the boost to indirect employment. Going by direct and indirect employment requirements for each million dollars produced, the greater or lesser intensity of sectoral employment could be categorized at the regional level by the nature of this employment, i.e., by whether it has been generated mainly within the sector concerned (direct employment) or in different sectors (indirect employment).

Table II.3 shows all the sectors included in South America's IOM and presents the typology of export employment by the greater or lesser intensity of direct or indirect employment, taking dominance among the 10 countries analysed as the measure. The first thing observed in South America is that of a total of 40 sectors, there are more indirect employment-intensive sectors in the aggregate than direct employment-intensive ones (21 sectors). The predominant characteristic of 16 of them is that most employment is created within the sector itself, while three sectors generate direct and indirect employment in equal measure (paper and wood, machinery and equipment, and other transport equipment).

The main sectors in South America that are more intensive in direct employment are non-mining primary sectors, especially the farming and forestry sector, where somewhat over 32 million people work. This sector accounts for a third of total employment in Ecuador, Paraguay, Peru and the Plurinational State of Bolivia and a fifth of total employment in Brazil and Colombia. Furthermore, it accounts for 38% of total export-related direct employment, with about 4.3 million jobs in export activities (see figure II.6). The growing of bananas, flowers, coffee and Andean grains (soya, quinoa, coffee, potatoes, yucca and other tubers) and stockbreeding and fishing activities (albeit to a lesser extent) are included in the farming and stockbreeding macrosector. Ranking behind this macrosector are the agro-industrial sector, the textile, apparel and footwear sector, the wood and related products sector, the non-metal mining sector and the metal manufacturing sector. In heavy industry, machinery and equipment manufacturing is direct employment-intensive in Argentina, the Bolivarian Republic of Venezuela, Peru, the Plurinational State of Bolivia and Uruguay. As for the service sector, this is direct employment- intensive in all the countries of South America, the only caveat being for the electricity, gas and water sector, whose particular characteristics mean that it generates a larger amount of employment in other sectors.

As for sectors that are more indirect employment-intensive, the chief ones are agro-industry (which includes the meat and meat derivatives, milling and baking, sugar and confectionery, other foods, and drinks and tobacco sectors) and mining and oil. These two sectors account for 29% and 22%, respectively, of the indirect employment associated with goods and services exports. In South America, an average of four indirect jobs are created for every direct job in agro-industry and seven in mining, with a particularly high figure for the energy-related mining sector, where 12 indirect jobs are created for every direct job. The cases that stand out most in this respect are oil in Argentina, the Bolivarian Republic of Venezuela, Brazil, Colombia and Ecuador, gas in the Plurinational State of Bolivia and non-energy mining in Chile and Peru.

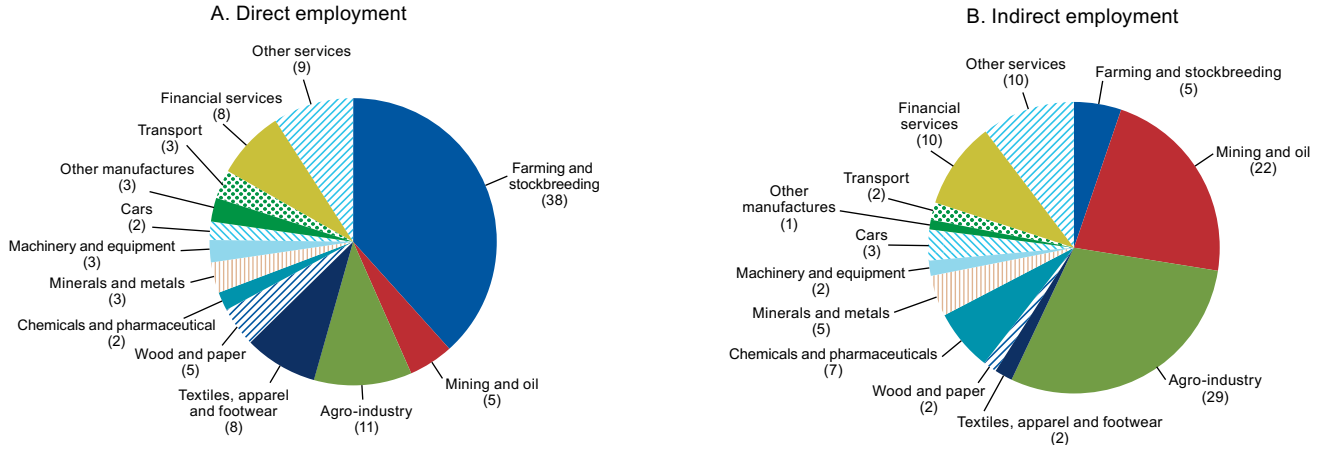
In summary, estimating the impact of the South American economies' participation in GSCs makes it clear how important the indirect effects of forward and backward linkages are. In a number of sectors, the impact on indirect employment is much greater than that on direct employment.

Table II.3
SOUTH AMERICA (10 COUNTRIES): TYPOLOGY OF EXPORT-LINKED EMPLOYMENT BY SECTORS AND PRODUCTS, 2005[a]

Direct employment-intensive sectors DER > IER	Indirect employment-intensive sectors DER < IER
Farming and forestry	Mining (energy)
Hunting and fisheries	Mining (non-energy)
Textiles, apparel and footwear	Meat and derivatives
Wood and wood products	Milling, baking and pastas
Wood pulp, paper, printers and publishers[b]	Sugar and confectionery
Non-metallic mineral products	Other food products
Metal products	Drinks
Machinery and equipment[b]	Tobacco products
Office equipment, machinery and electrical appliances	Wood pulp, paper, printers and publishers[b]
Other transport equipment[b]	Basic chemicals
Services (water, gas, construction, commerce, hotels, restaurants, transport, insurance, business services, private education, health care, leisure and domestic work)	Pharmaceuticals
	Rubber and plastic
	Iron and steel
	Non-ferrous metals
	Machinery and equipment[b]
	Radio and television and telecommunication equipment
	Medical equipment and precision instruments
	Other transport equipment[b]
	Vehicles
	Aircraft
	Other transport equipment
	Electricity and gas

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the Latin American countries' input-output matrices for 2005.
Note: DER = direct employment requirements; IER = indirect employment requirements; > = greater than; < = less than.
[a] The data cover the following countries: Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, the Plurinational State of Bolivia and Uruguay.
[b] Sectors for which the evidence is mixed.

Figure II.6
SOUTH AMERICA (10 COUNTRIES): STRUCTURE OF EXPORT-LINKED EMPLOYMENT, 2005[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the Latin American countries' input-output matrices for 2005.
[a] The data cover the following countries: Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, the Plurinational State of Bolivia and Uruguay.

D. Achievements and challenges: examples of some chains in Latin America and the Caribbean[13]

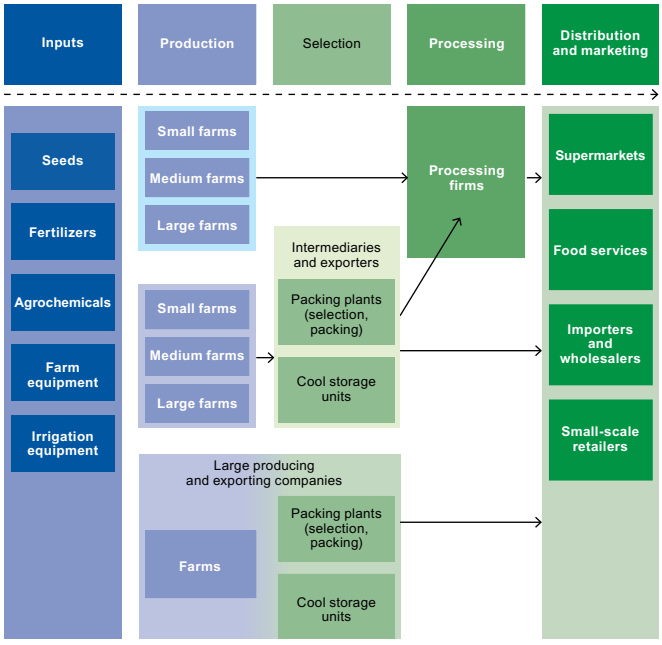
In this section, the quantitative study of the previous section is supplemented by a more qualitative type of analysis to present some achievements and challenges relating to engagement in chains and to show the link between economic upgrading and social upgrading. To this end, some chains have been chosen (high-value agriculture, clothing and offshore services) and examples have been taken from certain countries for illustration purposes, without any attempt at an exhaustive overview.

1. High-value agriculture

(a) Overview

High-value agricultural or agro-food products are non-bulk agricultural commodities that either require special handling, such as fresh fruits and vegetables, or are processed in one or more post-harvest stages prior to reaching the end market, such as specialty coffee, asparagus and honey. These products tend to be significantly more labour-intensive than cereal crops and other traditional agriculture, largely because mechanization is complicated by the need to prevent damage to fragile produce. Relatively skilled labour is thus one of the most important factors in the production of these high-quality crops. Modern export agriculture requires a more skilled labour force, ranging from farmers who must adopt sophisticated production techniques to quality control operators in packhouses and on the processing lines of food factories. Diagram II.1 illustrates a typical high-value agriculture GSC.

Diagram II.1
EXAMPLE OF A HIGH-VALUE AGRICULTURE GLOBAL SUPPLY CHAIN



Source: G. Gereffi, P. Bamber and K. Fernandez-Stark, *Promoting Decent Work in Global Supply Chains in Latin America and the Caribbean: Key Issues, Good Practices, Lessons Learned and Policy Insights*, ILO Technical Reports 2016/1, Lima, ILO Regional Office for Latin America and the Caribbean, 2016.

[13] This section is based largely on Gereffi, Bamber and Fernandez-Stark (2016), the source for the global supply chain experiences of countries in the region offered as examples, although other information from ongoing or completed ILO research into the subject has also been included. The publication cited provides a more detailed survey and a fuller account of sources.

Latin American and Caribbean nations are important global suppliers of these products. Although these countries traditionally exported to the United States market, over the past decade the number of export destinations has increased. Today, fruits and vegetable from Latin America and the Caribbean are also frequently exported to Europe and Asia. The region's basket of agricultural export products has also diversified. Caribbean and Central American countries are well known for their high-quality coffee, cacao and tropical fruits (from Saint Vincent and the Grenadines, for example). Chile excels in fresh fruit exports and is the top global exporter of apples, blueberries, cherries and grapes, among other fruits. Honduras has specialized as a supplier of Asian vegetables. Brazil and Peru have also emerged as strong exporters of fresh fruit and vegetables.

Latin American and Caribbean countries have all seized the opportunity to participate in these GSCs by supplying the northern hemisphere with high-quality produce during its low season. This process has yielded important economic and social outcomes for the region's countries. High-value agriculture has major consequences for poverty alleviation in rural areas of developing countries due to its potential to increase incomes and create employment. In addition, it is a key source of knowledge transfer in modern farming techniques and improved capabilities to meet quality and sanitary and phytosanitary standards in global markets. Economic upgrading has helped these export sectors become important contributors to foreign reserves and employment. Social upgrading has been strong in terms of job creation. However, substantial and ongoing challenges prevail when it comes to overall improvements in wages, working conditions and labour rights in these sectors in several countries, including the need for special attention to be paid to the working conditions of micro, small and medium-sized enterprises in supply chains where informality is prevalent and freedom of association and collective bargaining are limited. Therefore, activities to ensure the promotion of the Decent Work Agenda have a crucial role to play in these sectors when it comes to realizing the potential for economic and social upgrading to go hand in hand in GSCs.

(b) Banana production in the Dominican Republic

Although the Dominican Republic has steadily upgraded into more sophisticated sectors, banana production remains an important contributor to the country's agricultural exports. Banana production is the second most important agricultural export of the Dominican Republic after sugar and it represents a key source of rural employment and income (ILO, 2015b). Production growth in recent years has been striking, with exports doubling since the 2008 crisis to US$ 330 million in 2014. Although productivity remains low, the key to the country's success in banana GSCs has been upgrading into the fair trade banana niche. This niche distinguishes fair trade bananas from trade in conventional bananas, which is dominated by larger, more competitive producers such as Ecuador. By 2013, over 60% of the Dominican Republic's banana exports were fair trade or organic-certified. In addition, preferential access to the European Union market has helped improve competitiveness. The Dominican Republic is the world's leading producer of fair trade bananas. Product upgrading into this niche market segment has resulted in increased margins for both producers and exporters.

(i) Job creation

The banana sector in the Dominican Republic employs an estimated 80,000 workers, although a smaller portion of these work in the segment dedicated solely to export markets, and statistics in recent years show a decrease in export levels. Jobs are predominantly in the most straightforward, lower-skilled activities such as land preparation, planting, cultivation and product packaging. Haitians make up the majority of workers on banana plantations. The industry provides wage employment for workers on both plantations and smallholdings. Two labour models have emerged: (i) the plantation model, which calls for permanent, full-time workers, and (ii) the smallholder model, where workers are employed for a few days each week. Both models employ temporary workers; however they are not seasonal workers per se, as there is no real seasonality in banana production.

(ii) Conditions of work, employment and labour rights

There have been some gains for workers in this sector, where overall conditions are considered to be poor and unionization and collective bargaining are limited, owing in part to high levels of unemployment and fear of dismissal. Child labour and forced labour have been reported in the production of bananas on plantations, although major efforts have been implemented to eradicate this practice; meanwhile, children still contribute to some production activities on family-owned smallholdings.

Dominicans working on banana plantations can generally secure permanent contracts, providing them with access to social security benefits that include health care and subsidized food. Haitian migrant workers experience significant difficulties, however, as they are mostly undocumented and are hired on a temporary basis with no contracts. This creates a dual labour force in which one segment of workers faces conditions considerably inferior to the other segment's. Work for both Dominicans and Haitians in certified fair trade operations is considered to be better than in the alternative agricultural operations in conventional banana production and the sugar plantations. Fair trade plantations have also provided opportunities for migrants to access work visas, by requiring and helping them to obtain passports. These plantations must also offer free health insurance and paid time off. As for smallholder producers, collective action has been on the increase. High transaction costs for exporters working with smallholders has led them to require producers to associate with one another. This process has enabled smallholders to access additional social benefits, including stipends for education and medical care.

These improvements in working conditions and labour rights in the banana export sector have brought about examples of social upgrading. However, decent work criteria are far from being fully met in a broader national context where child labour, poor working conditions, low wages and widespread unemployment with limited social security are prevalent.

(iii) Key policy actions

- A key action has been the securing of access to the United States market, tied to improved labour inspection. Although the banana trade is predominantly with the United Kingdom, the sector has benefited from institutional capacity-building as a result of the incorporation of labour provisions into trade agreements with the United States. As early as 1991, the national government began to focus on improving its labour legislation to protect its exports to that country. These labour provisions were once again included in the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR) in 2008. As a result, the government of the Dominican Republic improved the capabilities of labour inspectors, who have since earned a reputation for professionalism. Labour inspectors tend to be well-qualified (more than half were lawyers in 2000), salaries have been raised to minimize the potential for corruption, and the recruitment process has become much more competitive, with higher technical standards.
- Fair trade certification has been pivotal in improving working conditions and in reducing child labour in the sector. In addition, Fairtrade International has directly engaged ILO and the national government in dialogue on how to protect Haitian migrant workers by granting them resident status and access to social security, while at the same time requiring certified plantations to establish social dialogue with the government to address this situation.
- A number of international organizations have helped to promote social dialogue in support of decent work in the industry. For example, a joint four-year programme with the title "Strengthening the banana value chain through the growth of inclusive markets" has engaged seven United Nations agencies, including the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and ILO, in an effort to promote decent work, train producer associations in workers' rights and health and safety issues, and foster social dialogue, particularly with respect to migrant labour. A similar European Union initiative implemented from 2013 to 2016 has focused on increasing competitiveness and improving worker conditions.

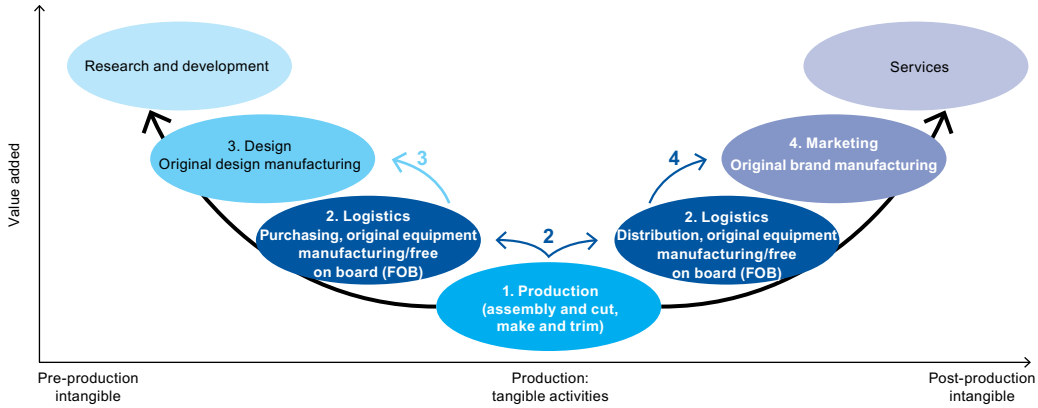
2. Apparel

(a) Overview

Garment production and commercialization around the world has apparently contradictory characteristics. On the one hand, this is a very traditional economic activity, since the production technology used is relatively simple. On the other, the trend towards fast fashion, with almost continuous turnover in stores' collections, gives it very modern characteristics in that the main focus is on getting the right product to market at the right time rather than on the intrinsic characteristics of the products themselves.

Many developing countries have joined the global manufacturing sector through assembly-oriented production in the apparel industry. Indeed, the apparel sector has provided an important springboard into GSC trade for Latin American and Caribbean countries over the past two decades. At the same time, the apparel industry has been a locus for labour rights violations. In response, various governance instruments have been implemented. Among these responses are supranational initiatives and multilateral or bilateral trade agreements with labour provisions. Private sector corporate social responsibility initiatives have also been particularly active in establishing codes of conduct and social monitoring in apparel GSCs. Diagram II.2 presents economic upgrading trends in apparel GSCs.

Diagram II.2
GLOBAL SUPPLY CHAINS IN THE APPAREL INDUSTRY



Source: G. Gereffi, P. Bamber and K. Fernandez-Stark, *Promoting Decent Work in Global Supply Chains in Latin America and the Caribbean: Key Issues, Good Practices, Lessons Learned and Policy Insights*, ILO Technical Reports 2016/1, Lima, ILO Regional Office for Latin America and the Caribbean, 2016.

Note: The main stages of upgrading in the apparel value chain are: (i) assembly, cut, make and trim: apparel manufacturers cut and sew woven or knitted fabric or knit apparel directly from yarn; (ii) original equipment manufacturing, full package and free on board (FOB): the apparel manufacturer is responsible for all production activities, including cut, make and trim, as well as finishing; the firm must have upstream logistics capabilities, including the ability to procure (source and finance) the raw materials, piece goods and trim needed for production; (iii) original design manufacturing and full package with design: this is a business model that focuses on adding design capabilities to the production of garments; and (iv) original brand manufacturing: this is a business model that focuses on branding and the sale of own-brand products.

In the face of rising competition from Asia, combined with significant pressure from global buyers to improve quality and turnaround while cutting costs, the region as a whole has lost ground in the apparel export sector. Two exceptions to this general rule are Nicaragua and Haiti.

At the same time, some retailers in the region have established leading positions in the chain, ordering apparel from suppliers in their own countries or internationally. In developed country markets, retailing margins had risen from between 35% and 40% in 1970 to between 55% and 60% by around 2010. At the same time, the prices at which apparel is sold to consumers have fallen considerably relative to average consumer prices, and the value allocated to the actual producers has inevitably been depressed. The employment costs involved in manufacturing the product are often lower than those associated with its sale to the consumer in the store. Design, marketing and branding costs can be as much as 20% of the retail value (Scheffer, 2012).

As a result of some major accidents (such as the one that took place in Bangladesh in 2013) and news about child and forced labour in the apparel chain generally, consumers have developed a greater awareness and some lead firms in the chain have taken on a more active role in reviewing employment conditions at their suppliers. These trends were initially seen mainly in the developed countries, but have more recently spread to those of the region too.

In Chile, output in the textile and apparel industry has fallen considerably over recent decades.[14] By contrast with this manufacturing decline, Chilean retailers have been highly dynamic in the apparel chain. Although the domestic market is small, two Chilean firms are among the world's top 100 retailers. The share of apparel sales made through concentrated distribution channels such as department stores and supermarkets is particularly high by international standards (Deloitte, 2016; Reinecke, 2010).

Chilean retailers order apparel from suppliers to be sold in Chile and the countries where they have branches, such as Argentina, Brazil, Colombia and Peru. The great bulk of this production takes place in China. Because the trend towards fast fashion has put a premium on speed, however, the share of Peruvian and Colombian firms in Chilean department store chains' apparel imports has been rising. Recently, one of the largest retailers began to implement a corporate social responsibility programme that includes auditing of suppliers of the firm's own brands, both in Asia and in Chile and other countries of the region, with the Sedex Members Ethical Trade Audit (SMETA) international protocol being applied for the purpose. In Brazil, too, an interesting corporate social responsibility programme has been implemented in the apparel manufacturing sector (see box II.1).

Box II.1
CORPORATE SOCIAL RESPONSIBILITY AND LABOUR INSPECTION IN THE BRAZILIAN APPAREL INDUSTRY

In the case of the Brazilian apparel industry, the discovery in 2006 of forced labour situations in small workshops supplying retailers in São Paulo led to the creation of the Municipal Council Investigation Committee. The recommendations of the Committee emphasized the responsibility of buyer firms for compliance with labour regulations at those firms supplying the apparel. In 2010, on the basis of these recommendations, the Brazilian Association of Textile Retail (ABVTEX) began to implement a corporate social responsibility initiative to enforce labour regulations right along the chain. Between September 2010 and November 2014, a total of 7,354 suppliers and subcontractors were certified and 2,130 participated in an action plan to qualify for certification. In addition to the auditing methodology in the supplier certification programme, one of the most striking characteristics of this initiative has been the way private sector action has been coordinated with measures to strengthen the public labour inspectorate. When serious breaches of workers' rights have been identified, a commitment by the private sector to monitor compliance with the rules has often been obtained. A new instrument for this is the publication of a "dirty list" with the names of firms at which situations of forced labour have been identified. This example shows that private sector initiatives to enforce employment legislation are no longer just a feature of developed countries, but exist in emerging economies too.

Source: A. Posthuma and R. Bignami, "Deepening compliance? Potential for multistakeholder interaction in monitoring labor standards in the value chains of Brazil's apparel industry", *Achieving Workers' Rights in the Global Economy*, R. Appelbaum and N. Lichtenstein (eds.), London, ILR Press, 2016; and Brazilian Association of Textile Retail (ABVTEX) [online] http://www.abvtex.org.br/.

These examples illustrate the point made by Pickles, Barrientos and Knorringa (2016) when they argue that consumers and civil society actors in emerging economies can also take an interest in matters relating to social standards and promote a trend towards selective use of corporate social responsibility tools, as well as voluntary initiatives among leading retailers in these countries.

[14] Employment in the textile and apparel sector continued to decline in the period from 2006 to 2013, from 124,000 to 77,000. This drop was mainly in wage employment, which fell by more than half from 60,000 to 26,000, while own-account employment dropped by only a fifth, from 59,000 to 48,000 (National Socioeconomic Survey (CASEN), 2006 and 2013).

(b) The apparel industry in Nicaragua

Apparel is Nicaragua's most important manufacturing sector, and clothing accounted for one third of the country's exports to the United States in 2011. This sector saw strong export growth between 2005 and 2012, the majority of which was destined for the United States. Growth was fuelled by tariff preference level (TPL) agreements provided to this sector under the CAFTA-DR trade agreement with the United States. The TPL agreements enabled Nicaraguan exports that did not meet the yarn-forward rule of origin established under CAFTA (e.g., items made from fabrics originating in Asia instead of the Americas) to access the United States market duty-free for a 10-year period (2004-2014).

The apparel export industry is based almost exclusively in export processing zones (EPZs), with some 54 factories. These firms are mostly foreign-owned, belonging primarily to United States and Korean corporations. In 2012, apparel firms accounted for 70% of employment in the country's EPZs. Nicaragua's main apparel product is knitted garments, especially shirts, but in recent years its exports of woven apparel have also grown rapidly. Knitted apparel manufacturing is integrated with Honduras in a full-package model whereby fabric is formed in Honduras and sewn in Nicaragua before the garment is exported to the United States. The majority of woven apparel companies offer some services beyond cut and sew, most typically the laundering that is a standard part of the production process for jeans and some twill trousers. Several companies offer various pre- and post-production processes as well, including pattern marking, grading and some product development, all indicative of product and process upgrading in the apparel supply chain.

(i) Job creation

In an economy characterized by a high degree of informality (affecting almost two thirds of the workforce), the 70,000 jobs in the apparel sector are a critical source of formal employment. However, Nicaragua's apparel exports are heavily dependent on trade policies, such as the temporary TPL provisions, and if these policies change, apparel exports and employment could alter dramatically.

(ii) Conditions of work, employment and labour rights

Nicaraguan garment factories (situated almost exclusively in EPZs) are generally not associated with systematic abuses of workers' rights, and there is broad agreement that the industrial relations environment in Nicaragua has improved markedly in recent years. Compared with other lower- or middle-income countries with large apparel-exporting industries, Nicaragua boasts a particularly active and independent trade union movement, although there are lingering concerns about the degree to which workers are able to exercise their collective bargaining rights. The country boasts a relatively high degree of institutionalized social dialogue, as represented by the Free Zone Tripartite Labour Commission formed in 2009 to help the country face the mounting pressures of the financial crisis and recurrent pressure from buyers to reduce costs.

(iii) Skills development

This remains an area of weakness for the Nicaraguan apparel sector. Few firms offer anything in the way of formal training. Limited training is focused on bringing new workers up to speed and is carried out on the job, lasting an average of just one month. Training is more prominent in woven firms than in knit firms. In general, human capital formation and skills development among Nicaragua's garment workers is modest.

(iv) Key policy actions

- Nicaragua's Tripartite Agreement, signed in 2009, provided a forum for dialogue and cooperation between organized labour, the private sector and the government, represented by both the Minister of Labour and the head of the EPZ authority. This agreement created the Free Zone Tripartite Labour Commission as a forum for dialogue and cooperation, with the goal of strengthening the industry and preserving jobs in the textile and apparel sector. Along with negotiated industry-wide minimum wage increases through 2013, it mandated the government and private sector to work together to establish commissaries to provide workers with basic commodities such as cooking oil, beans and rice at lower prices than can be found in retail outlets. Companies were generally positive about the Tripartite Commission and the two agreements it had negotiated, seeing this as a proactive effort on the part of the government to create a more predictable environment for local firms.
- Firms voluntarily opted into audited certification programmes: many employers apply the Fair Labour Association (FLA) Code of Conduct and receive independent monitoring from the brands or the FLA itself. Some employers have enrolled in certification programmes such as Worldwide Responsible Accredited Production (WRAP), an industry-organized certification system. Frustration with meeting multiple buyer codes of conduct, however, was one of the factors that encouraged firms to join the ILO Better Work Nicaragua programme, which offers a harmonized auditing operation that most buyers are prepared to accept in lieu of their own auditing.
- The ILO-International Finance Corporation (IFC) Better Work programme links access to markets and finance with labour conditions. Nicaragua joined the Better Work programme in 2011. Better Work offers technical and advisory services to help factories improve their compliance with the ILO Decent Work Agenda as well as establishing mechanisms to increase social dialogue. It also links international loans from IFC to improvements in labour conditions. While many countries have engaged in the Better Work programme in order to improve their labour conditions, Nicaragua has leveraged its participation to demonstrate to buyers that it is a responsible business location. The programme has had a smaller economic impact than was hoped. Still, it is important to consider how a responsible business environment may help to maintain the loyalty of buyers who are reputation-sensitive, even in a period of slower global growth and at a time when the TPL agreement has expired.

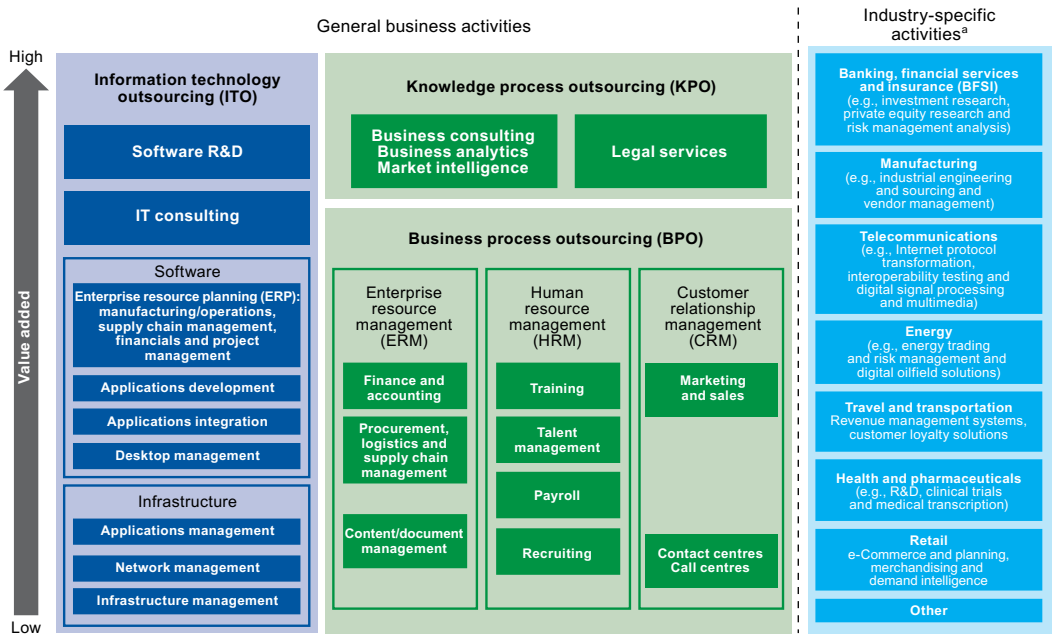
3 Offshore services

(a) Overview

Offshore services have emerged as a dynamic global sector in the past two decades, providing developing economies in Latin America with the opportunity to upgrade into services-sector exports. Given that human capital is the central input for offshore services, this sector is an important source of employment for more highly skilled members of the workforce.

Diagram II.3 illustrates the offshore services GSC. This includes three broad types of offshore services that can be provided across all industries (general business services): (i) information technology outsourcing (ITO), including software design and development; (ii) business process outsourcing (BPO), such as back office functions in call centres, accounting and payroll operations; and (iii) knowledge process outsourcing (KPO), such as market and legal research, as well as those services that are industry-specific.

Diagram II.3
THE OFFSHORE SERVICES INDUSTRY GLOBAL SUPPLY CHAIN



Source: G. Gereffi, P. Bamber and K. Fernandez-Stark, *Promoting Decent Work in Global Supply Chains in Latin America and the Caribbean: Key Issues, Good Practices, Lessons Learned and Policy Insights*, ILO Technical Reports 2016/1, Lima, ILO Regional Office for Latin America and the Caribbean, 2016.

[a] Industry-specific: each industry has its own value chain, and within each of these chains there are associated services that can be offshored. This diagram captures the industries with the highest demand for offshore services. This graphical depiction of industry-specific services does not imply value levels. Each industry may include ITO, BPO, KPO and other advanced activities.

Firms providing general business services tend to be process-oriented, while those in the vertical chains must have industry-specific expertise and their services may have limited applicability in other industries. Within these services, ITO contains a full spectrum of low-, middle- and high-value activities in the offshore services chain; BPO activities are in the low and middle segments, while KPO activities are in the highest-value segment of the chain.

As a relative latecomer to the industry, Latin America and the Caribbean has complemented the established offshore service centres around the world, with Argentina, Brazil, Chile, Colombia, Costa Rica, Jamaica, Mexico, Peru and Uruguay all opening centres of varying size and expertise. Chile has developed exports of industry-specific services in retail and mining, Costa Rica has excelled as a general service provider in BPO and KPO, while Uruguay has gained a reputation for ITO services. Numerous countries in the Caribbean, including Antigua and Barbuda, the Bahamas, Barbados and Saint Kitts and Nevis, provide a wide range of services in the financial sector.

Given the potential gains for sustainable economic growth via this industry, Latin America and the Caribbean is strategically positioned as a hub for offshore services. The region offers two distinct advantages over other low-cost locations: time zone positioning and language skills. Bilingual employees with Spanish and English skills are essential for serving the growing Hispanic population in the United States.

(b) Offshore services in Uruguay

Offshore services, and the information technology (IT) services industry in particular, represent a key economic sector in Uruguay. Global service exports accounted for US$ 1.3 billion worth of revenues in 2013, almost double the 2010 total. Uruguay's software industry began to develop in the 1980s, and now includes more than 370 IT companies. Economic upgrading has taken place, as the share of support services (call centres) has fallen while that of more advanced services, such as financial services, has increased (Bamber and Fernandez-Stark, 2016). In 2015, exports from this industry alone totalled close to US$ 500 million. Uruguay's ITO sector includes a growing number of strong domestic companies.

The 2002 arrival of Tata Consultancy Services (TCS), the leading Indian offshore services company, introduced new competencies and forced domestic firms to become more competitive. The entry of TCS ultimately strengthened the competitiveness of the local industry and its ability to provide high-end services. In addition to IT services, Uruguay has expanded its presence as a regional shared services provider, logistics hub and financial services centre. The country has also developed and begun to export specialized industry-specific software for traceability in its powerful livestock sector.

(i) Job creation

There has been a rise in employment in offshore services over recent years, largely in firms operating out of the country's EPZs (Bamber and Fernandez-Stark, 2016). The offshore services sector employed an estimated 63,000 people in 2015. While three quarters of these worked in a range of back office, finance and logistics functions, approximately 18,000 were employed in the ITO services sector, 80% of whom were highly qualified engineers, analysts, programmers, ITO technicians and other professionals. Both back office functions and ITO positions draw heavily on younger employees, precisely the ones who generally find it most difficult to enter the workforce in Latin America and the Caribbean.

(ii) Conditions of work, employment and labour rights

With a largely professional workforce, positions are well compensated. For example, the average monthly wage of a senior procurement specialist is US$ 2,500. Also, Uruguay has sectoral collective agreements that cover more than 90% of the national labour force, which enables social actors to negotiate better conditions for all workers. However, particularly for those with mid-range skills, pay can be lower than in other sectors for equally qualified staff, something that may be offset by benefits such as access to training in latest-generation technologies. Employment in the industry is formalized, so that workers have 20 days' paid leave per annum, a thirteenth monthly salary and social security benefits, including health insurance, pensions and unemployment insurance. These benefits are the same for all Uruguayan workers, as in other industrial, services or commercial activities (only foreign workers in an EPZ have the right to choose whether or not to affiliate to the social security system). Working hours, conditions and minimum wages are negotiated through collective bargaining at the industry level. These benefits are provided to workers on both temporary and full-time contracts. Freedom of association was reinstated in 1985. The tripartite wage councils were reactivated in 2005 to negotiate sectoral wages and other working conditions. Primary concerns for occupational health and safety are focused on stress and physical problems from sedentary positions.

(iii) Skills development

The industry draws on a generally well-educated population in Uruguay; free education through to university level, combined with mandatory English language and computer science classes in secondary school, has contributed to high literacy rates and language proficiency and closed the digital divide. Skills development is also an essential part of employers' planning. Even so, there are constraints when it comes to the quality and quantity of bilingual professionals (Bamber and Fernandez-Stark, 2016). Several specific training programmes are available thanks to government incentives for the sector, as discussed below.

(iv) Key policy actions

- Investment and training incentives have increased productive work opportunities: investing firms can access a wide range of investment benefits in Uruguay's EPZs, including income tax exemption and duty-free imports of equipment, among others. The EPZs have attracted a large number of foreign companies that have set up operations for the export of knowledge services such as BPO and KPO. The government also gives investing firms access to its "finishing school", a programme which subsidizes between 40% and 70% of job training costs in specific skills required by them in sectors including business services, information technology, pharmaceuticals and health, architecture and engineering. Access to these benefits is linked closely to the number of full-time positions provided. Specifically, firms in shared services operations are also required to establish detailed training programmes involving Uruguayan professionals. Firms also have access to the government's Smart Talent website, which serves as a centralized recruitment and job search website for the industry.
- Sector-wide tripartite wage councils offer a forum for collaboration on decent work issues: in Uruguay, laws provide for industry-specific tripartite wage councils that include employers (represented by the National Chamber of Commerce and Services and the Chamber of Industries of Uruguay), union representatives and the Ministry of Labour and Social Security, which establish minimum wages for the industry. Individual negotiations and collective bargaining agreements can provide for higher, but not lower, wages. These councils extend to the EPZs, as do other national labour regulations.
- Subcontracting law passes social protection responsibilities to buyers of services: labour subcontracting is permitted by Law 18099 (passed in 2007), but buyers are held responsible for ensuring that all service providers in their supply chain make the appropriate contributions to employee pension and health funds as stipulated by law. Buyers are held jointly liable in the event that these social security contributions are not paid.

E. Conclusions and policy guidelines[15]

1. Conclusions

From the information provided in this section, it can be concluded that the economies of Latin America and the Caribbean have gradually integrated into GSCs, although somewhat more slowly than other regions.

An analysis based on input-output matrices for 10 countries of South America showed that these countries' products often served as intermediate inputs for other industries (forward linkages), but there were fewer backward linkages dynamizing demand for intermediate inputs from other sectors. This finding is consistent with the diagnosis that production is relatively undiversified in the economies of Latin America and the Caribbean and that these are situated in links of the value chain that are not intensive in value added.

International participation is reflected in employment. The exports of the 10 South American countries considered account for 15.4% of total employment in South America. The analysis also illustrated the importance of indirect employment arising out of forward or backward linkages. Many sectors, particularly some capital-intensive ones such as mining, create more indirect than direct jobs. The total number of jobs linked to exports, put at 25.6 million, includes more indirect jobs (14.443 million) than direct ones (11.165 million).

Employment quantity and quality in GSCs are interconnected and relate to the specific stage in the supply chain a country is in. The economic modernization of GSCs usually leads, within a given chain, to jobs becoming fewer but better in terms of skill intensity, employment conditions, formal contracts and pay.

The entry of Latin American and Caribbean countries into the labour-intensive segments of their respective chains has generated a large number of jobs, for example in banana production in the Dominican Republic and apparel manufacturing in Nicaragua. These jobs are generally at lower stages of the value chain, which are more vulnerable to changes in GSC competition. However, owing to the need to meet the international standards of global buyers, these workers are typically more skilled than those in similar jobs who serve the local economy.

However, economic upgrading across sectors via structural transformation changes the skill level of the labour required at the lowest stages of the value chain and has important implications for the Decent Work Agenda. The labour-intensive stages of agriculture and apparel value chains require lower-level skills than the manual labour stages of advanced manufacturing chains. Workforce skill constraints can often put a brake on economic and social upgrading, so that skills development and occupational training policies are also part of strategies to modernize GSCs.

Participation in the lower-value stages of less sophisticated supply chains contributes to poverty alleviation through job creation by generating employment for lower-skilled workers, but this can also be accompanied by decent work challenges that should be addressed in order to align opportunities for economic and social upgrading.

A gendered division of labour is most apparent in lower-value stages of the GSCs in which Latin American and Caribbean countries participate, partially because of perceptions of workforce skills. This is the case, for example, in apparel factories and some phases of fruit picking and handling.

Formal sector jobs are concentrated in export-oriented segments of GSCs, although in cyclical and seasonal industries, such as apparel and agriculture, there is a high incidence of temporary or informally contracted labour even in these segments.

There are also important examples of participation in more technologically sophisticated and higher-skilled value chains, such as automotive chains in Mexico and high-technology and medical product chains in Costa Rica.

Skills development plays a critical role in improving labour gains and economic upgrading. The preceding analysis illustrates that workers with higher skill levels can access higher stages of the value chain and face fewer decent work shortcomings than workers with lower skills.

2. Policy

The general discussion that took place as part of the ILO International Labour Conference, held in June 2016, led to the passing of the resolution on decent work in global supply chains. Agreed by labour market actors worldwide, this document includes overall guidelines for policies to improve the working conditions and labour rights of workers employed in the lower links of chains, and to ensure that chains do not achieve competitiveness by flouting labour regulations. It also seeks to encourage the formulation of employment policies and the implementation of social dialogue practices tailored to the economic and social reality of GSCs. Lastly, it recognizes concerns that current ILO standards may not be appropriate to ensure decent work in global supply chains, and it affirms the need to intensify research and the role of ILO standards as a benchmark for best practice in this area.

[15] This section is based partly on Gereffi, Bamber and Fernandez-Stark (2016), presenting conclusions for the global supply chain experience of countries in the region as analysed in that document.

The examples given of supply chains in the region illustrate some of the concrete policies that can support modernization in conjunction with economic and social upgrading.[16]

First, while participation in the most basic links of supply chains has the merit of creating a great number of jobs and income sources and reducing poverty in countries with an abundance of low-skilled labour, such as the Dominican Republic and Nicaragua, it is essential to place special stress on respect for fundamental employment laws. Accordingly, the Dominican Republic has focused on strengthening the labour inspectorate by recruiting well-trained inspectors and paying them relatively high salaries. The inclusion of labour clauses in free trade agreements, as in the case of Nicaragua, is another factor that can help to prevent labour abuses. Voluntary initiatives can contribute directly to compliance with labour laws by establishing the responsibility of lead firms for ensuring that suppliers right along the supply chain comply with labour legislation. An indirect contribution can also be made by fair trade initiatives, which aim to ensure a reasonable level of prices and thus facilitate the payment of decent wages and compliance with labour laws. Initiatives of this type have been illustrated by the example of banana planting and harvesting in the Dominican Republic.

Second, while corporate social responsibility initiatives in the framework of GSCs were traditionally the preserve above all of lead firms in developed countries that had suppliers in developing ones, there has more recently been a trend for lead firms in the region to fully accept their role in corporate social responsibility. In the case of the apparel chain, some leading trading companies in Brazil and Chile have initiated corporate social responsibility programmes to monitor working conditions at suppliers both in their own countries and abroad. The example of Brazil is an innovative one, given the close coordination between the corporate social responsibility initiative and the strengthening of the labour inspectorate by the public sector.

Third, skills development policies can contribute critically to successful participation by the region's firms in medium- and high-value links of GSCs, as has happened with offshore services in Uruguay. The country implemented a "finishing school" programme that includes training in skills needed for the work, with firms' eligibility being determined by conditions directly linked to the number of jobs created.

Lastly, a number of social dialogue structures contributing to social upgrading in GSCs have been identified, such as the tripartite wage councils in Uruguay and the Tripartite Commission in Nicaragua. In the Brazilian horticulture chain, threatened strikes and critical action in periods that were sensitive for the sector also played a role in improving working conditions. In other cases, tripartite dialogue has contributed to the establishment of a shared diagnosis of skill requirements, helping education and vocational training to be correctly oriented.

[16] See Gereffi, Bamber and Fernandez-Stark (2016) for a wider range of analyses of best practice and policy recommendations.

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Annex A1

Table A1.1
LATIN AMERICA AND THE CARIBBEAN: ANNUAL AVERAGE URBAN UNEMPLOYMENT RATE, 2005 TO FIRST HALF OF 2016
(Percentages)

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2015	2016
												First six months[a]	
Latin America													
Argentina[b]	11.6	10.2	8.5	7.9	8.7	7.7	7.2	7.2	7.1	7.3	6.5[c]	6.6[d]	9.3[d]
Bolivia (Plurinational State of)	8.1	8.0	7.7	6.7	6.8	...	3.8	3.2	4.0	3.5	...	...	...
Brazil[e]	9.8	10.0	9.3	7.9	8.1	6.7	6.0	8.2	8.0	7.8	9.3	8.9	12.4
Chile[f]	9.2	7.8	7.1	7.8	9.7	8.2	7.1	6.4	5.9	6.4	6.2	6.3	6.6
Colombia[g]	13.2	13.2	12.2	12.1	13.2	12.7	11.8	11.4	10.7	10.0	9.8	10.4	10.9
Costa Rica[h]	6.9	6.0	4.8	4.8	8.5	7.1	7.7	9.8	9.1	9.5	9.7	10.0	9.5
Cuba[i]	1.9	1.9	1.8	1.6	1.7	2.5	3.2	3.5	3.3	2.7	...	...	...
Dominican Republic	7.3	6.2	5.4	5.3	5.8	5.7	6.7	7.2	7.9	7.2	6.9	6.0[j]	5.7[j]
Ecuador[k]	8.5	8.1	6.9	6.9	8.5	7.6	6.0	4.9	4.7	5.1	5.4	5.2	7.0
El Salvador[l]	7.3	5.7	5.8	5.5	7.1	6.8	6.6	6.2	5.6	6.7	...	...	...
Guatemala[m]	...	...	...	...	...	4.8	3.1	4.0	3.8	4.0	...	...	...
Honduras	6.1	4.6	3.9	4.2	4.9	6.4	6.8	5.6	6.0	7.5	8.8	...	...
Mexico	4.0	4.0	4.0	4.3	5.9	5.9	5.6	5.4	5.4	5.3	4.7	4.7	4.4
Nicaragua[n]	7.9	7.6	7.3	8.0	10.5	10.1	6.5	7.6	...	...	...	...	...
Panama[o]	12.1	10.4	7.8	6.5	7.9	7.7	5.4	4.8	4.7	5.4	5.8	6.0[p]	6.5[p]
Paraguay[q]	7.6	8.9	7.2	7.4	8.2	7.2	7.1	8.1	8.1	8.0	6.8	...	...
Peru[r]	9.6	8.5	8.5	8.4	8.4	7.9	7.7	6.8	5.9	5.9	6.5	6.9	6.9
Uruguay	12.2	11.3	9.8	8.3	8.2	7.5	6.6	6.7	6.7	6.9	7.8	7.6	8.2
Venezuela (Bolivarian Republic of)[s]	12.3	9.9	8.3	7.4	7.8	8.6	8.3	8.1	7.8	7.2	7.0	7.2[t]	7.5[t]
The Caribbean													
Bahamas[s]	10.2	7.7	7.9	8.7	14.2	...	15.9	14.4	15.8	14.8	13.4	12.0[u]	12.7[u]
Barbados[s]	9.1	8.7	7.4	8.1	10.0	10.8	11.2	11.6	11.6	12.3	11.3	11.8[v]	9.3[v]
Belize[s]	11.0	9.4	8.5	8.2	13.1	12.5	...	15.3	13.2	11.6	10.1	10.1[j]	8.0[j]
Jamaica[s]	11.2	10.3	9.8	10.6	11.4	12.4	12.6	13.9	15.2	13.7	13.5	13.7[w]	13.5[w]
Trinidad and Tobago[s]	8.0	6.2	5.5	4.6	5.3	5.9	5.1	5.0	3.7	3.3	3.5	3.7[p]	3.8[p]
Latin America and the Caribbean[x]	**10.2**	**9.1**	**8.6**	**8.0**	**9.2**	**8.6**	**7.8**	**7.4**	**7.2**	**7.0**	**7.4**	**7.6[y]**	**9.2[y]**

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official information from household surveys carried out in the respective countries.

[a] Preliminary figures.
[b] Gradual incorporation up to 31 urban agglomerates in the third quarter of 2006. The National Institute of Statistics and Censuses (INDEC) of Argentina does not recognize the data for the period 2007-2015 and is currently revising them. Those data are therefore preliminary in nature and will be replaced when the new official data are published.
[c] Average for the first to third quarters.
[d] Second quarter.
[e] The survey covered six metropolitan areas prior to 2012. A new survey was applied as from 2012, which covers 20 metropolitan regions, so the data are not comparable with those of earlier years.
[f] National total. A new measurement was applied as from 2010, so the data are not comparable with those of earlier years.
[g] Metropolitan areas. Includes hidden unemployment.
[h] New measurement as from 2009, and again as from 2012, so the data are not comparable with those of earlier years.
[i] National total.
[j] Figure for April.
[k] As from 2007, the definition of the working-age population was changed from 10 years and over to 15 years and over. Includes hidden unemployment.
[l] As from 2007, the definition of the working-age population was changed from 10 years and over to 16 years and over. Includes hidden unemployment.
[m] As from 2011, the definition of the working-age population was changed from 10 years and over to 15 years and over.
[n] A new survey was applied as from 2010, so the data are not comparable with those of earlier years.
[o] Includes hidden unemployment.
[p] Figure for March.
[q] Since 2010, data of urban zones of Asunción and the Central Departament.
[r] Metropolitan Lima.
[s] National total. Includes hidden unemployment.
[t] January-April average.
[u] Figure for May.
[v] First quarter.
[w] Average of the figures for January and April.
[x] Weighted average. Includes data adjustment for the exclusion of hidden unemployment in Colombia, Ecuador, Jamaica and Panama.
[y] Figure corresponding to a limited number of countries, so it is not comparable with annual data.

Table A1.2
LATIN AMERICA AND THE CARIBBEAN: ANNUAL AVERAGE URBAN PARTICIPATION RATE, 2005 TO FIRST HALF OF 2016
(Percentages)

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2015	2016
												First six months[a]	
Latin America													
Argentina[b]	59.9	60.3	59.5	58.8	59.3	58.9	59.5	59.3	58.9	58.3	57.7[c]	...	...
Bolivia (Plurinational State of)	55.7	58.7	57.1	58.8	60.5	...	59.7	57.0	58.4	59.4	...	...	...
Brazil[d]	56.6	56.9	56.9	57.0	56.7	57.1	57.1	63.1	63.4	62.8	62.8	62.7	63.4
Chile[e]	55.6	54.8	54.9	56.0	55.9	58.5	59.8	59.5	59.6	59.8	59.7	59.6	59.4
Colombia[f]	61.7	60.6	60.2	60.6	62.9	64.1	65.2	66.0	65.8	66.0	66.3	65.9	65.7
Costa Rica[g]	58.2	58.2	58.5	58.6	62.3	60.7	62.6	64.5	63.3	64.0	62.7	63.4	58.6
Cuba[h]	72.1	72.1	73.7	74.7	75.4	74.9	76.1	74.2	72.9	71.9	69.1	...	...
Dominican Republic[i]	56.4	57.1	57.1	57.4	55.2	56.5	57.8	59.0	58.7	59.1	59.3	58.9[j]	59.8[j]
Ecuador[h]	59.5	59.1	69.1	67.7	66.3	64.2	62.2	62.8	61.8	62.2	64.1	63.2	65.6
El Salvador[k]	54.3	53.9	63.6	64.1	64.3	64.4	63.7	64.6	65.1	64.6	...	...	...
Guatemala	...	...	...	...	...	...	61.0	65.5	61.9	62.7	...	...	...
Honduras	50.3	52.1	51.7	52.7	53.1	53.7	52.5	51.2	54.3	55.7	57.1	...	...
Mexico	60.4	61.5	61.4	61.3	61.1	60.8	61.0	61.6	61.6	60.9	60.8	60.5	60.6
Nicaragua[l]	52.1	53.1	50.7	53.8	52.1	71.6	74.2	75.2	...	...		...	
Panama[m]	63.7	62.8	62.6	64.4	64.4	64.0	63.2	63.6	64.1	64.3	64.5	65.6[n]	64.8[n]
Paraguay[o]	60.4	57.9	59.6	61.5	62.3	62.5	62.4	62.9	65.1	64.9	64.8	...	...
Peru[p]	67.1	67.5	68.9	68.1	68.4	70.0	70.0	69.1	68.9	68.4	68.3	68.2	68.7
Uruguay	58.5	60.8	62.9	62.8	63.3	63.5	65.0	64.0	63.6	64.8	64.0	64.1	63.9
Venezuela (Bolivarian Republic of)[q]	66.3	65.4	64.8	64.8	65.0	64.6	64.4	64.0	64.3	65.1	63.7	64.4[r]	62.9[r]
The Caribbean													
Bahamas[q]	76.3	75.1	76.2	76.3	73.4	...	72.1	72.5	73.2	73.7	74.3	73.0[s]	76.9[s]
Barbados[q]	69.6	67.9	67.8	67.6	67.0	66.6	67.6	66.2	66.7	63.9	65.1	65.2[t]	65.3[t]
Belize[q]	59.4	57.6	61.2	59.2	...	...	...	65.8	64.0	63.6	63.2	63.4[j]	63.7[j]
Jamaica[q]	64.2	64.7	64.9	65.4	63.5	62.4	61.7	61.9	63.0	62.8	63.1	62.9[u]	64.5[u]
Trinidad and Tobago[q]	63.7	63.9	63.5	63.5	62.7	62.1	61.3	61.8	61.3	61.9	60.6	60.8[n]	60.1[n]
Latin America and the Caribbean[v]	**61.8**	**62.0**	**62.1**	**62.2**	**62.3**	**62.5**	**62.7**	**63.0**	**63.0**	**62.7**	**62.5**	**62.3[w]**	**62.8[w]**

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official information from household surveys carried out in the respective countries.

[a] Preliminary figures.
[b] Gradual incorporation up to 31 urban agglomerates in the third quarter of 2006. The National Institute of Statistics and Censuses (INDEC) of Argentina does not recognize the data for the period 2007-2015 and is currently revising them. Those data are therefore preliminary in nature and will be replaced when the new official data are published.
[c] Average for the first to third quarters.
[d] The survey covered six metropolitan areas prior to 2012. A new survey was applied as from 2012, which covers 20 metropolitan regions, so the data are not comparable with those of earlier years.
[e] National total. A new measurement was applied as from 2010, so the data are not comparable with those of earlier years.
[f] Municipal capitals. Includes hidden unemployment.
[g] New measurement as from 2009, and again as from 2012, so the data are not comparable with those of earlier years.
[h] As from 2007, the definition of the working-age population was changed from 10 years and over to 15 years and over. Includes hidden unemployment.
[i] National total.
[j] Figure for April.
[k] As from 2007, the definition of the working-age population was changed from 10 years and over to 16 years and over. Includes hidden unemployment.
[l] A new survey was applied as from 2010, so the data are not comparable with those of earlier years.
[m] Includes hidden unemployment.
[n] Figure for March.
[o] Since 2010, data correspond to Asunción and the urban areas of Central Department.
[p] Metropolitan Lima.
[q] National total. Includes hidden unemployment.
[r] January-April average.
[s] Figure for May.
[t] First quarter.
[u] Average of the figures for January and April.
[v] Weighted average. Includes data adjustment for the exclusion of hidden unemployment in Colombia, Ecuador, Jamaica ad Panama. Does not include Guatemala, Nicaragua or the Plurinational State of Bolivia.
[w] Figure corresponding to a limited number of countries, so it is not comparable with annual data.

Table A1.3
LATIN AMERICA AND THE CARIBBEAN: ANNUAL AVERAGE URBAN EMPLOYMENT RATE, 2005 TO FIRST HALF OF 2016
(Percentages)

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2015 First half[a]	2016 First half[a]
Latin America													
Argentina[b]	53.0	54.1	54.5	54.2	54.2	54.4	55.2	55.0	54.7	54.0	53.9[c]	...	...
Bolivia (Plurinational State of)	51.2	54.0	52.7	56.2	57.5	...	57.4	55.2	56.1	57.3	...	...	...
Brazil[d]	51.0	51.2	51.6	52.5	52.1	53.2	53.7	57.9	58.3	57.9	57.0	57.1	55.6
Chile[e]	50.4	50.5	51.0	51.7	50.5	53.7	55.5	55.7	56.0	56.0	56.0	55.8	55.5
Colombia[f]	53.5	52.6	52.9	53.2	54.6	56.0	57.5	58.5	58.8	59.4	59.8	59.1	58.5
Costa Rica[g]	54.2	54.7	55.7	55.7	57.0	56.4	57.8	58.2	57.5	57.9	56.6	57.1	53.0
Cuba[h]	70.7	70.7	72.4	73.6	74.2	73.0	73.6	71.6	70.5	70.0	67.5	...	...
Dominican Republic[h]	52.8	54.0	54.2	54.7	52.3	53.6	54.5	55.2	54.6	55.4	55.8	55.4[i]	56.4[i]
Ecuador[j]	54.4	54.3	64.3	63.1	60.7	59.3	58.5	59.7	58.9	59.0	60.7	59.9	61.0
El Salvador[k]	50.3	50.8	59.9	60.6	59.7	60.0	59.5	60.6	61.5	60.3	...	...	...
Guatemala	...	...	...	...	...	...	59.0	62.8	59.5	60.2	...	...	...
Honduras	47.2	49.7	49.7	50.5	50.5	50.3	48.9	48.3	51.1	51.5	52.1	...	...
Mexico	58.0	59.0	58.9	58.7	57.5	57.2	57.5	58.3	58.3	57.6	57.9	57.6	57.9
Nicaragua[l]	49.9	49.1	47.1	49.5	46.6	...	...	...	...	...		...	
Panama	56.0	56.3	57.7	60.2	59.3	59.1	59.8	60.6	61.1	60.9	60.7	61.6[m]	60.5[m]
Paraguay[n]	55.8	52.7	55.3	57.0	57.1	58.0	58.0	57.8	59.9	59.7	60.4	...	...
Peru[o]	60.7	61.8	63.0	62.4	62.7	64.5	64.5	64.4	64.8	64.3	63.8	63.4	63.8
Uruguay	51.4	53.9	56.7	57.6	58.4	58.8	60.7	59.6	59.5	60.4	59.0	59.2	58.6
Venezuela (Bolivarian Republic of)[h]	58.2	58.9	59.4	60.0	59.9	59.0	59.0	58.8	59.3	60.4	59.2	59.8[p]	58.2[p]
The Caribbean													
Bahamas[h]	68.5	69.4	70.2	69.7	63.0	...	60.6	62.1	61.6	62.8	64.3	64.2[q]	67.1[q]
Barbados[h]	63.2	61.9	62.8	62.1	60.3	59.4	60.0	58.5	58.9	56.0	57.7	57.5[r]	59.2[r]
Belize[h]	52.8	52.2	56.0	54.3	...	...	...	55.7	55.7	56.3	56.8	56.6[o]	58.7[o]
Jamaica[h]	57.0	58.0	58.6	58.5	56.3	54.7	54.4	53.3	53.4	54.2	54.6	54.2[s]	55.8[s]
Trinidad and Tobago[h]	58.6	59.9	59.9	60.6	59.4	58.4	58.2	58.8	59.1	59.9	58.9	58.6[m]	57.8[m]
Latin America and the Caribbean[t]	**55.7**	**56.2**	**56.8**	**57.2**	**56.8**	**57.5**	**58.0**	**58.4**	**58.5**	**58.3**	**58.0**	**57.6**[u]	**57.0**[u]

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official information from household surveys carried out in the respective countries.

[a] Preliminary figures; first three quarters of 2015.
[b] Gradual incorporation up to 31 urban agglomerates in the third quarter of 2006. The National Institute of Statistics and Censuses (INDEC) of Argentina does not recognize the data for the period 2007-2015 and is currently revising them. Those data are therefore preliminary in nature and will be replaced when the new official data are published.
[c] Average for the first to third quarters.
[d] The survey covered six metropolitan areas prior to 2012. A new survey was applied as from 2012, which covers 20 metropolitan regions, so the data are not comparable with those of earlier years.
[e] National total. A new measurement was applied as from 2010, so the data are not comparable with those of earlier years.
[f] Municipal capitals.
[g] New measurement as from 2009, and again as from 2012, so the data are not comparable with those of earlier years.
[h] National total.
[i] Figure from April.
[j] As from 2007, the definition of the working-age population was changed from 10 years and over to 15 years and over.
[k] As from 2007, the definition of the working-age population was changed from 10 years and over to 16 years and over.
[l] A new survey was applied as from 2010, so the data are not comparable with those of earlier years.
[m] Figure from March.
[n] Since 2010, data correspond to Asunción and the urban areas of Central Department.
[o] Metropolitan Lima.
[p] January-April average.
[q] Figure for May.
[r] First quarter.
[s] Average of the figures for January and April.
[t] Weighted average. Does not include Guatemala, Nicaragua or the Plurinational State of Bolivia.
[u] Figure corresponding to a limited number of countries, so it is not comparable with annual data.

Table A1.4

LATIN AMERICA AND THE CARIBBEAN (13 COUNTRIES): URBAN RATES OF ECONOMIC ACTIVITY, EMPLOYMENT AND OPEN UNEMPLOYMENT BY SEX, FIRST HALF OF 2015 AND 2016[a]

(Percentages)

Country	Unemployment rate						Economic activity rate						Employment rate					
	Total		Men		Woman		Total		Men		Woman		Total		Men		Woman	
	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016	First half of 2015	First half of 2016
Bahamas[b]	12.0	12.7	11.0	11.1	12.9	14.5	73.0	76.9	78.5	81.2	71.5	72.0	64.2	67.1	69.9	72.2	62.3	61.6
Barbados[c]	11.8	9.3	12.1	8.7	11.6	10.0	65.2	65.3	69.5	69.6	61.3	61.4	57.5	59.2	61.1	63.6	54.2	55.2
Brazil	8.1	11.1	6.9	9.7	9.7	12.9	61.2	61.5	72.2	72.6	51.1	51.3	56.2	54.7	67.2	65.6	46.1	44.7
Chile	6.3	6.6	5.6	6.1	7.3	7.2	59.6	59.4	71.6	71.4	47.9	47.8	55.8	55.5	67.6	67.1	44.4	44.4
Colombia (municipal capitals)																		
Broad measurement[d]	10.4	10.9	8.4	8.9	12.7	13.3	65.9	65.7	74.7	74.6	57.9	57.7	59.1	58.5	68.5	67.9	50.6	50.0
Open unemployment	9.8	10.3	8.1	8.5	11.8	12.3												
Costa Rica	9.8	9.4	8.2	8.3	12.2	11.3	62.0	57.9	74.7	71.8	49.1	43.9	55.9	52.4	68.6	65.9	43.1	38.9
Dominican Republic[e]	6.0	5.7	4.4	3.7	8.4	9.0	58.9	59.8	74.1	74.2	44.1	45.6	55.4	56.4	70.8	71.4	40.3	41.5
Ecuador																		
Broad measurement[d]	5.2	7.0	4.2	5.4	6.6	9.1	63.2	65.8	77.6	78.4	50.1	54.1	59.9	61.0	74.3	74.1	46.8	49.2
Open unemployment	4.5	6.2	3.7	4.9	5.7	8.0												
Jamaica[f]																		
Broad measurement[d]	13.7	13.5	10.5	10.0	17.7	17.6	62.9	64.6	70.0	71.1	56.0	58.3	54.3	55.8	62.6	63.9	46.1	48.0
Open unemployment	10.0	8.9	7.5	6.8	11.8	11.2												
Mexico (32 areas)	5.1	4.7	5.2	4.8	5.0	4.6	60.8	60.9	76.0	75.7	47.2	47.5	57.7	58.0	72.1	72.1	44.8	45.3
Panama[g]																		
Broad measurement[d]	6.0	6.5	5.1	5.5	7.1	7.8	65.6	64.8	78.1	77.0	54.4	53.7	61.6	60.5	74.1	72.8	50.5	49.5
Open unemployment	4.8	4.9	4.0	3.8	5.9	6.4												
Peru (Metropolitan Lima)	6.9	6.9	5.6	6.2	8.5	8.2	68.2	68.7	76.4	77.9	60.5	60.1	63.4	63.8	72.1	73.1	55.4	55.1
Uruguay	7.6	8.2	6.6	6.9	8.8	9.7	64.0	63.9	72.5	71.9	56.4	56.6	59.1	58.6	67.7	67.0	51.4	51.1

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of official information from the countries.

[a] National total for the Bahamas, Barbados, Brazil, Chile, Costa Rica, the Dominican Republic and Jamaica.

[b] Figures for May of both years.

[c] Figures for the first quarter of both years.

[d] Includes hidden unemployment as part of the economically active and unemployed population.

[e] Figures for April of both years.

[f] Figures for the averages for January and April of both years.

[g] Figures for March of both years.

Annex A2

Methodology for estimating export-linked employment from the input-output matrix

On the basis of the input-output approach, and considering particularly the factor content of production (production inputs per unit of output), an estimate was made of employment associated with regional goods and services exports in 2005, the reference year for the South American input-output matrix.

Taking the input-output matrices at 2005 base prices prepared for each country, a set of technical production coefficients was calculated, these being obtained from the inverse of the Leontief matrix. Formally:

$$B = (I - A)^{-1} \quad (1)$$

$$B = \begin{bmatrix} b_{11} & \dots & b_{1n} \\ \vdots & \ddots & \vdots \\ b_{n1} & \dots & b_{nn} \end{bmatrix} \quad (2)$$

Where *B* represents the matrix of direct and indirect employment requirements for the production of *j*, and each element b_{ij} represents the quantity of output that should be generated by the *i*-th sector to meet one unit of final demand (net of imports) for the *j*-th product, other things being equal.

Direct employment requirements are in the main diagonal of the matrix and indirect employment requirements outside it.

The sectoral information for total employment in the sector and the gross value of production in each sector was used to calculate direct employment coefficients that serve to measure the employment requirements of each sector or, what comes to the same thing, the level of employment per monetary unit of output, as follows:

$$CE_i^d = \frac{N_i}{GVO_i} \quad (3)$$

Where N_i represents the employment level in sector *i* and GVO_i the gross value of output in sector *i*, and superscript *d* indicates the direct employment measure.

This coefficient of employment (CE) can be used to estimate how many jobs are generated in a sector *i* of the economy as a result of an increase in exports (final demand) in that same sector *i*. Since the gross value of production is expressed in millions of dollars and employment in millions of people, the result is the number of employees required per dollar.

The matrix of direct and indirect employment requirements was used to calculate indirect employment, and a diagonal matrix formed of the coefficients of direct employment was multiplied by this matrix to obtain the coefficients of total employment, as follows:

$$CE^T = CE_i^d * B = \begin{bmatrix} CE_1^d & 0 & 0 \\ 0 & CE_2^d & 0 \\ 0 & 0 & CE_n^d \end{bmatrix} * \begin{bmatrix} b_{11} & \dots & b_{1n} \\ b_{21} & \ddots & b_{2n} \\ b_{n1} & \dots & b_{nn} \end{bmatrix} \quad (4)$$

Which yields:

$$CE_j^T = \sum_i CE_i^d \, b_{ij} \quad (5)$$

Where CE_j^T is total employment in each of the *j*-th branches of economic activity (sums by columns of the matrix yielded by the multiplication described above). Thus, for each *j*-th branch, the CE_j^T matrix column shows the total employment requirements (direct and indirect) towards industry *j* itself (element CE_{jj})and indirect employment requirements towards the other industries per unit of gross value of the production of *j*.

With total employment requirements for industry *j* having been obtained, indirect employment requirements towards the industry can then be calculated by difference via the subtraction of direct employment requirements from total employment requirements, as follows:

$$CE_j^i = CE_{jj}^T - CE_{jj}^d \quad (6)$$

With this coefficient of indirect employment for the industry, it is possible to estimate how many jobs are created in the other sectors of the economy in consequence of higher exports in sector *i* (indirect employment).

Note that from the direct and indirect employment values calculated, it is possible to calculate the ratio between indirect and direct employment, i.e., the number of indirect jobs generated for each direct job.

$$Ratio\ between\ direct\ and\ indirect\ employment = \frac{CE_j^i}{CE_j^d} \quad (7)$$

The amount of export-linked employment can be obtained from the result of equation 3 and the amount exported by each sector in the input-output matrix. Equation 8 sets out the procedure for this:

$$DE = * \sum_j (X_j * CE_j^d) \quad (8)$$

Likewise, total export-linked employment can be calculated from the result of equation 4 and the amount exported, as follows:

$$TE = * \sum_j (X_j * CE_j^T) \quad (9)$$

Lastly, the difference between equations 9 and 8 yields the density of indirect employment linked to the total exports of the economy. Formally:

$$IE = TE - DE \quad (10)$$

Source: J. Durán Lima and S. Castresana, "Estimación de empleo directo e indirecto asociado a las exportaciones del Ecuador a la Unión Europea", *Project Documents*, Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2016, forthcoming.

Annex A3

Table A3.1
SOUTH AMERICA (10 COUNTRIES): DIRECT EMPLOYMENT LINKED TO EXPORTS, BY SECTOR, 2005
(Thousands of people)

Sector	Argentina	Bolivia (Plurinational State of)	Brazil	Chile	Colombia	Ecuador	Paraguay	Peru	Uruguay	Bolivarian Republic of Venezuela	South America
Farming and stockbreeding	271	90	2 031	288	404	602	223	344	21	8	**4 281**
Mining and oil	18	38	135	82	92	11	0	71	0	114	**563**
Agro-industry	128	64	685	47	161	34	21	50	30	12	**1 231**
Textiles, apparel and footwear	76	17	469	3	164	18	9	144	17	5	**921**
Wood and paper	30	19	314	38	24	5	6	50	7	7	**501**
Chemicals and pharmaceuticals	25	1	77	14	24	7	1	2	4	16	**171**
Rubber and plastic	10	0	30	3	11	1	0	3	2	2	**63**
Non-metallic minerals	4	1	81	1	12	2	0	8	1	6	**116**
Metals and derivatives	14	5	117	41	40	4	1	10	3	34	**270**
Machinery and equipment	39	0	198	2	23	2	4	6	1	4	**281**
Motor vehicles and their parts	34	0	159	1	17	6	1	0	1	10	**230**
Other manufactures	36	7	106	1	37	5	4	96	4	2	**298**
Electricity, gas and water	11	0	0	0	0	0	0	0	0	0	**12**
Construction	0	1	34	0	0	0	0	0	0	0	**37**
Transport	45	11	97	98	42	4	0	44	20	0	**362**
Telecommunications	3	3	1	3	7	0	0	4	0	0	**21**
Financial services	54	7	716	19	16	4	1	12	31	2	**863**
Other services	83	29	572	102	18	13	1	108	19	0	**945**
Total	**883**	**293**	**5 822**	**744**	**1 094**	**718**	**272**	**952**	**163**	**224**	**11 165**

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the input-output matrix for South America.
Note: The partial figures may not add up to the totals because of rounding.

Table A3.2
SOUTH AMERICA (10 COUNTRIES): INDIRECT EMPLOYMENT LINKED TO EXPORTS, BY SECTOR, 2005
(Thousands of people)

Sector	Argentina	Plurinational State of Bolivia	Brazil	Chile	Colombia	Ecuador	Paraguay	Peru	Uruguay	Bolivarian Republic of Venezuela	South America
Farming and stockbreeding	157	6	215	54	135	107	58	12	10	2	**757**
Mining and oil	20	77	136	207	86	441	0	1 140	0	1 112	**3 219**
Agro-industry	529	136	1 737	103	616	238	99	704	86	12	**4 261**
Textiles, apparel and footwear	13	5	98	2	50	2	2	110	4	0	**285**
Wood and paper	13	3	90	32	10	3	2	61	1	2	**218**
Chemicals and pharmaceuticals	121	1	278	18	26	23	0	21	2	456	**947**
Rubber and plastic	8	0	20	1	5	0	0	2	1	3	**40**
Non-metallic minerals	1	0	17	0	7	1	0	6	0	3	**35**
Metals and derivatives	11	2	215	26	19	6	0	240	1	103	**622**
Machinery and equipment	9	0	213	3	4	1	9	3	0	1	**243**
Motor vehicles and their parts	45	0	428	1	9	10	0	0	0	1	**495**
Other manufactures	2	1	33	0	12	1	1	102	1	2	**156**
Electricity, gas and water	11	0	1	0	1	0	0	0	0	0	**12**
Construction	0	1	26	0	1	1	0	1	1	0	**31**
Transport	58	15	42	100	13	1	0	30	17	0	**278**
Telecommunications	3	1	0	1	4	0	0	3	0	0	**11**
Financial services	11	3	1 330	19	6	2	0	10	10	1	**1 393**
Other services	158	69	809	14	63	19	1	252	54	1	**1 439**
Total	**1 173**	**321**	**5 685**	**582**	**1 068**	**856**	**173**	**2 697**	**187**	**1 701**	**14 443**

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the input-output matrix for South America.
Note: The partial figures may not add up to the totals because of rounding.

Table A3.3
SOUTH AMERICA (10 COUNTRIES): EXPORTS WITHIN THE GROUPING AND TO THE REST OF THE WORLD, AND EXPORT-LINKED EMPLOYMENT, BY SECTOR, 2005[a]
(Millions of dollars and thousands of people)

Sector or product	Exports			Employment		Ratio of indirect to direct employment
	South America	Rest of world	South American share of total *(percentages)*	Direct	Indirect	
Agriculture and forestry	3 193	17 343	15.5	4 124	745	0.2
Hunting and fisheries	834	1 663	33.4	157	12	0.1
Mining (energy)	3 423	86 904	3.8	225	1 785	7.9
Mining (non-energy)	3 221	36 320	8.1	338	1 433	4.2
Meat and derivatives	704	8 903	7.3	323	606	1.9
Milling, baking and pastas	965	430	69.2	52	39	0.8
Sugar and confectionery	602	4 378	12.1	110	112	1.0
Other food products	4 156	23 191	15.2	682	3 419	5.0
Drinks	761	1 498	33.7	36	56	1.5
Tobacco products	1 197	2 026	37.1	28	28	1.0
Textiles	1 260	2 356	34.8	246	47	0.2
Apparel	902	3 297	21.5	472	190	0.4
Footwear	443	2 567	14.7	203	48	0.2
Wood and products of wood and cork	321	6 399	4.8	353	108	0.3
Wood pulp, paper, printers and publishers	2 098	5 129	29.0	147	110	0.7
Coke, refined oil and nuclear fuel	4 489	31 972	12.3	26	687	26.1
Basic chemicals	3 435	7 141	32.5	44	92	2.1
Other chemicals (excluding pharmaceuticals)	3 233	4 186	43.6	74	157	2.1
Pharmaceuticals	894	918	49.4	26	12	0.4
Products of rubber and plastic	1 728	2 236	43.6	63	40	0.6
Non-metallic mineral products	669	2 759	19.5	116	35	0.3
Iron and steel	2 924	15 878	15.6	88	308	3.5
Non-ferrous metals	2 321	10 761	17.7	88	285	3.2
Metal products	1 194	1 677	41.6	94	30	0.3
Machinery and equipment (excluding electrical machinery)	3 260	7 362	30.7	171	166	1.0
Office equipment (including computer equipment)	354	528	40.1	10	1	0.2
Electrical machinery and appliances	1 326	2 748	32.5	53	37	0.7
Radio, television and telecommunication equipment	1 672	3 168	34.5	24	37	1.5
Medical equipment and optical and precision instruments	337	654	34.0	23	1	0.1
Motor vehicles, trailers and semi-trailers	6 225	12 890	32.6	160	475	3.0
Aircraft and spacecraft	89	4 124	2.1	44	16	0.4
Other transport equipment	447	1 361	24.7	26	4	0.2
Other manufacturing n.e.c.[b] and recycling	727	3 343	17.9	298	156	0.5
Electricity and gas	1 368	45	96.8	12	12	1.1
Construction	36	393	8.4	37	31	0.8
Transport	1 770	6 843	20.5	362	278	0.8
Post and telecommunications	125	534	19.0	21	11	0.5
Finance and insurance	484	971	33.3	35	34	1.0
Business services of all types	705	12 056	5.5	828	1 359	1.6
Other services	1 141	8 138	12.3	945	1 439	1.5
Total	**65 034**	**345 091**	**15.9**	**11 165**	**14 443**	**1.3**

Source: Economic Commission for Latin America and the Caribbean (ECLAC) and International Labour Organization (ILO), on the basis of information from the input-output matrix for South America.
Note: The partial figures may not add up to the totals because of rounding.
[a] The South America data cover the following countries: Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, the Plurinational State of Bolivia and Uruguay.
[b] Not elsewhere classified.

During the first half of 2016, labour markets in Latin America and the Caribbean moved from what had earlier been diagnosed as a slow motion crisis to a more acute stage involving a substantial rise in the unemployment rate and a general deterioration of labour market indicators. In the group of countries for which monthly or quarterly employment information is available, a decline in the employment rate, combined with a rise in the participation rate, translated into a substantial increase in the unemployment rate (1.6 percentage points) between the first half of 2015 and the first half of 2016, taking the indicator up to 9.2%. At the same time, differences between subregions widened, with a deterioration in the countries of South America, and especially Brazil, contrasting with far more positive trends in those of Central America.

Global supply chains and their impact on productive employment and decent work are the subject of the second part of this report. The countries of Latin America and the Caribbean participate less in global supply chains than other regions. On the whole, the exports of the region's countries generate few backward linkages, a reflection of the fact that the products they sell abroad are, on average, not highly processed. Although linkages are relatively weak, exports have a greater impact on indirect employment (generated by forward and backward linkages) than on direct employment. The report also analyses some examples of countries in the region that have achieved economic upgrading in global supply chains, which in turn can translate into social upgrading via increased job creation, higher wages and greater formality. It is found, though, that this link is not automatic, since the results in terms of decent employment also depend on whatever other economic, employment and education policies accompany the process.

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