GLOBAL VALUE CHAINS, TRADE AND EMPLOYMENT IN MERCOSUR: A STRUCTURAL DECOMPOSITION ANALYSIS[1]

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ABSTRACT

In this research, we verified the employment developments in Mercosur in the context of the "slowbalization" events after the 2008 crisis. Using data obtained from EORA26 MRIO for a sample of 189 countries between 1995 and 2016, we decompose Mercosur jobs according to the destination of its production (domestic consumption, traditional trade, and trade in GVCs) and according to the trading partner. Then, in a structural decomposition exercise, we measured how variations in labor productivity, economic upgrading, interindustry structure, and final demand affected the growth of the employment rate. We found out that Mercosur employment related to international trade grew at a higher rate than those for domestic consumption in the pre-crisis period, driven mainly by foreign demand and a marginal effect of the interindustry structure. Nonetheless, after the 2008 crisis, most of the jobs created were those related to activities for domestic consumption. We also found evidence of a drastic reduction in the role of foreign demand and signs of adverse effects of the interindustry structure on employment growth.

Keywords: global value chains, employment, input-output analysis, structural decomposition, Mercosur

JEL classification: F14, F15, F66

1. INTRODUCTION

It is widely cataloged in the international trade literature that the globalization movement has imprinted, mainly from the 1980s onwards, an expansion of trade flows as rarely seen in the history of recent capitalism (Milberg & Winkler, 2013; Baldwin, 2016; World Bank, 2019; 2021). The share of global trade in global output increased from 14% in 1970 to 30% in 2018, mostly between 1986 and 2008. Following the same trend, the share of trade in global value chains (GVC) in global trade rose from 36% to 55%, also remarkably after the 1980s (Antràs, 2020).

However, since the 2008 crisis, there has been a slowdown in several indicators related to international trade. The "era of hyperglobalization" (as it is commonly referred to by international bodies) has faced an uncertain context, marked by the rise of trade protectionism, the emergence of the discussion about reshoring strategies (De Backer et al., 2016; De Backer & Flaig, 2017), political discussions about the social and environmental effects of offshoring (Glachant, 2013; Taglioni & Winkler, 2016; Bacchetta & Stolzenburg, 2019; Hollweg, 2019) and the stagnation of the share of international trade in global production (Wang et al., 2017;

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Li et al., 2019). Notoriously, the discussion reached international bodies under the title of "slowbalization" or, for those less optimistic about the resilience of this production paradigm, "de-globalization" (Antràs, 2020; Meng et al., 2021).

Many factors are behind the dynamics of international trade in the last forty years. For our purpose in this work, we want to highlight the process of trade liberalization that operated in three main ways: through the unilateral reduction of tariffs and tariff barriers, through the internationalization of institutional aspects with the wide adoption of the results of the rounds of negotiations at the global level and with the strengthening of regional integration agreements in different formats (ILO, 1997). As much as the beginning of this process can be dated back to the 1940s with the establishment of the first rounds of the General Agreement on Tariffs and Trade (GATT), the conclusion of the Uruguay round in 1994, and the creation of the World Trade Organization (WTO) directly impacted the trend of expansion multilateral, regional, bilateral, and unilateral trade regimes.

All over the world efforts were made aiming to stimulate international cooperation and regularize the investment environment[4]. Not differently, Latin America witnessed a rebirth of actions encouraging new attempts at regional integration with the establishment of Mercosur in the first half of the 1990s. Over time, these agreements began to encompass non-exclusively trade topics, with themes of the most varied range, among which, are relevant to the labor market. Indeed, economic trade theory (Melitz, 2003; Grossman & Rossi-Hansberg, 2008) and the literature on GVCs (Barrientos et al., 2011) have pointed out that the opening of the economy to international markets has important effects on the labor market[5].

In our work, we are restricting our object of study to Mercosur. We are interested in studying employment developments, considering the disruptive impacts of the slowbalization period. We performed two exercises. Firstly, we break down Mercosur employment based on the type of production, (i.e. according to their destination). In doing so, we decompose the production aimed at domestic consumption and trade channels, the latter separated into traditional trade (of final goods and services) and GVCs (intermediate goods and services). For our purposes, we further qualified the participation in international trade according to the bilateral flows carried out with five trading partners (in addition to the rest of the world). Then, using the structural decomposition method, we verified to what extent the evolution of employment in Mercosur is related to four factors: the effects of changes in labor productivity, participation in production chains (or economic upgrading), the interindustry structure, and the changes in the final demand (domestic and foreign, considering the different trade partners).

But why study employment developments in Mercosur? Firstly, the history of the countries that make up Mercosur is marked by macroeconomic cycles and a heterogeneous labor market characterized by high rates of informality and low capabilities (ILO, 1997). Attempts of integration beyond the commercial sphere, encompassing social aspects, have been implemented as an attempt to synchronize national labor policies (ILO, 1997; Kon, 2003;

[4] To provide some context, the European continent saw the consolidation of the European Union in 1992 and its subsequent expansion throughout the 2000s. In the same year in Asia, six countries signed the agreement that gave rise to the Association of Southeast Asian Nations (ASEAN), later expanded with the entry of four new members. In North America, the Free Trade Agreement (FTA) signed between Canada and the United States in 1988 took the first step that would, with Mexico's accession in 1994, become the North American Free Trade Agreement (NAFTA).

[5] For a review of the neoclassical international trade literature, to what extent these models can be used to understand international trade relations in the "era of GVCs" and its labor markets implications, see Inomata (2017) and Hummels et al. (2018).

Cacciamali, 2005; Martins, 2019)[6]. However, the effects of these measures are still divergent and there is a lack of evidence about the response of labor markets to regional policies. Caceres (2011) points out that there is a relevant interrelation between the labor markets of the Mercosur countries and economic shocks, which encourages us to verify the impacts of international trade on employment in the context we are exposing.

Secondly, a few recent studies that set out to understand the impact of international trade on employment suggest that the impacts are heterogeneous between developed and developing countries. Foster-McGregor et al. (2015) analyses a sample of 40 countries in the period between 1995-2009, and concludes that the impact of offshoring on the labor demand elasticities was mainly negative. The most affected were the workforce with low and medium qualification levels in developing countries and for workforce with a high level of qualification in developed economies. In the same direction, Szymczak and Wolszczak-Derlacz (2021) estimated the effects of international trade on labor demand in 43 countries between 2000-2014. They concluded that different types of international insertion (trade in final or intermediate goods) influence labor demand in different ways, varying according to the countries' income level and the education level of the workforce. Furthermore, Farole et al. (2018) point out that while total exports had a positive impact on employment between 2001-2014, after isolating the specific impact of GVC integration on the demand for jobs, there is evidence that it generates negative effects on the demand for labor, the results being dependent on the structural conditions of the countries in analysis.

There is also evidence of different impacts of international trade on employment in the post-2008 crisis period between developed and developing countries. Portella-Carbó (2016) examines in detail the experiences of Spain, Germany, Italy, France, the United Kingdom, the United States, Japan, and China between 1995 and 2011. The exercise concludes that the effects of international trade on domestic employment vary between countries and that, after the crisis in 2008, intermediate goods production chains contributed negatively to employment in all countries, except Germany. Foster-McGregor (2019) studies developments in employment generation as a function of domestic demand and traditional trade and in GVCs in six Asian countries (India, Indonesia, Japan, China, South Korea, and Taiwan) in the period between 2000 and 2014. In addition to being heterogeneous, the results indicate that the period after 2008 reduced the role of foreign demand for employment growth and altered the previously observed effects of labor productivity and the countries' industrial structure on employment growth.

The empirical strategy adopted in our work dialogues with the literature that measures international trade in value-added and estimates trade flows based on multi-regional input-output matrices (MRIO). Our starting point is the works of Los et al. (2015) and Foster-McGregor (2019), who also proposed to study the developments in employment as a function of final demand. We employ the production decomposition method of Wang et al. (2017) to quantify Mercosur production according to demand and trade partner. Then, to understand the factors responsible for the evolution of employment in Mercosur, we carried out the structural decomposition exercise proposed by Foster-McGregor (2019). The data obtained in the EORA26 MRIO for a group of 189 countries and 26 sectors provide us with the necessary data

[6] The first effort to build a directory for discussions related to the labor market in Mercosur can be referenced to the Working Subgroup (WSG) No. 11, which was subordinate to the Common Market Group (the executive branch) whose first section took place in 1992. Later, the Ouro Preto Protocol (1994) defined the organic structure of Mercosur during its implementation period and formalized in its executive body the Economic and Social Advisory Forum, dedicated to discussions related to the labor market (ILO, 1997).

to trace production by origin and destination, as well as the construction of information by trade bloc.

Behind our analysis, we have two hypotheses that we want to verify more closely with the structural decomposition exercise. Firstly, we expect that changes in international trade during the "slowbalization" period will have negative effects on the interindustry structure of Mercosur, mainly due to changes in sourcing patterns and the weakening of potential gains via the spillover effect of trade participation. Secondly, Feenstra & Hong (2007) and Foster-McGregor (2019) point out that the impact of final demand on employment is a function of productivity levels and rates[7]. Additionally, we know that exporting firms tend to be more productive (Melitz, 2003). Besides, there is a body of evidence in the literature that demonstrates the biased relationship between employment in exporting sectors and level of qualification (Milberg & Winkler, 2013; Farole et al., 2018; Hollweg, 2019). As our methodology decomposes employment growth as a function of final demand, we have reason to expect that the relationship between productivity and foreign demand is decisive in employment developments.

We believe that our efforts can contribute to the literature in some ways. First, our study estimates the jobs created in Mercosur according to the production component, discriminating international trade in final and intermediate goods and services. Secondly (a direct consequence of the first one), our study goes deeper by considering the different trading partners for the breakdown of these jobs in the different spheres of international trade. Thirdly, the structural decomposition sheds light on the role of a set of intra-bloc structural factors and final demand on the creation of jobs in Mercosur in a way that has not yet been estimated. Finally, we studied how the changes in the global context after 2008 influenced the results previously obtained.

The work is organized as follows. In addition to this introduction, section 2 describes our empirical strategy. Section 3 points out the data used, as well as some stylized facts. Section 4 presents the results. We start by discussing the entire sample and then look at the implications for the post-crisis period. Section 5 concludes.

2. METHODOLOGY

We want to identify the effects of Mercosur's international trade on domestic jobs, distinguishing between traditional trade and GVCs with different trading partners. To do so, we will start by assuming that the output of a sector in an economy is determined using domestic factors of production (capital and labor) and intermediate inputs (which can be of domestic or foreign origin). In turn, the output generated by sectors of an economy can be used as final demand or as an intermediate input to produce other goods.

Let us initially consider a set of G countries and K sectors, where i denotes the home economy and j the destination economy such that $i, j \in \mathrm{G}$. Also, we will call s the origin sector and t the destination sector, such that $s, t \in \mathrm{K}$. The equilibrium condition between resources and input uses can be written as:

[7] To establish this relationship, the authors rely on the so-called "Denison effect". The reasoning behind this effect suggests that when factors of production are reallocated from a low-productivity industry to a high-productivity industry, the growth in the economy's aggregate productivity tends to mitigate a portion of the jobs created with the expansion of final demand since the labor requirements for producing a unit of output are smaller (Feenstra & Hong, 2007).

$$y_i(s) = \sum_j \sum_r m_{ij}(s,t) + \sum_j f_{ij}(s) \quad (1)$$

In equation (1), $y_i(s)$ is the value of output of sector *s* in economy *i*, $f_{ij}(s)$ is the value of final goods and services traded by the set country/sector of origin to final use in the destination economy and $m_{ij}(s,t)$ is the value of intermediate goods and services sold by the source country for use in the destination economy. Following Miller & Blair (2009), equation (1) can be presented in a matrix form from the basic equilibrium equation of an open input-output model, such that:

$$\mathbf{Y} = (\mathbf{I} - \mathbf{A})^{-1}\mathbf{f} \Rightarrow \mathbf{Y} = \mathbf{Bf} \quad (2)$$

where $\mathbf{Y}$ $(kn\ x\ 1)$ is a vector containing the total production, $\mathbf{A}$ $(kn\ x\ kn)$ is the global direct technical coefficient matrix, whose elements $a_{i,j}(s,t) = m_{i,j}(s,t)/y_j(t)$ capture the ratio of intermediate inputs per unit of output. $\mathbf{f}$ $(kn\ x\ n)$ is the final demand matrix, where $f_{i,j}(s,t)$ is the demand of country *j* for the final products and services of country *i*. $\mathbf{I}$ $(kn\ x\ kn)$ is the identity matrix and e $\mathbf{B} = (\mathbf{I} - \mathbf{A})^{-1}$ is the inverse global Leontief matrix with dimension $kn\ x\ kn$, which captures the output that is generated at each stage during the production process of a final product unit.

Los et al. (2015) assume that the amount of output generated in a sector depends on the amount of work, capital and intermediate inputs used in production. Denoting $y_i(s)$ e $l_i(s)$ as the output and employment of sector *s* in economy *i*, respectively, it is possible to define $p_i(s)$ as the employment necessary for the production of a unit of final product, that is, $p_i(s) = l_i(s)/y_i(s)$, the elements of the column vector $\mathbf{p}$ $(kn\ x\ 1)$. It is possible to estimate the required employment for all stages of production by post-multiplying $\hat{\mathbf{p}}$ $(kn\ x\ kn)$, the diagonal matrix containing the employment coefficients on its main diagonal, by **Bf,** the output needed to produce the final goods and services:

$$\mathbf{k} = \hat{\mathbf{p}}(\mathbf{I} - \mathbf{A})^{-1}\mathbf{f} = \hat{\mathbf{p}}\mathbf{Bf}. \quad (3)$$

Each element $k_{i,j}(s,t)$ of the matrix $\mathbf{k}$ $(kn\ x\ kn)$ indicates the employment required in each of the countries/sectors in the world to supply the demand both in the sectors of the country of origin and in other upstream sectors (domestic and foreign) that are supplying inputs for the final production in the country/sector of origin.

Equation (3) is the basis for estimating jobs related to domestic and foreign production. We will follow Foster-McGregor (2019) and expand the results obtained in (3) by decomposing the $\hat{\mathbf{p}}\mathbf{Bf}$ matrix considering the developments of the decomposition proposed by Wang et al. (2017). In this way, we will differentiate the activities produced according to their use, whether they are intended for purely domestic demand (without involving international trade), traditional international trade (export of final goods) and trade in GVC (export of intermediaries, involve the re-importation of these in more advanced stages of production). In this sense, we can rewrite the resource-use balance equation in (1) as:

$$\mathbf{y} = \mathbf{Ay} + \mathbf{f} = \mathbf{A^D y} + \mathbf{f^D} + \mathbf{A^F y} + \mathbf{f^F} \Rightarrow \mathbf{A^D y} + \mathbf{f^D} + \mathbf{E}, \quad (4)$$

where $\mathbf{A^D}$ $(kn\ x\ kn)$ is a diagonal matrix of domestic technical coefficients, $\mathbf{A^F}$ $(kn\ x\ kn)$ is a matrix obtained from $\mathbf{A^F = A - A^D}$ and indicates the foreign technical coefficients. Similarly, $\mathbf{f^D}$ $(kn\ x\ kn)$ is a matrix of final goods and services produced for domestic consumption and $\mathbf{f^F = f - f^D}$ is a $kn\ x\ kn$ matrix of final goods and services for exports. $\mathbf{E}$ $(kn\ x\ kn)$ is the matrix of raw exports. By defining $\mathbf{L = (I - A^D)^{-1}}$ as the inverse domestic Leontief matrix, it is possible to rearrange (4) so that, when pre-multiplying by $\hat{\mathbf{p}}$, we get:

$$\mathbf{k = \hat{p}Bf = \underbrace{\hat{p}Lf^D}_{k^D} + \underbrace{\hat{p}Lf^F}_{k^E} + \underbrace{\hat{p}LA^FBf}_{k^I}} \qquad (5)$$

Equation (5) breaks down the employment used in each country/sector according to its destination. Specifically, the employment generated domestically during production for domestic consumption (k^D), the employment generated domestically during production for traditional exports (k^E) and employment generated through trade in GVCs (k^I). Thus, variations in employment induced by each component are a function of three sets of factors: labor requirements ($\hat{\mathbf{p}}$), the structure of inputs ($\mathbf{L}$, $\mathbf{B}$ e $\mathbf{A^F}$) and the final demand ($\mathbf{f}$, $\mathbf{f^D}$ e $\mathbf{f^F}$).

Through the application of structural decomposition techniques, it is possible to verify how each of these sets of factors contributed to the evolution of the jobs generated. To do so, we define the employment growth rate due to final demand between two time periods as:

$$\mathbf{1 + \dot{k} = \frac{k_1}{k_0} = \frac{\hat{p}_1 B_1 f_1}{\hat{p}_0 B_0 f_0} = \frac{\hat{p}_1 B_1 f_1}{\hat{p}_0 B_1 f_1}\ x\ \frac{\hat{p}_1 B_1 f_1}{\hat{p}_0 B_0 f_1}\ x\ \frac{\hat{p}_1 B_1 f_1}{\hat{p}_0 B_0 f_0}} \qquad (6)$$

Equation (6) will be expanded to capture the effects of changes in labor productivity and economic upgrading on employment generation. Denoting $v_i(s)$ as the value-added of sector *s* in economy *i*, we can define labor productivity (i.e. value-added per employment) as $lp_i(s) = v_i(s)/l_i(s)$. Dividing by $y_i(s)$ and rearranging, we get $l_i(s)/y_i(s) = l_i(s)/v_i(s)\ x\ v_i(s)/y_i(s)$ equivalent, in matrix algebra, to the expression:

$$\hat{\mathbf{p}} = \hat{\mathbf{q}}\hat{\mathbf{w}} \qquad (7)$$

What we are pointing out with equation (7) is that the labor requirement (recalling, the ratio of employment per output) of sector *s* in economy *i* is equal to the inverse of labor productivity multiplied by the ratio of value-added per output (our proxy for economic upgrading). Substituting (7) into (6) and applying the logarithm, we can obtain the (approximate) employment growth rate between two periods as a function of final demand, that is:

$$\begin{aligned} \dot{\boldsymbol{k}} \approx \ln(\mathbf{1} + \dot{\boldsymbol{k}}) &\approx \ln\left(\frac{\boldsymbol{k_1}}{\boldsymbol{k_0}}\right) \\ &\approx \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B_1 f_1}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_1\boldsymbol{B_1 f_1}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B_1 f_1}}{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_0\boldsymbol{B_1 f_1}}\right) \\ &+ \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B_1 f_1}}{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B_0 f_1}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B_1 f_1}}{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B_0 f_0}}\right) \end{aligned} \qquad (8)$$

Therefore, the employment growth rate can be defined as the sum of the four terms in (8), which represent the variation in employment as a function of the effects arising from: the variation in labor productivity ($\hat{\mathbf{q}}$); the variation in the share of value-added in production ($\hat{\mathbf{w}}$) (i.e., economic upgrading); the variation of the interindustry structure (**B**); and the variation in final demand (**f**). It is important to point out that the variation component of the interindustry structure includes the role of changes in the commercial structure in intermediate goods and includes factors such as variations resulting from the substitution of production factors, technological change, and patterns of international insertion in the productive chains.

As a final step, we can apply the decomposition described in (8) in the terms specified in (5), so that:

$$\dot{\boldsymbol{k}}^{\boldsymbol{D}} \approx \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{D}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{D}}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{D}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{D}}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{D}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{D}}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{B}_1\boldsymbol{f}_1^{\boldsymbol{D}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{B}_0\boldsymbol{f}_0^{\boldsymbol{D}}}\right) \tag{9a}$$

$$\dot{\boldsymbol{k}}^{\boldsymbol{F}} \approx \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{F}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{F}}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{F}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{F}}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{F}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_0\boldsymbol{f}_1^{\boldsymbol{F}}}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{f}_1^{\boldsymbol{F}}}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_0\boldsymbol{f}_0^{\boldsymbol{F}}}\right) \tag{9b}$$

$$\begin{aligned}\dot{\boldsymbol{k}}^{\boldsymbol{I}} \approx \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}\right) \\ + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_1\boldsymbol{L}_0\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_0\boldsymbol{A}_0^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}\right) \\ + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_0\boldsymbol{A}_0^{\boldsymbol{F}}\boldsymbol{B}_0\boldsymbol{f}_1}\right) + \ln\left(\frac{\hat{\boldsymbol{q}}_1\hat{\boldsymbol{w}}_1\boldsymbol{L}_1\boldsymbol{A}_1^{\boldsymbol{F}}\boldsymbol{B}_1\boldsymbol{f}_1}{\hat{\boldsymbol{q}}_0\hat{\boldsymbol{w}}_0\boldsymbol{L}_0\boldsymbol{A}_0^{\boldsymbol{F}}\boldsymbol{B}_0\boldsymbol{f}_0}\right)\end{aligned} \tag{9c}$$

Unlike (9a) and (9b), the equation (9c) explains the effects of the matrix $\mathbf{A^F}$ of foreign technical coefficients (i.e., intermediate inputs per unit of imported output) and of the global matrix of Leontief (**B**). Despite being measured, the approach we adopted will follow Foster-McGregor (2019), in such a way that the effects of the interindustry structure will be presented by adding the three components that represent the structure of inputs (**L**, **B** e $\mathbf{A^F}$). We are doing this with the purpose of facilitating direct comparison with the results of other components.

3. DATA

The data used to estimate the employment by the different production components and for the structural decomposition were mainly obtained from the EORA26 global input-output matrix. With annual periodicity, the data cover a set of 189 countries (plus the rest of the world) and 26 sectors[8] during the period from 1995 to 2016. MRIO data provide information for different countries and their sectors regarding the flow of intermediate goods and services, final demand (domestic and foreign) for different components, value-added and output. Nominal

[8] Following the International Standard Industrial Classification of All Economic Activities (ISIC, ver. 4).

data were deflated using the US$ GDP deflator from the World Development Indicators (WDI). In addition, formal employment data by country was obtained from the International Labor Organization (ILO).

For our purposes, the sectors were aggregated at the national level to then partition the matrices according to blocs of trading partners. In addition to Mercosur - our bloc of interest - data were aggregated for six trade partners: European Union (EU28), North America Free Trade Agreement (NAFTA), Association of Southeast Asian Nations (ASEAN), East Asia Countries (EASIA), Latin America Countries (L.A.) and the Rest of the World (RoW)[9].

Table 1 presents the employment levels of Mercosur and its trading partners at the beginning and end of the analysis period, as well as employment by production component specified according to equation (5). In 1995, domestic consumption represented a large part of employment in all trade blocs, reaching more than 94% (107 million) of jobs in Mercosur and, on average, 89% of jobs in trading partners, except Asean (70 %). In 2016, production for domestic consumption continued to account for most of the jobs, although its share in Mercosur and its partners reduced. Conversely, jobs created for domestic consumption in NAFTA increased over the period.

Table 1 – Employment levels in Mercosur and trade partners (million)

Trade bloc	Total employment			Employment by productive activity								
				Domestic consumption			Traditional trade			GVC trade		
	1995	2016	Δ	1995	2016	Δ	1995	2016	Δ	1995	2016	Δ
Mercosul	113.4	173.7	60.3	107.0	156.5	49.5	1.7	4.9	3.3	4.7	12.3	7.5
Asean	389.7	560.7	171.0	274.1	371.8	97.8	41.5	61.1	19.5	74.1	127.8	53.7
EASIA	84.9	150.5	65.7	75.9	127.2	51.4	3.3	8.3	4.9	5.7	15.0	9.4
EU28	515.9	752.8	236.9	462.1	623.3	161.1	22.4	45.7	23.3	31.3	83.8	52.5
Latin America	735.7	844.8	109.0	647.9	715.1	67.1	17.2	27.9	10.6	70.5	101.8	31.3
NAFTA	6.6	10.3	3.7	6.0	9.5	3.5	0.2	0.2	0.0	0.4	0.6	0.2

Source: own elaboration based on estimates with data from EORA26 and ILO.

Concerning trade channels, GVC trade was responsible for the majority of jobs in 1995. In Mercosur, this means something around 4% (4.7 million). Among trading partners, this channel has been important for Asean countries (19%), reflecting the specialization of these countries in the production of parts and components. To a lesser extent, we see other trading partners such as Latin American countries (11%), EASIA, NAFTA, and EU28 (6%). Data for 2016 indicate that most jobs related to domestic consumption migrated to GVCs trade, reinforcing this scenario. Finally, traditional trade was responsible for a small part of jobs in Mercosur (close to 1%), while it was most expressive in Asean (11%), EU28, and EASIA (4%). Over time, there was a timid expansion of jobs in this channel, mainly in EASIA and EU28, in addition to Mercosur.

[9] For more information regarding the construction of trading partner blocs, see Appendix A.

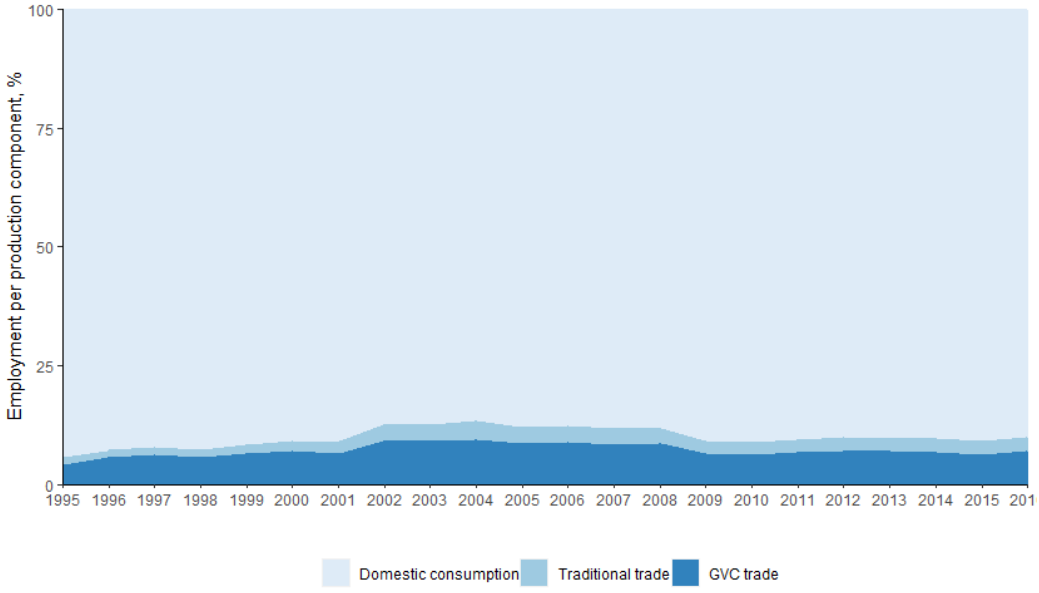
4. RESULTS AND DISCUSSION

This section is divided into three parts. The first one presents the evolution of job creation in Mercosur according to the different productive activities and their destination. In sequence, we present the results of the structural decomposition for the factors affecting the employment growth rate in the different components of Mercosur production. In the last part we deepen the previous discussion, taking into account the effects of the 2008 economic crisis.

4.1 EVOLUTION OF EMPLOYMENT IN MERCOSUR BY DESTINATION OF PRODUCTION AND TRADE PARTNER

Figure 1 shows the evolution of Mercosur's employment level throughout the entire period of analysis. Activities focused on domestic consumption accounted for most domestic jobs (on average 90.1% or 132.9 million). The remaining jobs are allocated to activities related to international trade, of which 2.7% refer to traditional trade and 7.2% to GVC trade, something close to 14.7 million. The period between 2001 and 2008 was marked by greater job creation in activities related to international trade. In this interval, the average share of international trade in total employment was 12% (17.4 million), of which 3.4 p.p. (4.9 million) are related to traditional trade and the remaining 8.6 p.p. (12.5 million) to GVCs trade.

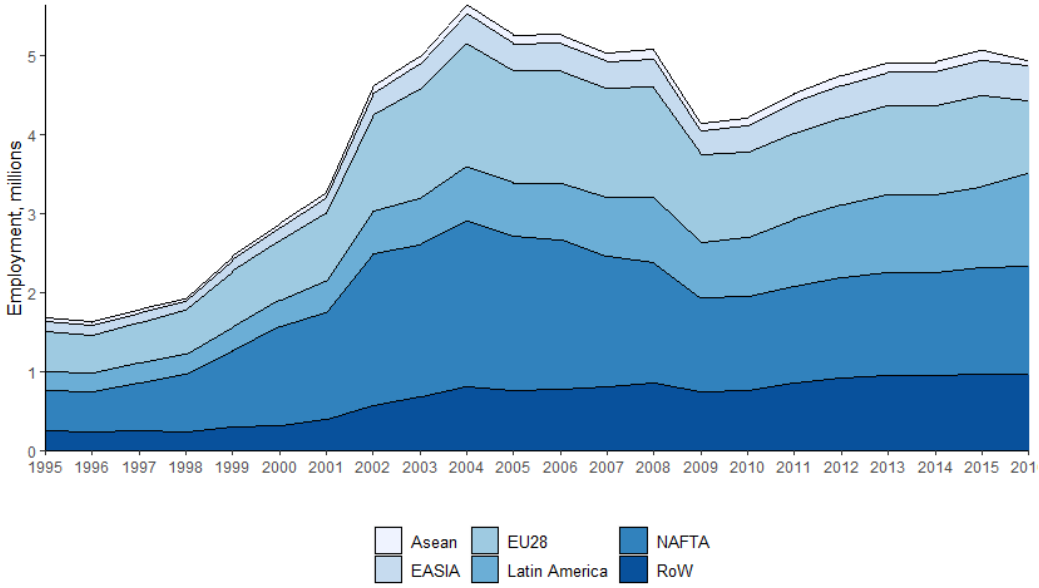
Figure 1 – Evolution of employment in Mercosur by productive activity



Source: own elaboration based on estimates with data from EORA26 and ILO.

We want to take a closer look at the evolution of jobs related to international trade. In doing so, we see that the dynamics by type of trade are different, and it is also possible to visualize some trends in relation to trade between blocs. Regarding traditional trade (Figure 2), three trading partners are responsible for more than 75% of the jobs created in the period: NAFTA (33.1%), European Union (26.1%), and Latin American countries (15.5%). On a smaller scale, exchanges with both Asian partners account for less than 9.4%.

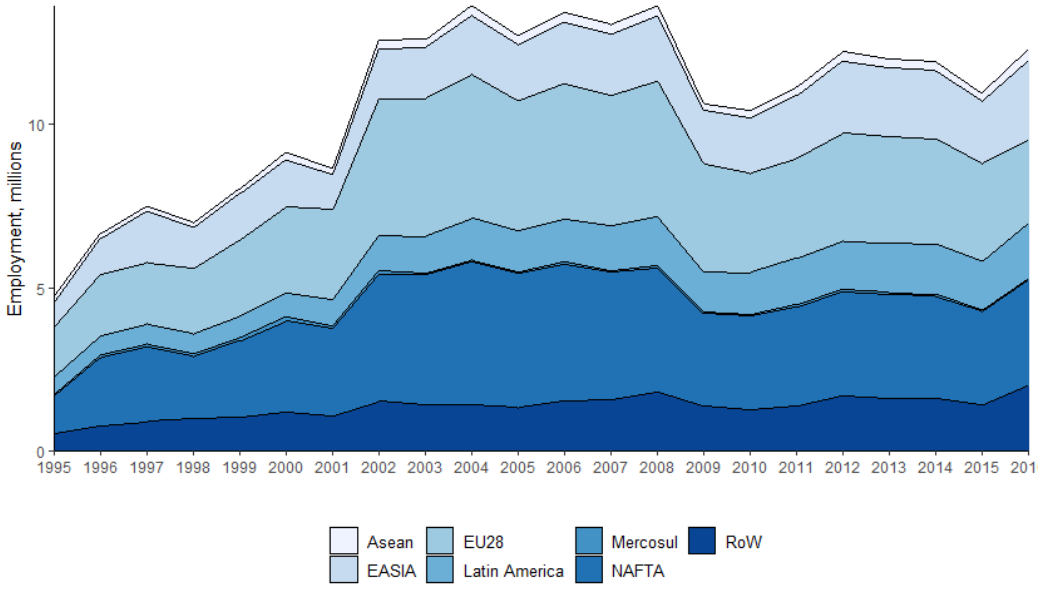
Figure 2 - Evolution of employment due to traditional trade in Mercosur by trade partner



Source: own elaboration based on estimates with data from EORA26 and ILO.

Trade in GVCs (Figure 3) has different implications for employment. Transactions with NAFTA (28.7%) and the European Union (29.2%) still account for a large part of the jobs created. However, unlike the previous scenario, Asian partners have greater importance (around 18.6%), largely due to trade with EASIA countries (15.9%). A small portion (close to 0.7%, or a little more than 73 thousand jobs) relates to re-imports of inputs to Mercosur itself.

Figure 3 - Evolution of employment due to GVC trade in Mercosur by trade partner



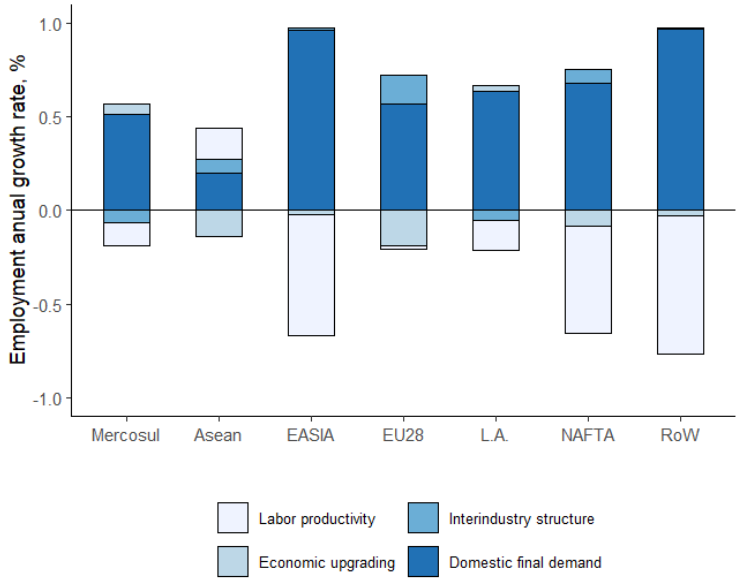
Source: own elaboration based on estimates with data from EORA26 and ILO.

4.2 DECOMPOSITION RESULTS: FACTORS BEHIND EMPLOYMENT DEVELOPMENTS IN MERCOSUR

In the previous section, we verified the evolution of jobs in Mercosur regarding the different production destinations. We also detail how these developments differed across both trade channels, taking into account the relations with each trading partner. Now, we discuss the results of the decomposition of employment growth among the productive activities from 1995 to 2016. This section is organized as follows. Firstly, we present Mercosur's results compared to results obtained for trading partners. Then, we detail the impact of trade flows with each trading partner (the foreign demand) on the Mercosur employment growth rate.

Figure 4 presents the results of the decomposition of the growth rate of employment as a function of domestic consumption. In most trade blocs, the growth rate of this component of production is more modest compared to the rate of employment growth of the trade channels (the exception being the Latin American countries). In Mercosur, jobs grew at a rate of 0.38% per year, behind the European Union and other Latin American countries, which account for the highest growth rates, 0.5% and 0.4% respectively. Lower rates were observed in other trading partners: around 0.3% in EASIA and Asean and 0.1% in NAFTA. In common, we found that labor productivity and final demand (in this case domestic demand) are components that had a large contribution to employment growth. In fact, in some partners such as NAFTA and EASIA these effects almost offset each other. The effects of economic upgrading and interindustry structure are marginal and do not have a clear pattern. In Mercosur, there is a positive effect of the first component and a negative effect of the latter, a pattern that is also seen in Latin American countries. For the other trading partners, the opposite is observed.

Figure 4 - Decomposition of employment growth due domestic consumption from Mercosur and trade partners

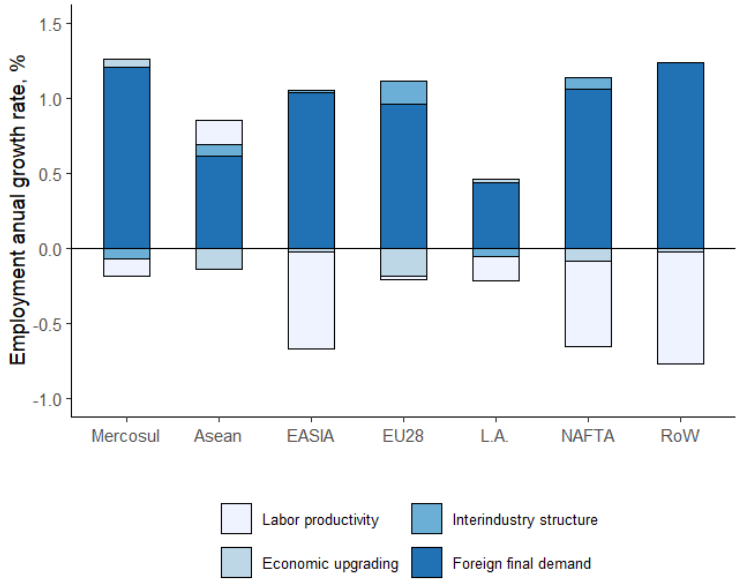


Source: own elaboration based on estimates with data from EORA26 and ILO.

Now we turn to the results related to production for both trade channels. Figure 5 shows the results for the traditional trade. The growth rate of employment varied between 0.3% and 1.1% per year, with Mercosur standing out ahead, followed by the European Union (0.91%)

and the ASEAN countries (0.71%). The variation in foreign final demand is responsible for a large part of the result obtained, mitigating the adverse outcome arising from labor productivity.

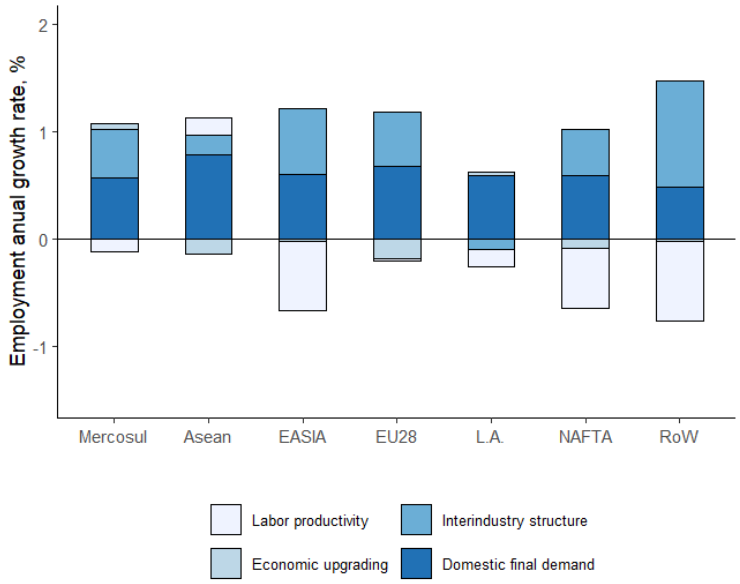
Figure 5 - Decomposition of employment growth due to traditional trade from Mercosur and trade partners



Source: own elaboration based on estimates with data from EORA26 and ILO.

As regards employment growth due to trade in GVCs, rates vary between 0.3% and 1%, with a major impact on Mercosur (0.95%). The labor markets of ASEAN and European Union countries are also among those that have benefited most from intermediary trade (they grew by around 0.98%). Again it was possible to verify the inverse relationship between changes in labor productivity and final demand in Mercosul and most trading partners, the latter being the main factor behind employment growth. Specifically, the interindustry structure plays a significant role in the generation of employment in this market. In Mercosur and most of its trading partners, participation in GVCs affected the productive structure in such a way that it generated positive effects on employment (positive effects vary between 0.2% and 0.6%), with Latin America being the exception (-0.1%). This may be an indication that integration into GVCs has influenced the production structure of these countries, in such a way that it has been possible to extract some positive spillover effects.

Figure 6 - Decomposition of employment growth due to GVC trade from Mercosur and trade partners

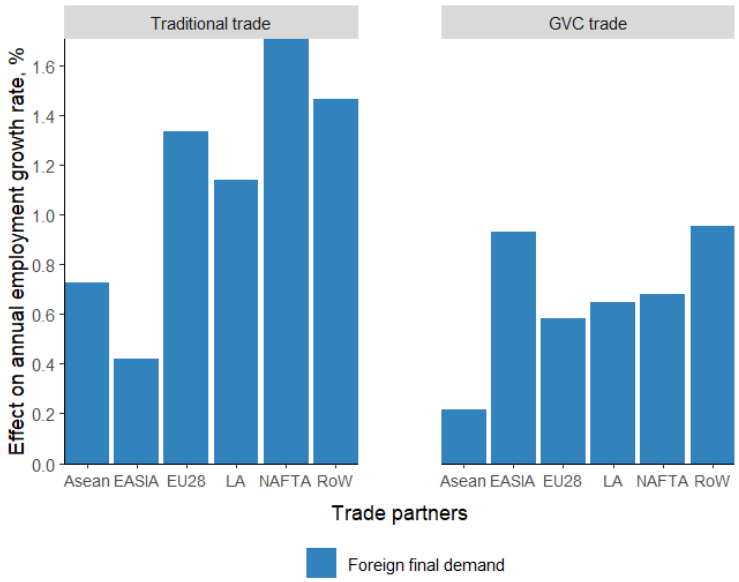


Source: own elaboration based on estimates with data from EORA26 and ILO.

Until then, we have limited ourselves to evaluating the results of the decomposition for both Mercosur and its trading partners in a comparative way. In light of the results presented so far, we now take a closer look at Mercosur's bilateral trade. We have seen that foreign demand played an important role in both trade channels. Figure 7 shows in detail how traditional trade with each partner affected the employment growth rate. The decomposition exercise allows us to ascertain that trade of final goods with NAFTA (1.7%), the European Union (1.3%) and Latin American countries (1.1%) were the main contributors to the employment growth through this trade channel. Regarding Mercosur's participation in GVCs, employment grew at a faster pace in trade activities related with EASIA countries (0.9%), NAFTA (0.7%), and Latin American partners (0.6%).

The results are in line with those obtained by Foster Mc-Gregor (2019). They support our argument based on Feenstra & Hong (2007) that a large part of employment developments is a response to movements of labor productivity and foreign final demand. Many factors may be behind the effects of changes in labor productivity. On the one hand, it is necessary to consider the effects arising from technological bias. Melitz (2003) points out that productivity gains arising from technological improvements can reduce the demand for labor from exporting firms. Due to the production dynamics itself, this effect tends to spread to other domestic supplying firms, generating a cascade effect on all production (Farole et al., 2018). In the context of GVCs, this dynamic becomes even more complex, in which this "productivity effect" must be evaluated in fragmented production regimes that generate new relationships between capital and labor on international scales (Grossman & Rossi-Hansberg, 2008). On the other hand, issues related to work heterogeneity, labor market frictions and informality have been explored in trade literature (Aleman-Castilla, 2020). These effects become even more impactful in a context of greater globalization, in which labor demand elasticities have become more elastic and sensitive to market fluctuations (Foster-McGregor et al., 2015).

Figure 7 – Effect of foreign final demand on Mercosur's employment by trade channel and partner



Source: own elaboration based on estimates with data from EORA26 and ILO.

The role of economic upgrading and interindustry structure also find support in the theory. We found evidence that economic upgrading is not being translated into new jobs. Apart from timid contributions in Mercosur and Latin American countries, the evolution of this component did not contribute to the generation of new jobs. Taglioni and Winkler (2016) state that verifying economic upgrading is not a necessary or sufficient condition to guarantee social improvements. The reasoning is that the impact of progress in production chains on social development depends on several factors that must be considered. It must be identified where the country, industry or firm is positioned in the chain, understanding that different production chains involve different combinations of capital, labor and technology, generating a heterogeneous effect on the labor market. Furthermore, the different spillovers generated by trade flows in a given sector may differ between countries. Regarding the interindustry structure, Mercosur's trading partners were mostly positively influenced by the gains from productive change. Considering both trade channels, international insertion has had a positive effect on supply components (production endowments, technology), changing the production structure and demanding new jobs. As Foster-McGregor (2019) points out, this result may indicate the densification of production chains and the reduction of dependence on imports in the form of reducing upstream intermediate imports and increasing the use of domestic upstream intermediate inputs.

We draw attention to the contribution of trade in GVCs to job creation as a whole. As we have seen, these activities are responsible for the highest employment growth rates in Mercosur and also in almost all of its trading partners (except Latin America). Now, evidence indicates the importance of this trade channel compared to traditional trade. Our findings also suggests that participation in GVCs has altered the industrial composition in Mercosur in such a way that spillover effects can contribute to employment growth.

4.3 EMPLOYMENT GROWTH IN TIMES OF CRISIS: DEVELOPMENTS IN THE "SLOWBALIZATION" ERA

In this section, we reconsider some previous results in light of the advances in the global economy after the 2008 crisis. As we pointed out, the period of "slowbalization" refers to the reduction in the dynamism of trade flows and the change in the pattern of trade (Antràs, 2020; Meng et al., 2021). Furthermore, we know that productive activities linked to international trade are more sensitive to product cycles, especially those linked to GVCs (Wang et al., 2017). Therefore, we argue that it is pertinent to expect that this situation has affected the labor market in its various spheres, one of which is job creation. The following results give us some evidence regarding the developments.

As we saw in section 4.1, even though a large part of jobs in Mercosur are generated in activities for domestic consumption, the period between 2000 and 2008 was marked by the expansion of jobs related to both trade channels. In fact, in the period between 1995 and 2007, employment in activities for domestic consumption grew at a slower pace than in international trade, except for Latin American countries (Table 2). In the post-crisis period, jobs in activities for domestic consumption grew, on average, at almost half the pace of the previous period (0.1%). Along with the ASEAN countries, Mercosur, as well as the ASEAN countries, were the main affected, with a reduction of 72% and 56% in the employment growth rate, respectively.

Table 2 – employment growth rate according to production componentin the pre-crisis and post-crisis (annual, %)

Trade bloc	Domestic consumption		Traditional trade		GVC trade	
	1995-2007	2008-2016	1995-2007	2008-2016	1995-2007	2008-2016
Mean	0,20	0,11	0,52	0,08	0,59	0,07
Mercosul	0,25	0,11	1,09	-0,03	1,01	-0,10
ASEAN	0,22	0,06	0,53	0,13	0,66	0,27
EASIA	0,16	0,12	0,41	-0,03	0,49	0,04
EU28	0,26	0,22	1,09	-0,18	1,07	-0,05
L.A.	0,29	0,15	-0,04	0,19	0,12	0,13
NAFTA	0,07	0,02	0,32	0,22	0,41	-0,04
RoW	0,15	0,05	0,21	0,26	0,39	0,24

Source: own elaboration based on estimates with data from EORA26 and ILO.

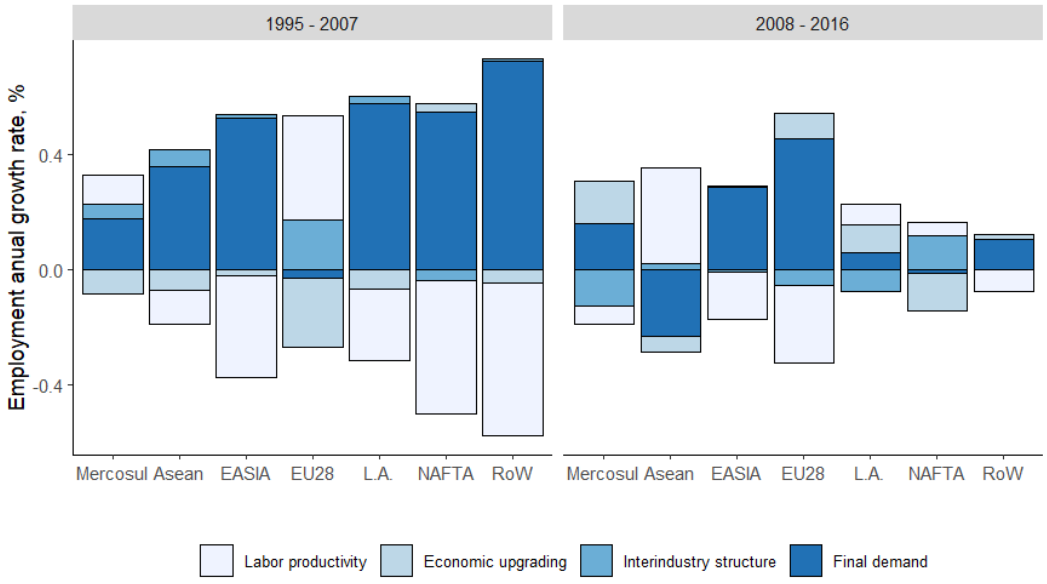
Both trade channels were the main sources of job creation in the pre-crisis period. In particular, Mercosur and the EU28 had the highest rates in traditional trade (1.09%) and GVC trade (1% and 1.1%, respectively). Nevertheless, both witnessed the biggest declines in job creation in the post-crisis. It is also worth highlighting NAFTA's participation (0.22%) in trade in final goods as the main vector of employment during the post-crisis period. This result may partly represent the bloc's stance as an assembler (in the case of Mexico) and exporter of technological goods (USA and Canada). One last point we want to draw attention to is that the trade blocs that have a large domestic demand (Mercosur, EASIA, NAFTA) are those most affected by the spread of the crisis in trade channels. Additionally, jobs in production for domestic consumption appear to have been more resilient. This scenario suggests that domestic demand was important to sustain the jobs destroyed by the external shock.

The decomposition into different periods allows us to refine some of the conclusions from the previous section. Firstly, while in the pre-crisis period, developments in employment

came mainly from a relationship between labor productivity and final demand, after the crisis this relationship remains valid, but in a milder way. In the context of production for domestic consumption (Figure 8), these two factors are important to explain employment growth rates in Mercosur, Asean, EU28 and EASIA. Secondly, there is a reduction in the adverse effects arising from labor productivity that were observed in the pre-crisis period. In some partners, labor productivity contributed to job creation (as a result of reduced labor productivity).

Thirdly, the marginal contribution of economic upgrading to the generation of jobs in Mercosur and L.A. that had been verified previously is linked to changes in the conjuncture of the post-crisis period. With the reduction in the participation of European and Asian conglomerates in international trade, Mercosur and Latin American countries gained space to enter international trade (as suppliers of inputs in upstream activities, gradually advancing in the content added to their production). This movement had (small) positive effects on the demand for jobs. Fourth, the positive effects of the inter-industry structure on employment were related to the period of "hyperglobalization." There is no clear pattern in the post-crisis period: a negative effect was observed on Mercosur, EASIA, EU28, and Latin America. Positive effects were observed in NAFTA and Asean, although in the latter the effect is almost null.

Figure 8 - Decomposition of employment growth due domestic consumption from Mercosur and trade partners: pre-crisis and post-crisis

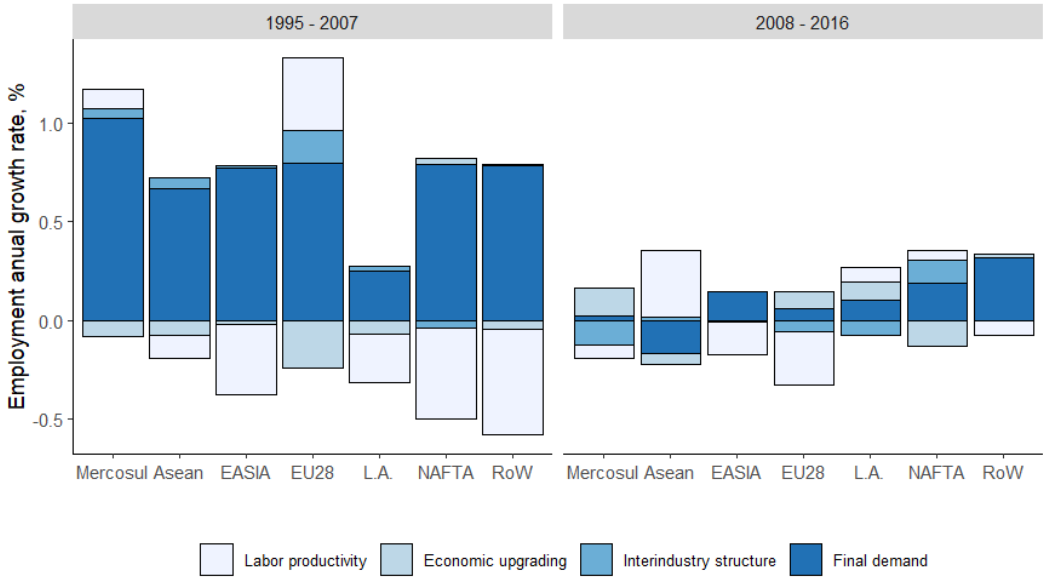


Source: own elaboration based on estimates with data from EORA26 and ILO.

Figures 9 and 10 provide information regarding both trade channels. In common, the “slowbalization” period had a major impact on final demand. In the pre-crisis period, the contribution of foreign demand in traditional trade to the employment growth rate varied between 0.3% (L.A.) and 1% (Mercosur), while in trade in GVCs, rates varied between 0.3% (EASIA and L.A.) and 0.5% (EU28). This scenario is completely different in the post-crisis, in which foreign demand in traditional trade contributed between -0.2% (Asean) and 0.2% (NAFTA), while in GVC trade, rates were between 0.04% (EU28) and 0.2% (EASIA). Once again, we found that the positive effects of the interindustry structure on employment are related to the pre-crisis period. In both trade channels there is a negative effect on Mercosur and Latin American countries. As for the other partners, the effects are mixed, pointing to the different

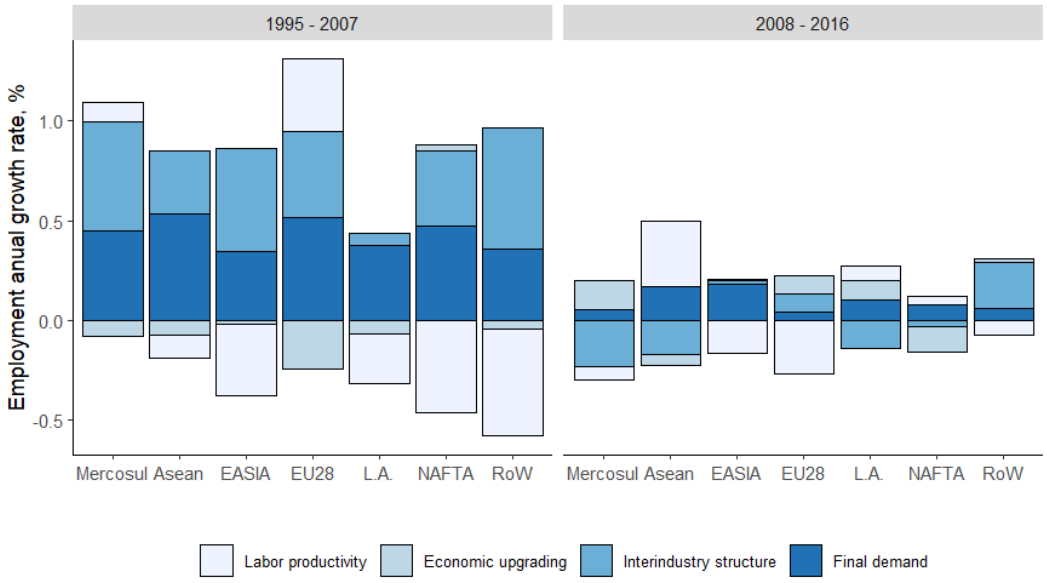
international integration profiles of the member countries. The greater amplitude of the effects of the crisis on employment via trade in GVCs is in line with Wang et al. (2017) and Bacchetta & Stolzenburg (2019), who argue that GVCs are more sensitive to economic fluctuations, with the effects on the labor market propagating with greater intensity and scale.

Figure 9 - Decomposition of employment growth due to traditional exports from Mercosur and trade partners: pre-crisis and post-crisis



Source: own elaboration based on estimates with data from EORA26 and ILO.

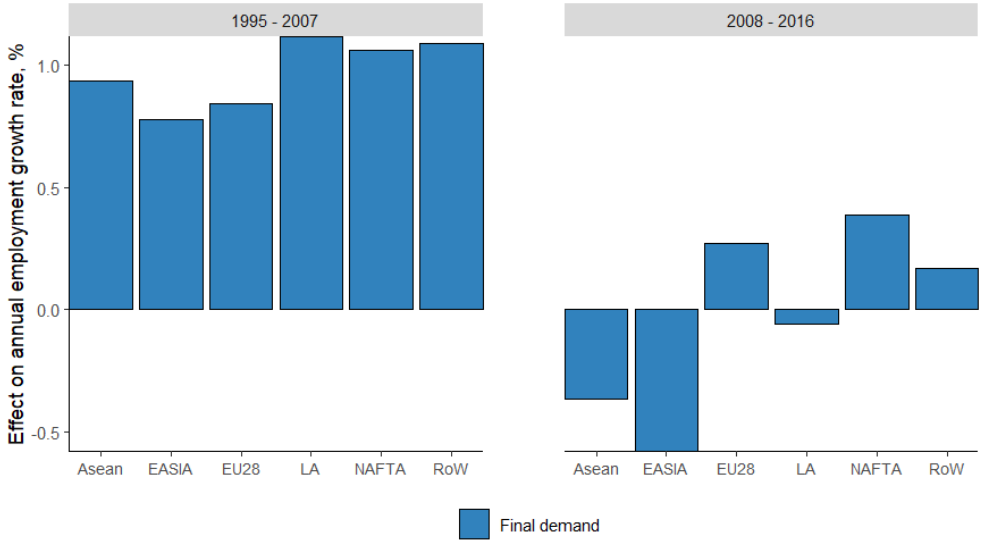
Figure 10 - Decomposition of employment growth due to GVC trade from Mercosur and trade partners: pre-crisis and post-crisis



Source: own elaboration based on estimates with data from EORA26 and ILO.

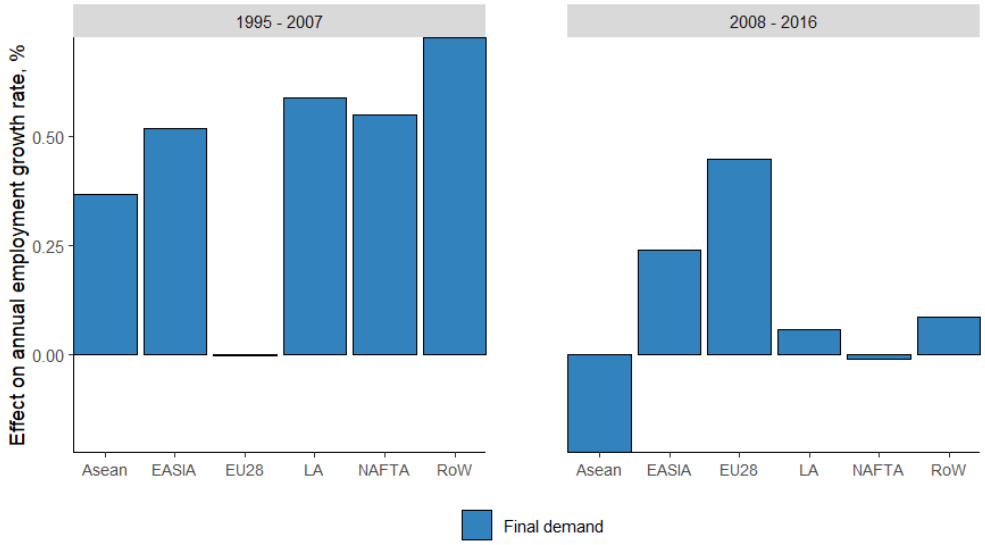
Finally, we end our analysis by checking Mercosur's bilateral trade with its trading partners, as in the previous section. We already know that the post-crisis period is marked by a reduction in foreign demand, affecting job creation. Figures 11 and 12 present information that allows us to identify which bilateral flows were most affected and, therefore, contributed to the impact on job creation in Mercosur. First thing to note is that the reversal in traditional trade was due, in large part, to the reduction in foreign demand from Asian countries and regional trade with Latin America. Other trading partners still contributed positively to job creation, although the positive effects coming from the demand component were partially offset by the negative effects of labor productivity.

Figure 11 – Effect of foreign final demand on Mercosur's employment due to traditional trade by partner: pre-crisis and post-crisis



Source: own elaboration based on estimates with data from EORA26 and ILO.

Figure 12 – Effect of foreign final demand on Mercosur's employment due to GVC trade by partner: pre-crisis and post-crisis



Source: own elaboration based on estimates with data from EORA26 and ILO.

Trade in GVCs was also negatively affected, particularly with direct competitors who also participate in international trade as suppliers of primary goods and inputs (Asean, Latin America and NAFTA – mostly Mexico). The expansion of trade with EASIA and EU28 may be related to a reduction in the participation of these countries in international trade. The estimates provide basis for the argument that the shift in production towards domestic consumption opened a window of opportunity for bilateral Mercosur trade, specializing in upstream activities destined for these markets.

5. CONCLUSION

Our objective with this research was to verify employment developments in Mercosur in light of the current situation of international trade, after the 2008 crisis. As we tried to argue, our motivation for choosing Mercosur is twofold: on the one hand, literature has pointed out that Distributional effects of international trade are sensitive to structural and institutional factors, so their implications lead to different results in developing countries. On the other hand, Mercosur is a trading bloc made up of Latin American countries that, despite having a history of structural difficulties, have a considerable joint capacity to respond to exogenous shocks, such as those arising in international trade. Our empirical strategy made it possible to break down Mercosur employment according to their destination and then, verify to what extent the evolution of employment in Mercosur is related to the effects of changes in labor productivity, the participation in production chains, the interindustry structure, and the changes in the final demand.

Among the results found, we were able to observe that around 90% of jobs in Mercosur are allocated to activities aimed at domestic consumption. Regarding jobs in both trade channels, a large proportion is allocated to production destined for trade in GVCs. NAFTA and the European Union stand out as Mercosur's largest trading partners in both traditional trade and GVCs. On a smaller scale, Latin America has been an important partner in trade in final goods, while Asian countries have gained ground in trade in GVCs (mostly with EASIA countries).

Following the results of our structural decomposition, we found that in the period between 1995 and 2016, trade channels were mainly responsible for the pace of the employment growth rate, surpassing the contributions of production for domestic consumption. When we compared the general trends of Mercosur with those of its trading partners, we were able to verify (limitations aside) that this tendency for trade to contribute to the employment growth rate was seen in the other partners, except in the Latin American countries, where domestic consumption activities were more important than international trade. A large portion of the variation in the employment growth rate of Mercosur and its trading partners is a response to changes in labor productivity and final demand. In some cases, both factors even offset each other. We argue, in light of developments in the automation literature and economic trade theory, that technological bias contributes to the labor-saving character of labor productivity, and its impacts gain scale in the context of GVCs.

Throughout the period, there is no clear pattern regarding the effects of economic upgrading and changes in the interindustry structure on the employment growth rate. While Mercosur and other Latin American countries benefited from the former, some trading partners such as Asean, the European Union and NAFTA had the opposite result. We found evidence that trade in GVCs changed the production and supply structure of countries, generating spillovers that positively affected employment. However, the effects of traditional trade and

production for domestic consumption on this component were more modest and, in some cases, such as in Mercosur and Latin American partners, there was a negative contribution.

We were able to bring new evidence that points out that the "slowbalization" period had decisive impacts on the employment dynamics not only of Mercosur but also of its trading partners. Overall, the pace of employment growth in both trade channels fell in the post-crisis period, reaching negative rates in Mercosur and most of its trading partners. Estimates suggest that there was a migration of jobs from trade channels to production for domestic consumption. This scenario was more evident in Mercosur and partners with great internal demand, where jobs were more resilient. We see that the weight of foreign demand in Mercosur's employment rate has drastically reduced, especially if we look at bilateral trade with Asean, Latin America and NAFTA. This scenario of reduced role of foreign demand is shared with other partners and points to the retraction of international trade in this period. The post-crisis period also contributed to changing the participation of the intersectoral structure component, which started to contribute negatively to the employment rate in Mercosur and most of its partners. This result is important because it signals a change in the countries' production routine, especially in trade in GVCs, generating potential limitations to obtaining some type of benefit from spillovers in GVCs.

These results allow us to think about some important trade policy questions. Although Mercosur's participation in international trade has translated into new jobs, the dynamics during the slowbalization period suggest that labor productivity and interindustry composition have not followed this trend, negatively affecting the performance of export activities. We also saw that the profile of export destinations changed considerably during this period, especially regarding exports of final goods. This evidence can contribute to further analysis, at a more detailed level, aiming to evaluate the sectors that are more susceptible to undergoing a process of replacement of domestic labor resulting from changes in the pattern of domestic production. Furthermore, if the new interindustry arrangement is favorable to productive specialization in production segments with low added value, the impact of greater insertion in GVCs would be translated into demand for less qualified workers, increasing the gap between working conditions between workers and countries. These are valid themes that highlight the need to consider Latin American commercial integration as a complex topic, which requires new empirical exercises that portray the little-explored social implications that cannot be ignored in a globalized world.

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Appendix A – Trading blocs and their compositions

Mercosul	ARG	Argentina						
	BRA	Brazil						
	PRY	Paraguay						
	URY	Uruguay						
ASEAN	BRN	Brunei	MYS	Malaysia				
	IDN	Indonesia	PHL	Philippines				
	KHM	Cambodia	SGP	Singapore				
	LAO	Laos	THA	Thailand				
	MMR	Myanmar	VNM	Viet Nam				
EASIA	CHN	China						
	JPN	Japan						
	KOR	South Korea						
	MNG	Mongolia						
	TWN	Taiwan						
NAFTA	CAN	Canada						
	MEX	Mexico						
	USA	USA						
EU28	AUT	Austria	DNK	Denmark	GBR	UK	ITA	Italy
	BEL	Belgium	ESP	Spain	GRC	Greece	LTU	Lithuania
	BGR	Bulgaria	EST	Estonia	HRV	Croatia	LUX	Luxembourg
	CZE	Czech Republic	FIN	Finland	HUN	Hungary	LVA	Latvia
	DEU	Germany	FRA	France	IRL	Ireland	MLT	Malta
	NLD	Netherlands	SVN	Slovenia				
	POL	Poland	SWE	Sweden				
	PRT	Portugal	CYP	Cyprus				
	ROM	Romania						
	SVK	Slovakia						
Latin America (L.A.)	ANT	Netherlands Antilles	DOM	Dominican Republic	HND	Honduras	SLV	El Salvador
	BOL	Bolivia	ECU	Ecuador	JAM	Jamaica	SUR	Suriname
	COL	Colombia	GTM	Guatemala	NIC	Nicaragua	TTO	Trinidad and Tobago
	CRI	Costa Rica	GUF	French Guiana	PAN	Panama	VEN	Venezuela
	CUB	Cuba	GUY	Guyana	PER	Peru		
Rest of the World (RoW)	AFG	Afghanistan	ARM	Armenia	BGD	Bangladesh	BTN	Bhutan
	ALB	Albania	AUS	Australia	BRB	Barbados	BIH	Bosnia and Herzegovina
	DZA	Algeria	AZE	Azerbaijan	BLR	Belarus	BWA	Botswana
	AND	Andorra	BHS	Bahamas	BLZ	Belize	BFA	Burkina Faso
	AGO	Angola	BHR	Bahrain	BEN	Benin	BDI	Burundi
	CMR	Cameroon	CIV	Cote dIvoire	ERI	Eritrea	GMB	Gambia
	CPV	Cape Verde	PRK	North Korea	ETH	Ethiopia	GEO	Georgia
	CAF	Central African Republic	COD	DR Congo	FJI	Fiji	GHA	Ghana
	TCD	Chad	DJI	Djibouti	PYF	French Polynesia	GIN	Guinea
	COG	Congo	EGY	Egypt	GAB	Gabon	HTI	Haiti
	HKG	Hong Kong	ISR	Israel	KGZ	Kyrgyzstan	MAC	Macao SAR
	ISL	Iceland	JOR	Jordan	LBN	Lebanon	MDG	Madagascar
	IND	India	KAZ	Kazakhstan	LSO	Lesotho	MWI	Malawi
	IRN	Iran	KEN	Kenya	LBR	Liberia	MDV	Maldives
	IRQ	Iraq	KWT	Kuwait	LBY	Libya	MLI	Mali
	MRT	Mauritania	NAM	Namibia	NGA	Nigeria	QAT	Qatar
	MUS	Mauritius	NPL	Nepal	NOR	Norway	MDA	Moldova
	MNE	Montenegro	NCL	New Caledonia	OMN	Oman	RUS	Russia
	MAR	Morocco	NZL	New Zealand	PAK	Pakistan	RWA	Rwanda
	MOZ	Mozambique	NER	Niger	PNG	Papua New Guinea	WSM	Samoa
	STP	Sao Tome and Principe	SOM	Somalia	SWZ	Swaziland	TGO	Togo
	SAU	Saudi Arabia	ZAF	South Africa	CHE	Switzerland	TUN	Tunisia
	SEN	Senegal	SDS	South Sudan	SYR	Syria	TUR	Turkey
	SRB	Serbia	LKA	Sri Lanka	TJK	Tajikistan	TKM	Turkmenistan
	SLE	Sierra Leone	SUD	Sudan	MKD	TFYR Macedonia	UGA	Uganda
	UKR	Ukraine	YEM	Yemen				
	ARE	UAE	ZMB	Zambia				
	TZA	Tanzania	ZWE	Zimbabwe				
	UZB	Uzbekistan						
	VUT	Vanuatu						

Source: own elaboration with data from EORA26.

Note: some countries available in EORA26 had to be excluded from the sample due to the unavailability of data for the level of employment. They are: Antigua, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Greenland, Liechtenstein, Monaco, Gaza Strip, San Marino, Seychelles and Former USSR.