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A structural decomposition analysis of "Latin American decade" for selected countries

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ABSTRACT

The 2003-2014 period for Latin America refers to the recent boom period within the growth cycles of the region and is called as "Latin American decade". Given that, the purpose of the paper is to analyze this specific period based on structural transformation dynamics. In this context, structural decomposition methods are evaluated to outline structural transformation patterns. For this analysis, the Groningen Growth and Development Centre (GGDC) Economic Transformation Database (ETD), which provides annual data on employment and real value added by 12 sub-sectors, is used for 8 LA countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru). The decomposition analysis is applied for three main periods (1990-2018, 1990-2003 and 2003-2014) within the growth cycles of the region. So it is predicted to define whether the "Latin American decade" differs from the previous period, regarding structural dynamics. During the "Latin American decade", the region has gone commodity-led growth pattern and deindustrialization. Moreover, this pattern is not so homogenous. Specifically, the mining sector and non-tradeable sectors dominate the structural dynamics of some countries. Due to these patterns, the results underlie that productivity gains remained at low levels. Latin American countries need to design growth strategies that focus on escaping from productivity traps.

Contribution/Originality: This paper contributes to the decomposition analysis of Latin American countries by implementing a modified version (Diao, McMillan, & Rodrik, 2017, 2019) of the structural decomposition method. Specifically, the decomposition analysis considers the growth cycles of the region from 1990 through 2018, for 8 LA countries.

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1. INTRODUCTION

Latin America and Caribbean is called among the main regions with unsustained growth and low productivity patterns that face "productivity traps" (Cepal, 2019). Recently, the 2003-2014 period -that is called the "golden years" or "Latin American decade"- refers to the recent growth boom within the growth cycles of the region (Ocampo, Bastian, & Reis, 2019). This period comprises unique conditions depending on the emerging macroeconomic performance of Latin America's countries. Primarily, increasing trend in commodity prices is accompanied by the performance achieved in growth rates. This means a new recovery phase for the countries in the region that is different from the previous two decades. The increase in commodity prices and increasing demand from China for specific commodities have accelerated commodity-led growth (Ocampo, 2017). Along with growth, there has been a decrease in inflation and countries lead more diversified fiscal policy space that also enables the use of social policies. Significantly achievements in growth performance are accompanied by improvements in social

dynamics (Ocampo, 2015; Ocampo et al., 2019). This period also represents reactions against market-led reforms and change in political regimes for some specific Latin America (LA) countries.

During this period commonly the problem of increasing competitiveness of LA countries after the lost decade has been questioned and formulated under emerging neo-developmentalist strategies as an alternative to market-led strategies. The systematic competitiveness and growth with equity targets formulated by Cepal (2016) have been adopted, albeit in different contexts. In this retrospect, active industrialization policies to increase the competitiveness of the productive capacity have been defined, and recalling back state activism came into the agenda (Devlin & Moguillansky, 2012; Ocampo & Porcile, 2020).

Given these initial facts related to the growth cycles of LA countries, this paper aims to focus on the recent growth accelerations period (2003-2014) based on structural dynamics. For this period it is suggested that the commodity-driven growth model (Ocampo, 2017) has been an explanatory fact in analyzing Latin America's boom and bust cycles. Overvaluation of the exchange rates and terms of trade gains has accelerated during this period and natural resource dependence of Latin American exports has increased. According to these approaches, LA countries are classified as; i) countries exporting mainly agricultural industrial products(Argentina, Paraguay, Uruguay), ii) mining and metal exporting countries(Chile, Peru), iii) hydrocarbon exporting countries (Ecuador, Colombia, Venezuela) and iv) manufacturing industry products exporting countries(Mexico, Brazil) that determines varieties in economic performance (Moreno-Brid & Garry, 2016). The scope of macroeconomic policies and external conditions bring about different forms of structural dynamics in countries. As LA countries have a heterogeneous structure in economic size and resources, these features also determine varieties in structural dynamics.

The paper considers these facts and aims to explore the structural transformation phase of the recent growth acceleration period and outline the main differences within the 1990-2018 period by considering the previous periods (1990-2003). For this purpose, a modified version of structural decomposition analysis based on Diao et al. (2017); Diao et al. (2019) is used for 8 LA countries (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, and Peru) based on the 1990-2018 period.

The rest of the paper is structured as follows. Section 2 reviews the dimensions and meaning of structural transformation for developing countries as the theoretical background. Section 3 outlines the literature review of the structural decomposition analysis for LA countries. Section 4 defines the specific methodology and the data used in this paper. Section 5 summarizes the basic findings of the structural decomposition analysis and later on concludes.

2. DIMENSIONS AND MEANING OF STRUCTURAL TRANSFORMATION

There is dual-link between economic growth and productivity due to the outcome of the interrelationship between structural dynamics and macroeconomic performance (Ocampo, 2020). From a broader perspective as the production and labour shift from the agricultural sector to modern sectors both total productivity and income increase. Therefore, structural transformation can be defined as the reallocation of economic activities in the process of economic growth (Herrendorf, Rogerson, & Valentinyi, 2014; Van Neuss, 2018). Structural change refers to all sorts of changes in the structure of employment and output while a change in the composition of sectoral activities could be measured in two ways, considering value-added share and employment share. Labour productivity (value-added share divided by employment share) growth, can originate in two ways. First, productivity can occur within economic sectors and second labour can move across sectors. Capital accumulation, technological change, or education of misallocation across plants are among the causes of sectoral productivity. In case of sectoral changes; shifts from low-productivity sectors to high-productivity sectors, increase overall labour productivity in the economy (McMillan, Rodrik, & Verduzco-Gallo, 2014). Hence for analyzing, phases of structural transformation, within and between sectoral changes in labour share is detrimental. Reallocation of the labour between sectors; either by rising new industries or movement of labour to higher productivity sectors, can be more decisive in terms of growth, apart from within-sector productivity (McMillan & Dani, 2011).

The shifts from agricultural to non-agricultural sectors also refer to the reallocation of economic activity from lower to higher productivity sectors. Industrialization or in a broader perspective shifts from agriculture to non-agricultural sectors accelerates productivity and creates structural- bonuses (Szirmai, 2012). Although the phase of transformation as it is suggested in seminal works could not be linear (as the shift from agriculture to industry and service) (Chenery, 1975; Kuznets, 1965; Syrquin, 1988) On the contrary recent cross-sectional studies on economic transformation pattern of the countries refers to varieties. Even different phases of transformation between and within the sectors occur (Angeles, 2010; Baymul & Sen, 2018, 2020; Sumner, 2019; Timmer, De Vries, & De Vries, 2015). For developing countries transition from agriculture to service is more dominant which is also among the causes of deindustrialization.

In these cases, structural change might have the effect of increasing the importance of the less productive activities so that the structural burden is more evident (Timmer & Szirmai, 2000). For example, according to the Baumol disease effect, the service sector tends to lower productivity levels so shifts from agriculture to services might slow the growth. On the other hand, the abundance of natural resources might impede shifts away from agriculture to mining while speed of industrialization decreases (Szirmai, 2012).

Since the 1990s, structural transformation phases, unlike traditional forms of structural transformation, comprise shifts to lower productivity sectors for developing countries (Baymul & Sen, 2018, 2020). Opening up experiences of countries, emergence of global value chains (Kaplinsky, 2013) acceleration of financialization processes and differentiation of industrialization policies on which they are based are explained as determining factors in this process. As an outcome of these facts, de-mature industrialization (Palma, 2005; Rodrik, 2016) that is accompanied

by services sectors (Schettkat & Yocarini, 2006) is considered the main driving factors that reveal different forms of structural transformation from the traditional Kuznets hypothesis.

For LA economies, empirically it is evident that pre-mature deindustrialization dominates the structural transformation (Beylis, Jaef, Sinha, & Morris, 2020). Gallagher and Porzecanski (2010) argue that the decline of manufacturing in LA and its rise in China are the results of the different development paths determined by the policy change. Dutch disease problem has contributed to the shift away from manufacturing and towards non-tradeable [1] sectors. More specifically, the pattern of the GVCs (Global Value Chains) determines the drivers of the growth. The concentration of exports on primary and extractive sectors impedes shifts to productive capacities and moves to higher added value segments of GVCs. In this pattern, low levels of technology and few incentives to invest in higher productivity activities create a vicious cycle of low productivity. It is suggested that drivers of growth should change to escape from the low productivity trap (Cepal, 2019).

3. LITERATURE REVIEW ON STRUCTURAL CHANGE OF LATIN AMERICAN COUNTRIES

For LA, empirical evidences analyzing structural dynamics based on decomposition methods outline some stylized facts. In LA, on average, the productivity increase achieved in the 1950-1975 period could not be sustained in the post-80 period. In particular, the post-1980 period contain the conditions in which the average growth rate is lower with a decrease in total productivity (Ocampo, 2019). Market-led reforms have not resulted in productivity gains. The market reforms were accelerated in the 1990s. However, in this period, it is seen that trade liberalization and financial liberalization policies determine the development of productive structures. While the growth rates achieved in the post-1980 period did not catch up with the previous periods, as observed the income gap of the region with the East Asian economies gained momentum in this period. The region entered a specific period after the mid-1990s and later on from 2003 -2014 where the growth rate is above the averages (Ocampo, 2019).

The transformation pattern of the LA countries outlines that they are at an earlier stage of structural transformation compared with the developed countries. Lower productivity levels characterize these transformation phases. Ferreira and Da Silva (2015) underlies that LA countries have different reallocation process regarding the shifts from agriculture to non-agricultural sectors. Furthermore, the structural transformation pattern of LA countries' differs from other developing countries in other regions. Between 1950 and 2005 both developing Asia and Latin American countries' growth accelerations could be explained by productivity increases within sectors whereas reallocation of employment to more productive sectors is limited (Timmer & Vries, 2009). Although this pattern has changed from 1990 through 2010. The contribution of structural transformation to labour productivity increases was close to zero or negative in the 1990-2010 period for the LA countries. According to the decomposition analysis (De Vries, Timmer, & De Vries, 2015) since 1990 structural transformation phases resulted in static gains and dynamic losses for Latin America countries.

McMillan and Dani (2011) reveal that the main difference in productivity performance between Asia and Latin American countries comes from the differences in patterns of structural change. In LA countries opposite from Asia, shifts to lower productivity sectors determine the structural transformation path. LA countries owning weak growth–promoting structural change significantly differs from the others (McMillan & Dani, 2011). It is found that the "within" component of productivity growth in the two periods; 1950–1975 and 1990–2005 has not changed too much but the structural change component decreased between 1990 and 2005.

Decomposition analysis of Ferreira and Da Silva (2015) for 9 LA countries (Brazil, Argentina, Chile, Mexico Colombia, Venezuela Peru Bolivia Costa Rica) based on the 1950-2003 period, outlines a strong process of labour reallocation. Steep decreases in agricultural labour and increase in the share of labour in services (Ferreira & Da Silva, 2015) represent structural transformation dynamics of LA economies. Although, for some LA countries, the share of agriculture is still important (Peru, Bolivia) where industrial sectors are found to be more diverse. The manufacturing sector productivity level is found to be below the world average while service sector productivity levels explain the basis of lower productivity levels of the countries.

The decomposition analysis of Aravena, Fernández, Hofman, and Mas (2014) is implemented for 4 LA countries Argentina, Brazil, Chile, and Mexico) and the seven reference countries (France, Germany, Italy, Spain, United Kingdom, United States, and Japan) together with the EU-15, for the period of 1995-2007. As a result of this analysis, within effect is found to be the main driver for all countries in the sample. Specifically, the structural change component effect is small for LA countries. Although, structural change component has a higher and more positive impact on LA countries compared with other countries in the sample. Additionally, the magnitude of the structural change component varies among the LA countries. Low levels in the structural change component are considered a determining indicator that limits the increase in labour productivity growth.

Diao et al. (2017) analyze the recent growth acceleration (2000-2010) effects on structural transformation for different economies. For LA economies, growth accelerations during this period have also contributed to rapid sectoral labour productivity growth. Although, growth–promoting structural change continues to be weak. For this period, this trend is found to be specific to LA countries, different from African and Asian countries. During the growth acceleration period, labour has moved from more productive sub-sectors to less productive sub-sectors, within non-agriculture sectors. In the case of LA, the structural change component of non-agricultural sectors is found to be negative. Agricultural sectors' productivity growth also contributes little to economy-wide productivity. During this period, Chile and Peru have higher productivity levels and their structural change component is

[1] Non-tradable sectors ; construction, distributive trade, repairs, transport, accommodation, food services activities, real estate activities, business services , and public administration (OECD, 2018).

stronger. However, for the rest of the countries in Latin America, the transformation patterns indicate weak improvement (Diao et al., 2017).

According to McMillan and Dani (2011) during the 1990s, the consequences of market reforms, high inflation with increasing unemployment contributed to weak structural change. Region's commodity dependence, overvalued exchange rates, (relatively) low agricultural employment shares and deindustrialization are the main facts that create this weak structural change. While modern sectors have performed well, the pace of expansions in labour shares have decelerated structural change (McMillan & Dani, 2011).

4. METHODOLOGY AND DATA

The pillars of the structural decomposition analysis are based on the shift-share analysis techniques. The fundamentals of this analysis are to decompose the change of an aggregate into a structural component. In this analysis, the changes in the composition of the aggregate and the changes within the individual units of the given aggregate are considered (Fagerberg, 2000). Given that, the aggregate productivity growth as an aggregate unit is decomposed into two main components; the growth at the sectoral level(within effect) and as reallocation effect (structural change) (Timmer & Vries, 2009). In this analysis, positive (negative) values for the within effect indicates that labour productivity in the sector is positive (negative). The positive (negative) contribution of the reallocation effect is evaluated as a sign of sectoral expansion (shrinkage) (Timmer & Vries, 2009). The reallocation effects (structural change component) define overall labour productivity growth and shifts of the workers across the sectors. It is outlined the positive (negative) value of the structural change component means that the changes in employment share are positively (negatively) correlated with productivity levels. Positive (negative) structural change component indicates increases (decreases) in economy-wide productivity growth (McMillan et al., 2014).

In this paper modified version of the decomposition analysis of McMillan and Dani (2011) and Timmer et al. (2015) based on Diao et al. (2017) will be implemented. In this version, rather than commonly used methods to decompose the within and sectoral allocation across sectors over an entire period, a year-by-year calculation is chosen. So that the contribution of the sectors' to growth accelerations would be included in the analysis. In doing so it is predicted that the paper will be able to outline the specific facts on structural transformation for the "LA decade".

In Equation 1, weights in the "within term" are sectors' labor shares at the beginning of the period (start-point weight) and weights in the "between the term" are sectors' labor productivity at the end of the period (end-point weight). The first term in Equation 1 is the "within-sector" component. The second term in the equation is the "structural change" (structural reallocation) component (Diao et al., 2017).

$$y^t - y^{t-k} = \Delta y^t = \Sigma_i y_i^t \theta_i^t - \Sigma_i y_i^{t-k} \theta_i^{t-k} \quad (1)$$

Equation 1 represents economy-wide labour productivity at a given time k and t-k; y^t and y^{t-k}. The relevant sectors' is named as i and i sectors' labour productivity is given for the period k and t-k respectively. $\theta_i^t = L_i^t/L^t$ and $\theta_i^{t-k} = L_i^{t-k}/L^{t-k}$ define shares of labour employed in sector i at the time, t and t-k whereas t>k (Diao et al., 2017).

In the second step Equation 1 is re-arranged as ;

$$\Delta y^t = \sum_i \theta_i^{t-k} \Delta y_i^t + \sum_i y_i^t \Delta \theta_i^t \quad (2)$$

The Equation 2 is identical to McMillan and Dani (2011) and De Vries et al. (2015). Following that, Equation 3 is modified as;

$$g_y^t = \Sigma_i \theta_i^{t-1} \pi_i^{t-1} g_{yi}^t + \Sigma_i \Delta \theta_i^t \pi_i^{t-1} (1 + g_{yi}^t) \quad (3)$$

In this equation $g_y^t = \Delta y^t / y^{t-1}$, $g_{yi}^t = \frac{\Delta y_i^t}{y_i^{t-1}}$ and π_i^t is relative labor productivity for sector i is defined as $\pi_i^t = y_i^t/y^t$. Later on, the average annual growth rates for the within and between terms in a given (n) time period for each sector by taking a simple average is calculated by using Equation 4 and 5 respectively.

$$g_i^{-between} = \frac{1}{n} \sum_n^{t=1} \Delta \theta_i^t \pi_i^{t-1} (1 + g_{yi}^t) \quad (4)$$

and

$$g_i^{-within} = \frac{1}{n} \sum_n^{t=1} \theta_i^t \pi_i^{t-1} g_{yi}^t \quad (5)$$

$g_i^{-within}$ and $g_i^{-between}$ represents the average labor productivity growth rates of sector i within sector over a given time period. In doing so, as the last step the annual economy wide labor productivity growth rates and its two components in this given period are defined in Equation 6. Here, total g_i^- defines the annual economy wide labor productivity (Diao et al., 2017).

$$\bar{g} = \sum_i g_i^{-within} + \sum_i g_i^{-between} \quad (6)$$

For the decomposition analysis, the relevant data is derived from the Groningen Growth and Development Centre (GGDC) /United Nations University (UNU-WIDER) Economic Transformation Database(ETD). This database comprises employment, real and nominal value added by 12 sectors for 51 economies, including nine LA(Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, and Peru) countries between the period 1990 and 2018. The economic activities are classified according to International Standard Industrial Classification Revision 4 (ISIC Rev.4) under 12 main sectors. Accordingly, the sub-sectors are arranged as; agriculture (A), mining (B), manufacturing (C), public utilities (D + E), construction (F), trade (G + I), transport (H), business services (J + M + N), finance (K), real estate (L), government services (O + P + Q) and other services (R + S + T + U).

Classification of the sectors enables us to observe the trends in non-manufacturing industries and sub-service sectors so that sectoral dynamics could be specified (Kruse, Mensah, Sen, & De Vries, 2021). In this paper 8 LA

countries apart from Cost Rica are included in the analysis. For decomposition analysis the data on value-added share (at constant 2015 prices in US dollars) and employment share of the sectors will be used.

For the analysis, three main time-period is defined due to changes in average growth rates, within the covered period by the data. As seen in Figure 1 the so-called "Latin American decade", the period between 2003 and 2014 has higher average growth rates for countries apart from Mexico. So a comparison of this period with the previous period, 1990-2003, considering the long-term trend between 1990 and 2018 is chosen.

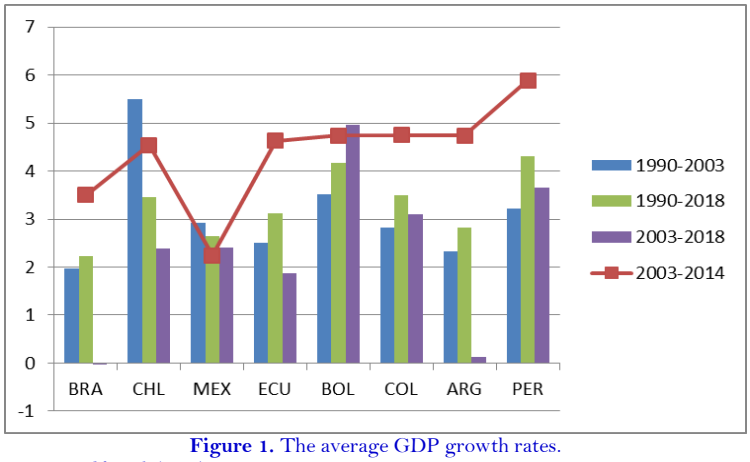

Figure 1. The average GDP growth rates.

Note: World Bank (2022).

5. BASIC FINDINGS OF STRUCTURAL DECOMPOSITION ANALYSIS

For all the three periods covered in the analysis, as a common fact, the rate of change in the total productivity level of the countries is at low levels. As seen in Figure 2[2] in terms of change in total productivity growth, there is no significant difference between the 1990-2003 and 2003-2014 periods. Progress of Colombia, Bolivia, and Peru is more evident from 2003 to 2014. Besides, the level of change for Mexico diverges from other LA countries. Two countries, Brazil and Ecuador with negative total productivity in the period 1990-2003, have increased their productivity level positively in this period. In the long run, the rate of change in the total productivity level of all countries except Argentina is negative.

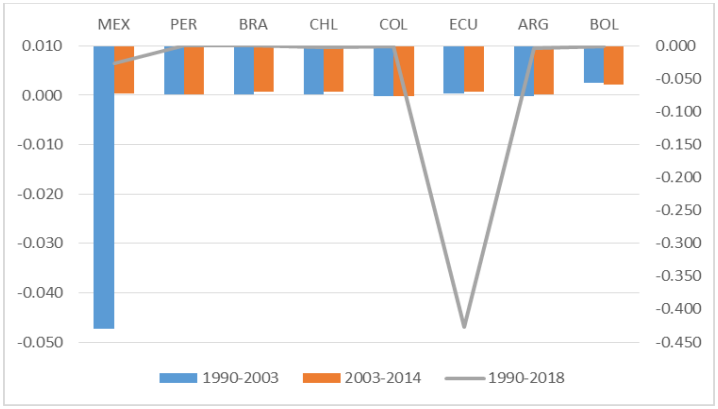

Figure 2. Overall total productivity change.

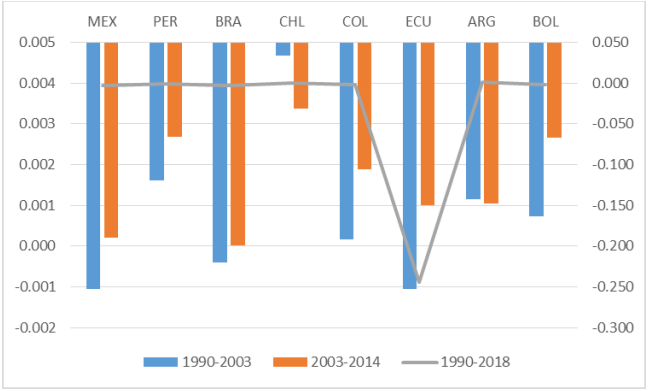

Figure 3. Total within effect.

[2] Figure 2 is interpretated from Equation 6.

As seen in Figure 3[3], LA countries vary in terms of sectoral productivity levels. Even the productivity gaps within the sectors are more detrimental than sectoral reallocation effects. During the "Latin American decade" for all countries sectoral productivity levels have positive values. Although compared to the previous period this rate is lower for Chile and Argentina. However, in the long run, both of these countries are successful in sustaining positive productivity increases. The highest rate in terms of total productivity belongs to Chile, Peru, and Bolivia. Andean countries benefited from this recovery period by achieving higher sectoral productivity gains. Mexico, Brazil, and Ecuador, also have shown a positive trend in total productivity during the growth acceleration period.

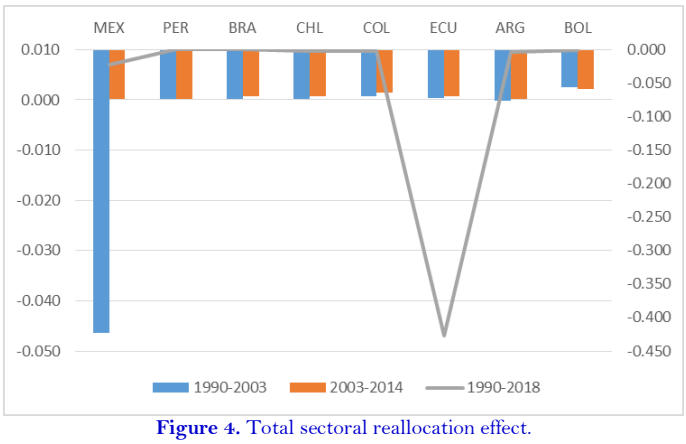

Figure 4. Total sectoral reallocation effect.

The analysis of total sectoral reallocation effects indicates that despite sectoral productivity gains, commonly changes in employment shares are negatively correlated with productivity levels. The employment creation capacity of LA countries impedes having higher reallocation effects. As seen in Figure 4[4] level of the total sectoral reallocation effect is smaller than within sectoral effects. In the growth acceleration period, Bolivia has the highest sectoral reallocation effect. In the long run, the total sectoral reallocation effect has little contribution to total productivity for all LA countries. These figures outline that sectoral shifts to lower-productivity level sectors are more significant.

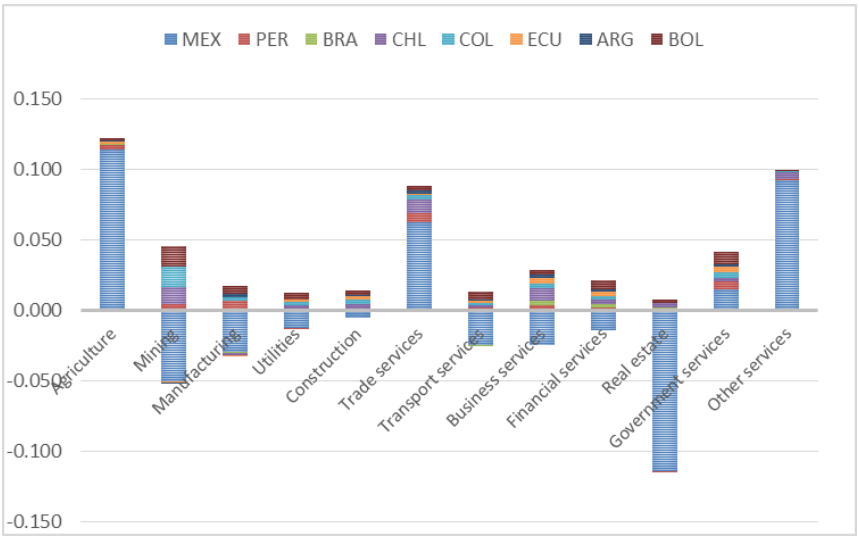

Figure 5. Overall sectoral productivity change for 2003-2014.

Comparison of the sectoral changes with the previous period (1990-2003), indicates that Mexico is the only country that has almost the same sectoral growth trend. For other countries, the most fundamental differences in terms of change in the level of total productivity emerge in the fields of agriculture, real estate, mining, trade, and other services. The productivity level of the manufacturing sector also varies among the countries. Productivity gaps within the sectors and between the countries create diverse paths in structural transformation (See Figure 5).[5]

Considering sectors' contribution level to the total productivity in the 2003-2014 period, varieties in structural transformations across sectors and within the countries can be revealed (see Figure 5). In terms of productivity gaps between the countries, within effects are more evident. Mining and trade and government services are the leading sectors that boost productivity change in the countries. Besides business services is more important than trade services for some LA countries.

[3] Figure 3 is interpretated from Equation 6.
[4] Figure 4 is interpretated from Equation 6.
[5] Figure 5-7 is interpreted by following the steps from Equation 3 to Equation 6.

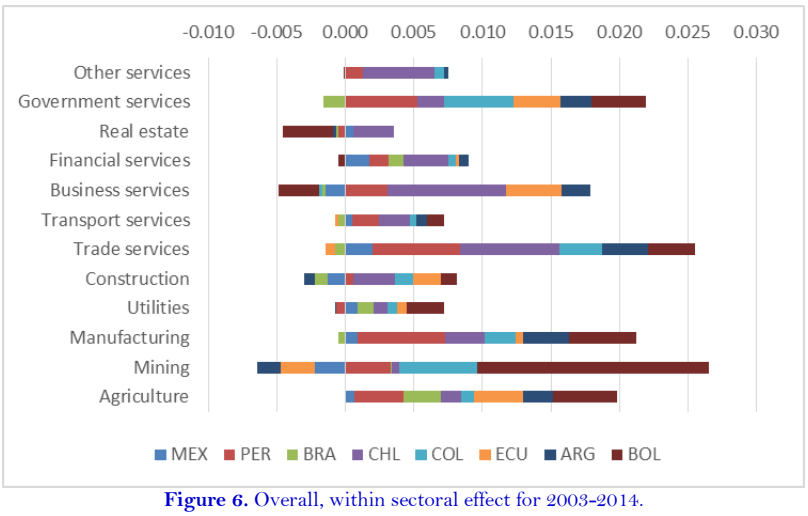

Figure 6. Overall, within sectoral effect for 2003-2014.

So that the transition from agriculture to non-agriculture sectors, has continued to determine the framework of the structural transformation phase. As seen in Figure 7 sectoral reallocation effect indicates that shifts from agriculture to service–related sectors, and additionally for specific countries mining, are more evident. Although the productivity gains are rather small.

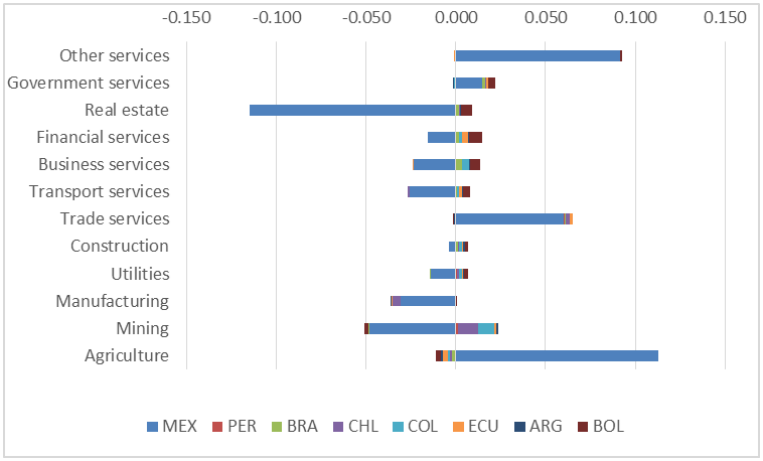

Figure 7. Overall structural change effect for 2013-2014.

The agriculture sector is still important in determining the total productivity gains and losses. Moreover, agriculture sectors have dispersion among the countries. Besides, the mining sector is the other specific sector that determines varieties. During this period, mining sector growth has increased although the contribution to total productivity has stayed at low levels. The total sectoral allocation effect of the mining sector for Bolivia Mexico and Brazil is negative. Even for the countries with a positive reallocation effect, employment creation has stayed at low levels.

It could be suggested that trade- off between the mining and manufacturing sector is another fact that shaped the growth patterns. The sectoral productivity and reallocation effects for this period also indicate that the mining and manufacturing sectors have opposite trends within the countries. In this period also deindustrialization phase has continued adding that only Bolivia has a positive reallocation effect for manufacturing though in a small portion.

Additionally, the service sector has variations among Latin American countries. Sectoral shifts to the service sector are another specific trend but the sub-sector characteristics of the services vary. Trade, real estate, business and finance are the sectors that have different phases between the countries. The trade sector is among the most important sector in the services that determine the total productivity level. Especially, for Mexico and Peru, trade services play an important role. While for Mexico, finance-business services have lost momentum, for Brazil, Chile, Colombia, Ecuador and Argentina these sectors are important. During this period, the real estate sector has gained momentum significantly in Brazil and Bolivia. In utilities and construction sectors as non-manufacturing industries, apart from Mexico and Brazil, productivity levels have increased.

6. CONCLUSION

Based on sectoral decomposition analysis, from 2003 through 2014, it is possible to emphasize three main tendencies of structural transformation. An increasing share of the commodities in the exports with higher gains in terms of trade indicates that commodity-led growth is evident for this period. This specific change has determined the structural transformation patterns of LA countries.

Accordingly, the growth pattern of Mexico diverges from the other LA countries. Mexico with a higher ratio of manufacturing products in exports has benefited from the commodity boom period differently. In the case of Mexico, shifts to higher productivity sectors have remained low. While changes in agriculture and trade services contributed positively to overall productivity and employment growth, changes in other sectors do not own the same tendencies. The growth patterns of the manufacturing sector indicate weak involvement in NAFTA (North American Free Trade Agreement). Even, also in this period, deindustrialization is more evident in Mexico.

As the second tendency, Brazil and Argentine, among the largest countries of the region vary from the other LA countries in the sample. These countries have a higher agricultural-export share than non-oil mining. During the commodity-boom period, these countries adopted neo-developmental strategies and led selective industrial policies. Even though they face resource curse. Deindustrialization trend has continued in this period while productivity gains in agriculture have increased. Besides, for Argentina, the mining sector has a positive reallocation effect. For both of the countries shifts to the non-manufacturing industry and service sector has accelerated during this period. Distinctively, for Brazil, the rate of change in total productivity level has stagnated differently from Argentina.

The third specific trend emerges through economies where the mining sector has a higher share in exports. Andean countries could be classified into two subgroups in this context. Countries with non-oil mining and oil exporters have divergent paths. Andean countries have succeeded in demonstrating more positive trends in this period. They have increased terms of trade gains and the commodity boom is more decisive for these countries. Chile and Peru outperformed the other Andean countries. The Chinese influence in the mining sector of Peru during this period is evident while Chile has lower productivity gains compared to the 1990-2003 period. Among the Andean countries, the performance of Bolivia also signifies different dynamics. For this country, industrialization has continued in this period with a negative sectoral allocation effect in mining. For Colombia as well, the productivity growth in manufacturing has been higher during this period.

Summing up, varieties of structural transformation characteristics outline the increasing importance of the GVCs' participation and deindustrialization within the region. Besides, sectoral inefficiency problems and weak creation of employment play an important role in determining the changes in productivity level. In the case of LA, during this period, although productivity increases have occurred, its level has continued to stay rather low compared to the world average. This tendency indicates a persistent problem related to the structural transformation patterns of the region.

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