Structural Transformation and Growth in G-24 countries: 2005-2015

Working Paper commissioned by the Group of 24 and Friedrich-Ebert-Stiftung New York

January 2019

Kee Beom Kim, Luis Pinedo Caro, Sukti Dasgupta[1]

This paper is part of the Growth and Reducing Inequality Working Paper Series, which is a joint effort of the G-24 and Friedrich-Ebert-Stiftung New York to gather and disseminate a diverse range of perspectives and research on trends, drivers and policy responses relevant to developing country efforts to boost growth and reduce inequality. The series comprises selected policy-oriented research papers contributed by presenters at a Special Workshop the G-24 held in Geneva (September 2017) in collaboration with the International Labour Organization and the Friedrich-Ebert-Stiftung, as well as relevant sessions in G-24 Technical Group Meetings.

[1] Employment and Labour Market Policies Branch, International Labour Organization (ILO). Views expressed are those of the authors.

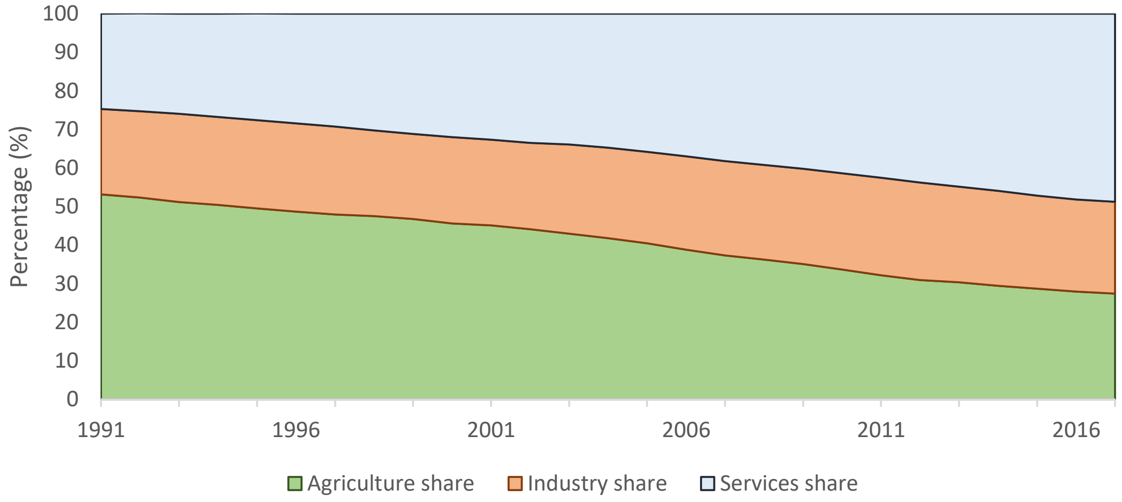
Abstract

This paper uses a three-fold decomposition to analyze the contribution of structural transformation to labor productivity growth between 2005 and 2015 in 14 G-24 countries. By decomposing the contributions to productivity growth into within-sector productivity gains as well as static and dynamic reallocation effects, we also examine the relationship between each of the three components and changes in the Gini coefficient of labor earnings. Our results indicate that within-sector increases in productivity are the main drivers of aggregate productivity growth in most G-24 countries, but that between sector changes, or structural shifts, also play an important role in some countries. In addition, we show the existence of a negative relationship between the dynamic reallocation component and the change in the Gini coefficient, signalling that the reallocation of employment towards productivity-expanding sectors may promote greater earnings equality.

1. Introduction

Fostering inclusive growth and productive employment are key priorities for G-24 countries.[2] Important progress has been made in the past decade, including an acceleration of labor productivity growth and reductions in working poverty and vulnerable employment, which have been accompanied by a continued reallocation of workers across sectors (Figure 1).[3] This paper seeks to assess to what extent the recent structural transformation process has played a role in boosting aggregate labor productivity growth in G-24 countries, as well as examining its relationship to the earnings distribution of workers.

Figure 1: Distribution of employment by sector in G-24 countries, 1991-2017 (%)



Note: Weighted average of the share of each of the three major sectors among G-24 countries. Labor force size used as a weight.
Source: Authors' calculations based on ILOSTAT.

These reallocations from low-productivity activities to higher productivity activities have long been considered key to aggregate economic growth, with Kuznets (1971), for example, identifying such structural transformation as one the six characteristics of modern economic growth. More recently, its importance has been highlighted in the Sustainable Development Goals (SDGs), which includes Target 8.2 to "Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labor-intensive sectors" under Goal 8 to "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all." Target 9.2 of the SDGs seeks to promote "inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries."

The agricultural sector is typically characterized by high labor input, low productivity and low wages. In contrast, the manufacturing sector is more likely to be formal, more capital intensive and more likely to have higher productivity and wages. In the past, as noted by the experience of present day developed countries, the first phase of structural transformation was seen as a shrinking of the agricultural sector and growth of the manufacturing sector. Given that land is limited, the marginal product of an additional worker/farmer in agriculture is assumed to be minimal, or almost zero, due to the law of diminishing marginal returns of labor on a fixed input, land. The expansion of the manufacturing sector draws labor from the subsistence agricultural sector. This raises output per worker - and therefore promotes a

---

[2] We define G-24 countries as both G-24 Members and Observers, see Appendix A.

[3] Working poverty defined as workers living in households with income or consumption per capita below the poverty line. Vulnerable employment defined as own-account workers and contributing family workers.

movement from low-productivity to higher productivity employment. This was central to the structural transformation hypothesis of scholars such as Kuznets (1971). Furthermore, the shift from agriculture to manufacturing, in particular, is deemed critical due to the dynamic economies of scale offered by manufacturing and the sector's ability to induce productivity growth within and outside of the sector (Kaldor, 1968; Chang, 2011).

In the literature, the services sector was viewed as a sector that grows at higher levels of income. Baghwati (2011), on the other hand, argues that services can provide an alternative "engine of growth" in light of the increasing tradability of services and potential for increasing returns. Dasgupta and Singh (2005) and Roncolato and Kucera (2014) take a more nuanced view, with services having the potential to act as both a leading and lagging complement to manufacturing in driving economic growth. This is particularly so as within the heterogeneous service sector there are high productivity subsectors such as finance and business services as well as traditional and non-market subsectors.

Shift-share decompositions are often used to identify sectors that drive labor productivity growth and to disentangle the effects of structural change and within-sector increases on growth (see for example McMillan and Rodrik, 2011; Roncolato and Kucera, 2014; de Vries *et al.*, 2015). In particular, de Vries *et al.* (2015) propose an innovative modification to the two-fold canonical decomposition method by separating the structural change effect into a static and a dynamic component. Such a distinction enables the identification of productivity changes arising not only from the shift of employment towards sectors with above average productivity levels (static effect), but also from the shift of workers towards sectors with above average productivity growth (dynamic effect). We follow de Vries *et al.* (2015) to decompose labor productivity growth between 2005 and 2015 in 14 G-24 countries, and do so by developing a unique mixed micro-macro dataset as opposed to relying exclusively on macroeconomic aggregates.[4] Such a dataset, which includes an array of labor market variables such as the earnings distribution of workers, allows us to also explore inequality-related issues in the context of structural transformation. Our findings point to within-sector productivity gains being the primary driver of aggregate labour productivity growth in most of the countries in our sample between 2005 and 2015, although the between-sector changes played a more important role in Pakistan and many Latin American countries, including Brazil, Ecuador, Guatemala and Mexico. Our findings also indicate that in most countries in our sample, workers have moved to sectors that have above average productivity levels but below average productivity growth.

Following this introduction, Section 2 describes developments in the labor market of developing countries to provide a more historical and contextual perspective of structural transformation in developing countries. Section 3 provides information on our dataset, while Section 4 discusses our methodology and results for the set of G-24 countries. Section 5 examines earnings inequality in the context of structural transformation, including exploring the link between inequality and the different components of our decomposition. Section 6 concludes with a number of policy implications.

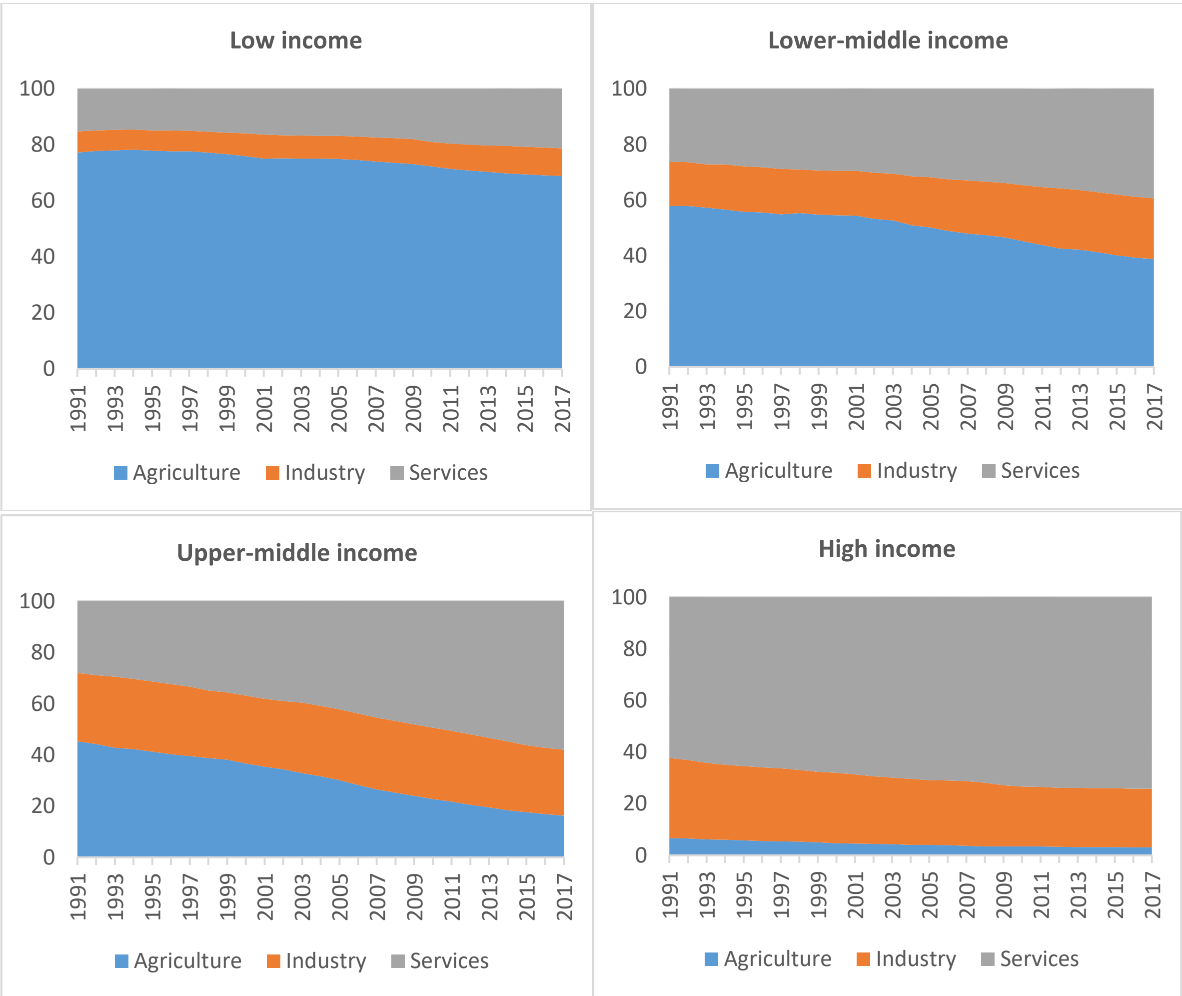
2. Structural Transformation and Labor Market Developments in Developing Countries

Developing countries have experienced sizeable structural shifts in employment in the past few decades (Figure 2). In low-income countries, the magnitude of the shifts has been more subdued compared to other income groups, with agriculture continuing to account for the largest share of employment at 68.5 percent. In lower-middle and upper-middle income countries, though the agricultural sector accounted for the largest share of employment in 1991, its share fell by 20 percentage points between 1991 and 2018 in lower-middle income countries and by 29.7 percentage points in upper middle-income countries.

[4] We define G-24 countries as both G-24 Members and Observers.

Services now account for the largest share of employment at 40.2 percent in lower middle-countries and 59 percent in upper-middle income countries. In low-income countries, the share of industry in total employment increased from 7.5 percent in 1991 to 10 percent in 2018, while increasing from 15.9 percent to 21.9 percent in lower middle-income countries. In upper middle-income countries, the share of industry in total employment increased incrementally from 1991 until the global economic crisis in 2008, but has since shown a declining trend, accounting for 25.4 percent of total employment in 2018 (a decline of 1.3 percentage points from 1991). In comparison, the share of industry in total employment declined by 8.4 percentage points between 1991 and 2018 in high-income countries.

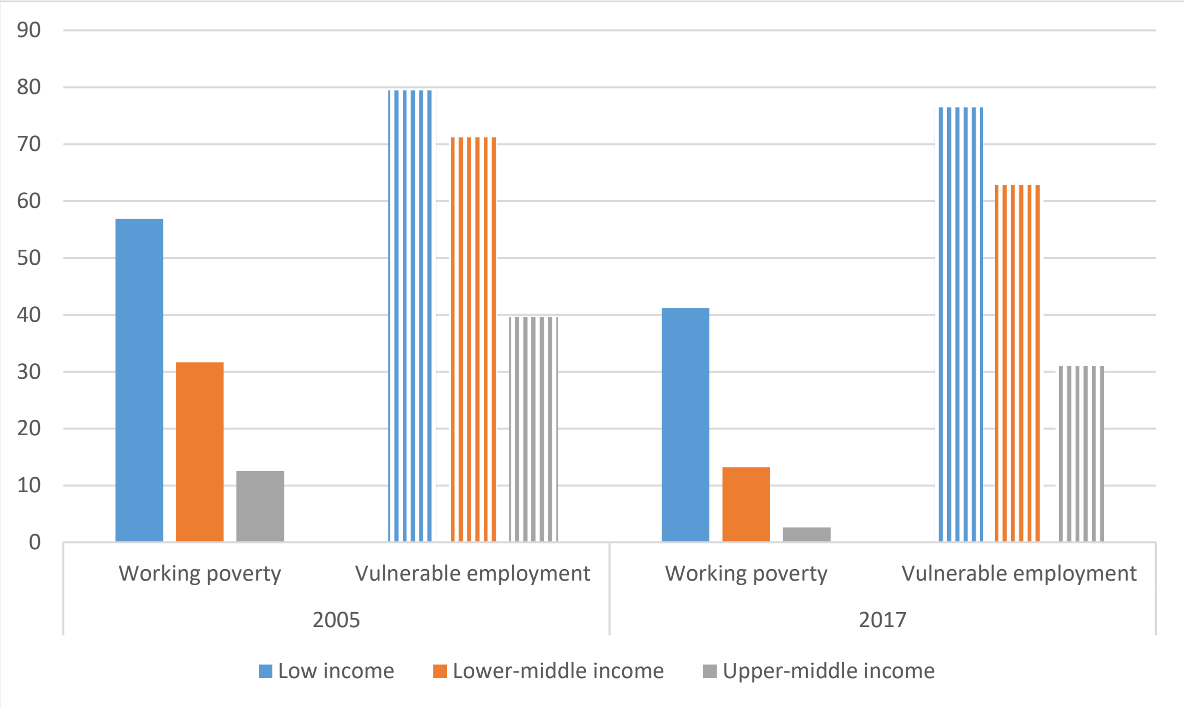
Figure 2: Distribution of employment by sector and income group, 1991-2017 (%)



Source: ILO modelled estimates, available from ILOSTAT.

A number of other labor market outcomes are closely linked to the structural transformation process, including working poverty. With most of the poor working in agriculture, the pace of working poverty reduction amongst income groups has mirrored the pace of structural transformation, falling the least in low-income countries and the most in upper middle- income countries. In the former, the share of extreme working poverty (workers living in households with income of less than US$ 1.90 a day, in purchasing power parity or PPP) is estimated to have fallen from 56.9 percent in 2005 to 41.2 percent in 2017 and from 12.5 percent to 2.6 in the latter (Figure 3). In lower middle-income countries, the incidence fell from 31.6 percent to 13.2 percent during the same period. The share of vulnerable employment (own-account workers and contributing family members) has also declined in all income groups, albeit at a much slower rate than reductions in working poverty. This reflects a high incidence of vulnerable employment in agriculture, but also in services such as wholesale and retail trade in low-income and lower middle-income countries (ILO, 2018).[5] In low-income countries, the share of vulnerable employment is estimated to have decreased modestly from 79.4 percent in 2005 to 76.4 percent in 2017; from 71.1 percent to 62.6 percent in lower-income countries; and from 39.6 percent to 31 percent in upper middle- income countries during the same period.

Figure 3: Share of working poor (US$ 1.90 PPP) and vulnerable employment in total employment, 2005 and 2018 (%)

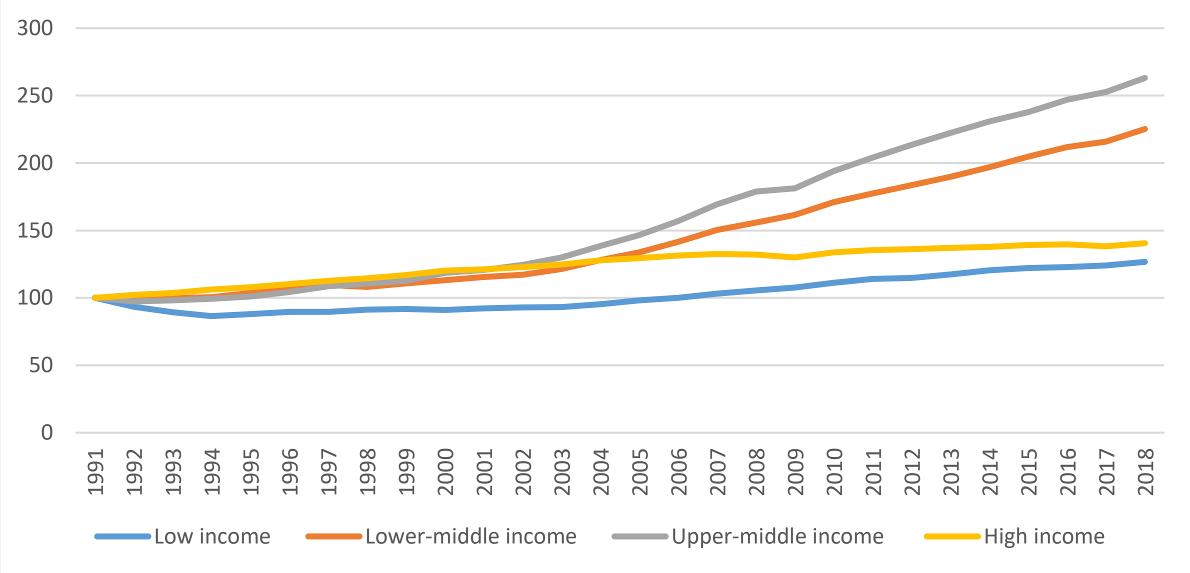


Source: ILO modelled estimates, available from ILOSTAT.

Structural employment shifts have also played an important role in increasing labor productivity in developing countries. Between 1991 and 2018, labor productivity is estimated to have increased at the fastest pace in upper middle- income countries followed by lower-middle income countries, with growth accelerating from 2002 (Figure 4). Whereas productivity levels more than doubled in both these income groups during that period, productivity growth was much more modest in in low-income countries, rising by 26.7 percent during the period, a rate slower than that in high-income countries (40.5 per cent).

[5] Workers in vulnerable employment are more likely to be poorly paid and under weak or no contracts, have little or no labor protection or support, be employed in the informal sector, have reduced access to social protection systems and be living in poverty.

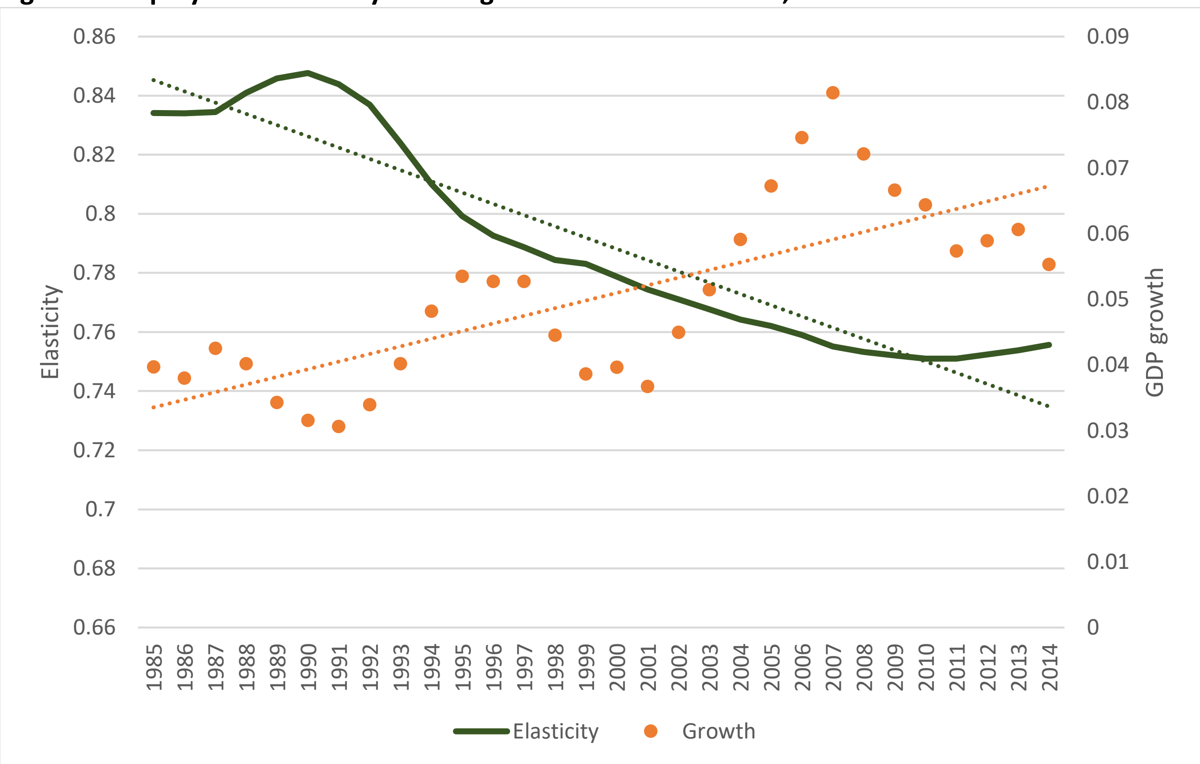
Figure 4: Growth in labor productivity (GDP constant 2011 international $ in PPP) (Index, 1991=100)



Source: Authors' calculations based on ILO modelled estimates, available from ILOSTAT.

In addition to improving the quality of jobs, developing countries also face the challenge of creating a sufficient number of productive jobs to reduce unemployment and absorb new entrants into the labor force. This challenge is compounded by a declining employment elasticity of growth (the percentage of change in employment associated with a one percentage point change in economic growth). In G-24 countries, employment elasticity has fallen from around 0.85 in the late 1980s to around 0.75 in the mid-2010s (Figure 5).

Figure 5: Employment elasticity of GDP growth in G-24 countries, 1985-2014



Note: G-24 countries included with the exception of Gabon and Lebanon; see Appendix A for list of countries. Weighted average.
Source: Authors' calculations based on Penn World Table 9.0.

3. Data

We contribute to the growing number of international datasets on output, employment and productivity by sector, including the Groningen Growth and Development Centre (GGDC) 10-Sector Database (see Timmer *et al.*, 2015), the extended GGDC 10-Sector dataset by McMillan and Rodrik (2011), and the Africa Sector Database (see de Vries *et al.*, 2015), by developing a new database (Macro Labour Force Micro Database or MLFM-11). The MLFM has its roots in the ILO's Labour Force Micro Database, originally developed for the *Global Employment Trends for Youth 2017* report (ILO, 2017). This database contains harmonized variables from household and labor force survey of 14 G-24 countries at two points in time, a year close to 2005 and a year close to 2015.[6] Among the variables that can be found in the database are the individuals' age, gender, living area (urban/rural), labor market status, employment status, economic activity (11 ISIC rev.4 sectors), occupation (ISCO 08) and earnings. We update that database with data on sectoral value added. The primary source of this variable is UNdata and we make use of this source whenever possible given that the data has already been harmonized. In the case of China, where the information provided by UNdata was not disaggregated enough, we relied on its National Bureau of Statistics.

A particularly challenging variable to construct is employment by economic activity as it needs to be harmonized with available data on value added, including through conversions of national classifications such as the China Standard Industrial Classification (CSIC) to the International Standard Industrial Classification (ISIC) and the change in the ISIC version from the Revision 3.1 to Revision 4. In the end, we define 11 broad sectors (Table 1) with a structure that follows rev.4 codes but has (forced) similarities with the rev.3.1.

Table 1: Economic activities, MLFM-11 (ISIC Rev.4)

Number	Code	Content
1	A	Agriculture
2	B,C,D,E	Mining and quarrying, manufacturing, electricity and water supply
3	F	Construction
4	G,I	Wholesale and retail, accommodation and food services
5	H,J	Transportation, storage, information and communication
6	K	Financial and insurance services
7	L,M,N	Real estate, professional, scientific and administrative activities
8	O	Public administration
9	P	Education
10	Q	Human health and social work
11	R,S,T,U	Arts, entertainment, other services, domestic personnel

We also construct a labor income variable to assess inequality-related issues. This variable is expressed in constant USD of 2011 by first deflating/inflating the respective local currency units and then applying the official exchange rate prevailing in 2011. Even though the variable is available for wage earners in all G-24 countries for which we have available data, incomes of the self-employed are sometimes missing. Given the importance of self-employment in the countries under analysis (developing and emerging nations), only countries for which data includes both the incomes of wage earners and the self-employed are analyzed in Section 5.

[6] We refer the reader to Appendix E of ILO (2017) for detailed information on the sources of the dataset, the exact years and the harmonization process.

4. Decomposition Methodology and Results

4.1 Methodology

Shift-share decomposition of labor productivity has a long tradition, dating back to Fabricant (1942), albeit that approach decomposed the change in labor per unit of product, rather than the product per unit of labor as is now customary.[7] Since then, shift-share decompositions have been used for several purposes including assessments of the contributions of establishments to sectoral total factor productivity (TFP) growth rates (see Baily *et al.* 1992; Haltiwanger, 1997) or the contributions of economic sectors to aggregate labor productivity growth rates (see van Ark, 1997). Early multi-country decompositions including van Ark (1997) and Timmer and Szirmai (2000) rely on three-fold decompositions in which aggregate labor productivity growth is decomposed into a within-sector effect, measuring the change in aggregate productivity within sectors, a between-sector effect, measuring the change in productivity resulting from inter-sectoral reallocations of labor, and a thrid term.[8] Subsequent studies have relied on two-fold decompositions (within-sector effect and between-sector effect) including Timmer and de Vries (2009); McMillan and Rodrik (2011); de Vries *et al.* (2012); Roncolato and Kucera (2014).[9] More recent studies have reverted back to three-fold decompositions, including de Vries *et al.* (2015), which we follow.

4.2 Notation

We denote aggregate variables using capital letters; V, for value added and L for the number of workers. In addition, sectoral aggregate variables are written with a subscript, $i \in \{1, I\}$, for instance generating V_i or L_i and which assumes the existence of I sectors in a given economy. Using the above-defined aggregate variables we define value added per worker, p, (also known as average labor productivity) as:

$$p = \frac{V}{L}. \tag{1}$$

An economy's value added can be decomposed as the summation of its $I \in \Re^{+}$ economic activities' value added:

$$V = \sum_{i=1}^{I} V_i. \tag{2}$$

Then, we can divide by the number of workers and develop the resulting expression to obtain:

$$p = \frac{\sum_{i=1}^{I} V_i}{L} = \frac{\sum_{i=1}^{I} V_i}{\sum_{i=1}^{I} L_i}. \tag{3}$$

If we further divide and multiply each of the terms of the summation by the corresponding number of workers in the i^{th} sector, we are able to define value added per worker as:

$$p = \sum_{i=1}^{I} s_i p_i, \tag{4}$$

[7] See Appendix G, page 336 of Fabricant (1942) for the technical details.
[8] This third term does not have a unique name; it is referred to as 'interaction term' by Timmer and Szirmai (2000), as 'dynamic reallocation effect' by de Vries *et al.* (2015), or simply as 'residual' by van Ark (1997).
[9] However, it should be noted that Roncolato and Kucera (2014) decompose labor productivity growth instead of differences in labor productivity between periods as done by McMillan and Rodrik (2011).

where $s_i = \frac{L_i}{L}$ and $p_i = \frac{V_i}{L_i}$ are, respectively, the employment share and the average labor productivity of the i^{th} sector.

4.3 Two-fold Decomposition

There are a number of approaches to the two-fold decomposition, depending on which weights are employed (see de Vries *et al*. 2015 for a review of the possibilities and their consequences). We focus on the ones used by inter alia McMillan and Rodrik (2011) and McMillan *et al.* (2017), given as:

$$p_{t+1} - p_t = \underbrace{\sum_{i=1}^{I} s_{i,t}(p_{i,t+1} - p_{i,t})}_{\text{Within-sector effect}} + \underbrace{\sum_{i=1}^{I} p_{i,t+1}(s_{i,t+1} - s_{i,t})}_{\text{Between-sectorr reallocation effect}} , \quad (5)$$

where two things should be noted; first, the weights used in the 'within' component are time t employment shares while the weights used in the reallocation term correspond to $t+1$ productivity levels. This generates an inter-temporal inconsistency since workers' decision to change sectors is based on ex-ante earnings, not on the post-equilibrium ones. These earnings are more likely correlated with their contemporaneous productivity than with future productivity levels, thus clouding the interpretation of the between-sector reallocation effect. Second, the sectoral contributions of the reallocation effect are positive whenever a sector gains employment share irrespective of whether the productivity of the sector is high or low (in relative terms), and irrespective of whether the productivity of that sector grew more or less than the one of the other economic sectors. This feature of the two-fold decomposition complicates the interpretation of the sectoral contributions.

4.4 Three-fold Decomposition

Timmer and de Vries (2009) and de Vries *et al.* (2015) modify the two-fold decomposition in an attempt to fix some of the limitations posed by the canonical decomposition. We follow these changes, in particular the ones suggested by de Vries *et al.* (2015) when developing the methodology. The starting point to construct the three-fold decomposition is the difference between time $t+1$ and time t average labor productivity:

$$p_{t+1} - p_t = \sum_{i=1}^{I} s_{i,t+1} p_{i,t+1} - \sum_{i=1}^{I} s_{i,t} p_{i,t}. \quad (6)$$

Mathematically speaking, the components of this class of decompositions can be obtained by adding and subtracting inner products of employment shares and labor productivities at different points in time. The two-fold decomposition shown in Equation 5 already uses one, time t employment shares and time $t+1$ productivities. The three-fold decomposition, in addition, uses time t employment shares with time t productivities and time $t+1$ employment shares with time t productivities. These inner products are shown in Equation 7:

$$\text{Inner products}: \begin{cases} \sum_{i=1}^{I} s_{i,t} p_{i,t+1} - \sum_{i=1}^{I} s_{i,t} p_{i,t+1} & \text{(a)} \\ \sum_{i=1}^{I} s_{i,t+1} p_{i,t} - \sum_{i=1}^{I} s_{i,t+1} p_{i,t} & \text{(b)} \\ \sum_{i=1}^{I} s_{i,t} p_{i,t} - \sum_{i=1}^{I} s_{i,t} p_{i,t} & \text{(c)} \end{cases} \quad (7)$$

The first term of Equation 7a and the second term of Equation 6 can be combined to obtain the within term, $\sum_{i=1}^{I} s_{i,t}(p_{i,t+1} - p_{i,t})$. Furthermore, the second term of Equation 6 and the first term of Equation

(7b) combined produce the static reallocation term, $\sum_{i=1}^{I} p_{i,t}(s_{i,t+1}-s_{i,t})$, which differs from the reallocation effect of Equation 5 in that time t instead of time $t+1$ productivities are used. That is, it calculates the contribution of sectors that gained employment at the productivities that caused these shifts. At last, the dynamic reallocation term (or cross-term), combines the leftover elements of Equation 6 and 7 to produce $\sum_{i=1}^{I}(s_{i,t+1}-s_{i,t})(p_{i,t+1}-p_{i,t})$, which is positive when there is *both* a gain in employment and a gain in productivity, signs of a dynamic economy.

Put together, the three terms constructed produce the following three-fold decomposition of labor productivity changes:

$$p_{t+1}-p_t=\underbrace{\sum_{i=1}^{I} s_{i,t}(p_{i,t+1}-p_{i,t})}_{\text{Within-sector effect}}+\underbrace{\sum_{i=1}^{I} p_{i,t}(s_{i,t+1}-s_{i,t})}_{\text{Static reallocation effect}}+\underbrace{\sum_{i=1}^{I}(p_{i,t+1}-p_{i,t})(s_{i,t+1}-s_{i,t})}_{\text{Dynamic reallocation effect}}, \qquad (8)$$

where, in comparison with the decomposition shown in Equation 5, it can be observed that the within-sector term remains unchanged but the between-sector effect is split into two, a static component and a dynamic one.

4.5 Sectoral Effects

De Vries *et al.* (2015) do not stop the development of the decomposition at this stage. The authors argue that the sectoral contributions arising from the reallocation of employment (both static and dynamic) might not be very sensible. For instance, the sectoral contributions arising from the static term are positive whenever a sector gains employment, irrespective of whether the productivity of that sector is higher than in the shrinking sectors of the economy. Likewise, sectoral contributions from the dynamic reallocation term are positive in all the sectors that gain employment and productivity, irrespective of whether they grew more than the sectors that shrank. In order to fix these undesirable features they adapt the demeaning of Timmer and de Vries (2009) to their three-fold decomposition.[10]

This modification divides the static and dynamic reallocation terms in two parts; one that adds up to the contribution of the J sectors whose employment shares are expanding and a second one that does the same with the K shrinking sectors. Then, they multiply the contribution of the shrinking sectors by $-\frac{\sum_{j=1}^{J}(s_{j,t+1}-s_{j,t})}{\sum_{k=1}^{K}(s_{k,t+1}-s_{k,t})}$, which uses the fact that, by definition, the employment share gained by the expanding sectors is the inverse of the share lost by the shrinking sectors, that is, $\sum_{j=1}^{J}(s_{j,t+1}-s_{j,t})=-\sum_{k=1}^{K}(s_{k,t+1}-s_{k,t})$, leaving the expression unchanged. At last, if we define the time t weighted average productivity in the shrinking sectors as:

$$p_t^K=\frac{\sum_{k=1}^{K} p_{k,t}(s_{k,t+1}-s_{k,t})}{\sum_{k=1}^{K}(s_{k,t+1}-s_{k,t})}, \qquad (9)$$

we can rearrange the expression given in Equation 8 as:

[10] Timmer and de Vries (2009) develop this tweak for a two-fold decomposition that uses average employment shares and average productivity as weights in Equation (9); de Vries *et al.* (2015) had to adapt this extension so as to use, as McMillan and Rodrik (2011) do, first period employment shares as weights in the within component.

$$
\begin{aligned}
p_{t+1} - p_t = & \underbrace{\sum_{i=1}^{I} s_{i,t}(p_{i,t+1} - p_{i,t})}_{\text{Within-sector effect}} + \underbrace{\sum_{j=1}^{J} (p_{j,t} - p_t^K)(s_{i,t+1} - s_{i,t})}_{\text{Static reallocation effect}} + \\
& \underbrace{\sum_{j=1}^{J} [(p_{j,t+1} - p_{j,t}) - (p_{t+1}^K - p_t^K)](s_{i,t+1} - s_{i,t})}_{\text{Dynamic reallocation effect}},
\end{aligned} \qquad (10)
$$

where the overall effects remain unchanged and the sectoral contributions are only defined for the expanding sectors, having standardized the contribution of the shrinking sectors to zero. In addition, the individual contribution of the shrinking sectors is now positive only if, respectively, the level (static) or the change (dynamic) in that sector's productivity is above the shrinking sectors' average. Even though the resulting signs (positive or negative) are more sensible to the actual effect caused, we should keep in mind that this method also standardizes the contribution of shrinking sectors to zero.

4.6 Decomposition results and analysis

Table 2 presents the results of the decomposition results for 14 G-24 countries. For most of the G-24 countries, we find that within-sector increases in productivity are the primary drivers of aggregate productivity growth. There are a number of G-24 countries that experienced negative aggregate productivity growth during the decade (Brazil, Mexico and Pakistan). In all three countries, the structural change component (the sum of the static and dynamic effect) contributed positively to aggregate growth, but the negative within component outweighed the positive structural change component, leading to negative aggregate productivity growth. On the other hand, while the contribution of within-sector productivity growth in Guatemala was negative (-0.92 percentage points), the structural change component made a 1.25 percentage points contribution to aggregate growth, leading to a small 0.33 percentage point increase in aggregate productivity growth.

Table 2: Three-fold decomposition, by G-24 country

Country	Within	Static	Dynamic	Productivity growth rate
Brazil	-4.54	0.66	-0.28	-4.15
China	8.36	1.11	1.12	10.58
Colombia	0.89	1.33	-0.88	1.34
Ecuador	0.41	0.87	-0.19	1.08
Egypt	2.06	-0.25	-0.21	1.60
Ethiopia	8.27	1.54	-0.21	9.59
Guatemala	-0.92	2.19	-0.94	0.33
India	4.84	2.08	-0.14	6.78
Indonesia	2.06	1.80	-0.86	3.00
Mexico	-0.47	0.38	-0.08	-0.17
Pakistan	-1.90	0.92	-0.31	-1.29
Peru	2.02	0.88	0.02	2.92
Philippines	2.02	1.08	-0.21	2.89
South Africa	0.10	0.35	-0.40	0.06
Average	1.66	1.07	-0.26	2.30

Note: The three components show annualized contributions to labor producitivty growth measured in percentage points. Numbers in the first three columns may not add up to the overall growth rate due to rounding. G-24 countries for which available data exists in the MLFM-11.
Source: Authors' calculations based on the MLFM-11.

Examining the structural change (between) component in more detail, with the exception of Egypt, all countries display a positive static effect, suggesting that labor has been moving to sectors with above average productivity *levels.* In Egypt, both the static and dynamic effect is negative, indicating that workers in Egypt moved to sectors that have both below average productivity *levels* and below average productivity *growth*, and thus structural change contributed negatively to aggregate labor productivity growth. Conversely, in China and Peru, both the static and dynamic effect is positive, suggesting that workers moved to sectors that have both above average productivity levels and to sectors with above average productivity growth.

In most of the other countries, the static between effect is positive but the dynamic between effect is negative, pointing to the movement of workers to sectors that have above average productivity levels but below average productivity growth. This negative dynamic effect is small in Ethiopia, India, Mexico and the Philippines. However, the negative dynamic effect is relatively large in Colombia, Guatemala, Indonesia and South Africa. In South Africa, the static effect contributed 0.35 percentage points to aggregate productivity growth, but the dynamic between effect contributed negatively (-0.40 percentage points), suggesting structural change made a negative contribution to aggregate productivity growth.

Appendix Table 3 to Table 16 provide the contributions of sectors in accounting for productivity growth. In the case of China, for example, we find that almost all sectors that increased in the share of employment (all sectors with the exception of agriculture and other services) experienced productivity growth rates exceeding those in sectors that experienced a decline in the share of employment. On the other hand, productivity growth in transportation, storage, information and communications was below those of declining sectors. In many of our sample countries, including Brazil, Colombia, Guatemala, Mexico, Peru, the Philippines and South Africa, where the share of manufacturing employment declined between 2005 and 2015, the sectors that expanded in employment experienced productivity growth rates lower than in declining sectors such as in manufacturing.

Construction is one sector that experienced employment gains in most of the G-24 countries under analysis. However, the static reallocation gains are generally limited, due to its relatively low-productivity levels. For example, the static component is negative for Egypt, Pakistan and South Africa, while its contribution as a percentage of the aggregate static effect is close to zero in Brazil, China, Colombia, Ethiopia, Indonesia and the Philippines.

Contrary to the experience of developed economies due to the global economic and financial crisis, the financial intermediation sector has seen dramatic increases in its employment share in all G-24 countries, with the exception of Ecuador and Egypt.[11] In addition, the sector showcases relatively high static reallocation effects, particularly in Asian countries (0.15 points in China, 0.25 in India and 0.49 in Indonesia). Overall, and despite some regional heterogeneity, the sector is one of the strongest performers, increasing in its employment share while sustaining gains in productivity and doing so with positive dynamic reallocation effects in half of the countries.

5. Sources of Economic Growth and Inequality

Most of the G-24 countries analyzed in Section 4 showcased positive labor productivity growth during the 2005-2015 period. However, economic growth might also be a source of earnings inequality, as has been documented in high-income countries, and in particular in the United States in the past few decades.[12] Herrendorf *et al.* (2014) link this rise in wage inequality to services-biased stuctural transformation and the changes in the skill premium that the rise of services activities are associated with. These changes in

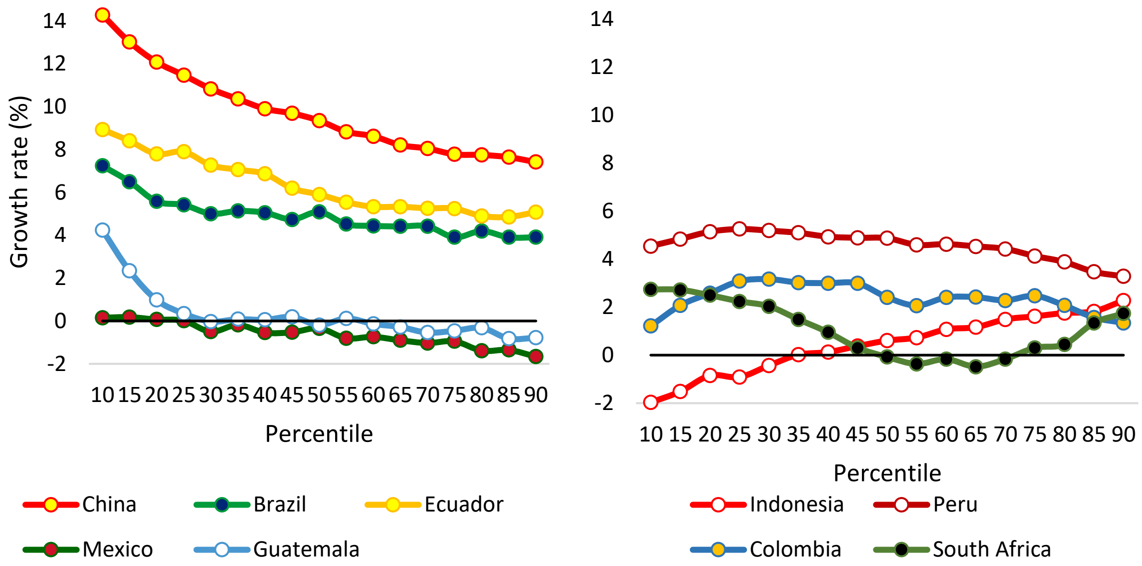
[11] Egypt had strong trade ties (48 percent of its exports) with European Union countries and thus was particularly vulnerable to the financial crisis.

[12] See for example Freeman and Katz (1994), summarizing early signs of rising inequality in the United States in the 1980s or Harrison and Bluestone (1990), one of the earliest papers attributing technological developments for the surge in wage inequality.

the skill-premium are well studied for developed countries in a rich literature that includes Autor *et al.* (2003) for the United States, Ikenaga and Kambayashi (2016) for Japan, and Goos *et al.* (2009) for Europe.

While the theory behind the rise in inequality has evolved from skill-biased technical change to routine-biased technical change, the bottom line remains almost intact: a drop in the relative demand for semi-skilled workers is altering the wage distribution.[13] In order to test whether similar effects (wage polarization or wage inequality) have accompanied the structural changes that have taken place in G-24 countries, we examine the changes in their earnings distribution. In particular, we measure the growth rate of labor earnings (for employees and the self-employed) between 2005 and 2015 at 17 percentiles, starting at the 10th decile and ending at the 90th.[14] The results are shown in Figure 6, which is split in two parts for better readibility.

Figure 6: Annualized hourly earnings (2011 constant USD) growth by decile, selected G-24 countries, 2005-2015



Note: Earnings includes wages of employees and earnings of the self-employed. Contributing family workers are not included in the calculations. Labor income is measured in constant 2011 USD.
Source: Authors' calculations based on MLFM-11.

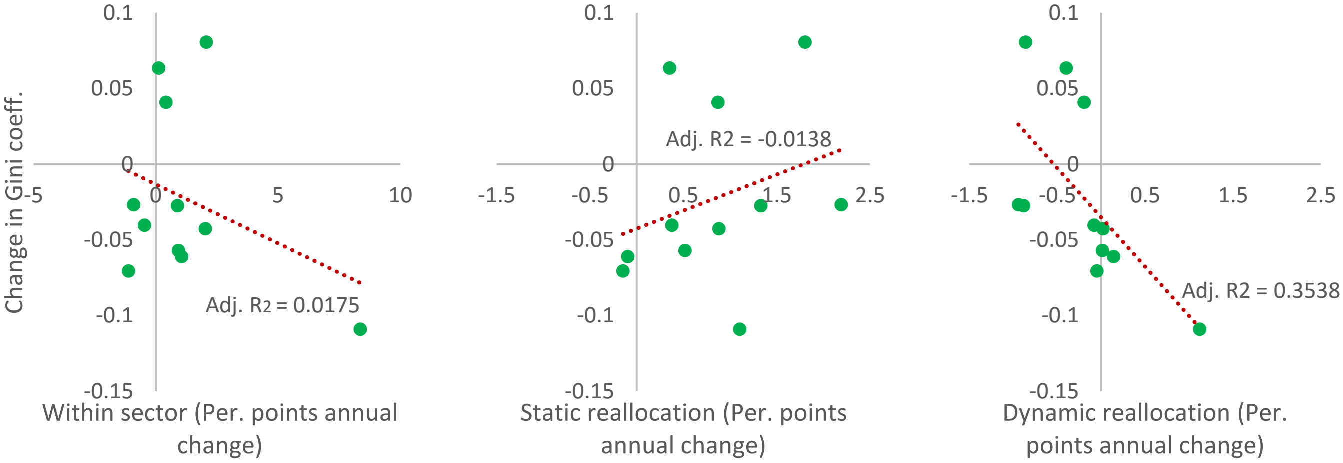
We observe that the evolution of labor earnings is generally positive; only Mexico showcased overall negative growth in constant terms. However, the growth pattern differs from country to country. As such, we can identify a group of countries (left hand-side figure) including China, Brazil, Ecuador, Guatemala and Mexico whose earnings' growth can be classified as being pro-poor, inasmuch as they showcase higher growth rates in the lower percentiles of the distribution. In contrast, a wider variety of growth patterns can be observed on the right hand-side figure. There is evidence of earnings polarization in South Africa, while in Indonesia, the fastest earnings growth is at the top ends of the distribution compared to negative growth for the bottom earners. On the other hand, earnings growth has been most rapid at around the middle of distribution in Colombia and Peru.

[13] See Autor *et al.* (1998) and Goos *et al.* (2014) for the discussion on skill-biased technical and routine-biased technical change.
[14] While wage earners constitute nearly 90 percent of the workforce in developed countries, in G-24 countries the share ranged from 8.9 percent in Ethiopia to 67.1 percent in Mexico in 2016.

Overall, there is only limited evidence of rising inequality in our sample of G-24 countries (Indonesia and South Africa), and we corroborate this by examining the Gini coefficient of the same set of countries. Of the nine countries under analysis, the Gini coefficient decreased in all but Ecuador, Indonesia and South Africa. The case of Ecuador can be reconciled when examining the top decile in the income distribution: the growth rate increased dramatically for this group (not shown in Figure 6). Including the top decile would yield a U-shaped distribution similar to that of South Africa.

We also pose the following question: is there a link between the type of growth source and earnings inequality? In order to address this question we pair the contribution of the three components of the decomposition performed in this paper (the "within" component, the "static reallocation effect" and the "dynamic reallocation effect") with the change in the Gini coefficient during the same period.[15] This is illustrated in Figure 7, together with a linear fit and the corresponding adjusted R-squared. The first two components show a very weak relationship with the change in the Gini coefficient, having in both cases unsignificant coefficients from the linear regression and adjusted R-squares that are extremely poor. On the contrary, the dynamic reallocation effect is associated with reductions of inequality: for every one percentage point increase in the dynamic component, there is an expected decrease of 0.065 in the Gini coefficient, a relationship which is significant at the 95 percent level and with a much better fit to the actual data. This relationship, which would need to be confirmed for other periods and with different sets of countries, is of particular relevance as it demonstrates the importance of splitting in the decomposition the two structural change components in the examination of inclusive structural transformation.

Figure 7. Change in the Gini coefficient and contribution to growth of the decomposition terms, 2005-2015



Note: The graphs show scatter plots between the change in the Gini coefficient for workers's earnings (employees and self-employed) and the percentage point contribution of each of the three decomposition terms calculated in Section 4 of this paper, during the period 2005-2015. Available G-24 countries plus Chile and Russia. The addition of these two non G-24 countries does not change the relationships in a significant way. Crimson line shows a linear fit, its adjusted R-square coefficient is included for reference.
Source: Authors' calculations based on MLFM-11.

6. Policy Implications

Decompositions of labour productivity growth in 14 G-24 countries indicate that within-sector productivity gains have been the primary driver of aggregate labour productivity growth between 2005 and 2015. These findings, which are consistent with McMillan and Rorik (2011) and Roncolato and Kucera (2014), point to the importance of modernizing existing sectors, and the firms within those sectors,

[15] The contributions of the components are measured in annualized percentage points.

including through enterprise-level training and innovation, to drive labour productivity growth. Nonetheless, between-sector productivity increases have played a more prominent role in Pakistan and many G-24 Latin American countries, including Brazil, Ecuador, Guatemala and Mexico, and can be expected to continue to play an important role in other G-24 countries where differecnes in sectoral productivity levels remain wide and that are at a lower stage of the structural transformation process.

For countries where agriculture continues to be the largest employer and that have experienced limited structural transformation in recent decades, and yet experience large differences in sectoral productivity levels, improving the productivity of employment in agriculture remains the priority. This "push" factor can bring the triple dividend of increasing productivity in the overall economy and decreasing the incidence of vulnerable employment and working poverty. For this to happen however, a "pull" factor is concurrently required and nurturing the development of sectors with relatively high productivity levels and growth rates through coordinated sectoral and employment policies can play an important role in raising living standards and supporting the growth of decent jobs.

Our findings indicate that in most countries in our sample, workers have shifted to sectors with above average productivity levels but below average productivity growth. Typically, such shifts have entailed the movement of workers from low-productivity agriculture to services, which generally have higher productivity levels than that of agriculture but lower productivity growth rates than manufacturing. With services being highly heterogeneous in terms of productivity levels, from typically low-productivity traditional services to high-productivity modern services, a key policy challenge for developing countries is fostering a pattern of structural transformation that involves the movement of workers from low-productivity agriculture to higher-productivity manufacturing and modern services, rather than merely to low-productivity traditional services. Our findings also indicate that such a pattern of structural transformation is likely to be associated with greater earnings equality. The continued growing importance of services in developing countries is also likely to impact the qualitative dimensions of employment, including working conditions. In high-income countries for example, the growth of the services sector in the past decades has coincided with an increase in part-time and temporary work and job stability. At the same time, new forms of employment such as on-call work and crowd work have blossomed in the services economy. Consequently, such forms of employment may also increase in developing countries as their services economy expands, pointing to a need to strengthen labour market institutions.

Structural transformation also implies the need for new skills in an economy, capabilities to gainfully absorb new technologies, and concerted efforts to enhance the skills of the workforce. This not only supports structural transformation process, but also provides pathways for the most vulnerable segments of the workforce. The specific areas of focus for education and training policies will differ by country, but ensuring that skills demand signals are expeditiously sent to those in education and to workers will play a key role in enhancing labor market outcomes. To this end, sound career guidance, labor market information systems for skills anticipation and partnerships with employers' and workers' organizations to identify emerging skills, ensure relevance of curricula and enhance firm-level training will support a more gainful structural transformation.

Structural transformation entails "churning" in the labor market, pointing to the importance of strengthening social protection systems in G-24 countries for a more inclusive development path. Well-designed social protection systems can also significantly contribute to reducing inequality. While we found only limited evidence of rising inequality in our sample of G-24 countries, Buera and Kabosky (2012) and Herrendorf *et al.* (2014) identify per capita income thresholds at which the skills premium accelerates, as a result of more complex services being demanded as an economy develops. It may thus be a matter of time before G-24 countries are confronted with rising earnings inequality, highlighting the importance of continuing to take progressive steps in strenghtening social protections systems.

References

Autor, D. H.; L.F. Katz and A.B. Krueger 1998. “Computing inequality: have computers changed the labor market?”, in *Quarterly Journal of Economics*, Vol. 113, 4 (November 1998): 1169-1214.

Autor, D.; F. Levy and R. Murnane 2003. “The Skill Content of Recent Technological Change: An Empirical Exploration”, in *Quarterly Journal of Economics*, 118(4): 1279-1333, Nov.

Baily, M. N.; C. Hulten and D. Campbell 1992. “Productivity dynamics in manufacturing plants”, in *Brookings Papers on Economic Activity*, 23(1992 Microeconomics):187–267.

Bhagwati, J. 2011. “The Economist.com debate: Manufacturing”, 28 June–8 July, available at: http://www.columbia.edu/~jb38/papers/pdf/The_Economist_com_Debate_Manufacturing.pdf

Buera, F. and J.P. Kaboski 2012. “The Rise of the Service Economy”, in *American Economic Review*, 102, 2540–2569.

Chang, H-J. 2011. “The Economist.com debate: Manufacturing”, 28 June–8 July, available at: http://www.columbia.edu/~jb38/papers/pdf/The_Economist_com_Debate_Manufacturing.pdf

Dasgupta, S. and A. Singh 2005. “Will services be the new engine of Indian economic growth?”, in *Development and Change*, Vol. 36, No. 6, pp. 1035–1057.

de Vries, G. J.; M. Timmer and K. de Vries 2015. “Structural transformation in Africa: Static gains, dynamic losses” in *The Journal of Development Studies*, 51(6):674–688, 2015.

de Vries, G. J.; A.A. Erumban; M. Timmer; I.B. Voskoboynikov and H. X. Wu 2012. “Deconstructing the BRICS: Structural transformation and aggregate productivity growth” in *Journal of Comparative Economics*, 40(2):211–227, 2012.

Fabricant, S. 1942. *Employment in manufacturing, 1899-1939*. New York, NY: NBER.

Freeman, R. B. and L.F. Katz 1994. “*Rising wage inequality: the United States vs. other advanced countries”,* in R. Freeman (ed.), *Working under different rules.* Russell Sage Foundation, New York.

Goos, M.; A. Manning and A. Salomons 2009. “Job Polarization in Europe”, in *American Economic Review*, 99 (2): 58-63.

Goos, M.; A. Manning and A. Salomons 2014. “Explaining Job Polarization: Routine-Biased Technological Change and Offshoring”, in *American Economic Review*, 104 (8): 2509-26.

Haltiwanger, J. C. 1997. “Measuring and analyzing aggregate fluctuations: The importance of building from microeconomic evidence” in *Federal Reserve Bank of St. Louis Review*, May/June 1997:55–78.

Harrison, B. and B. Bluestone 1990. “Wage polarisation in the US and the “flexibility” debate,” in *Cambridge Journal of Economics*, 14, pp. 351-373.

Herrendorf, B.; R. Rogerson and A. Valentinyi 2014. *Growth and Structural Transformation.* Handbook of Economic Growth, Volume 2, Pages 855-941.

Ikenaga, T. and R. Kambayashi 2016. "Task Polarization in the Japanese Labor market: Evidence of a Long-Term Trend", in *Industrial Relations*, Vol. 55, Issue 2, April 2016 pp. 267-293.

International Labour Organization 2017. *Global Employment Trends for Youth 2017: Paths to a better working future*, Geneva, ILO.

International Labour Organization 2018. *World Employment and Social Outlook: Trends 2018*, Geneva, ILO.

Kaldor, N. 1968. "Productivity and growth in manufacturing industry: A reply", in *Economica* New Series, Vol. 35, No. 140, pp. 385–391.

Kuznets, S. 1971. *Modern Economic Growth: Findings and Reflections* (Nobel Memorial Lecture).

McMillan, M. and D. Rodrik 2011. *Globalization, structural change and productivity growth.* NBER Working Paper 17143, June.

McMillan, M.; D. Rodrik and C. Sepulveda 2017. *Structural change, fundamentals and growth: A framework and case studies*. NBER Working Paper 23378.

Roncolato, L. and D. Kucera 2014. "Structural drivers of productivity and employment growth: a decomposition analysis for 81 countries", in *Cambridge Journal of Economics*, 38(2):399–424.

Timmer, M. P. and G.J. de Vries 2009. "Structural change and growth accelerations in Asia and Latin America: a new sectoral data set", in *Cliometrica*, (3):165–190.

Timmer, M.P. and A. Szirmai 2000. "Productivity growth in Asian manufacturing: the structural bonus hypothesis examined", in *Structural Change and Economic Dynamics*, (11):371–392.

Timmer, M. P.; G. J. de Vries and K. de Vries 2015. "Patterns of Structural Change in Developing Countries", in Weiss J. and M. Tribe (eds.), *Routledge Handbook of Industry and Development* (pp. 65-83). Routledge.

van Ark, B. 1997. "Sectoral growth accounting and structural change in post-war Europe", in *Quantitative aspects of post-war European economic growth*, pages 84–164. CEPR, Cambridge University Press, Cambridge, 1997.

Appendix A – G-24 Members and Observers

Algeria
Argentina
Brazil
China
Colombia
Congo
Ecuador
Egypt
Ethiopia
Gabon
Ghana
Guatemala
Haiti
India
Iran
Ivory Coast
Kenya
Lebanon
Mexico
Morocco
Nigeria
Pakistan
Peru
Philippines
South Africa
Sri Lanka
Syria
Trinidad and Tobago
Venezuela

Appendix A - Three-fold decomposition, disaggregated G-24 countries

Table 3 Brazil

Sector	Within	Static	Dynamic
0-Total country	-4.54	0.66	-0.28
A, Agriculture,	-0.08	0.00	0.00
B-E, Manufacturing	-1.24	0.00	0.00
F, Construction	-0.20	0.01	-0.01
H,J, Transport, communications	-0.24	0.06	-0.02
G,I, Trade, hotels	-0.28	-0.02	0.03
K, Financial int.	-0.40	0.08	-0.04
L-N, Real state, bus. activities	-0.89	0.42	-0.20
O, Public administration	-0.56	0.04	-0.02
P, Education	-0.13	0.01	0.01
Q, Health	-0.18	0.07	-0.03
R-U, Other services	-0.35	0.00	0.00

Table 4 China

Sector	Within	Static	Dynamic
0-Total country	8.36	1.11	1.12
A, Agriculture,	1.79	0	0
B-E, Manufacturing	3.16	0.16	0.25
F, Construction	0.54	0.06	0.1
H,J, Transport, communications	0.03	0.26	-0.16
G,I, Trade, hotels	0.73	0.14	0.11
K, Financial int.	0.39	0.15	0.33
L-N, Real state, bus. activities	0.86	0.23	0.48
O, Public administration	0.21	0.07	0.01
P, Education	0.2	0.01	0
Q, Health	0.08	0.02	0
R-U, Other services	0.38	0	0

Table 5 Colombia

Sector	Within	Static	Dynamic
0-Total country	0.89	1.33	-0.88
A, Agriculture,	0.07	0	0
B-E, Manufacturing	0.76	0	0
F, Construction	0.31	0.03	0.05
H,J, Transport, communications	-0.04	0.01	-0.04
G,I, Trade, hotels	0.14	-0.05	-0.02
K, Financial int.	0.05	0.09	0.01
L-N, Real state, bus. activities	-0.74	1.23	-0.86
O, Public administration	0.1	0.04	0
P, Education	0.19	0	0
Q, Health	0.03	-0.02	-0.01
R-U, Other services	0.03	0	0

Table 6 Ecuador

Sector	Within	Static	Dynamic
0-Total country	0.41	0.87	-0.19
A, Agriculture,	0.33	0	0
B-E, Manufacturing	-0.08	0	0
F, Construction	0.3	0.1	0.05
H,J, Transport, communications	-0.43	0.21	-0.13
G,I, Trade, hotels	0.09	0.01	-0.01
K, Financial int.	0.16	0	0
L-N, Real state, bus. activities	-0.25	0.38	-0.1
O, Public administration	0.03	0.16	0
P, Education	0.12	0	0
Q, Health	0.12	0.01	0
R-U, Other services	0.02	0	0

Table 7 Egypt

Sector	Within	Static	Dynamic
0-Total country	2.06	-0.25	-0.21
A, Agriculture,	-0.04	0	0
B-E, Manufacturing	0.43	0	0
F, Construction	-0.06	-0.28	-0.2
H,J, Transport, communications	-0.04	0	-0.05
G,I, Trade, hotels	0.86	0	0
K, Financial int.	0.05	0	0
L-N, Real state, bus. activities	0.46	0.05	0.17
O, Public administration	0.58	0	0
P, Education	-0.02	0	0
Q, Health	0.12	-0.01	0
R-U, Other services	-0.28	-0.01	-0.13

Table 8 Ethiopia

Sector	Within	Static	Dynamic
0-Total country	8.27	1.54	-0.21
A, Agriculture,	3.53	0	0
B-E, Manufacturing	0.11	0.1	-0.13
F, Construction	1.32	0.12	0.59
H,J, Transport, communications	-0.13	0.81	-0.5
G,I, Trade, hotels	2.07	0	0
K, Financial int.	0.13	0.14	0.13
L-N, Real state, bus. activities	0.63	0	0
O, Public administration	0.27	0.03	0.02
P, Education	-0.05	0.26	-0.24
Q, Health	-0.01	0.07	-0.09
R-U, Other services	0.41	0	0

Table 9 Guatemala

Sector	Within	Static	Dynamic
0-Total country	-0.92	2.19	-0.94
A, Agriculture,	-0.03	0	0
B-E, Manufacturing	0.07	0	0
F, Construction	-0.01	0	0
H,J, Transport, communications	0.07	0.08	0.01
G,I, Trade, hotels	0.2	0.24	0.03
K, Financial int.	-0.05	0.14	-0.03
L-N, Real state, bus. activities	-0.89	1.26	-0.73
O, Public administration	-0.18	0.27	-0.13
P, Education	-0.06	0.07	-0.03
Q, Health	-0.11	0.14	-0.06
R-U, Other services	0.08	0	0

Table 10 India

Sector	Within	Static	Dynamic
0-Total country	4.84	2.08	-0.14
A, Agriculture,	1.82	0	0
B-E, Manufacturing	1.48	0.13	0.07
F, Construction	0.03	0.49	-0.18
H,J, Transport, communications	0.61	0.11	0.06
G,I, Trade, hotels	-0.09	0.18	-0.07
K, Financial int.	0.13	0.25	0.04
L-N, Real state, bus. activities	0.01	0.78	-0.02
O, Public administration	0.62	0	0
P, Education	0.06	0.06	-0.01
Q, Health	-0.07	0.07	-0.03
R-U, Other services	0.24	0	0

Table 11 Indonesia

Sector	Within	Static	Dynamic
0-Total country	2.06	1.8	-0.86
A, Agriculture,	1.05	0	0
B-E, Manufacturing	-0.18	0.31	-0.08
F, Construction	0.33	0.14	0.04
H,J, Transport, communications	0.88	0	0
G,I, Trade, hotels	0.27	0.14	-0.11
K, Financial int.	-0.15	0.49	-0.27
L-N, Real state, bus. activities	-0.16	0.53	-0.28
O, Public administration	-0.04	0.07	-0.03
P, Education	0.01	0.08	-0.07
Q, Health	-0.01	0.05	-0.04
R-U, Other services	0.05	-0.01	-0.02

Table 12 Mexico

Sector	Within	Static	Dynamic
0-Total country	-0.47	0.38	-0.08
A, Agriculture,	0.04	0	0
B-E, Manufacturing	-0.37	0	0
F, Construction	0.05	0	0
H,J, Transport, communications	-0.05	0	0
G,I, Trade, hotels	0.06	0	0
K, Financial int.	-0.02	0.04	0
L-N, Real state, bus. activities	-0.27	0.36	-0.08
O, Public administration	0.1	0	0
P, Education	0.02	0	0
Q, Health	-0.05	0	0
R-U, Other services	0.04	-0.02	0

Table 13 Pakistan

Sector	Within	Static	Dynamic
0-Total country	-1.9	0.92	-0.31
A, Agriculture,	-0.05	0	0
B-E, Manufacturing	-0.39	0.1	-0.04
F, Construction	-0.1	-0.04	-0.01
H,J, Transport, communications	-0.24	0	0
G,I, Trade, hotels	-0.37	0.11	-0.03
K, Financial int.	-0.25	0.15	-0.1
L-N, Real state, bus. activities	-0.16	0.59	-0.13
O, Public administration	-0.14	0	0
P, Education	-0.14	0	0
Q, Health	-0.08	0	0
R-U, Other services	0.02	0	0

Table 14 Peru

Sector	Within	Static	Dynamic
0-Total country	2.02	0.88	0.02
A, Agriculture,	0.45	0	0
B-E, Manufacturing	0.42	0	0
F, Construction	-0.03	0.22	-0.05
H,J, Transport, communications	0.2	0.07	0.01
G,I, Trade, hotels	0.4	0.01	0
K, Financial int.	0.16	0.13	0.08
L-N, Real state, bus. activities	-0.04	0.29	-0.04
O, Public administration	-0.07	0.11	-0.03
P, Education	0.3	0.01	0.02
Q, Health	0.1	0.04	0.03
R-U, Other services	0.13	0	0

Table 15 Philippines

Sector	Within	Static	Dynamic
0-Total country	2.02	1.08	-0.21
A, Agriculture,	0.45	0	0
B-E, Manufacturing	0.46	0	0
F, Construction	0.19	0.02	0.01
H,J, Transport, communications	0.05	0.01	0
G,I, Trade, hotels	0.69	0.02	0.03
K, Financial int.	0.18	0.15	0.06
L-N, Real state, bus. activities	-0.2	0.87	-0.26
O, Public administration	0.05	0.01	0
P, Education	0.23	0	0
Q, Health	0.04	0	0
R-U, Other services	-0.12	-0.01	-0.05

Table 16 South Africa

Sector	Within	Static	Dynamic
0-Total country	0.1	0.35	-0.4
A, Agriculture,	0.1	0	0
B-E, Manufacturing	0.14	0	0
F, Construction	0.02	-0.1	-0.02
H,J, Transport, communications	-0.15	0.1	-0.04
G,I, Trade, hotels	0.15	0	0
K, Financial int.	0	0.07	0
L-N, Real state, bus. activities	-0.4	0.37	-0.32
O, Public administration	0.33	0	0
P, Education	0.01	-0.02	0
Q, Health	-0.01	-0.06	-0.02
R-U, Other services	-0.08	0	0