



# **Income inequality and labour income share in G20 countries: Trends, Impacts and Causes**

International Labour Organization  
International Monetary Fund  
Organisation for Economic Co-operation and Development  
World Bank Group



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## 1. Introduction

The Government of Turkey has made inclusiveness one of the three priorities of its G20 Presidency.<sup>1</sup> This builds upon the G20 Leaders' commitment in 2014 to "...support development and inclusive growth, and help to reduce inequality and poverty."<sup>2</sup>

Indeed, the inclusiveness of growth, and the related issues of growing inequality and declining labour income shares, have taken center stage in policy debates both within the G20 and beyond. An ever-growing body of research documents that inequality has risen across the globe, including in most G20 countries, in some cases to historic highs.<sup>3</sup> The middle class has been squeezed in many advanced and some emerging economies, with incomes stagnating or even declining. The share of national income going to labour has declined in almost all G20 countries, with productivity rising much faster than real wages in a number of advanced G20 economies.<sup>4</sup> Within the labour share, the highest earners have captured an increasingly large portion, while those at the bottom have seen their shares decline significantly.<sup>5</sup>

Many emerging G20 economies have managed to bring millions of people out of absolute poverty over the past two decades, but at the same time several have seen sharp increases in income inequality. Overall, the reality for emerging markets and developing countries is more mixed than for the developed world. Amongst the emerging economies of the G20, inequality has been increasing in some—e.g. Indonesia and China—while falling in others—e.g. Brazil and Argentina.<sup>6</sup>

Rising inequality raises concerns because it can have a corrosive effect on social and political cohesion.<sup>7</sup> Further, a growing body of research also demonstrates that high inequality may lead to slower as well as less sustained economic growth.<sup>8</sup> This negative impact on growth occurs through various channels, including lowering consumption,

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<sup>1</sup> Investment and implementation are the other two priorities. Turkey has identified three areas for efforts on inclusion: inequality in G20 countries, attention to small and medium enterprises and attention to G20's impacts on low-income developing countries.

<sup>2</sup> Paragraph 3, Brisbane Summit Communiqué, 16 November 2014.

<sup>3</sup> ILO, 2014a, 2015a and 2015b; OECD, 2014a and 2015a; Berg and Ostry, 2011a and 2011b; Dabla-Norris, Kochhar et al, 2015.

<sup>4</sup> ILO, 2014a, 2015a and 2015b; Dabla-Norris, Kochhar et al, 2015; and OECD, 2012b.

<sup>5</sup> OECD, 2012b; Berg and Ostry, 2011a; and Dabla-Norris, Kochhar et al, 2015.

<sup>6</sup> Inequality has fallen in most of Latin America, Sub-Saharan Africa and many Middle East and North African countries (see for example Tsounta and Osueke, 2014, IMF, 2014b World Bank, 2014). For a discussion of inequality developments in Asian and Pacific countries see IMF, 2011. For a broader discussion on inequality, see IMF, 2014a; Clements et al. eds. 2015, forthcoming; ILO, 2015a; ILO, 2014a; World Bank, 2014; OECD, 2015a; Dabla-Norris, Kochhar et al., 2015 and Berg, J. ed., 2015.

<sup>7</sup> World Bank, 2006.

<sup>8</sup> World Bank, 2006; Ostry, Berg and Tsangarides, 2014; OECD, 2015a; ILO, 2012; ILO, 2015b and Dabla-Norris, Kochhar et al., 2015.

under-investment by firms in the face of slack demand, less government revenue and less investment by low-income households in education and skills.<sup>9</sup> Thus, pro-equity policies, especially those that target the middle class and poor, can also be pro-growth if properly designed and implemented. IMF and OECD studies found that policies to redistribute income through the fiscal system may be pro-growth or at least growth-neutral, insofar as the positive effects of the resulting lower inequality may outweigh any negative effects of the redistribution itself.<sup>10</sup> The new body of evidence contrasts with an earlier view that inequality was a price that had to be paid for higher growth. In fact the evidence shows that the effect can run in the opposite direction, with more *equality* leading to higher growth.

Given the commitment of the G20 to raise overall economic growth, notably by an additional 2 per cent of GDP by 2018, the attention to inequality is particularly appropriate and necessary. And as global and G20 growth have slowed again this year, it has become a matter of urgency.

With that in mind, the G20 Sherpas and the Employment Working Group have requested the international organizations to present concise evidence of recent trends in inequality and labour income shares and to identify possible causes as a basis for developing potential policy responses. This report takes up that task and pays particular attention to both the overall trends and common patterns in the G20 as well as to the important differentiation across G20 countries. The paper is organized as follows: Section 2 reviews the implications of changes in the labour share and inequality for the economy and growth. Section 3 reviews recent trends in income inequality and the labour share in G20 countries. It also identifies the inter-linkages between these two measures. Section 4 assesses the weight and patterns of different components contributing to rising inequality, such as labour income and redistribution, as understanding the different elements behind the changes is essential to determine appropriate areas for policy actions. Section 5 discusses the underlying causes of changing income inequality and labour shares.

## **2. Impacts and consequences of rising inequality and falling labour income shares**

In light of the concern with a global slow-down in economic growth and the increases in inequality and falling labour incomes shares experienced by many countries in recent years, greater attention has been paid to the economic impacts of these changes. Broadly speaking, there are three types of research, which are closely related to each other: (i) growth impacts of inequality in the short and medium-term; (ii) growth impacts of declining labour share;

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<sup>9</sup> World Bank, 2006.

<sup>10</sup> Ostry, Berg and Tsangarides, 2014; OECD, 2015a.

and (iii) the impacts of inequality on long-term potential growth through education and other channels.

### **Income inequality and growth**

There is a rapidly growing body of evidence that high income inequality, usually measured by the Gini index,<sup>11</sup> can have adverse consequences for the pace and sustainability of economic growth. One strand of research shows that higher inequality is associated with shorter spells of growth and more breaks in growth and that the effect is large.<sup>12</sup> For example closing half of the inequality gap between Latin America and emerging Asia would more than double the expected duration of growth spells in the former. An ILO-KIEP study estimates that inequality above a certain level may have detrimental effects on growth and found that level to be a disposable income Gini index of 24.5.<sup>13</sup> Most G20 countries have inequality levels beyond this threshold, in many cases well beyond.

A second body of research examines the effect of inequality on the pace of growth during subsequent periods.<sup>14</sup> For example, a recent OECD study shows that the rise of income inequality across OECD countries between 1985 and 2005 was estimated to have knocked 4.7 percentage points off cumulative growth between 1990 and 2010.<sup>15</sup> The World Bank finds a clear potential nexus: inequalities in income, wealth or power translate into unequal opportunities, leading to wasted productive potential and to inefficient allocation of resources.<sup>16</sup> In addition, recent studies find that apart from overall income inequality, the income distribution itself also matters for growth. A recent OECD study suggests that the inequality for the bottom 40% of the income distribution is what matters for the observed negative link between inequality and growth. High inequality among this broad group may, for example, lower investment in their human capital. A World Bank study found that in over half (51 out of 72) of developing countries for which there is reliable data, falling inequality has led to faster growth for the bottom 40 percent between 2006 and 2011.<sup>17</sup> An IMF study found that increases in income for the top 20% of the income distribution are negatively associated with overall economic growth, while increases for the bottom 20% positively correlate with growth.<sup>18</sup> A recent World Bank Policy Research Working Paper

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<sup>11</sup> Gini index measures the extent to which income is equally distributed among the population, ranging from 0 (perfect equality) to 1 (perfect inequality). See also box 1.

<sup>12</sup> Berg and Ostry, 2011a; Ostry et al., 2014; ILO, 2015b and Berg and Ostry, 2011b.

<sup>13</sup> ILO and KIEP, 2015; Tsounta and Osueke 2014 also confirm the existence of the Kuznets curve for a group of 44 emerging and developing countries.

<sup>14</sup> Ostry, et al., 2014.

<sup>15</sup> OECD, 2015a.

<sup>16</sup> World Bank, 2006.

<sup>17</sup> World Bank, 2014.

<sup>18</sup> Dabla-Norris, Kochhar, et al., 2015

confirms these findings for the US and suggests that high inequalities particularly detrimental for the lower incomes group.<sup>19</sup> Recent studies suggest that inequality could also be an important factor in determining the effectiveness of government policies, both those aimed at stimulating growth and those addressed to redistribution. For instance, high inequality can undermine the effectiveness of fiscal policies, as fiscal multipliers tend to be smaller when inequality is higher, presumably due to consumption effects.<sup>20</sup>

## Labour income share and growth

National income is the sum of all income available to the residents of a given country in a given year. The division of national income between labour and capital is called the *functional distribution* of income. The labour income share (or labour share or LIS) is the part of national income allocated to labour compensation, while the capital share is the part of national income going to capital.<sup>21</sup> In recent years, a growing body of evidence suggests that labour shares have seen a *secular* downward trend in most countries, with Figure 2 below providing an illustration for G20 countries. The impact on GDP growth can occur through a number of channels. For example, a declining labour income share can limit household consumption and reduce overall aggregate demand if the redistribution of income to capital does not sufficiently increase investment or if lower wages do not increase net exports sufficiently to offset lower domestic demand. These negative consumption effects can in turn weaken investment, as firms do not see new strong sources of demand.<sup>22</sup> In addition, fiscal revenues are likely to suffer as income taxes are typically the largest source of government revenue, which will in turn constrain public investments in infrastructure, social protection and other labour market and social measures.

Recent research has provided evidence of these channelling mechanisms.<sup>23</sup> The negative consumption effects of a falling labour share are large across G20 countries.

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<sup>19</sup> Milanovic and Van der Weide, 2014.

<sup>20</sup> Keefer and Milanovic, 2014; ILO and KIEP, 2015.

<sup>21</sup> A full discussion and technical details of the labour income share can be found in ILO and OECD, 2015.

<sup>22</sup> There are a number of factors explaining the disconnection between growing profits and productive investment in advanced G20 countries. First, weak aggregate demand, both domestic and foreign, explains most of the weak non-housing investment since the onset of the crisis. Second, much of the long-term increase in the capital share of income accrued in the financial sector. Third, profits of non-financial corporations have increasingly been used to pay dividends and to invest in financial assets rather than to make productive investments. Finally, there have been important long-term structural changes such as a relocation of part of domestic business investment to other countries as well as a shift from highly investment-intensive industrial sectors to less investment-intensive services (ILO, 2011 and OECD, 2015b).

<sup>23</sup> Some of these studies examine short- and mid-term growth impacts, including ILO, 2012; ILO, 2014b; Lavoie and Stockhammer, eds., 2013. A new study (ILO and KIEP, 2015), which investigates long-term effects based on a long historical time-series data confirms that the declining labour income share has negative impacts on economic growth in advanced G20 countries, although with significant variation across countries and over time..

It is also important to note that, when the negative impacts of falling labour share on private consumption are not offset by investment, countries tend to rely more on credit (household debts) and/or net exports in order to maintain aggregate demand. This may contribute to increasing financial instability and/or to global imbalances. If many countries simultaneously pursue policies of wage moderation (as defined by wage growth lower than labour productivity growth), the result is likely to be a shortfall in global aggregate demand, with negative effects on most countries. Persistent declines in labour income share (as seen in Figure 2A below) could also exert a negative effect on global demand.

### **Inequality and long-term potential growth: the role of education and investment**

One important transmission mechanism between inequality and long-term growth is human-capital investment. In other words, income inequality may have long-term negative impacts on potential growth by consolidating and reinforcing existing inequalities of opportunities, reducing skills, capabilities and hampering mobility.<sup>24</sup> Studies by the OECD have shown that widening income inequality can lead to larger gaps in educational outcomes and weaker social mobility.<sup>25</sup> Even when poorer people spend the same amount of time in education as their better-off peers, they may perform at a lower level due to the lower quality of schools that are available to them.<sup>26</sup> The impact of high levels of income inequality can also be transmitted across generations. An OECD study also found that an increase in inequality of around 6 Gini points increases the fraction of time spent out of employment by a worker from a family in which the parents had low educational background by approximately 3 percentage points.<sup>27</sup>

An emerging area of research addresses the impact of current low investment patterns in many countries on future productivity growth.<sup>28</sup> If low investment is driven in part by inequality and declining labour share, as suggested by a number of studies discussed above, this may also be a factor explaining the negative impact of inequality on long-term growth and is an area for further study.

## **3. Key trends in income inequality and the labour share in the G20**

### **Income inequality**

In the G20 as a whole, there is a broad trend toward rising inequality and declining labour income share, although the developments vary across countries. In general, widening

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<sup>24</sup> World Bank, 2006.

<sup>25</sup> OECD, 2014a and OECD, 2015a.

<sup>26</sup> OECD, 2012a and OECD, 2015a.

<sup>27</sup> OECD, 2015a.

<sup>28</sup> OECD, 2015b.

income inequality as measured by the Gini index has risen significantly in most advanced G20 countries in terms of both market and disposable income (see Table 1 and Figure 1).<sup>29</sup> It has reached historical highs in some countries. In many advanced economies, the effect is most dramatic at the top end, with increasing concentration of income at the very top of the distribution. The bottom 40% has fallen significantly behind in many countries, particularly since the recent crisis. For instance, in the United States, between 1979 and 2007, almost one half of the total national income gains were captured by the top 1 per cent.<sup>30</sup> Similarly, in Europe, the top 10 per cent in the wage distribution earns 25 per cent of the total wage bill while the top 10 per cent in the capital distribution owns 60 per cent of total capital, so that – ultimately – the top 10 per cent in the distribution of incomes (wages and capital) obtains 35 per cent of national income.<sup>31</sup>

In the G20 emerging economies, recent developments are mixed. Income inequality has fallen in Argentina, Brazil, Mexico and Turkey since the mid-2000s (or earlier for some countries), although in Mexico the decline was modest and in Argentina, Brazil and Turkey inequality remains relatively high. In other emerging G20 economies, notably China, India, Indonesia and the Russian Federation, income inequality (notably as measured by disposable income Gini) increased over the same period, albeit at a somewhat slower pace than in advanced G20 economies. Of particular concern is the finding that the G20 emerging economies with growing inequality account for over half of the world poor.<sup>32</sup>

Apart from income inequality, inequality in other economic dimensions also matters.<sup>33</sup> Wealth is more concentrated around the top of the distribution and more unequally distributed than income, which is not surprising since it partly reflects the cumulative impact of persistent income inequality. In addition, inequality of opportunity remains a key issue. This inequality can be persistent across generations and can limit the potential of individuals from birth, based only on inherent characteristics (such as gender or ethnicity) or accidents of birth (such as parental income and education).<sup>34</sup> Recent studies by the World Bank based on a simple, intuitive Human Opportunity Index (HOI) show inequality of opportunities to be pervasive, and the negative effect of on productivity potentials to be considerable, across different regions of the developing world.<sup>35</sup> In advanced economies,

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<sup>29</sup> Dabla-Norris, Kochhar et al., 2015 also discuss how wealth inequality is more prevalent than income inequality in most G20 countries.

<sup>30</sup> OECD, 2014b; Sommeiller and Price, 2015.

<sup>31</sup> OECD, 2012b and OECD, 2015a.

<sup>32</sup> World Bank, 2014.

<sup>33</sup> OECD (2015a) presents evidence on the distribution of wealth in advanced economies. See also Dabla-Norris, Kochhar et al., 2015; IMF, 2014a; Clements et al., 2015, forthcoming.

<sup>34</sup> Ferreira et al (2014a), Marrero and Rodriguez (2014).

<sup>35</sup> For more details see *Visualize inequality* at

<http://www1.worldbank.org/poverty/visualizeinequality/index.html>

intergenerational income mobility appears to be lower in countries with higher income inequality. In some emerging and developing economies, inequality of opportunities such as unequal access to education, health care and finance are pervasive, exacerbating income inequality.



**Table 1. Changes in Market and Disposable Income Ginis for G20 Countries**

	Market Income Gini		Disposable Income Gini	
	Most recent (late 2000s)	$\Delta$ since 2000s	Most recent (late 2000s)	$\Delta$ since 2000s
Argentina	..	..	0.42	↓
Australia	0.46	↓	0.32	↑
Brazil	..	..	0.52	↓
Canada	0.44	↓	0.32	↔
China	..	..	0.46	↑
France	0.51	↑	0.31	↑
Germany	0.51	↑	0.29	↑
India	..	..	0.34	↑
Indonesia	..	..	0.41	↑
Italy	0.50	↑	0.32	↔
Japan	0.49	↑	0.34	↔
Mexico	0.51	↓	0.48	↓
Russian Federation	0.48	..	0.40	..
Rep. of Korea	0.34	↑	0.31	↔
South Africa	..	..	0.67	↔
Saudi Arabia	..	..	..	..
Spain	0.52	↑	0.34	↑
Turkey	0.47	..	0.41	↓
United Kingdom	0.53	↑	0.34	↓
United States	0.51	↑	0.39	↑

Notes: Data are based on equivalised income for all countries except for Argentina, Brazil, China (income based) and India and Indonesia (expenditure based) for which inequality at market income is not available. Market income is disposable income before receiving social transfers and paying income taxes, except for Mexico and Turkey where it is before receiving social transfers but after paying taxes. Arrows indicate changes in inequality since the 2000s (red arrow depicts an increase, green arrow a decrease and grey arrows little change). For the Republic of Korea, Spain and Turkey, changes refer to mid-2000s (rather than the 2000s). See also <http://dx.doi.org/10.1787/888933207711> and the note to Figure 1.3.

Source: OECD Income Distribution database; ILO G20 Inequality Dataset, OECD Income Distribution Database (IDD), World Bank, SEDLAC database and national sources.

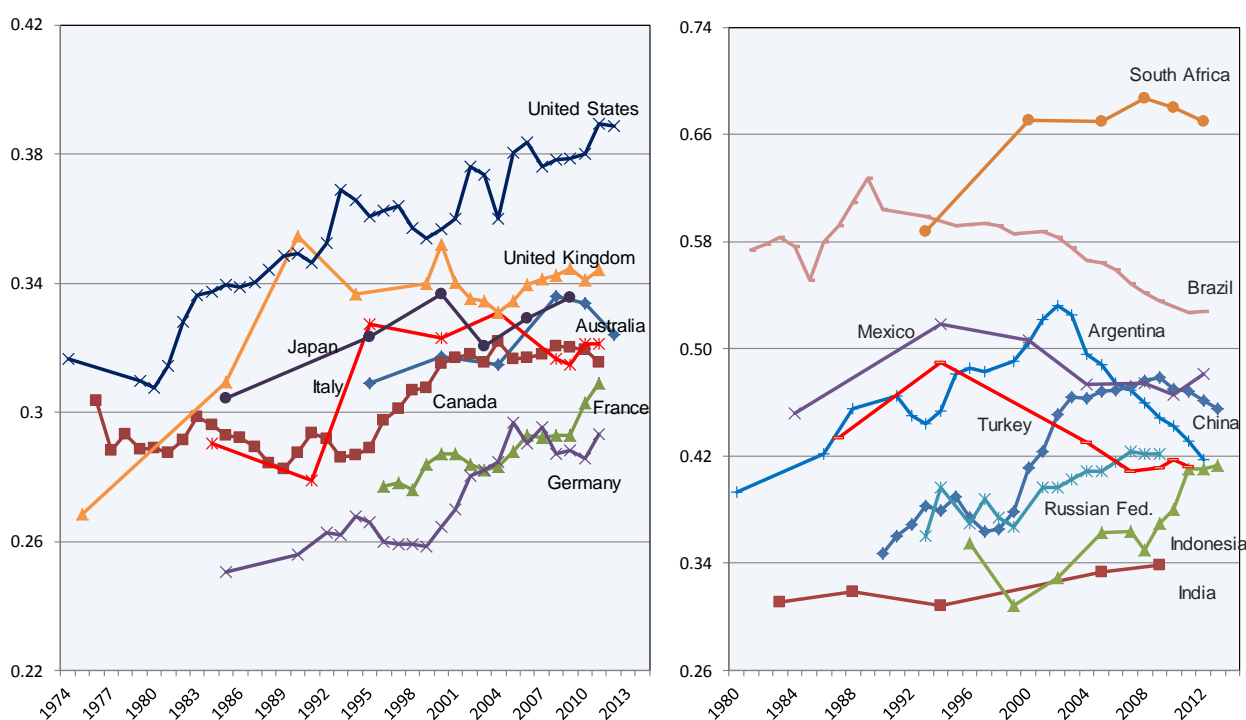
### Box 1. Definitions

**Income inequality** is concerned with how total income is distributed between individuals, households or other demographic groups, which is also called *personal income distribution*. There are a variety of methods of measuring income inequality but this paper will focus on the most popular measure, Gini index, which ranges 0 (perfect equality) and 1 (perfect

inequality). Decile and quintile income ratio (e.g. top 10 per cent, bottom 10 per cent) are also used to examine inequality dynamics.<sup>36</sup>

**Labour income share** is concerned with the distribution of national income between capital and labour, which is often called *functional income distribution*. More specifically, it measures the ratio of compensation of employees to gross value added, both measured in nominal terms (*unadjusted labour income share*). However, the ratio does not capture labour income from the self-employed, which is particularly large in developing countries. Thus, adjustments are often made to reflect the income situation of self-employed (*adjusted labour income share*) but adjustment methods vary.<sup>37</sup>

**Figure 1. Gini coefficient of the distribution of household disposable income**



Source: OECD, 2015a.

### Labour income share

In recent years, a growing body of evidence suggests that labour shares have seen a *secular* downward trend in most G20 countries (Figure 2).<sup>38</sup> These trends are consistently found in

<sup>36</sup> See OECD Income Distribution database and Ostry and Berg, 2014 for comprehensive measures of income inequality.

<sup>37</sup> For details on concepts, measurements and estimation, see ILO and OECD, 2015.

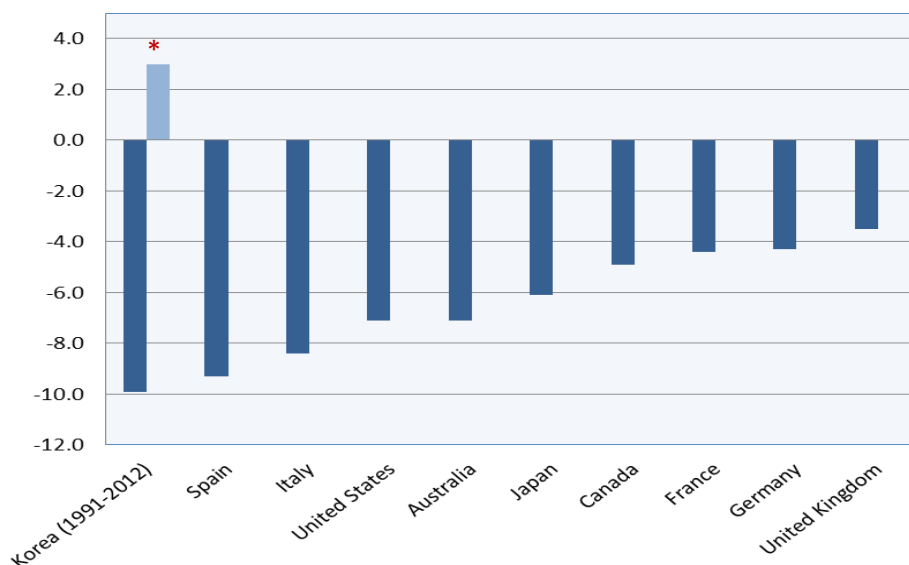
<sup>38</sup> Ibid; IMF, 2007; EC, 2007; ILO, 2012 and OECD 2012b.

a range of different studies using the various labour share metrics available. For example, ILO estimates of adjusted labour shares based upon the AMECO database, using both market and factors costs, found that for 11 of the G20 countries plus Spain there was a long-term downward trend. ILO estimates of adjusted and unadjusted labour shares based on main national accounts from UN data for 12 G20 countries (over varying periods) found declines since 1990. An OECD study found declines in the private sector labour share among nine advanced G20 countries between 1990 and 2007.<sup>39</sup>

While both adjusted (including the self-employed) and unadjusted labour income shares tend to show a consistent trend in advanced G20 economies, this is not always the case in emerging economies such as Brazil and Mexico. The latter reflects the difficulties in estimating the size and components of income for self-employed, particularly in emerging economies where informal self-employment is often significant, and adjusting the labour income share accordingly (see box 1). It should also be noted that in some emerging economies, the change in labour share may be partly attributed to changes in the structure of the economies toward more productive and/or capital intensive industries. Thus, for emerging G20 countries both adjusted and unadjusted labour shares are presented. The special case of the Republic of Korea, which was a low-income country when the measurement began but has since been categorized as an advanced economy, is explained in a note.

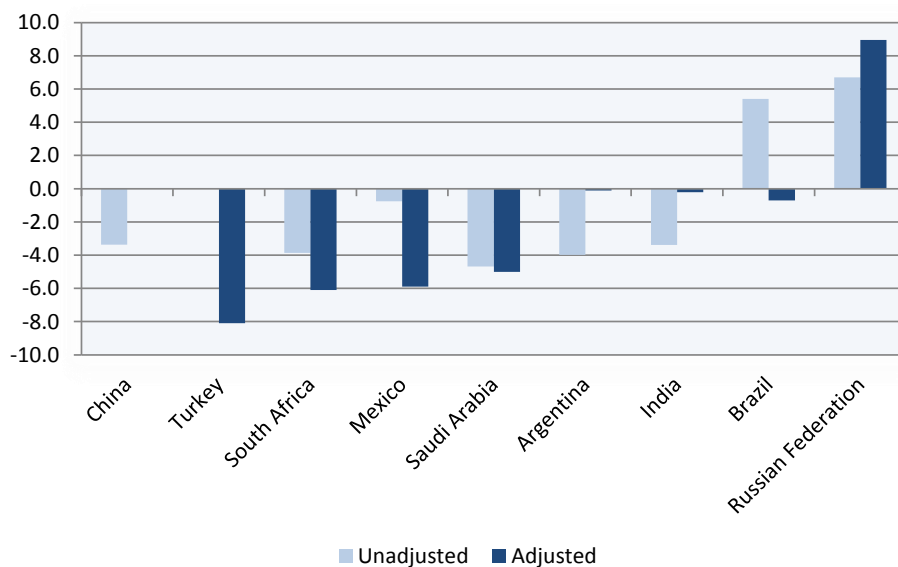
**Figure 2. Changes in labour shares in G20 countries (plus Spain)**

**Panel A. Advanced economies 1970-2014**



<sup>39</sup> ILO and OECD, 2015.

## Panel B. Emerging economies 1995-2012



\* Unadjusted labour share (estimated by the Bank of Korea). Recently, the Republic of Korea was categorized as an advanced country. In 1970, it was a low-income country with GDP per capita of USD253 and 60% of workers in non-wage employment. The proportion of self-employment has since declined rapidly and continued during the period under consideration, which creates a large difference between adjusted and unadjusted labour shares.

Notes: Figures are sorted from left to right in increasing order based on adjusted labour shares. Figures refer to the change in the adjusted labour share between 1970-2014 for advanced economies and for emerging economies, adjusted and unadjusted labour shares between 1995-2012. Exceptions include: Republic of Korea: 1991-2014, Saudi Arabia: 2002-09, Turkey: 1995-2014, Mexico: 1995-2004; India and Brazil: 1995-2009. Data for Indonesia are not available. Prior to 1991, the adjusted labour income share in Germany refers to West Germany.

Source: ILO based on AMECO Database and ILO Databases.

It is also important to note that in the advanced G20, the declining share of labour income tended to be distributed unevenly in favour of top income earners.<sup>40</sup> For OECD countries, the labour income share of the top 1 per cent increased by 20 per cent between 1990-mid 2000s, partly reflecting strikingly high executive salaries and bonuses, while that of low-income workers slumped.<sup>41</sup> Thus, if these top earners are excluded from the labour income share, the magnitude of the decline is even larger.<sup>42</sup>

<sup>40</sup> ILO, 2012 and OECD 2012b.

<sup>41</sup> OECD, 2012b and Dabla-Norris, Kochhar et al., 2015.

<sup>42</sup> ILO, 2012 and OED 2012b.

## The relationship between labour income share and income inequalities

The observed trends show that the labour income share has typically fallen alongside an increase in income inequality, while those countries that have managed to reduce inequality also show increases in the labour share. Figure 3 illustrates that the decline of the labour share has tended to evolve in parallel with the widening of market-income inequalities while in a few cases (e.g., Argentina and Brazil) an increase in the labour share has contributed to reducing inequality.<sup>43</sup>

In theory, the relationship between the two is not clear-cut, depending largely on how labour and capital incomes are distributed as well as the magnitude of other sources of household incomes and the impact of taxes and social transfers. Yet, recent evidence confirms that declines in the labour income share have a significant relationship with income inequality, especially when, as in most advanced economies, the decline in labour shares was concentrated at the lower end of the labour income distribution.<sup>44</sup> This is not surprising as labour income represents a higher share of total income for lower and middle income groups.<sup>45</sup>

At the G20 aggregate level, overall a one per cent reduction in the labour income share leads to an increase in inequality of between 0.1 and 0.2 per cent (as measured by the market income Gini index, i.e., before taxes and income transfers).<sup>46</sup> The disposable income (after taxes and transfers) Gini index also increases as the labour share declines, but at a smaller pace than that of the market income Gini index. This is due to the impact of government redistribution measures (see Section 4). However, in most cases, these retributive measures are not sufficient to prevent inequality from rising.

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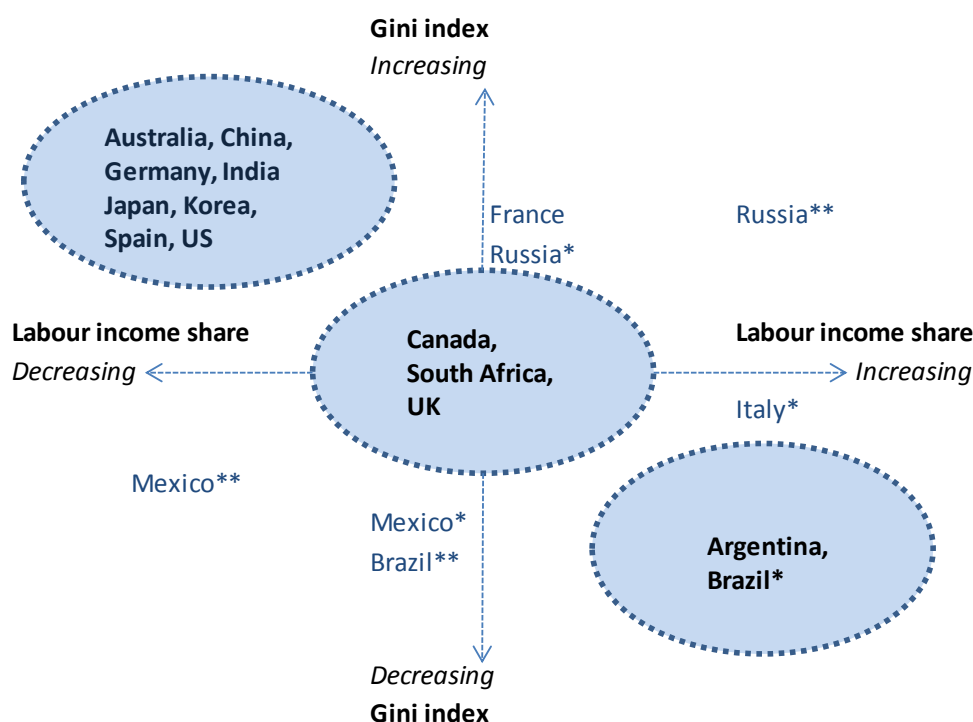
<sup>43</sup> For the case of Latin America declining income inequality coincided with declining skill premium amid rising education spending (see for instance Tsounta and Osueke, 2014).

<sup>44</sup> ILO and KIEP, 2015 and OECD 2012b.

<sup>45</sup> World Bank. 2006 and 2013.

<sup>46</sup> ILO and KIEP, 2015. Some countries (typically, advanced economies of G20) tend to have a smaller correlation coefficient between functional and personal income distribution, while others countries such as China have a much larger coefficient. Such cross-country variations indicate the important role of policies and institutions in the area of income distribution.

**Figure 3. Evolution in Labour income share versus Gini index (since 2000)**



Notes: In some countries, such as **Brazil** and **Mexico**, results are sensitive to adjustments to the labour share (LS\* = unadjusted labour share; LS\*\* = adjusted labour share); **Russia**: Assessment on the labour income share depending on the time span. Point-to-point comparison shows an increasing trend in recent years (“Russia\*\*”), but if the whole time period (1995-2012) is considered, the overall trend is a gradual recovery to the former peak level (“Russia\*”); **South Africa**: Meaningful classification is feasible for 2005 onward when both sets of data are available. If only these periods are considered, both indicators show a relatively stable trend. It has been argued that the preceding periods are characterized by decreasing labour share and increasing Gini index; Missing are **Indonesia** (No data for labour income share, with a sign of increasing Gini index (consumption)); **Saudi Arabia** (No data on Gini, with a sign of decreasing labour share); **Turkey** (No reliable data on Gini index, with a sign of decreasing labour share).

Source: ILO G20 Inequality Dataset (Gini) and ILO Global Wage Database (labour income share).

#### 4. Components of changing income inequality

This section examines the different elements contributing to aggregate-level changes in income distribution by looking at changes in the major components of household income, which range from labour market incomes to redistribution through taxes and transfers.

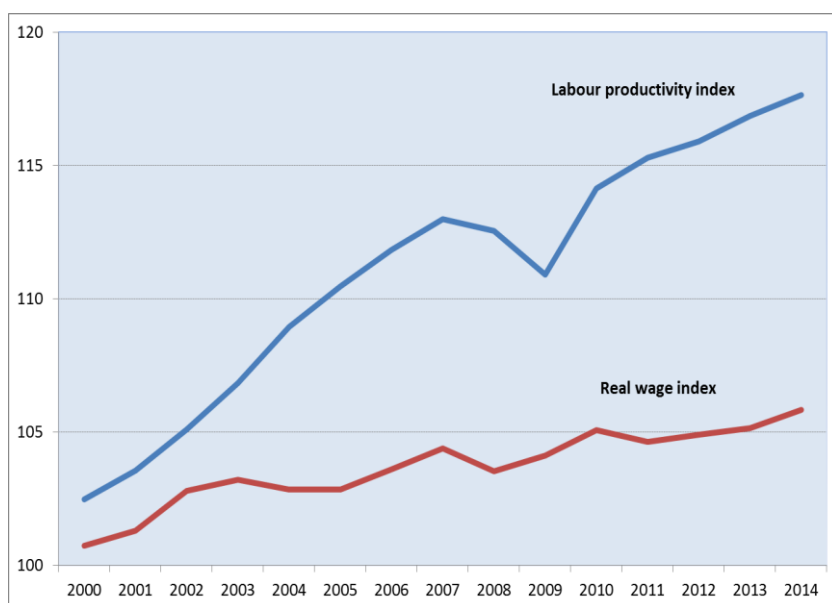
##### Labour market and employment

Income inequality can arise from numerous sources *within* the labour market, but five of them are particularly relevant, notably (i) the gap between wages and productivity; (ii)

employment levels; (iii) changing patterns of employment relationships; (iv) a weakening of labour market institutions; and (v) increasing wage dispersion.

The first is particularly relevant to the labour income share: in a number of countries where labour shares declined, wage growth significantly lagged behind productivity growth.<sup>47</sup> Labour productivity has outpaced real average wage growth in a group of nine advanced G20 economies for which data is available since 1999 (Figure 4). The gap between productivity growth and wage growth was particularly pronounced in the large economies of the United States, Germany and Japan<sup>48</sup> but similar trends were also observed for other advanced and emerging market economies, including Mexico, Italy, South Korea and UK.<sup>49</sup>

**Figure 4. Evolution of average wages and labour productivity in selected advanced G20 economies, 2000-2014\***



\*Estimates of productivity growth for 2014.

Notes: Data refer to Australia, Canada, France, Germany, Italy, Japan, Rep. of Korea, the United Kingdom and the United States. Real wage growth is calculated as a weighted average of year-on-year growth in real average monthly wages in the advanced G20 economies (for a description of the methodology, see ILO Global Wage Report 2014-15, Appendix I). Index is based on 1999 because of data availability.

Source: ILO Global Wage Database; ILO Trends Econometric Models, July 2015.

<sup>47</sup> This is the case regardless of what deflators are used or if total compensation is used instead of the narrower concept of wages (ILO, 2014a).

<sup>48</sup> ILO, 2014a. A recent study by the IMF has shown that advanced economies have experienced a secular decline in growth and average labour productivity over the last four decades (See Dabla-Norris, Guo et al., 2015).

<sup>49</sup> Dabla-Norris, Guo et al, 2015.

A second labour market factor contributing to inequality is the share of people of working age who are employed. This depends on the availability of employment or level of unemployment and underemployment. As employment is a major source of income for most households, having a job has major implications for income inequality. A significant portion of the changes in income inequality in recent years, including during the global financial crisis, can be explained by changes in employment and wages, both in many emerging and some advanced economies such as Spain and the United States (Figure 5).<sup>50</sup> The figure illustrates that the weight of employment effects and wage effects varied across countries, depending on the impact of the crisis and the nature of the labour market.<sup>51</sup> However the combination of wage and employment factors tended to outweigh other income sources in driving income inequality patterns. This suggests that both macroeconomic policies (with effects on overall employment levels) and labour market policies (with effects on wages) have played important roles.<sup>52</sup>

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<sup>50</sup> ILO, 2014a; OECD, 2014b and OECD, 2015a.

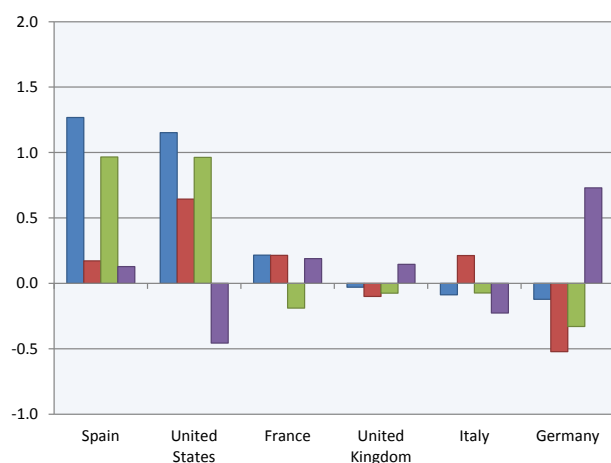
<sup>51</sup> Banerji et al, 2014.

<sup>52</sup> *Ibíd.*; IMF, 2012.

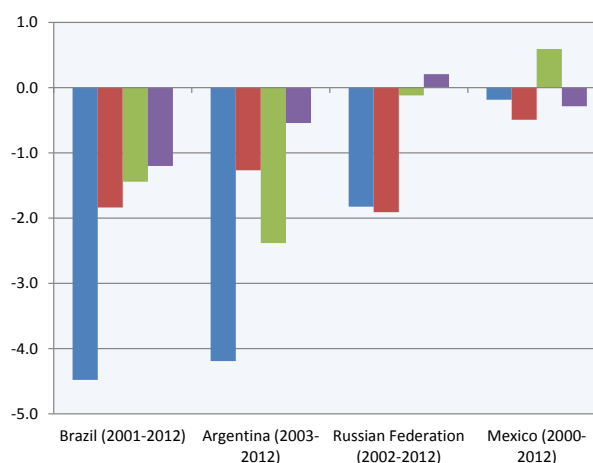


**Figure 5. Relative impact of wage and employment factors in income inequality (D9/D1 ratio)**

**Panel A. Selected advanced G20 (2006-2010)**



**Panel B. Selected emerging G20**



■ Actual change in total inequality (D9/D1) ■ Wage effect ■ Employment effect ■ Other income sources

Note: The figures refer to the contribution of wage and employment to the observed changes in inequality as measured by the ratio of the top income decile (D9) to the bottom decile (D1).

Source: ILO 2014 and ILO staff estimates.

The third major labour market source of inequality is the changing nature of employment relationships and the shift away from full-time, permanent jobs in the formal economy. The growing incidence of temporary and involuntary part-time work and persistence of informal jobs – which are significantly less well remunerated than permanent, full-time work – partly explains falling labour shares and rising inequality.<sup>53</sup> In fact, the extent of non-standard work can explain about 20 per cent of household income inequality.<sup>54</sup>

The fourth major set of labour market factors affecting inequality is the significant change in labour market policies and institutions in many G20 countries over recent decades. Although causality is always difficult to establish, an IMF Staff Discussion Note (SDN) shows that the decline in union density in many advanced countries is associated with the rise of top income shares, with a ten percentage point decline in union density associated with a 5 percent increase in the top 10 percent income share.<sup>55</sup> Similarly, the IMF SDN also found that about half of the increase in the Gini of net incomes was found to be associated with de-unionization. Other studies have also found a smaller albeit significant

<sup>53</sup> ILO, 2015a; OECD 2015a.

<sup>54</sup> *Ibid.* Such impacts are particularly large in some countries such as Australia.

<sup>55</sup> Jaumotte, and Osorio-Buitron, 2015b.

effect of the decline in union density on income inequality.<sup>56</sup> The IMF SDN also finds that a reduction in the minimum wage relative to the median wage is significantly associated with an increase in income inequality. Moves to reduce or eliminate employment security regulations can contribute to the rise in temporary and part-time work, noted above, which can also play a role in explaining rising inequality in some countries.<sup>57</sup> These changes in labour market policies and institutions can have strong effects on the wage and employment *components* of household income that contribute to the rise in inequality in many G20 countries. At the same time, they are also among the long-term *causes* of declining labour share and rising inequality, discussed further in section 5.

Wage dispersion is a final factor that contributes to increasing income inequality. One IMF study found that the most important determinant of increasing income inequality in the last four decades has been the growing dispersion of wages within labour income.<sup>58</sup> This result reflects the fact that the lion's share of household income is labour earnings. It also occurs because top salaries have grown enormously, as noted above.

### **Social protection and redistribution**

Redistribution through government policies such as taxes and transfers is an important means of curbing inequality, including inequality that arises within the labour market. Available estimates suggest that fiscal re-distribution policies reduce inequality by about one-third in advanced economies.<sup>59</sup> In emerging economies, there is considerably less fiscal redistribution, reflecting lower levels of both taxes and social spending. In addition, emerging economies allocate a relatively smaller share of social spending to progressive redistributive social transfers than most advanced economies. They also tend to rely more on indirect taxes, such as value-added taxes, which tend to be regressive. By way of illustration, differences in the redistributive impact of tax and spending can explain two-thirds of the difference in the disposable income Gini coefficient between Latin America and advanced economies.<sup>60</sup>

There are considerable variations among G20 countries in the role and impact of redistributive policies (Figure 6). As noted above, there is less overall redistribution in emerging economies than in most advanced economies. There are also significant differences in the extent of redistribution among advanced economies, with relatively high market income inequality reduced to relatively low levels in countries such as France and

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<sup>56</sup> Berg, J. ed., 2015; Hayter and Weinberg, 2011 and ILO, 2008.

<sup>57</sup> ILO 2014; Jaumotte, and Osorio-Buitron, 2015b.

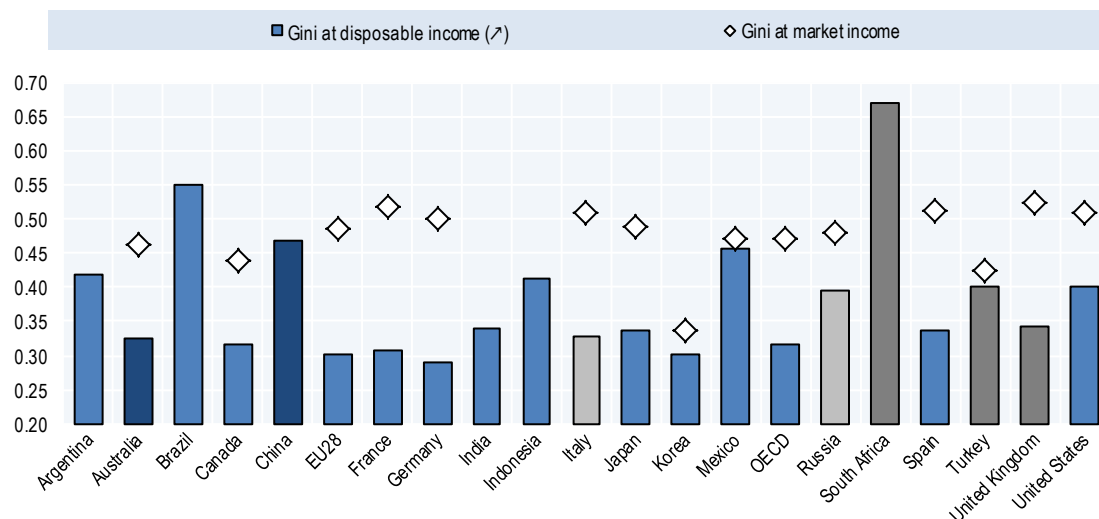
<sup>58</sup> Francese and Mulas-Granados, forthcoming.

<sup>59</sup> OECD, (2011); IMF, 2014a; Clements et al., 2015, forthcoming.

<sup>60</sup> Ibid.

Germany, while comparably high market inequality is reduced less by redistribution in countries such as the United States.

**Figure 6. Market and disposable income Gini indexes for 2013 latest year available**



Notes: Data are based on equivalised income from the OECD Income Distribution Database <http://oe.cd/idd> for all countries except for Argentina, Brazil, China (income based, in dark grey) and India and Indonesia (expenditure based, in light grey) for which inequality at market income is not available. Market income is disposable income before receiving social transfers and paying income taxes, except for Mexico and Turkey where it is before receiving social transfers but after paying taxes. No data for Saudi Arabia.

Source: OECD, 2015a.

It has been observed that the efficacy of fiscal redistribution has weakened over recent years in most advanced economies, partly attributed to declining progressivity of income tax systems resulting in lower effective tax rates for high-income households and corporations and partly attributed to less generosity of unemployment and social assistance benefits.<sup>61</sup> At the same time, redistributive policies have been increasing employed in many emerging G20 economies, sometimes at dramatic pace, but from a low base and so they remain relatively low.<sup>62</sup>

A recent IMF analysis of 27 recent fiscal adjustment episodes found that, in almost two-thirds of the economies, fiscal measures led to either a decrease in inequality (a decline in the Gini coefficient for disposable income) or at least partly offset the effect of a worsening of market inequality, suggesting that well-designed adjustment measures could help lower income inequality.<sup>63</sup> An ILO analysis demonstrated a strong positive relationship between

<sup>61</sup> IMF, 2014a; Clements et al., 2015, forthcoming; OECD, 2015a.

<sup>62</sup> ILO, 2014c.

<sup>63</sup> IMF, 2014a; Clements et al., 2015, forthcoming.

higher shares of public social expenditure as a per cent of GDP and lower income inequality.<sup>64</sup> More generally, recent studies by the IMF and ILO have highlighted how well-designed fiscal policies, for instance through tax and transfer systems, can help governments achieve their distributional objective to lower income inequality.<sup>65</sup> IMF studies note that care needs to be taken to ensure that fiscal redistribution is achieved in efficient ways. Recent studies have also found that because redistribution lowers inequality and inequality itself is harmful to growth, the total effect of redistributive policies can enhance economic growth.<sup>66</sup>

## 5. Causes of changing inequality and labour income shares

Understanding the root causes of these undesirable trends is important to inform effective policy responses. In recent years, as inequality has risen and labour share has declined across many countries, increasing research attention has been devoted to this topic, not least because of the adverse impact of rising inequality on economic growth.<sup>67</sup>

The accumulating body of studies tends to converge around a number of key causal factors that potentially explain the trends. The common factors identified include technological changes, changes in labour market institutions such as declining bargaining power of workers, globalization, financial deepening, privatization of state-owned enterprises, and changes in product markets (see box 2).

While there is a general consensus on the list of potential causal factors, different studies assign different relative weights to different factors. Earlier studies tended to emphasize technological change as a key factor, but other factors, such as the marked weakening of trade unions and workers' bargaining power in many countries, as well as the growth of financial sectors, have been explored more fully in recent studies and have been found to have significant explanatory power. In addition, the trends toward inequality and declining labour share have also been found in sectors that have not experienced profound technological change.

### **Box 2. Possible drivers of falling labour shares and rising income inequality**

*Technological change:* Intensification of technology, capital deepening and the resulting diffusion of skilled-biased technology have been found in many studies to account for a

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<sup>64</sup> See ILO, 2014c, Figure 6.22.

<sup>65</sup> Clements et al., 2014; IMF, 2014a; Clements et al. 2015, forthcoming; ILO, 2014c.

<sup>66</sup> Ostry et al., 2014; Tsounta and Osueke, 2014 and Dabla-Norris, Kochhar et al., 2015.

<sup>67</sup> ILO, 2015a; Dabla-Norris, et al, 2015a; OECD, 2015a and Jaumotte et al, 2013.

sizeable portion of the decline in the labour income share and the increased inequality in market income among advanced G20 countries.<sup>68</sup>

*Sectoral shifts and “within-sector” changes:* Some studies argue that the shift from labour-intensive to more capital-intensive sectors (where labour shares are typically lower) partially explains the decline in labour shares. While the bulk of the evidence finds that in advanced economies the fall in labour share is principally due to within sector changes it is plausible that in the emerging economies the sometimes large shifts toward more capital intensive activities have also contributed to reduce the aggregate labour share.<sup>69</sup>

*Globalization:* Some studies have found negative effects of globalization on the labour share in high-income countries, possibly due to the intensification of competition and the entry of labour-abundant countries into the global economy, which may have worked to reduce workers’ bargaining power.<sup>70</sup>

*Changes in labour market policies and institutions:* Many studies find that weakening labour market institutions can adversely impact distribution of labour income shares at the bottom and middle of the distribution, through a variety of channels including by reducing workers’ bargaining power.<sup>71</sup> Such changes include:

- *Decline in unionization rate:* As noted above, an IMF Staff Discussion Note found that about half of the increase in the Gini of net incomes in advanced economies was associated with de-unionization.<sup>72</sup> Other studies have also found a smaller albeit significant effect of the decline in union density on income inequality.<sup>73</sup> The decline of unions may also increase post-redistribution inequality by reducing the influence of unions and organized workers on policy makers to adopt more redistributive policies, such as progressive taxation rates.<sup>74</sup> In addition, de-unionization can further strengthen groups and interests that were already dominant in society, and change the political equilibrium in a direction involving greater efficiency losses.<sup>75</sup>
- *Weakening of other labour market institutions:* Beyond unionization and collective bargaining rates, research has also shown the importance of other labour market

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<sup>68</sup> OECD, 2012b; Bentolila and Saint-Paul, 2003; Arpaia et al., 2009; Driver and Muñoz-Bugarín, 2010; Raurich and Sorolla, 2010; Hutchinson and Persyn, 2012 and Dabla-Noris et al., 2015a.

<sup>69</sup> ILO, 2012; OECD, 2012b; Francesca and Mulas-Granados, 2015.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid; Jaumotte and Osorio-Buitron, 2015a; Berg, J. ed., 2015.

<sup>72</sup> Jaumotte and Osorio-Buitron, 2015b.

<sup>73</sup> Berg, J. ed., 2015; Hayter and Weinberg, 2011 and ILO, 2008.

<sup>74</sup> Jaumotte and Osorio-Buitron, 2015a.

<sup>75</sup> Acemoglu and James, 2013.

institutions, such as minimum wages, employment protection and unemployment benefits, in influencing workers' bargaining power and otherwise affecting inequality through employment and wage channels.<sup>76</sup> In particular, as noted above, the IMF SDN shows that a reduction in the minimum wage relative to the median wage could increase inequality.<sup>77</sup> Other studies have found that the emergence of less secure employment types (part-time, casual, temporary) have also been associated with increased inequality.<sup>78</sup> The IMF SDN found that the empirical evidence on the effects of other labour market institutions (e.g. unemployment benefits, employment protection) on inequality and redistribution is not robust.

*Regulatory reforms to strengthen product market competition.* Over the past decades, most G20 countries have carried out regulatory reforms to strengthen competition in the markets for goods and services. These changes in policies and regulations have affected the way in which globalisation and technological changes translated into distributional changes. On the one hand, a recent OECD study points to the significant positive impact of reforms on *employment levels* largely by reducing market rents and expanding activity.<sup>79</sup> On the other hand, most of these policies and regulatory reforms have also contributed to widening *wage disparities*, as more low-paid people entered employment in the deregulated sectors and the highly-skilled reaped more benefits from a more dynamic economy. The *combined* effect of these reforms on overall earnings inequality and household income inequality is uncertain and also depends on specific complementary policies to facilitate workers' reallocation and enhance their skills.

*Financial deepening:* The role of financial markets, and in particular the high growth of these sectors in some countries, has also been highlighted as a potential cause of rising inequality and declining labour shares, particularly as it may increase pressures to maximize profits and shareholder value or to pay dividends rather than sharing with workers. It may also pressure firms to focus on core activities while subcontracting labour-intensive activities.<sup>80</sup> A recent IMF study suggested that financial deepening can have a mixed impact on inequality, depending on how inclusive the financial system is.<sup>81</sup> The importance of this factor may be magnified by the fact that recent research shows that beyond a certain level of financial development, the positive effect on economic growth begins to decline, while costs in terms of economic and financial volatility begin to rise.<sup>82</sup>

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<sup>76</sup> ILO, 2012; OECD 2012b; ILO, 2015a.

<sup>77</sup> ILO, 2012 and OECD 2012b.

<sup>78</sup> Berg, J. ed., 2015; ILO, 2015a.

<sup>79</sup> OECD, 2011

<sup>80</sup> Weil, 2013 and ILO, 2012.

<sup>81</sup> Dabla-Norris, Kochhar et al, 2015.

<sup>82</sup> Sahay et al, 2015.

*Privatization of state owned enterprises:* Privatization, particularly in network industries, has been found to account for one-third of the labour share decline in these industries.<sup>83</sup>

As progress is made in understanding the causes of rising inequality and declining labour shares, more attention is needed to possible interactions and reinforcing feedback loops as well. For example, capital deepening, capital mobility and financial deregulation are likely to interact. Weaker trade unions may also weaken other labour market institutions, through reduced policy influence or reduction of monitoring of compliance with labour laws by unions.

It is also to be expected that the relative weight of different causal factors will vary widely by country. While there are common trends and results across most G20 countries, there is still substantial variation, both between advanced and emerging economies and also among countries in each of those groups. For example, OECD and IMF studies find that in advanced economies, rising skill premium is associated with widening income disparities, while the IMF and ILO also find that financial deepening is associated with rising inequality in emerging and developing economies.<sup>84</sup> International organizations have provided disaggregated information on the trends regarding inequality and labour share for each of the G20 countries and this can help to inform appropriate, country specific policy responses.

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<sup>83</sup> OECD, 2012b.

<sup>84</sup> OECD, 2011b; ILO, 2012; Dabla-Norris, Kochhar et al, 2015.

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