

Guerriero, Marta

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ADB Working Paper Series

**THE LABOR SHARE OF INCOME
AROUND THE WORLD: EVIDENCE
FROM A PANEL DATASET**

Marta Guerriero

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Marta Guerriero is a senior teaching fellow and deputy head of the School for Cross-Faculty Studies (Global Sustainable Development) at the University of Warwick, United Kingdom.

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Please contact the authors for information about this paper.

Email: M.Guerriero@warwick.ac.uk

Asian Development Bank Institute
Kasumigaseki Building, 8th Floor
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

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Abstract

There are two fundamental reasons why factor shares have traditionally been overlooked in the economic literature. First, because of their nature, factor shares are conceptually difficult to define and measure. Second, they have for a long time been perceived as constant across time and space. In this study, we provide an evaluation of five different methodologies of estimation commonly used in the labor share literature and propose a new measurement. We then compile a global dataset of the labor income share across 151 economies—both developing and developed—for all or part of the period 1970–2015. Results show that our suggested indicator is correlated to the other five measures but it also retains unique information. Contrary to the traditional assumption of stable factor shares, we document the existence of considerable heterogeneity across economies and variability over time. Specifically, there has been a general decline in the labor share around the world, in particular from the mid-1980s onwards.

Keywords: factor shares, income distribution, labor

JEL Classification: E25, J30, E01

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1. INTRODUCTION

Recent contributions on income distribution indicate that striking changes have been taking place in recent decades. For example, the decline in the share of labor in national income, which has been witnessed in recent years in several economies, is an interesting phenomenon (Elsby et al 2013; IMF 2017; Karabarbounis and Neiman 2013; Stockhammer 2017). This constitutes a major historical transformation, as the stability of functional income distribution has often been described in the past as a “stylised fact of growth” (Kaldor 1961).

Most research on the labor income share provides only a partial picture, focusing mainly on industrialized economies (Elsby et al 2013; Piketty and Zucman 2014), the corporate sector (Karabarbounis and Neiman 2013) and relatively short periods of time (IMF 2017). Authors also question whether this apparent decline is mainly due to problems of measurement. Studies find that, after appropriately adjusting for self-employment income (Bernanke and Gürkaynak 2001; Gollin 2002), indirect taxation and capital depreciation (Bridgman 2017; Rognlie 2015), factor shares are practically uniform across economies and approximately constant over time. Consequently, there has been little systematic attempt to generate a comprehensive global database of the labor income share.

This study intends to address these issues. Firstly, since factor shares are conceptually difficult to define (Gollin 2002) and highly dependent on the way they are constructed (Bridgman 2017; Izyumov and Vahaly 2015; Mućk et al 2018), we examine different methodologies of measurement. Secondly, after comparing five alternative measures used in the existing empirical literature, we propose a sixth indicator, which allows us to compile a new global dataset of the labor income share across 151 economies – both developing and developed – for all or part of the period 1970-2015. Finally, we use descriptive statistics to document the existence of considerable heterogeneity across economies and variability over time.

The remainder of this study is organized as follows. Section 2 presents the main problems related to the definition and estimation of factor shares of income, highlights the importance of appropriate measurement and provides an evaluation of the methodologies most commonly used to estimate labor income shares. By building on the empirical work of Gollin (2002) and the theoretical conceptualization of Atkinson (2009), we propose an alternative approach to measuring labor shares. Section 3 provides a brief overview of our dataset, computed using the six methodologies described in Section 2. In Section 4, we use descriptive statistics to present an account of the performance of factor shares over time and across economies, and draw comparisons with the existing empirical literature. Our analysis offers some evidence against the proposition that the labor share is stable over time and that it converges across economies. Concluding remarks are made in Section 5.

2. PROBLEMS OF DEFINITION AND ALTERNATIVE APPROACHES

The labor share of income is conventionally computed by dividing the total compensation paid to employees¹ by the national income. Although it may be considered straightforward to determine, several problems of a conceptual and practical nature arise from its measurement.

This study builds on the methodologies proposed in the existing academic literature (Krueger 1999; Glyn 2009; Gollin 2002) illustrating measurement issues in both time series and cross-economy data on the labor income share. We use data from the United Nations (UN) National Accounts Statistics² (UN 2018), which provide yearly national accounts tables for more than 200 economies. Even though the data suffers from some comparability issues (Hartwig 2006), these estimations are useful and have been widely applied in the cross-economy literature on labor shares (Bernanke and Gürkaynak 2001; Gollin 2002; Jayadev 2007).

The labor income share is a ratio. Two adjustments are required for the computation of its denominator – the income aggregate – subject to data availability³. First, taxes on production and imports (minus subsidies) are removed from gross value added at market prices, converting the income aggregate to factor cost: indirect taxes (net of subsidies) do not represent any kind of return to capital nor to labor and therefore should not be counted (Glyn 2009; Gollin 2002; Izyumov and Vahaly 2015; Rognlie 2015). Second, capital income needs to be calculated net of capital consumption, by subtracting consumption of fixed capital from the value added to obtain a measure that is net of depreciation (Glyn 2009; Kuznets 1959; Piketty and Zucman 2014). According to Rognlie (2015), the distinction between labor income and net capital income (instead of gross capital income) is indeed more directly relevant to considerations of income distribution and inequality.

Turning to the numerator of the ratio, from a conceptual perspective, the total compensation of employees differs from labor income because it disregards the contribution of the self-employed. By counting only payments to corporate workers as labor income, it implicitly classifies all the earnings from the self-employed as capital income. This incorrectly underestimates the measure of labor share, since the income earned by the self-employed often represents a combination of returns to labor and returns to capital. Self-employment may represent emerging entrepreneurship and business start-ups; but it may also be the result of marginal employment and disguised unemployment (Gollin 2002).

From a time series perspective, a long-term decline in self-employment income would lead to an increasing trend in the labor share. In terms of international comparisons, since the rate of self-employment varies substantially across economies, the compensation of employees may significantly understate labor income in developing economies, where the self-employed account for a large portion of the workforce. According to OECD (Organisation for Economic Co-operation and Development) data (OECD 2018), self-employment in the United States decreased from 18.0% in 1955 to 6.3% in 2017, and in Japan from 56.5% in 1955 to 10.4% in 2017. Moreover, while the

¹ The compensation of employees includes wages and salaries as well as other forms of non-wage compensation which also constitute returns from labor.

² Prepared by the Statistics Division of the United Nations in collaboration with national and international statistical agencies.

³ Please see the appendix for complete information on data availability.

self-employment rate is currently 6.3% in the United States and 15.5% in the European Union, it is 31.5% in Mexico, 32.9% in Brazil and 51.9% in Colombia.

One solution to this problem is to analyze the corporate sector only (Bridgman 2017; Karabarbounis and Neiman 2013), or the manufacturing sector only, where the self-employed are less numerous (Azmat et al 2011; Daudey and Garcia-Peñalosa 2007), however this approach does not resolve the issue entirely. It provides only a partial picture of the economy and it makes international comparisons difficult, since not all economies publish sector-specific data. Alternatively, in order to consider the whole economy we need to derive the labor income component of self-employment income and then add it to the compensation of employees (Johnson 1954; Kravis 1959; Kuznets 1959).

Six different measures of labor share will be presented and compared below: the unadjusted measure and five different indicators imputing a wage component to self-employment income – four of which have been proposed in the existing empirical literature.

2.1 LS1: The Unadjusted Labor Share

The unadjusted labor share, here called *LS1* (see Equation 2.1), is the ratio of the compensation of employees to the value added (net of indirect taxes and consumption of fixed capital):

$$LS \text{ (unadjusted) or } LS1 = \frac{\text{compensation of employees}}{\text{value added}(-\text{indirect taxes}-\text{fixed capital})} \quad (2.1)$$

As previously argued, although this measure has been widely used in the literature (Daudey and Garcia-Peñalosa 2007; Jayedev 2007; Rodrik 1999), it results in an underestimation of the labor share.

2.2 LS2: A Rule of Thumb

The System of National Accounts (SNA) method breaks down value added into: compensation of employees, operating surplus (from rent and capital) and mixed income (or operating surplus of private unincorporated enterprises). Mixed income from self-employment “implicitly contains an element of remuneration for work done by the owner, or other members of the household, that cannot be separately identified from the return to the owner as entrepreneur” (OECD 1993). The UN National Accounts Statistics provide information on mixed income for a large number of economies⁴.

A common rule, proposed by Johnson (1954), is to impute two-thirds of self-employment income to labor income and the rest to capital income (see Equation 2.2). The choice of the value ‘2/3’ derives from the common belief that labor income represents around two-thirds of the overall economy’s income. Self-employment income is then expected to be composed of a similar combination of labor and capital. This rule of thumb has been extensively used in the literature (Guscina 2006; Izyumov and Vahaly 2015).

$$LS2 = \frac{\text{compensation of employees} + \frac{2}{3}\text{mixed income}}{\text{value added}(-\text{indirect taxes}-\text{fixed capital})} \quad (2.2)$$

⁴ Following Gollin (2002), we collect data on gross mixed income. Please see the appendix for complete information on data availability.

The main problem with this adjustment is that the value '2/3' is arbitrary – some studies, in fact, use a ratio of '1/2' instead of '2/3' – and it treats all economies in the same way (Izyumov and Vahaly 2015). Moreover, given that the division of income between labor and capital remains constant, this measure may ignore the effect of external forces that shift the balance over time.

2.3 LS3: The Self-Employed as Workers

A second adjustment (Kravis 1959) involves attributing all self-employment income to labor earnings (see Equation 2.3). The rationale for this is that most of the self-employed in developing economies provide pure labor services.

$$LS3 = \frac{\text{compensation of employees} + \text{mixed income}}{\text{value added}(-\text{indirect taxes}-\text{fixed capital})} \quad (2.3)$$

By using this approach, however, the labor share is unavoidably overstated, as in reality some self-employed businesses generate and use considerable amounts of capital and land, even in developing economies (Gollin 2002).

2.4 LS4: Self-Employment as the Rest of the Economy

It is also possible to consider self-employment income as composed of the same combination of labor and capital income as the rest of the economy (Atkinson, 1983; Kravis 1959). The labor share is scaled up by a factor that takes into account the proportion of self-employed, who are attributed a wage equal to the average wage of employees. Mathematically, this is done by deducting mixed income from the income aggregate at the denominator (see Equation 2.4):

$$LS4 = \frac{\text{compensation of employees}}{\text{value added}(-\text{indirect taxes}-\text{fixed capital})-\text{mixed income}} \quad (2.4)$$

This adjustment assumes that the split between capital and labor is approximately the same in private unincorporated enterprises and in large corporations (or in the government sector). In reality, these are very different in terms of size of the workforce, structure and degree of labor-intensiveness, and vary greatly from one economy to another. Studies also show that this adjustment leads to unrealistic values of labor shares greater than 1 for some economies (Bernanke and Gürkaynak 2001). Despite being problematic, this approach is more reasonable than the previous one, since it allows for the possibility that the self-employed generate capital income. Being quite straightforward, it has been widely used in the academic literature (Izyumov and Vahaly 2015; Bernanke and Gürkaynak 2001; Rognlie 2015; Ryan 1996).

2.5 LS5: Using Data on Workforce Composition

The fundamental problem related to the three adjustments presented above is that they require data on self-employment income. Unfortunately, data on mixed income is not so widely available: the majority of economies report only operating surplus, recording income from self-employment together with capital income. For this reason, an alternative method is required.

Gollin (2002) suggests a fourth adjustment, based on data on the composition of the workforce. Not only is it easier to collect data on the number of self-employed than on their actual earnings, but studies have also shown that the self-employed tend to underreport their income (Hurst et al 2010). This approach has been widely used in the

literature for industrialized economies (Bentolila and Saint-Paul 2003; Ellis and Smith 2007) and by the OECD, the IMF (International Monetary Fund) and the EC (European Commission) in their calculations.

Information on the composition of employment can be sourced from the International Labour Organization (ILO) Yearbooks of Labour Statistics (ILO 2018), which classify the workforce into: 1. employees; 2. employers; 3. own-account workers; 4. members of producers' cooperatives; 5. contributing family workers; and 6. workers not classifiable by status. While the first category of workers holds *paid employment jobs*, categories 2–6 are defined by the ILO (1993) as holding *self-employment jobs*⁵.

Gollin's (2002) measurement imputes average employee compensation to all five categories of self-employed workers. This is calculated (see Equation 2.5) by scaling up employee compensation by the ratio of the total workforce to the number of employees:

$$LS5 = \frac{\text{compensation of employees} \cdot \frac{\text{total workforce}}{\text{number of employees}}}{\text{value added}(-\text{indirect taxes}-\text{fixed capital})} \quad (2.5)$$

Because of the greater availability of data⁶, this approach is preferred to the previous ones. It also considers variations in the composition of the workforce among economies and over time. It provides a better estimation of the labor share, particularly in economies where the share of self-employment is large. The fundamental disadvantage is that it requires detailed micro-data on the workforce. Furthermore, it may be problematic where there are systematic differences in income composition between employees and the self-employed⁷.

2.6 LS6: A New Adjustment

This study proposes a further adjustment based on the ILO data on workforce composition. LS6 (see Equation 2.6) attributes the average employee's wage to all those workers who hold *self-employment jobs* but are not classified as *employers* (therefore, Categories 3, 4, 5 and 6 in the above classification), removing *employers* from the adjusted numerator.

$$LS6 = \frac{\text{compensation of employees} \cdot \frac{(\text{total workforce}-\text{employers})}{\text{number of employees}}}{\text{value added}(-\text{indirect taxes}-\text{fixed capital})} \quad (2.6)$$

The rationale for such an adjustment is related to the fact that LS5 overestimates the labor share. Bernanke and Gürkaynak (2001) replicate and update Gollin's (2002) measurements, obtaining unreasonable labor shares greater than 1. We believe that this is because employers' income is considered twice: as profit in the operating surplus and as labor income from self-employment.

⁵ Data on the composition of the workforce is not always available for every year. When absent, it is assumed to be the same as in the previous year (Gollin 2002). This is a realistic assumption (Askenazy 2003), given that the composition of the workforce is relatively constant over time.

⁶ Please see the Appendix for complete information on data availability.

⁷ As a response to this criticism, Bernanke and Gürkaynak (2001) construct a measure of labor share combining information on the corporate share of the labor force and the aggregate operating surplus. However, their computation is not convincing as it is based on the assumption that the corporate share of total private-sector income is the same as the share of the labor force employed in the corporate sector. Income and employment shares may instead be very different. Their results are in fact unrealistic for those economies with very low corporate employment shares.

We consequently propose to consider the entire workforce net of *employers* to reflect views which relate factor shares to concerns about social justice, collective bargaining and workers' evaluation of 'fair wages' (Atkinson 2009). These perspectives set workers' efforts against employers' profits. Employers are therefore assumed to only capture profits and earn a negligible amount of labor income. Their labor income is certainly not comparable to that of the employees or other categories of self-employed workers engaging in substantial forms of labor.

2.7 Alternative Methods

Other approaches have also been suggested in the literature, however as they require more detailed data which is not available for a large number of economies, they cannot be considered in this study.

Glyn (2009), for example, proposes attributing the average agricultural wage to the self-employed. The rationale behind this method is that in developing economies the self-employed are mainly concentrated in agriculture, where incomes (and wages) are normally below the national average. An improvement to this approach is to value the services of labor and capital in accordance with the returns prevailing in each sector of the economy rather than in the economy as a whole (Feinstein 1968). This would allow variation to be captured across industries, which, as documented, is quite considerable: agriculture and primary commodity production, when compared to manufacturing and services, have lower employee compensation shares (Solow 1958; Kravis 1959; Glyn 2009).⁸

Young (1995) suggests another approach, attributing implicit wages to the self-employed and unpaid workers on the basis of their sector of employment, sex, age and education. The assumption is that they earn an implicit wage equal to the hourly wage of employees in the same industry, of similar sex, age and education.⁹

3. THE DATASET

We compute labor shares of income using data from the UN National Accounts Statistics and the ILO Yearbooks of Labour Statistics. Given the scarce availability of data for the years preceding 1970, the analysis focuses on the period 1970–2015. All six methods introduced above (LS1–LS6) are employed, where possible.¹⁰ Data is collected for 151 economies: 37 in Africa, 33 in the Americas, 32 in Asia, 39 in Europe and 10 in Oceania.¹¹ The sample is a good representation of the entire world, including 62.92% of all economies and 81.69% of the global population. For the majority of the economies, the data covers at least a 20-year span (the average time series is 23.36 years). Most of the observations refer to the decades 1990s–2000s, however a good number of economies also possess data for the 1970s, 1980s and 2010s.

⁸ However, Gollin (2002), after considering variations in the sectoral composition of income, does not find this factor to be relevant in explaining changes in the labor share.

⁹ This approach, which has been recently used in the literature (Freeman 2011), suffers from possible selection bias and is highly data-demanding.

¹⁰ Certain adjustments have already been made for some economies (Young 2003), which cannot be entirely considered for international comparisons. The Chinese National Bureau of Statistics, for example, does not follow the accounting methods of the UN System of National Accounts, and it counts the income of the self-employed in agriculture as labor compensation.

¹¹ Please see the appendix for a complete list of economies included in the database.

Table 1 contains summary statistics for all six measures of the labor share. As can be seen, all indicators have quite large variability, their coefficients of variation being between 17.73% and 34.98%, demonstrating that the labor share varies considerably across economies. The unadjusted labor share (LS1) has relatively large variation, with a standard deviation equal to 0.17. This can be explained by the fact that this measure is not corrected for self-employment income and therefore underestimates the labor share, especially in developing economies (Krueger 1999; Gollin 2002). Its values are indeed relatively small (at times, unrealistically smaller than 0.05)¹² and its mean and median, the smallest among the six measures, are below 0.5 (0.490 and 0.497, respectively). The unadjusted labor share is therefore flawed and needs to be replaced by a measure taking self-employment income into account.

Table 1: Overview of the Data: Summary Statistics of the Labor Share Measures

Variable	Obs.	Economies	\bar{T}	Mean	Median	St. Dev.	Min	Max
LS1	3,527	151	23.36	0.490	0.497	0.171	0.035	0.868
LS2	1,293	82	15.77	0.668	0.694	0.126	0.228	0.954
LS3	1,293	82	15.77	0.731	0.757	0.130	0.250	0.997
LS4	1,293	82	15.77	0.665	0.703	0.154	0.166	0.997
LS5	2,962	121	24.48	0.693	0.709	0.181	0.079	2.144
LS6	2,879	118	24.40	0.660	0.682	0.156	0.074	0.998

Source: Author's calculations.

LS2, LS3 and LS4 require data on mixed income for their computation. Due to the scarcity of information on self-employment income in several economies, the sample is considerably reduced. The total number of economy-year pair observations is reduced to 1,293 (from 3,527 observations in the case of LS1), and the total number of economies in the sample is only 82 (instead of 151). Of these, 12 economies are in Africa, 19 in the Americas, 11 in Asia, 37 in Europe and 3 in Oceania. As a result, not only is the dataset significantly smaller, but it is also biased towards the developed regions of the world, for which we possess data on mixed income. Nonetheless, all three measures seem more realistic than LS1. Of these, because of its construction, LS4 is preferable, and LS2 is in most cases a good approximation of it. The '2/3' ratio, indeed, happens to be a very close estimate of the average of both LS2 and LS4 (0.668 and 0.665, respectively), and therefore a realistic approximation for developed economies. As expected, LS3 generally overstates the labor share of income. Its mean and median are the largest among all six measures (0.731 and 0.757, respectively), and its coefficient of variation is the smallest (17.73%), thus its observations are high and quite concentrated.

LS5 and LS6 are computed using ILO data on the structure of the workforce. Both the overall number of observations (2,962 and 2,879, respectively) and the overall number of economies (121 and 118, respectively) are reduced compared to the unadjusted measure, but the sample remains large. Compared to the three previous adjustments, LS5 and LS6 better represent the world as a whole, with observations more evenly distributed across different geographical regions. For the LS5 sample, 20 economies are in Africa, 29 in the Americas, 31 in Asia, 36 in Europe and 5 in Oceania. In terms of the LS6 sample, 19 economies are in Africa, 29 in the Americas, 30 in Asia, 36 in Europe and 4 in Oceania. Nevertheless, least developed countries (LDCs) and the African continent are not as well represented as in LS1 because of the absence of data on the

¹² In the cases of Iraq in 2000 and Nigeria in 1998, 1999, 2000, 2002 and 2003.

composition of the workforce. In fact, we possess information for 21 LDCs on LS1, and only 7 on LS6. Moreover, while the LS1 sample contains 64.91% of African economies (and 70.19% of the African population), the LS6 sample includes only 33.33% of African economies (and 26.67% of the African population). Similarly, since the People's Republic of China (PRC) and India are now excluded from the dataset, the LS6 sample represents 60.00% of Asian economies, but only 17.14% of the Asian population. Nevertheless, compared to the other adjusted measures (LS2–LS4), the sample of economies for LS5 and LS6 is much larger, and the total number of observations more than double.

As previously mentioned, LS5 overstates the labor share; its mean and median being the second highest among the six measures (0.693 and 0.709, respectively). As found in Bernanke and Gürkaynak (2001), the labor share in some economies is greater than 1¹³, and even 2 in one case¹⁴. Conversely, LS6 appears to be a good measure, with a mean and a median (0.660 and 0.682, respectively) very close to those of LS2 and LS4. The standard deviation (0.156) and coefficient of variation (23.57%) are relatively large, suggesting a large variation in the data even after adjustments, in contrast to the results in Gollin (2002) and Rognlie (2015). Moreover, contrary to LS5, LS6 is never greater than 1. Since the samples for LS2 and LS4 are notably reduced, LS6 is our preferred measure out of the six computed in this study.

Table 2 shows the variance decomposition of our preferred measure of labor share, LS6, explaining how the variable changes over time (within-variation) and across economies (between-variation). The data highlights a considerable difference between cross-economy and within-economy variation, with the former being much larger than the latter. As we will see in the next section, labor shares in some economies do not change substantially over time. This result is consistent with the empirical literature on income inequality, which is often considered a long-term phenomenon (Li et al 1998), and it may explain why labor shares have long been perceived as constant over time (Goldfarb and Leonard 2005).

Table 2: LS6 Panel Summary Statistics: Within- and Between- Variation

	Variable	Mean	Std. Dev.	Min	Max	Observations
LS6	Overall	0.660	0.156	0.074	0.998	N = 2879
	Between		0.150	0.236	0.913	n = 118
	Within		0.068	0.356	0.958	\bar{T} = 24.3983

Source: Author's calculations.

4. RESULTS

This section uses descriptive statistics to provide an account of the performance of the labor income share over time and across economies. Our dataset presents evidence of substantial variability, both cross-economy and within-economy. These results are contrary to general theoretical consensus in favor of the long-term stability of factor shares and recent findings in the empirical literature suggesting that differences in labor shares are mainly determined statistically at the measurement level (Gollin 2002; Rognlie 2015; Bridgman 2017).

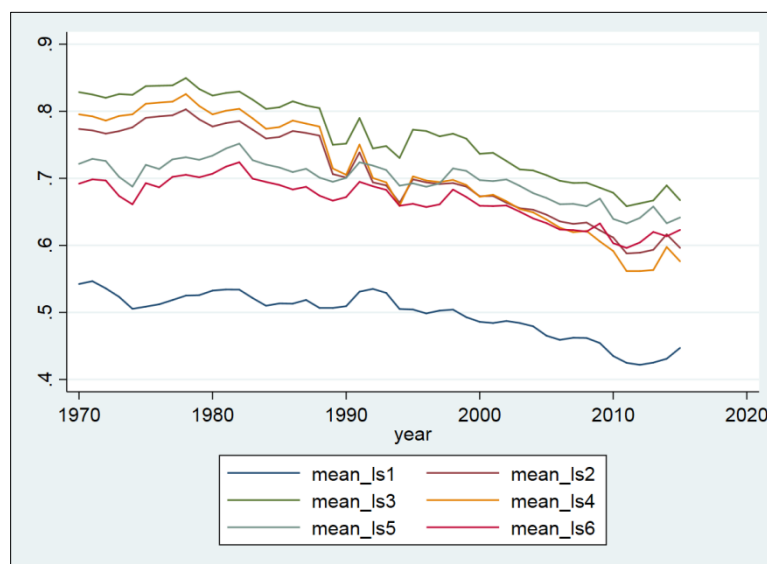
¹³ In the cases of Croatia in 1999, the Republic of Korea in 1970–1973 and 1980–1983, Mali in 2000–2006 and 2010–2011, Morocco in 2005 and the Netherlands Antilles in 2002–2008.

¹⁴ In the case of Mali in 2007–2008 and 2012–2013.

4.1 Global Trends

Figure 1 plots yearly unweighted averages of the six measures of labor share in the period 1970–2015. LS1 (blue) is the lowest line on the diagram: consistent with the summary statistics presented above, it is an underestimation of the labor share. As expected, the five adjustments pull up the value of the labor share. LS3 (green line) and LS5 (teal line) possibly overestimate the share, as discussed in the previous section. This is particularly evident for the last two decades, when their averages are considerably higher than the other measures. LS4 (orange line) and LS6 (red line) produce more reasonable averages and, especially in recent years with increasing data availability for LS4, the measures tend to evolve in a similar way. Finally, the averages of LS2 (maroon line) and LS4 (orange line) are very close, providing a rationale for the commonly used ‘2/3’ ratio.

Figure 1: Labor Share Averages over Time: Alternative Measures



Source: Author's calculations.

The data clearly presents medium- and long-term evidence of variability: not only do factor shares vary over time, but there also is a general declining trend over the last two decades, in particular from the 1990s onwards. LS1 ranges, on average across economies, from a maximum value of 0.547 in the early 1970s (specifically, 1971) to a minimum of 0.422 in 2012. The maximum values of LS2, LS3 and LS4, instead, are in 1978 (0.803, 0.850 and 0.826, respectively), while LS5 and LS6 peak later on, in 1982 (0.752 and 0.724, respectively). All adjusted measures of labor share saw their average minimum values in the year 2011.

It is worth mentioning that these are averages of an unbalanced panel and that the sample of economies changes considerably between the 1970s and the 2010s. For example, while there are 1,238 observations for LS1 in the 2000s, there are only 426 observations for LS1 in the 1970s. Similarly, for LS6, the size of the sample increases from 361 observations in the 1970s to 994 observations in the 2000s. This is particularly evident in the case of LS2, LS3 and LS4, for which we possess 619 observations for the 2000s, and only 47 observations for the 1970s.

In general, the six measures behave similarly over time. Nonetheless, in some cases the lines overlap or show diverging trends, due to variations in the methodology of imputation of the labor income component of self-employment, providing evidence that the choice of measurement is fundamental. However, Figure 1 reports the averages of an unbalanced panel and, as mentioned above, data availability differs across the measures. On average, the time series for LS2, LS3 and LS4 (15.8 years) is considerably shorter than LS5 and LS6 (24.5 and 24.4 years, respectively), but also LS1 (23.4 years).

To better understand the relationship among the different measures of labor share, pair-wise correlation coefficients are computed between the six variables for the overall time period (Table 3). As expected, the correlation coefficients are positive, strong and significant. Because of the way they are constructed, LS2, LS3 and LS4 are highly correlated, with correlation coefficients greater than 0.9. When analyzed in relation to all other measures, LS6, our preferred adjustment, is correlated but not redundant: while its correlation with LS5 is very strong (0.91), the correlation coefficients between LS6 and the other measures are lower than 0.79, implying that the measure must retain some information not held in the other adjustments, and again highlighting the importance of the choice of measurement.

Table 3: Labor Share Measures: Pair-Wise Correlation Matrix

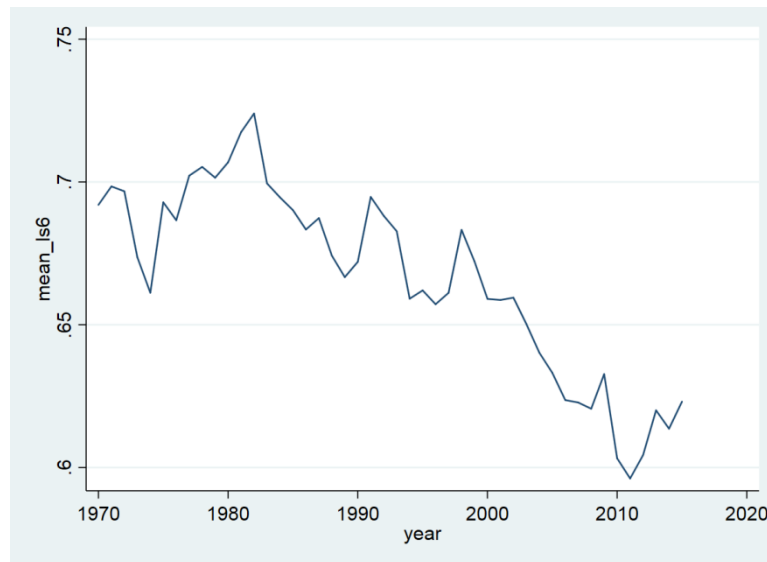
	LS1	LS2	LS3	LS4	LS5	LS6
LS1	1					
LS2	0.8297*	1				
LS3	0.5783*	0.9352*	1			
LS4	0.8311*	0.9864*	0.9145*	1		
LS5	0.5504*	0.7980*	0.7750*	0.7780*	1	
LS6	0.6577*	0.7818*	0.7561*	0.7646*	0.9128*	1

Source: Author's calculations. Please note: * $p < 0.05$

Returning to the behavior of factor shares of income over time, there seems to be a general reduction in the labor income share over the last three decades. After a stationary pattern in the 1970s and 1980s, labor shares fall substantially from the 1990s onwards. The hypothesis that factor shares are relatively stable is rejected, in accordance with recent economy-specific and cross-economy studies (Glyn 2009; ILO 2008; IMF 2017) and contrary to the well-established belief of long-term constancy.

Figure 2 plots the average for LS6 over time. The overall trend for the last three decades has been decreasing. The share increases in the 1970s (with the only exceptions in 1973–1974, when it drops noticeably), reaching its maximum of 0.724 in 1982. It then decreases considerably in the 1990s and 2000s, a period of increased liberalization and integration of markets, accelerated diffusion and adoption of technologies following the ICT revolution, as well as major policy and institutional shifts in many labor markets across the globe (IMF 2017). Overall, we find that the labor income share has decreased on average by approximately 0.10 in the last 30 years and it is currently at its historical minimum (0.596 in 2011). Furthermore, the average share seems rather volatile and it appears from the figure that some of the sudden inversions in trend occur following years of financial crises or periods of instability (Diwan 2001). Similar behavior can be observed if we analyze median levels instead of average levels of the labor share.

Figure 2: Unweighted Average Values of LS6 over Time



Source: Author's calculations.

4.2 Economy-Level Data

In addition to considering the world as a whole, we can evaluate the data on the labor share of income for each individual economy in the dataset. Table 4 provides a summary of alternative measures of labor share, as calculated in this study and in the existing empirical literature (Bentolila and Saint-Paul 2003; Bernanke and Gürkaynak 2001; EC 2007; Gollin 2002; Izyumov and Vahaly 2015). Most of the estimated labor income shares lie between 0.60 and 0.70, as expected. Compared to previous measurements, our computations seem to generate broadly consistent but relatively higher values, however a comparison among the different studies appears very difficult.

Firstly, the measures have not been constructed in the same way. Bernanke and Gürkaynak (2001), Gollin (2002) and Izyumov and Vahaly (2015) use the UN National Accounts Statistics, generating samples that, although smaller than ours, include both developed and developing economies. Conversely, Bentolila and Saint-Paul (2003) draw on the OECD International Sectoral Data Base (ISDB) 1996, concentrating their attention on 15 developed economies only. The European Commission employs the Commission's AMECO database (EC 2007) and examines only the EU-27, the United States of America and Japan.

Secondly, not all studies consider a panel dataset. Bernanke and Gürkaynak (2001), the EC (2007) and Izyumov and Vahaly (2015) construct an unbalanced panel dataset and then compute averages of the measures over the entire period of time. Gollin (2002) and Bentolila and Saint-Paul (2003), instead, consider only the cross-economy dimension, analyzing the labor share data at a particular point in time.

Table 4: Alternative Measures of Labor Share: A Comparison with the Existing Empirical Literature

Economy	Gollin ¹ (Cross-economy)				Bernanke and Gürkaynak ² (1980–1995)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Algeria					0.47		0.61	0.63
Angola								
Argentina								
Armenia								
Aruba								
Australia	0.50	0.72	0.67	0.68	0.57	0.68	0.66	0.68
Austria					0.61		0.70	0.71
Azerbaijan								
Bahamas								
Bahrain								
Barbados								
Belarus	0.42	0.55	0.51					
Belgium	0.55	0.79	0.74	0.74	0.60	0.74	0.71	0.73
Benin								
Bermuda								
Bolivia	0.26	0.83	0.63	0.48	0.37			0.67
Bosnia and Herzegovina								
Botswana	0.30	0.37	0.34	0.48	0.39	0.45		
Brazil								
British Virgin Islands								
Brunei Darussalam								
Bulgaria								
Burkina Faso								
Burundi	0.20	0.91	0.73		0.22	0.75		
Cabo Verde								
Cameroon								
Canada					0.62		0.68	0.69
Cayman Islands								
Central African Republic								
Chad								
Chile					0.42		0.59	0.62
PRC								
Hong Kong, China					0.51			0.57
Macau, China								
Colombia					0.45			0.65
Comoros								
Cook Islands								
Congo	0.37	0.69	0.58		0.38	0.47		
Costa Rica					0.54		0.73	0.74
Cote d'Ivoire	0.29	0.81	0.69		0.43	0.68		
Croatia								
Cuba								
Curaçao								
Cyprus								
Czech Republic								
Denmark					0.64		0.71	0.72
Djibouti								
Dominican Republic								
Ecuador	0.21	0.82	0.57	0.50	0.25			0.45
Egypt					0.43			0.77
El Salvador					0.35			0.58
Estonia	0.47	0.61	0.57					
Eswatini (Swaziland)								

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Table 4 *continued*

Economy	Gollin ¹ (Cross-economy)				Bernanke and Gürkaynak ² (1980–1995)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Faeroe Islands								
Fiji								
Finland	0.57	0.76	0.73	0.68	0.62	0.71	0.71	0.73
France	0.52	0.76	0.72	0.68	0.61	0.74	0.71	0.73
Gabon								
Georgia								
Germany (before 1991, Fed. Rep. of Germany)					0.63		0.69	0.71
Greece					0.45		0.79	0.86
Greenland								
Guatemala								
Guinea								
Honduras								
Hungary	0.58	0.80	0.77	0.67				
Iceland								
India	0.69	0.84	0.83					
Iran								
Iraq								
Ireland					0.58		0.73	0.75
Israel					0.59		0.70	0.73
Italy	0.45	0.80	0.72	0.71	0.49	0.71	0.65	0.69
Jamaica	0.43	0.62	0.57		0.53	0.60		
Japan	0.56	0.73	0.69	0.72	0.59	0.68	0.73	0.77
Jordan					0.45		0.64	0.67
Kazakhstan								
Kenya								
Kuwait								
Kyrgyz Republic								
Latvia	0.37	0.55	0.47					
Lesotho								
Libya								
Liechtenstein								
Lithuania								
Luxembourg								
Malaysia					0.43			0.66
Mali								
Malta	0.43	0.71	0.63					
Marshall Islands								
Mauritania								
Mauritius	0.39	0.77	0.67	0.49	0.48			0.57
Mexico					0.34		0.55	0.59
Federated States of Micronesia								
Monaco								
Mongolia								
Morocco					0.36			0.58
Mozambique								
Namibia								
Netherlands	0.53	0.72	0.68	0.64	0.59	0.67	0.66	0.67
Netherlands Antilles								
New Zealand					0.55		0.67	0.69
Nicaragua								
Niger								
Nigeria								
Norway	0.52	0.68	0.64	0.57	0.55		0.61	0.63

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Table 4 *continued*

Economy	Gollin ¹ (Cross-economy)				Bernanke and Gürkaynak ² (1980–1995)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Oman								
Palau								
Panama					0.50		0.73	0.76
Papua New Guinea								
Paraguay					0.32		0.49	0.52
Peru					0.31		0.56	0.59
Philippines	0.35	0.80	0.66	0.87	0.27	0.59		
Poland								
Portugal	0.45	0.82	0.75	0.60	0.52	0.72	0.71	0.73
Qatar								
Republic of Korea	0.47	0.77	0.70	0.80	0.48	0.65		
Republic of Moldova								
Reunion	0.59	0.83	0.80					
Romania								
Russian Federation								
Rwanda								
San Marino								
Saudi Arabia								
Senegal								
Serbia								
Seychelles								
Sierra Leone								
Singapore					0.47		0.53	0.55
Sint Maarten								
Slovakia								
Slovenia								
Solomon Islands								
South Africa					0.59		0.62	0.63
Spain					0.52		0.67	0.70
Sri Lanka					0.50		0.78	0.81
Sudan								
Suriname								
Sweden	0.61	0.80	0.77	0.72	0.68	0.77	0.74	0.75
Switzerland					0.66		0.76	0.78
Tajikistan								
Thailand								
Trinidad and Tobago					0.55		0.69	0.71
Tunisia					0.41			0.62
Turkey								
Ukraine	0.77	0.78	0.76					
United Arab Emirates								
United Kingdom	0.57	0.81	0.78	0.72	0.65	0.75	0.72	0.74
United Republic of Tanzania								
United States	0.60	0.77	0.74	0.66	0.65	0.74	0.71	0.71
Uruguay					0.43		0.58	0.59
Vanuatu								
Venezuela (Bolivarian Republic of)					0.38		0.53	0.55
Viet Nam	0.59	0.83	0.80					
Yemen								
Zambia					0.48		0.72	0.78
Zimbabwe								

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Table 4 *continued*

Economy	EC ³ (2007)	Bentolila and Saint-Paul ⁴ (Cross-economy)			Izyumov and Vahaly ⁵ (1990-228)		
	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Algeria							
Angola							
Argentina					0.46	0.49	0.43
Armenia					0.47	0.73	0.47
Aruba							
Australia		0.65	0.66	0.63	0.62	0.65	0.62
Austria	0.66				0.64	0.65	0.64
Azerbaijan					0.40	0.38	0.31
Bahamas							
Bahrain							
Barbados							
Belarus					0.57		0.56
Belgium	0.61	0.62	0.72	0.64	0.64	0.66	0.64
Benin							
Bermuda							
Bolivia					0.41	1.17	0.40
Bosnia and Herzegovina							
Botswana					0.29	0.37	0.28
Brazil					0.48	0.62	0.47
British Virgin Islands							
Brunei Darussalam							
Bulgaria	0.51				0.48	0.47	0.45
Burkina Faso							
Burundi							
Cabo Verde							
Cameroon							
Canada		0.67	0.62	0.65	0.60	0.67	0.60
Cayman Islands							
Central African Republic							
Chad							
Chile					0.48	0.61	0.46
PRC							
Hong Kong, China							
Macau, China							
Colombia					0.53	0.64	0.49
Comoros							
Cook Islands							
Congo							
Costa Rica							
Cote d'Ivoire							
Croatia					0.61	0.70	0.61
Cuba							
Curaçao							
Cyprus	0.57				0.55	0.56	0.54
Czech Republic	0.52				0.56	0.57	0.55
Denmark	0.59						
Djibouti							
Dominican Republic							
Ecuador							
Egypt					0.51	0.52	0.45
El Salvador							
Estonia	0.51				0.58	0.58	0.57
Eswatini (Swaziland)							

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Table 4 *continued*

Economy	EC ³ (2007)	Bentolila and Saint-Paul ⁴ (Cross-economy)			Izyumov and Vahaly ⁵ (1990-228)		
	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Faeroe Islands							
Fiji							
Finland	0.62	0.69	0.70	0.72	0.62	0.68	0.62
France	0.61	0.68	0.72	0.62	0.63	0.65	0.63
Gabon							
Georgia					0.46	0.64	0.37
Germany (before 1991, Fed. Rep. of Germany)	0.62	0.64	0.69	0.62	0.66	0.65	0.66
Greece	0.66				0.47	0.61	0.45
Greenland							
Guatemala					0.50	1.22	0.45
Guinea							
Honduras					0.61	1.03	0.59
Hungary					0.63	0.62	0.62
Iceland							
India							
Iran					0.44	0.45	0.34
Iraq							
Ireland					0.52	0.55	0.50
Israel							
Italy		0.67	0.64	0.63	0.58	0.63	0.56
Jamaica							
Japan	0.68	0.57	0.69	0.68	0.57	0.65	0.57
Jordan							
Kazakhstan					0.54	0.57	0.51
Kenya							
Kuwait							
Kyrgyz Republic					0.66	0.61	0.65
Latvia	0.50				0.58	0.56	0.56
Lesotho							
Libya							
Liechtenstein							
Lithuania	0.49				0.54	0.56	0.52
Luxembourg	0.52				0.61		0.60
Malaysia							
Mali							
Malta	0.51*						
Marshall Islands							
Mauritania							
Mauritius							
Mexico					0.47	0.53	0.42
Federated States of Micronesia							
Monaco							
Mongolia					0.52	0.63	0.43
Morocco							
Mozambique							
Namibia							
Netherlands	0.63	0.68	0.69	0.59	0.62	0.64	0.61
Netherlands Antilles							
New Zealand							
Nicaragua							
Niger					0.61		0.47
Nigeria							
Norway		0.68	0.66	0.64	0.59	0.55	0.58

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Table 4 *continued*

Economy	EC ³ (2007)	Bentolila and Saint-Paul ⁴ (Cross-economy)			Izyumov and Vahaly ⁵ (1990-228)		
	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Oman						Oman	
Panama					0.47	0.57	0.43
Papua New Guinea							
Paraguay							
Peru							
Philippines					0.48		0.57
Poland	0.55				0.61	0.61	0.59
Portugal	0.67				0.66	0.74	0.66
Qatar							
Republic of Korea							
Republic of Moldova					0.58	0.71	0.57
Reunion							
Romania	0.68					0.70	
Russian Federation					0.58	0.54	0.57
Rwanda							
San Marino							
Saudi Arabia							
Senegal							
Serbia					0.66	0.78	0.66
Seychelles							
Sierra Leone							
Singapore							
Sint Maarten							
Slovakia	0.44				0.60	0.48	0.57
Slovenia	0.64				0.67	0.71	0.67
Solomon Islands							
South Africa						0.58	
Spain	0.62				0.65	0.67	0.65
Sri Lanka							
Sudan							
Suriname							
Sweden	0.62	0.70	0.74	0.73	0.67	0.65	0.67
Switzerland					0.70	0.78	0.70
Tajikistan					0.49		0.34
Thailand							
Trinidad and Tobago							
Tunisia							
Turkey							
Ukraine					0.58	0.62	0.57
United Arab Emirates							
United Kingdom	0.65				0.65	0.69	0.65
United Republic of Tanzania							
United States	0.64	0.70	0.68	0.66	0.71	0.67	0.71
Uruguay					0.54	0.47	0.51
Vanuatu							
Venezuela (Bolivarian Republic of)					0.40		0.38
Viet Nam							
Yemen							
Zambia							
Zimbabwe							

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Table 4 *continued*

Economy	Author's Calculations ⁶					
	LS1	LS2	LS3	LS4	LS5	LS6
Algeria	0.37				0.59	0.55
Angola	0.22				0.68	0.65
Argentina	0.39	0.48	0.52	0.45	0.53	0.51
Armenia	0.51				0.88	0.88
Aruba	0.64	0.70	0.72	0.70	0.67	0.64
Australia	0.67	0.77	0.82	0.80	0.81	0.75
Austria	0.72	0.78	0.82	0.80	0.83	0.79
Azerbaijan	0.23				0.50	0.46
Bahamas	0.49				0.58	0.55
Bahrain	0.33				0.35	0.34
Barbados	0.71				0.81	0.80
Belarus	0.54	0.61	0.64	0.60	0.57	0.56
Belgium	0.63	0.77	0.81	0.78	0.76	0.74
Benin	0.22	0.67	0.91	0.68		
Bermuda	0.69				0.81	0.76
Bolivia	0.37				0.59	0.57
Bosnia and Herzegovina	0.71				0.97	0.75
Botswana	0.40	0.35	0.36	0.34	0.58	0.57
Brazil	0.48	0.55	0.59	0.54	0.75	0.72
British Virgin Islands	0.53				0.62	0.58
Brunei Darussalam	0.22				0.24	0.24
Bulgaria	0.48	0.60	0.66	0.59	0.56	0.54
Burkina Faso	0.26					
Burundi	0.22					
Cabo Verde	0.38	0.63	0.75	0.61	0.66	0.64
Cameroon	0.27	0.64	0.81	0.61		
Canada	0.69	0.77	0.80	0.78	0.81	0.76
Cayman Islands	0.57				0.63	0.59
Central African Republic	0.18	0.25	0.29	0.20		
Chad	0.20					
Chile	0.47	0.56	0.60	0.55	0.66	0.64
PRC	0.54				0.59	
Hong Kong, China	0.51				0.57	0.54
Macau, China	0.36				0.40	0.39
Colombia	0.39	0.54	0.63	0.50	0.65	0.62
Comoros	0.13				0.46	0.44
Cook Islands	0.72				0.85	0.73
Congo						
Costa Rica	0.54	0.69	0.74	0.70	0.74	0.70
Cote d'Ivoire	0.29	0.58	0.74	0.51		
Croatia	0.70	0.80	0.85	0.82	0.91	0.86
Cuba	0.47				0.63	0.53
Curaçao	0.71					
Cyprus	0.62	0.70	0.75	0.71	0.80	0.75
Czech Republic	0.60	0.73	0.80	0.75	0.71	0.68
Denmark	0.75	0.83	0.87	0.85	0.85	0.79
Djibouti	0.60					
Dominican Republic	0.38	0.68	0.83	0.70	0.70	0.67

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Table 4 *continued*

Economy	Author's Calculations ⁶					
	LS1	LS2	LS3	LS4	LS5	LS6
Ecuador	0.32				0.57	0.53
Egypt	0.29	0.48	0.58	0.41	0.49	0.41
El Salvador						
Estonia	0.63	0.68	0.70	0.68	0.69	0.67
Eswatini (Swaziland)	0.57				0.74	0.73
Faeroe Islands	0.70	0.71	0.72	0.72		
Fiji	0.49				0.82	0.81
Finland	0.71	0.78	0.82	0.80	0.84	0.81
France	0.69	0.77	0.81	0.78	0.80	0.77
Gabon	0.31				0.47	0.46
Georgia	0.31	0.53	0.64	0.47	0.81	0.80
Germany (before 1991, Fed. Rep. of Germany)	0.69				0.78	0.74
Greece	0.43	0.65	0.75	0.64	0.72	0.66
Greenland	0.72					
Guatemala	0.37	0.53	0.62	0.49	0.69	0.66
Guinea	0.16	0.53	0.72	0.35		
Honduras	0.56	0.66	0.72	0.66		
Hungary	0.62	0.76	0.82	0.79	0.74	0.72
Iceland	0.75	0.83	0.85	0.84	0.91	0.85
India	0.39					
Iran	0.28	0.51	0.62	0.43	0.54	0.51
Iraq	0.17				0.30	0.29
Ireland	0.58	0.58	0.61	0.57	0.75	0.71
Israel	0.68				0.79	0.76
Italy	0.56	0.71	0.79	0.73	0.79	0.74
Jamaica	0.57				0.94	0.91
Japan	0.65	0.73	0.76	0.74	0.82	0.80
Jordan	0.48				0.59	0.55
Kazakhstan	0.43	0.58	0.66	0.56	0.68	0.67
Kenya	0.43				0.44	
Kuwait	0.31				0.32	0.32
Kyrgyz Republic	0.35	0.72	0.90	0.79	0.70	0.69
Latvia	0.63	0.72	0.78	0.73	0.74	0.71
Lesotho	0.49	0.62	0.69	0.61	0.60	0.60
Libya	0.28				0.48	0.46
Liechtenstein	0.61	0.68	0.71	0.68		
Lithuania	0.56	0.66	0.72	0.67	0.68	0.66
Luxembourg	0.59	0.69	0.73	0.70	0.66	0.63
Malaysia	0.34				0.47	0.46
Mali	0.14				1.76	0.76
Malta	0.57	0.69	0.72	0.69	0.66	0.63
Marshall Islands	0.75					
Mauritania	0.27				0.70	0.69
Mauritius	0.46				0.57	0.49
Mexico	0.35	0.53	0.61	0.48	0.59	0.56
Federated States of Micronesia	0.48	0.68	0.78	0.69		
Monaco	0.53					
Mongolia	0.30	0.55	0.67	0.49	0.77	0.76

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Table 4 *continued*

Economy	Author's Calculations ⁶					
	LS1	LS2	LS3	LS4	LS5	LS6
Morocco	0.36				0.84	0.82
Mozambique	0.28	0.63	0.83	0.59		
Namibia	0.54				0.80	0.76
Netherlands	0.69	0.78	0.83	0.80	0.79	0.76
Netherlands Antilles	0.80	0.89	0.92	0.91	0.96	0.90
New Zealand	0.59				0.73	0.67
Nicaragua	0.42	0.60	0.70	0.58	0.79	0.76
Niger	0.18	0.67	0.91	0.70		
Nigeria	0.17					
Norway	0.65	0.70	0.72	0.70	0.72	0.70
Oman	0.33	0.40	0.43	0.36	0.38	0.37
Palau	0.55	0.56	0.57	0.56	0.56	
Panama	0.38	0.46	0.50	0.44	0.57	0.55
Papua New Guinea	0.36					
Paraguay	0.38	0.53	0.61	0.49	0.75	0.71
Peru	0.33	0.41	0.49	0.33	0.67	0.64
Philippines	0.32				0.62	0.59
Poland	0.52	0.74	0.84	0.77	0.73	0.70
Portugal	0.60	0.83	0.90	0.87	0.83	0.79
Qatar	0.25	0.25	0.27	0.24	0.25	0.25
Republic of Korea	0.52				0.95	0.90
Republic of Moldova	0.50	0.63	0.69	0.61	0.72	0.71
Reunion						
Romania	0.42	0.57	0.64	0.55	0.70	0.69
Russian Federation	0.66	0.75	0.79	0.76	0.71	0.70
Rwanda	0.24					
San Marino	0.61	0.79	0.87	0.83	0.69	0.62
Saudi Arabia	0.32	0.31	0.32	0.29	0.35	0.34
Senegal	0.28				0.83	0.83
Serbia						
Seychelles	0.47				0.54	0.53
Sierra Leone	0.47					
Singapore	0.45				0.53	0.50
Sint Maarten	0.79					
Slovakia	0.57	0.75	0.84	0.78	0.64	0.62
Slovenia	0.74	0.83	0.88	0.86	0.88	0.85
Solomon Islands	0.53					
South Africa	0.65				0.78	0.73
Spain	0.57	0.78	0.85	0.81	0.76	0.72
Sri Lanka	0.52				0.88	0.86
Sudan	0.36					
Suriname	0.38				0.47	0.46
Sweden	0.77	0.77	0.79	0.78	0.85	0.82
Switzerland	0.76	0.87	0.93	0.92	0.91	0.85
Tajikistan	0.24				0.45	0.44
Thailand	0.29				0.80	0.78
Trinidad and Tobago	0.51				0.68	0.65
Tunisia	0.48				0.70	0.58

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Table 4 *continued*

Economy	Author's Calculations ⁶					
	LS1	LS2	LS3	LS4	LS5	LS6
Turkey	0.28	0.50	0.58	0.44	0.53	0.50
Ukraine	0.65	0.62	0.62	0.62	0.77	0.69
United Arab Emirates	0.28				0.29	0.28
United Kingdom	0.70	0.73	0.75	0.73	0.79	0.76
United Republic of Tanzania	0.16					
United States	0.71	0.79	0.83	0.80	0.77	0.74
Uruguay	0.43	0.54	0.59	0.51	0.60	0.57
Vanuatu	0.48					
Venezuela (Bolivarian Republic of)	0.39	0.47	0.52	0.44	0.64	0.60
Viet Nam						
Yemen	0.27				0.64	0.63
Zambia						
Zimbabwe	0.52	0.55	0.57	0.54		

Source: Bentolila and Saint-Paul (2003), Bernanke and Gürkaynak's (2001), EC (2007), Gollin (2002), Izyumov and Vahaly (2015), author's calculations.

¹ Gollin's (2002) calculations:

- 1) Unadjusted labor share: employee compensation / (GDP – indirect taxes)
- 2) OSPUE entirely incorporated into labor income: (employee compensation + mixed income) / (GDP – indirect taxes)
- 3) Gollin's adjustment for OSPUE: employee compensation / (GDP – indirect taxes – mixed income)
- 4) Gollin's labor force correction: [(employee compensation / number of employees) * total workforce] / GDP

² Bernanke and Gürkaynak's (2001) calculations:

- 1) Unadjusted labor share: employee compensation / (GDP – indirect taxes)
- 2) Gollin's adjustment for OSPUE: corporate employee compensation / (GDP – indirect taxes – OSPUE)
- 3) Bernanke's adjustment for OSPUE
- 4) Labor force correction: corporate employee compensation / [corporate share of labor force * (GDP – indirect taxes)]

³ EC's (2007) calculations:

- 1) Labor force adjustment: [(compensation of employees/number of employees) * total employment] / gross domestic employment at market price

⁴ Bentolila and Saint-Paul's (2003) calculations:

- 1) Labor force adjustment: [compensation of employees * (total employment / number of employees)] / (GDP – net indirect taxes), year 1970
- 2) Labor force adjustment, year 1980
- 3) Labor force adjustment, year 1990

⁵ Izyumov and Vahaly's (2015) calculations:

- 1) Fixed arbitrary proportion: (employee compensation + α * gross mixed income) / (GDP – indirect taxes)
- 2) Wage imputation: [employee compensation + (β * average compensation in CG sector * self-employed)] / (GDP – indirect taxes)
- 3) Factor share imputation: employee compensation / (GDP – gross mixed income – indirect taxes)

⁶ The data presented here are averages of labor shares over the period 1970–2015.

Thirdly, the time series in the panel datasets are different. Bernanke and Gürkaynak (2001) consider the period 1980–1995, the EC (2007) the period 1960–2006 and Izyumov and Vahaly (2015) the period 1990–2008, while this study considers the period 1970–2015.

Finally, the adjustments in the numerator and denominator of the share are different for all studies considered here, hence the discussion in the remainder of this section will concentrate only on our calculations.

Table 5 below presents summary statistics of our preferred measure of labor share, LS6, for each of the economies in the sample. The data is heterogeneous, with large differences across economies.

Oil-producing economies in the Middle East are characterized by very low labor share averages, their incomes being mainly dependent on the endowments of natural resources: for example, Qatar (average of 0.25), the United Arab Emirates (0.28), Kuwait (0.32) and Saudi Arabia (0.34). Conversely, North European economies, such as Iceland (average of 0.85), Sweden (0.82), Finland (0.81) and Denmark (0.79), exhibit very high shares of labor in national income.

Data in some economies, such as the United States, shows very little variation, with a standard deviation equal to 0.014; whereas in other economies, such as Trinidad and Tobago, the labor share variation over time is high, with a standard deviation equal to 0.153. The overall declining trend mentioned in the above section is visible for economy-level data when observing minimum values: most economies (56.4% of the sample) experienced their historical minimum labor share in the 21st century.

To further examine this declining trend, the following table considers our preferred measure of labor share, LS6, and summarizes its averages and trends of variation by decade for each economy. In the 1970s and 1980s, the majority of economies (81.52% and 80.00%, respectively) did not experience significant variation in the labor share (exhibiting an average annual variation between -1% and $+1\%$ throughout the decade), however this overall trend changed considerably from the 1990s. In particular, in the decade 2000–2009 the share of labor declined in exactly half of the sample and in the period 2010–2015 it declined in 31.87% of the sample. However, it is possible to identify notable differences across economies. In some economies, such as Peru, the labor share of income has demonstrated a clear declining pattern over the last four decades. In others, such as the Netherlands, there is no strong evidence of variation over time.

Table 5: Overview of the Data: Summary Statistics of LS6 across Economies

Economy	Obs.	Mean	Median	Std. Dev.	Min (Year)	Max (Year)
Algeria	36	0.5545	0.5219	0.1393	0.3432 (2006)	0.8128 (1971)
Angola	14	0.6511	0.6204	0.1314	0.4748 (2005)	0.8863 (2015)
Argentina	21	0.5092	0.5075	0.0540	0.4218 (2003)	0.6400 (2013)
Armenia	16	0.8781	0.8687	0.0480	0.7994 (1995)	0.9583 (2000)
Aruba	9	0.6397	0.6539	0.0480	0.5300 (1994)	0.6773 (1999)
Australia	39	0.7505	0.7480	0.0260	0.6894 (1988)	0.7921 (1982)
Austria	33	0.7932	0.8011	0.0351	0.7213 (2006)	0.8504 (1978)
Azerbaijan	18	0.4605	0.4624	0.4594	0.3743 (2008)	0.5532 (2009)
Bahamas	22	0.5536	0.5281	0.0669	0.4752 (2008)	0.6719 (1997)
Bahrain	22	0.3411	0.3356	0.0407	0.2768 (2008)	0.4097 (1998)
Barbados	2	0.8039	0.8039	0.0018	0.8026 (1975)	0.8052 (1974)
Belarus	26	0.5615	0.5682	0.0418	0.4522 (1991)	0.6279 (2013)
Belgium	34	0.7441	0.7480	0.0556	0.6599 (1989)	0.8341 (1996)
Bermuda	20	0.7561	0.7708	0.0351	0.6747 (1997)	0.8023 (2010)
Bolivia (Plurinational State of)	45	0.5748	0.5861	0.0499	0.4173 (1986)	0.7007 (1984)
Bosnia and Herzegovina	7	0.7533	0.7515	0.0130	0.7336 (2007)	0.7756 (2009)
Botswana	41	0.5684	0.5490	0.1032	0.3817 (2001)	0.7948 (1982)
Brazil	22	0.7159	0.7199	0.0389	0.6232 (1993)	0.7857 (2013)
British Virgin Islands	30	0.5794	0.6065	0.1039	0.3994 (1996)	0.7664 (2009)
Brunei Darussalam	6	0.2358	0.2308	0.0314	0.2034 (2011)	0.2880 (2015)
Bulgaria	16	0.5424	0.5507	0.0405	0.4437 (1997)	0.5915 (1999)
Cabo Verde	8	0.6393	0.6474	0.0338	0.5985 (2008)	0.6827 (2014)
Canada	41	0.7534	0.7633	0.0282	0.6870 (2010)	0.8245 (1992)
Cayman Islands	19	0.5855	0.5787	0.0408	0.4928 (2006)	0.6432 (1988)
Chile	41	0.6362	0.6444	0.0685	0.5014 (1988)	0.7533 (1999)
Hong Kong, China	34	0.5425	0.5408	0.0210	0.5036 (1994)	0.5793 (2001)
Macau, China	24	0.3878	0.3927	0.0485	0.3137 (1995)	0.4567 (2008)
Colombia	46	0.6235	0.6085	0.0685	0.5049 (1994)	0.7472 (2010)
Comoros	8	0.4353	0.4236	0.0980	0.3575 (2013)	0.6619 (2014)
Cook Islands	13	0.7300	0.7557	0.0588	0.6141 (1996)	0.7974 (1998)
Costa Rica	44	0.7003	0.7185	0.0705	0.5294 (1982)	0.8026 (1990)
Croatia	15	0.8646	0.8666	0.0555	0.7592 (2008)	0.9514 (1999)
Cuba	10	0.5334	0.5326	0.0191	0.5122 (2000)	0.5808 (2005)
Cyprus	15	0.7489	0.7611	0.0333	0.6982 (2001)	0.7981 (2003)
Czech Republic	17	0.6796	0.6817	0.0168	0.6467 (1998)	0.7083 (1994)
Denmark	39	0.7904	0.7926	0.0370	0.7083 (1973)	0.8661 (2008)
Dominican Republic	15	0.6722	0.6877	0.0616	0.5089 (2004)	0.7330 (1999)
Ecuador	30	0.5326	0.5132	0.1430	0.2954 (1991)	0.8308 (2013)
Egypt	18	0.4104	0.4130	0.0222	0.3472 (2012)	0.4498 (2007)
Estonia	22	0.6712	0.6640	0.0530	0.6101 (2001)	0.7935 (1993)
Eswatini (Swaziland)	8	0.7311	0.7268	0.0383	0.6856 (1986)	0.8065 (1983)
Fiji	19	0.8118	0.8169	0.0730	0.6710 (2001)	0.9439 (1983)
Finland	39	0.8085	0.8080	0.0623	0.7156 (2007)	0.9582 (1991)
France	40	0.7696	0.7664	0.0553	0.6597 (1970)	0.8722 (1982)
Gabon	12	0.4583	0.4173	0.1155	0.3318 (2005)	0.6836 (1978)
Georgia	18	0.8018	0.8510	0.1350	0.6113 (2004)	0.9810 (2009)
Germany (before 1991 Fed. Rep.)	26	0.7476	0.7498	0.0399	0.7139 (2007)	0.7778 (1993)
Greece	14	0.6624	0.6655	0.0194	0.6374 (2007)	0.6925 (2002)
Guatemala	12	0.6636	0.6573	0.0924	0.5562 (2012)	0.7878 (2001)
Hungary	24	0.7186	0.7064	0.0457	0.6585 (1987)	0.8193 (1995)
Iceland	33	0.8546	0.8558	0.0414	0.7781 (1994)	0.9392 (2005)

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Table 5 *continued*

Economy	Obs.	Mean	Median	Std. Dev.	Min (Year)	Max (Year)
Iran	21	0.5123	0.5003	0.0510	0.4328 (2011)	0.6205 (1998)
Ireland	39	0.7117	0.7181	0.0971	0.5615 (2002)	0.9075 (1980)
Israel	17	0.7589	0.7636	0.0315	0.7105 (2009)	0.7993 (1995)
Italy	39	0.7436	0.7323	0.0566	0.6639 (2000)	0.8508 (1981)
Jamaica	18	0.9131	0.9098	0.0357	0.8521 (2005)	0.9670 (2013)
Japan	38	0.7982	0.8112	0.0400	0.6486 (1970)	0.8407 (1998)
Jordan	43	0.5482	0.5502	0.0420	0.4651 (2012)	0.6512 (1999)
Kazakhstan	16	0.6710	0.6350	0.0915	0.5707 (2013)	0.8289 (1998)
Kuwait	24	0.3172	0.3160	0.0727	0.2147 (2006)	0.4740 (1992)
Kyrgyz Republic	12	0.6942	0.6860	0.0568	0.6365 (2005)	0.8089 (2002)
Latvia	17	0.7125	0.6976	0.0786	0.6163 (2002)	0.8422 (1995)
Lesotho	17	0.6071	0.5968	0.0544	0.5410 (2007)	0.7611 (1997)
Libyan Arab Jamahiriya	9	0.4586	0.4585	0.0475	0.3785 (1974)	0.5177 (1972)
Lithuania	15	0.6641	0.6516	0.0345	0.6249 (2005)	0.7574 (1999)
Luxembourg	39	0.6338	0.6446	0.0485	0.5132 (1970)	0.7223 (1993)
Malaysia	5	0.4598	0.4587	0.0239	0.4365 (1978)	0.4928 (1970)
Mali	15	0.7643	0.7525	0.1138	0.6022 (2001)	0.9325 (2007)
Malta	39	0.6303	0.6191	0.0495	0.5573 (1989)	0.7214 (2004)
Mauritania	3	0.6851	0.6973	0.0393	0.6411 (2006)	0.7169 (2005)
Mauritius	5	0.4598	0.4587	0.0239	0.4365 (1978)	0.4928 (1970)
Mexico	32	0.5599	0.5773	0.0682	0.4412 (1987)	0.7117 (1993)
Mongolia	15	0.7610	0.7640	0.0725	0.6460 (1997)	0.8883 (2009)
Morocco	18	0.8173	0.8029	0.1115	0.5777 (2000)	0.9858 (2005)
Namibia	27	0.7592	0.7971	0.1002	0.5790 (2015)	0.8882 (1993)
Netherlands	39	0.7579	0.7561	0.0216	0.7247 (1985)	0.8089 (1979)
Netherlands Antilles	17	0.9010	0.9126	0.0499	0.7993 (1992)	0.9665 (2003)
New Zealand	36	0.6746	0.6602	0.0335	0.6315 (2000)	0.7411 (1980)
Nicaragua	22	0.7613	0.7973	0.0988	0.5806 (1998)	0.9416 (2015)
Norway	40	0.7018	0.7067	0.0632	0.5684 (2006)	0.8021 (1988)
Oman	28	0.3715	0.3710	0.0529	0.2584 (2008)	0.4831 (1998)
Panama	17	0.5547	0.5796	0.0658	0.4323 (2012)	0.6220 (2000)
Paraguay	22	0.7094	0.6939	0.1143	0.5358 (1994)	0.9126 (2000)
Peru	42	0.6372	0.6403	0.1457	0.3826 (2008)	0.8844 (1973)
Philippines	21	0.5921	0.5977	0.0626	0.4624 (2012)	0.6807 (2006)
Poland	18	0.6990	0.7136	0.0594	0.5974 (2007)	0.7724 (1996)
Portugal	34	0.7862	0.7926	0.1057	0.6208 (1994)	0.9104 (2005)
Qatar	19	0.2491	0.2176	0.0900	0.1537 (2008)	0.4352 (1998)
Republic of Korea	39	0.9014	0.8800	0.0504	0.8361 (2004)	0.9978 (1973)
Republic of Moldova	26	0.7139	0.7260	0.0940	0.5016 (1999)	0.9716 (1991)
Romania	14	0.6871	0.6773	0.0692	0.5751 (1997)	0.8396 (2001)
Russian Federation	19	0.6983	0.7059	0.0690	0.5869 (2000)	0.7945 (1996)
San Marino	18	0.6154	0.6174	0.0515	0.5388 (2007)	0.7314 (2012)
Saudi Arabia	15	0.3391	0.3544	0.0652	0.2106 (2008)	0.4452 (1998)
Senegal	25	0.8258	0.8440	0.0884	0.6036 (1996)	0.9817 (2014)
Seychelles	21	0.5272	0.5276	0.0435	0.4546 (1976)	0.6138 (1982)
Singapore	33	0.5042	0.5035	0.0265	0.4500 (1980)	0.5670 (1985)
Slovakia	23	0.6205	0.6192	0.0342	0.5487 (2008)	0.6752 (1998)
Slovenia	15	0.8499	0.8496	0.0434	0.7854 (2008)	0.9195 (1995)
South Africa	46	0.7335	0.7486	0.0549	0.6375 (2008)	0.8149 (1982)
Spain	29	0.7221	0.7316	0.0444	0.6573 (1989)	0.7941 (1997)
Sri Lanka	31	0.8606	0.8511	0.0469	0.7712 (2001)	0.9430 (2013)
Suriname	4	0.4634	0.4690	0.0215	0.4329 (2008)	0.4829 (2007)

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Table 5 *continued*

Economy	Obs.	Mean	Median	Std. Dev.	Min (Year)	Max (Year)
Sweden	39	0.8176	0.8133	0.0314	0.7514 (1995)	0.8954 (1977)
Switzerland	26	0.8495	0.8487	0.0253	0.8025 (2007)	0.9027 (2001)
Tajikistan	16	0.4448	0.4205	0.1155	0.3021 (2008)	0.6580 (2000)
Thailand	46	0.7820	0.7895	0.0917	0.6005 (1970)	0.9619 (1992)
Trinidad and Tobago	40	0.6549	0.6794	0.1527	0.3509 (2008)	0.9022 (1986)
Tunisia	20	0.5785	0.5581	0.0545	0.5106 (1996)	0.6538 (2005)
Turkey	27	0.5034	0.4950	0.0573	0.4086 (1987)	0.6210 (1991)
Ukraine	25	0.6866	0.6546	0.0931	0.4784 (1993)	0.8825 (2013)
United Arab Emirates	22	0.2805	0.2764	0.0328	0.2204 (2006)	0.3562 (1986)
United Kingdom	36	0.7627	0.7587	0.0195	0.7349 (1996)	0.8166 (1975)
United States	42	0.7413	0.7425	0.0139	0.7085 (2011)	0.7673 (1980)
Uruguay	9	0.5733	0.5841	0.0284	0.5271 (2003)	0.6018 (2001)
Venezuela (Bolivarian Republic of)	46	0.6049	0.6045	0.0663	0.4448 (1996)	0.7165 (1972)
Yemen	11	0.6276	0.6500	0.0981	0.5139 (1973)	0.7490 (1981)

Source: Author's calculations.

Table 6: LS6 Averages and Trends, by Decade

Economy	Labor Share Averages					Labor Share Trends*				
	1970s	1980s	1990s	2000s	2010s	1970s	1980s	1990s	2000s	2010s
Algeria	0.7327	0.7208	0.5814	0.4045	0.4642	=		–	=	+
Angola				0.5727	0.7556				++	++
Argentina			0.5104	0.4800	0.5803			–	=	++
Armenia			0.8746	0.8802				+	=	
Aruba			0.6403	0.6386				++	--	
Australia	0.7441	0.7346	0.7726	0.7506		=	=	=	=	
Austria	0.8301	0.8110	0.8045	0.7444		=	=	=	=	
Azerbaijan			0.4398	0.4610	0.4935			–	++	–
Bahamas			0.6158	0.4949	0.4922			=	=	=
Bahrain			0.3873	0.3242	0.3230			=	–	+
Barbados	0.8039					=				
Belarus			0.5339	0.5768	0.5822			=	+	=
Belgium	0.7460	0.7094	0.7351	0.7916		=	–	+	=	
Bermuda			0.7094	0.7578	0.7843			+	=	=
Bolivia	0.5799	0.5595	0.6054	0.5854	0.5203	=	–	=	–	=
Bosnia and Herzegovina				0.7528	0.7547				=	–
Botswana	0.6743	0.5987	0.4943	0.5620	0.5447	+	--	+	=	--
Brazil			0.6977	0.7148	0.7550			+	=	+
British Virgin Islands	0.6629	0.5975	0.4141	0.5638	0.6606	=	–	=	++	--
Brunei Darussalam					0.2358					++
Bulgaria			0.5290	0.5483	0.5498			++	=	--
Cabo Verde				0.6020	0.6616				=	+
Canada	0.7673	0.7549	0.7951	0.7440	0.6870	=	=	=	–	–
Cayman Islands		0.6247	0.6113	0.5303	0.5679		=	–	++	=
Chile	0.6629	0.6207	0.6306	0.6799	0.5590	–	=	++	=	–
Hong Kong, China		0.5308	0.5350	0.5573	0.5532		=	+	=	=
Macau, China			0.3689	0.4225	0.3551			++	=	=
Colombia	0.5814	0.6208	0.5528	0.6733	0.7327	=	=	=	+	=
Comoros				0.4131	0.4486				--	++
Cook Islands			0.6916	0.7541				++	=	

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Table 6 *continued*

Economy	Labor Share Averages					Labor Share Trends*				
	1970s	1980s	1990s	2000s	2010s	1970s	1980s	1990s	2000s	2010s
Costa Rica	0.6292	0.6702	0.7138	0.7535	0.7862	=	+	–	+	=
Croatia			0.9069	0.8642	0.8034			++	–	–
Cuba				0.5334					=	
Cyprus			0.7228	0.7582	0.7611			–	+	–
Czech Republic			0.6763	0.6826				=	=	
Denmark	0.7410	0.7978	0.8009	0.8253		=	=	=	=	
Dominican Republic			0.6951	0.6377				=	--	
Ecuador	0.5140	0.4381	0.3155	0.6522	0.7737	–	–	--	++	=
Egypt			0.4041	0.4191	0.3952			+	=	=
Estonia			0.6947	0.6506	0.6755			–	+	=
Eswatini (Swaziland)		0.7311					=			
Fiji	0.8191	0.8511	0.7635	0.7005		–	=	+	--	
Finland	0.8118	0.8495	0.8335	0.7312		=	=	–	=	
France	0.7172	0.8291	0.7708	0.7613		+	=	=	=	
Gabon	0.5056			0.3921		++				--
Georgia			0.7036	0.7502	0.9206			=	++	–
Germany (Fed Rep before 91)		0.7473	0.7548	0.7400			=	=	=	
Greece			0.6708	0.6577				=	=	
Guatemala				0.6984	0.5595				--	–
Hungary		0.7015	0.7717	0.7081			+	–	=	
Iceland	0.8626	0.8569	0.8209	0.8973		+	=	=	=	
Iran			0.5620	0.5043	0.4687			++	–	=
Iraq			0.1154	0.2590	0.4253			--	++	+
Ireland	0.7504	0.8226	0.6750	0.5861		=	=	–	=	
Israel			0.7864	0.7542	0.7129			=	–	=
Italy	0.7355	0.8201	0.7141	0.7002		=	+	–	=	
Jamaica			0.8971	0.8943	0.9497			=	=	=
Japan	0.7560	0.8144	0.8216	0.8015		+	=	=	=	
Jordan	0.5257	0.5592	0.5849	0.5473	0.4678	=	=	+	–	--
Kazakhstan			0.8050	0.6746	0.5952			--	–	–
Kuwait			0.3872	0.2855	0.2765			–	=	++
Kyrgyz Republic				0.7030	0.6676				–	+
Latvia			0.8037	0.6648	0.6415			+	=	--
Lesotho			0.6818	0.5755	0.6301			--	=	+
Libya	0.4596					=				
Lithuania			0.6987	0.6467				+	–	
Luxembourg	0.5998	0.6363	0.6681	0.6307		++	=	=	=	
Malaysia	0.4601	0.4587				--				
Mali			0.6436	0.7438	0.8460				++	=
Malta	0.6025	0.5903	0.6169	0.6923	0.6852	=	=	+	=	–
Mauritania				0.6851					--	
Mauritius	0.5359	0.4917	0.4747	0.4503	0.4667	=	–	=	=	=
Mexico		0.5341	0.6204	0.5401	0.4861		+	=	–	--
Mongolia			0.7314	0.7758				+	+	
Morocco			0.8880	0.8168	0.7945			++	+	=
Namibia		0.7347	0.8412	0.7210	0.6902			+	–	=
Netherlands	0.7774	0.7580	0.7491	0.7458		=	=	=	=	
Netherlands Antilles			0.8721	0.9266				+	=	
New Zealand	0.6829	0.6951	0.6589	0.6571		+	=	=	=	
Nicaragua			0.6193	0.7958	0.8458			--	++	++

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Table 6 *continued*

Economy	Labor Share Averages					Labor Share Trends*				
	1970s	1980s	1990s	2000s	2010s	1970s	1980s	1990s	2000s	2010s
Norway	0.7581	0.7260	0.7090	0.6140		=	=	=	=	
Oman		0.3810	0.4206	0.3396	0.3394		--	+	=	+
Panama			0.6117	0.5629	0.4514			=	-	--
Paraguay			0.7237	0.7468	0.6327			++	-	-
Peru	0.8100	0.6712	0.6367	0.4807	0.3884	-	=	=	--	-
Philippines			0.6131	0.6105	0.4752			+	-	--
Poland			0.7400	0.6580				+	-	
Portugal	0.7653	0.7071	0.7548	0.8923	0.8951	--	-	++	=	-
Qatar			0.3868	0.2099	0.1753			-	-	--
Republic of Korea	0.9472	0.9197	0.8828	0.8507		=	=	=	=	
Republic of Moldova		0.7307	0.7376	0.6825	0.7260			-	++	-
Romania			0.6601	0.7021				+	=	
Russian Federation			0.7248	0.7074	0.6425			--	+	--
San Marino			0.6246	0.5854	0.6699			=	=	-
Saudi Arabia			0.3971	0.3101				+	-	
Senegal			0.7749	0.8192	0.9408			=	+	+
Seychelles	0.4764	0.5534	0.5188			+	=	=		
Singapore		0.5032	0.5023	0.5084	0.4996		=	=	=	=
Slovakia			0.6461	0.6103	0.6076			=	=	=
Slovenia			0.8973	0.8263				-	=	
South Africa	0.7622	0.7809	0.7586	0.6645	0.6799	=	=	=	-	+
Spain		0.6898	0.7331	0.7458			-	+	=	
Sri Lanka		0.8661	0.8381	0.8526	0.9279		=	=	+	=
Suriname				0.4624	0.4665				=	-
Sweden	0.8396	0.8208	0.7984	0.8109		=	=	=	=	
Switzerland			0.8460	0.8537	0.8481			=	=	=
Tajikistan				0.4372	0.4574				--	++
Thailand	0.6547	0.8044	0.9044	0.7776	0.7602	+	=	+	-	=
Trinidad and Tobago	0.6597	0.7664	0.7240	0.4695		-	++	-	-	
Tunisia			0.5334	0.5999	0.6515			+	+	=
Turkey		0.4366	0.5332	0.5024	0.4882		++	+	--	=
Ukraine		0.6469	0.6716	0.6504	0.8248			+	+	+
United Arab Emirates		0.3086	0.2539	0.2566	0.2895		+	--	+	=
United Kingdom	0.7644	0.7601	0.7648	0.7605		=	=	=	=	
United States	0.7457	0.7536	0.7405	0.7319	0.7090	=	=	=	=	-
Uruguay			0.5859	0.5671				+	-	
Venezuela	0.6590	0.6333	0.5578	0.5691	0.6058	=	-	+	=	-
Yemen	0.5876	0.7341				++	=			

Source: Author's calculations.

* Please note: ++ Average annual variation greater than +3%;

+ Average annual variation between +1% and +3%;

= Average annual variation between -1% and +1%;

- Average annual variation between -3% and -1%;

-- Average annual variation less than -3%.

5. CONCLUDING REMARKS

The study of the labor income share is severely hampered by measurement problems. As summarized by Kravis (1959, p. 918), it *“is handicapped by the fact [...] that the nature of the components of income for which we have data has not been determined by the requirements of the economists but by legal and institutional arrangements of our society.”* This study represents an attempt to construct a global dataset of the labor share of income. By suggesting an adjustment to the most commonly used methodologies of estimation, it offers an argument on the importance of accurate measurement and some useful information for future research.

We compile a new measure of the labor share of income across 151 economies – both developing and developed – using the UN National Accounts Statistics and the ILO Yearbooks of Labour Statistics for all or part of the period 1970–2015. Compared to five other measurements previously used in the empirical literature, the estimate suggested here allows us to consider a large sample of economies and it retains unique information.

Our analysis of the data offers evidence against the traditional hypothesis of the stability of factor shares (Kaldor 1961). We also reject more recent suggestions that changes in factor shares are mainly due to the lack of appropriate adjustment for self-employment income (Bernanke and Gürkaynak 2001; Gollin 2002), indirect taxation and capital depreciation (Bridgman 2017; Rognlie 2015).

Our study finds evidence that the labor income share varies considerably across economies and it has generally declined over time, especially in the last three decades. On a socio-political level, this trend risks creating perceptions that workers are not receiving ‘fair’ shares of the income they produce, and it thus may endanger socio-political stability (Atkinson 2009). On an economic level, it may risk jeopardizing the sustainability of future economic growth by constraining wage-based household consumption (Onaran and Galanis 2013). These issues are even the more significant in light of the negative repercussions on labor markets caused by the global financial crisis and its slow recovery in many parts of the world (Smeeding and Thompson 2011).

Our results are relevant for policymakers wishing to pursue adequate pro-poor and pro-labor policies. These are particularly important today, given the recent changes in global labor markets caused by increasing international trade and capital flows and by rapid technological progress. Given that factor shares are found to be relatively persistent over time, policies in both industrialized and developing economies should aim to devise instruments which safeguard labor and should reconsider traditional approaches targeted at protecting capital.

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APPENDIX

List of Economies and Data Availability

Economy	Time Series	Adjustments to Value Added		Adjustments to Self-employment Income		
		Net of Indirect Taxes	Net of Consumption of Fixed K	Gross Mixed Income	Workforce Composition	
					Employees	Employers
Algeria	1970–1978 and 1989–2015	Yes	Yes	No	Yes	Yes
Angola	2002–2015	Yes	No	No	Yes	Yes
Argentina	1993–2013	Yes	No	Yes	Yes	Yes
Armenia	1994–2009	Yes	Yes	No	Yes	Yes
Aruba	1994–2002	Yes	Yes	Yes	Yes	Yes
Australia	1970–2008	Yes	Yes	Yes	Yes	Yes
Austria	1976–2008	Yes	Yes	Yes	Yes	Yes
Azerbaijan	1995–2012	Yes	Yes	No	Yes	Yes
Bahamas	1989–2010	Yes	Yes	No	Yes	Yes
Bahrain	1994–2015	Yes	Yes	No	Yes	Yes
Barbados	1974–1975	No	Yes	No	Yes	Yes
Belarus	1990–2015	Yes	No	Yes	Yes	Yes
Belgium	1975–2008	Yes	Yes	Yes	Yes	Yes
Benin	1974–1978, 1982–1986, 1994–2012	Yes	Yes	Yes	No	No
Bermuda	1996–215	Yes	Yes	No	Yes	Yes
Bolivia	1970–1986, 1988–2015	Yes	No	No	Yes	Yes
Bosnia and Herzegovina	2005–2011	Yes	Yes	No	Yes	Yes
Botswana	1974–2001, 2003–2015	Yes	Yes	Yes	Yes	Yes
Brazil	1992–2013	Yes	No	Yes	Yes	Yes
British Virgin Islands	1970–1977, 1984–1987, 1995–2012	Yes	Yes	No	Yes	Yes
Brunei Darussalam	2010–2015	Yes	No	No	Yes	Yes
Bulgaria	1994, 1996–2010	Yes	Yes	Yes	Yes	Yes
Burkina Faso	1979–1984 and 1999–2014	Yes	Yes	No	No	No
Burundi	1984–1988 and 2005–2014	Yes	Yes	No	No	No
Cabo Verde	2007–2014	Yes	No	Yes	Yes	Yes
Cameroon	1974–1988, 1990, 1993–2011, 2013–2014	Yes	Yes	Yes	No	No
Canada	1970–2010	Yes	Yes	Yes	Yes	Yes
Cayman Islands	1983–1991, 2006–2015	Yes	Yes	No	Yes	Yes
Central Afr. Rep.	2005–2006	Yes	No	Yes	No	No

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Appendix table continued

Economy	Time Series	Adjustments to Value Added		Adjustments to Self-employment Income		
		Net of Indirect Taxes	Net of Consumption of Fixed K	Gross Mixed Income	Workforce Composition	
					Employees	Employers
Chad	1975, 1995–2001, 2005–2010	Yes	Yes	No	No	No
Chile	1974–2014	Yes	Yes	Yes	Yes	Yes
PRC	1992–2014	Yes	No	No	Yes	No
Hong Kong, China	1980–2013	Yes	No	No	Yes	Yes
Macau, China	1992–2015	Yes	Yes	No	Yes	Yes
Colombia	1970–2015	Yes	No	Yes	Yes	Yes
Comoros	2007–2014	Yes	No	No	Yes	Yes
Cook Islands	1995–2007	Yes	Yes	No	Yes	Yes
Costa Rica	1970–2013	Yes	Yes	Yes	Yes	Yes
Cote d'Ivoire	1974–1979, 1989–2000, 2005–2013	Yes	Yes	Yes	No	No
Croatia	1997–2011	Yes	Yes	Yes	Yes	Yes
Cuba	1996–2009	Yes	No	No	Yes	Yes
Curacao	2000–2012	Yes	Yes	No	No	No
Cyprus	1996–2010	Yes	Yes	Yes	Yes	Yes
Czech Republic	1992–2008	Yes	Yes	Yes	Yes	Yes
Denmark	1970–2008	Yes	Yes	Yes	Yes	Yes
Djibouti	1990–1998	Yes	No	No	No	No
Dom. Republic	1991–2005	Yes	Yes	Yes	Yes	Yes
Ecuador	1970–1991, 2007–2014	Yes	Yes	No	Yes	Yes
Egypt	1996–2013	Yes	Yes	Yes	Yes	Yes
Estonia	1993–2013	Yes	Yes	Yes	Yes	Yes
Eswatini (Swaziland)	1980–1987	No	Yes	No	Yes	Yes
Faeroe Islands	1999–2012	Yes	No	Yes	No	No
Fiji	1977–1989, 1996–2001	No	Yes	No	Yes	Yes
Finland	1970–2008	Yes	Yes	Yes	Yes	Yes
France	1970–2009	Yes	Yes	Yes	Yes	Yes
Gabon	1972–1978, 2001–2005	Yes	Yes	No	Yes	Yes
Georgia	1998–2015	Yes	Yes	Yes	Yes	Yes
Germany (pre-1991, Fed. Rep.)	1970–2008	Yes	Yes	Yes	Yes	Yes
Greece	1995–2008	Yes	Yes	Yes	Yes	Yes
Greenland	2003–2015	Yes	No	No	No	No
Guatemala	2001–2012	Yes	No	Yes	Yes	Yes
Guinea	2006–2013	Yes	No	Yes	No	No
Honduras	1992–2015	Yes	Yes	Yes	No	No
Hungary	1980–1989, 1995–2008	Yes	Yes	Yes	Yes	Yes
Iceland	1973–2005	Yes	Yes	Yes	Yes	Yes
India	1980–2008	Yes	Yes	No	No	No
Iran	1994–2014	Yes	Yes	Yes	Yes	Yes

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Appendix table continued

Economy	Time Series	Adjustments to Value Added		Adjustments to Self-employment Income		
		Net of Indirect Taxes	Net of Consumption of Fixed K	Gross Mixed Income	Workforce Composition	
					Employees	Employers
Iraq	1997–2015	No	Yes	No	Yes	Yes
Ireland	1970–2008	Yes	Yes	Yes	Yes	Yes
Israel	1995–2011	Yes	Yes	No	Yes	Yes
Italy	1970–2008	Yes	Yes	Yes	Yes	Yes
Jamaica	1998–2015	Yes	Yes	No	Yes	Yes
Japan	1970–2007	Yes	Yes	Yes	Yes	Yes
Jordan	1970–2012	Yes	Yes	No	Yes	Yes
Kazakhstan	1998–2013	Yes	Yes	Yes	Yes	Yes
Kenya	1970–2013	Yes	Yes	No	Yes	No
Kuwait	1992–2015	Yes	Yes	No	Yes	Yes
Kyrgyz Republic	2001–2012	Yes	Yes	Yes	Yes	Yes
Latvia	1994–2010	Yes	Yes	Yes	Yes	Yes
Lesotho	1997–20013	Yes	Yes	Yes	Yes	Yes
Libya	1971–1979	No	Yes	No	Yes	Yes
Liechtenstein	1998–2014	Yes	Yes	Yes	No	No
Lithuania	1995–2009	Yes	Yes	Yes	Yes	Yes
Luxembourg	1970–2008	Yes	Yes	Yes	Yes	Yes
Malaysia	1970–1971, 1973, 1978, 1983	No	Yes	No	Yes	Yes
Mali	1999–2013	Yes	No	No	Yes	Yes
Malta	1973–2011	Yes	Yes	Yes	Yes	Yes
Marshall Isl.	1997–2015	Yes	Yes	No	No	No
Mauritania	2001, 2005–2006	Yes	No	No	Yes	Yes
Mauritius	1970–2010	Yes	No	No	Yes	Yes
Mexico	1980–2011	Yes	Yes	Yes	Yes	Yes
Fed. States of Micronesia	1995–2015	Yes	No	Yes	No	No
Monaco	2005–2009	Yes	No	No	No	No
Mongolia	1995–2009	No	Yes	Yes	Yes	Yes
Morocco	1998–2015	Yes	No	No	Yes	Yes
Mozambique	1996–2012	Yes	Yes	Yes	No	No
Namibia	1989–2015	Yes	Yes	No	Yes	Yes
Netherlands	1970–2008	Yes	Yes	Yes	Yes	Yes
Netherlands Antilles	1992–2008	Yes	Yes	Yes	Yes	Yes
New Zealand	1971–2006	Yes	Yes	No	Yes	Yes
Nicaragua	1994–2015	Yes	Yes	Yes	Yes	Yes
Niger	1975–1977, 1995–2015	Yes	Yes	Yes	No	No
Nigeria	1981–2013	Yes	Yes	No	No	No
Norway	1970–2009	Yes	Yes	Yes	Yes	Yes
Oman	1988–2015	Yes	Yes	Yes	Yes	Yes
Palau	2000–2015	Yes	No	Yes	Yes	No
Panama	1996–2012	Yes	Yes	Yes	Yes	Yes
Papua New Guinea	1970–1974, 1983–1991, 1994–2006	Yes	Yes	No	No	No

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Economy	Time Series	Adjustments to Value Added		Adjustments to Self-employment Income		
		Net of Indirect Taxes	Net of Consumption of Fixed K	Gross Mixed Income	Workforce Composition	
					Employees	Employers
Paraguay	1994–2015	Yes	Yes	Yes	Yes	Yes
Peru	1970–2011	Yes	Yes	Yes	Yes	Yes
Philippines	1992–2012	Yes	Yes	No	Yes	Yes
Poland	1991–2008	Yes	Yes	Yes	Yes	Yes
Portugal	1977–2010	Yes	Yes	Yes	Yes	Yes
Qatar	1995–2013	Yes	Yes	Yes	Yes	Yes
Rep. of Korea	1970–2008	Yes	Yes	No	Yes	Yes
Rep. of Moldova	1989–2014	Yes	No	Yes	Yes	Yes
Romania	1995–2010	Yes	No	Yes	Yes	Yes
Russian Federation	1989–2013	Yes	Yes	Yes	Yes	Yes
Rwanda	1975–1989	Yes	Yes	No	No	No
San Marino	1997–2014	Yes	Yes	Yes	Yes	Yes
Saudi Arabia	1995–2009	Yes	Yes	Yes	Yes	Yes
Senegal	1990–2014	Yes	Yes	No	Yes	Yes
Seychelles	1976–1996	Yes	Yes	No	Yes	Yes
Sierra Leone	1984–1990, 2001–2014	Yes	Yes	No	No	No
Singapore	1980–2012	Yes	Yes	No	Yes	Yes
Sint Maarten	2008–2014	No	Yes	No	No	No
Slovakia	1993–2015	No	Yes	Yes	Yes	Yes
Slovenia	1995–2009	Yes	Yes	Yes	Yes	Yes
Solomon Islands	1984–1986	No	Yes	No	No	No
South Africa	1970–2015	Yes	Yes	No	Yes	Yes
Spain	1980–2008	Yes	Yes	Yes	Yes	Yes
Sri Lanka	1983–2013	Yes	No	No	Yes	Yes
Sudan	1972, 1978–1983, 1995–2010	Yes	Yes	No	No	No
Suriname	2007–2010	Yes	No	No	Yes	Yes
Sweden	1970–2008	Yes	Yes	Yes	Yes	Yes
Switzerland	1990–2015	Yes	Yes	Yes	Yes	Yes
Tajikistan	2000–2015	Yes	Yes	No	Yes	Yes
Tanzania	1998–2013	No	Yes	No	No	No
Thailand	1970–2015	Yes	No	No	Yes	Yes
Trinidad and Tobago	1970–2009	Yes	Yes	No	Yes	Yes
Tunisia	1992–2011	Yes	Yes	No	Yes	Yes
Turkey	1987–2006, 2009–2015	Yes	Yes	Yes	Yes	Yes
Ukraine	1989–2013	Yes	Yes	Yes	Yes	Yes
United Arab Emirates	1983–1990, 2001–2014	Yes	Yes	No	Yes	Yes
United Kingdom	1970–2005	Yes	Yes	Yes	Yes	Yes
United States	1960–2011	Yes	Yes	Yes	Yes	Yes
Uruguay	1997–2005	Yes	Yes	Yes	Yes	Yes
Vanuatu	2001–2012	Yes	No	No	No	No
Venezuela	1970–2015	Yes	Yes	Yes	Yes	Yes
Yemen	1972–1982	No	No	No	Yes	Yes
Zimbabwe	1970–1990, 2009–2015	Yes	No	Yes	No	No

Source: UN National Accounts Statistics (available to download at: <http://data.un.org/>).ILO Statistics (available to download at: <https://www.ilo.org/ilostat>).