Vice Presidency of Sectors and Knowledge
Research Department
Social Sector

Labor Share and Inequality in Latin America and the Caribbean

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I. Motivation

The distribution of personal income in Latin America and the Caribbean (LAC) and its determinants have received considerable attention for at least the last three decades. Income across households in the typical LAC country is very unequally distributed, more so than in countries from other regions, perhaps except for Sub-Saharan Africa (Alvaredo and Gasparini, 2015). This is the case despite significant reductions during the 2000s (López-Calva and Lustig, 2010). The unweighted average of the Gini coefficient for household income per capita in the region fell from 0.56 to 0.50 (Rodríguez-Castelán, López-Calva, Lustig and Valderrama, 2016). Because most households derive their income from selling their labor in exchange for a wage, the reduction of wage inequality was the main driver of the decline of inequality of income across households (Acevedo, Inchauste and Sanfeliche, 2011). A fruitful and growing literature has examined the causes of labor market changes and their effects on inequality (see Messina and Silva, 2018 and the references therein).

However, the literature has paid much less attention to changes in the functional distribution of income (that is, the distribution of income across land, labor, capital, and firms' organization) and its relation to income inequality in LAC. In the developed world, on the contrary, declines in the share of labor are at the center of the debate on growing inequality (Piketty, 2014). Increasing market concentration, technological change, automation, trade and offshoring, which have changed the shares of income captured by different production factors, have been identified as potential causes behind increasing inequality in the developed world.

This project has three goals. First, to increase our understanding of the levels and trends of the labor share in LAC. Second, to understand the factors behind the evolution of the labor share in the region and put them in an international perspective. Third, to study the links between changes in the functional and inter-personal distribution of income. We are interested in broadening the regional knowledge of aggregate levels and dynamics and in further understanding the micro-dynamics of the labor share. That is, we are also interested in studies examining movements of the labor share within and across sectors and firms. Finally, we would like to document how these changes in the functional distribution of income translate into changes in the distribution of personal income, including (but not confined to) top incomes.

II. Background

Overview of the international evidence

Although the cross-sectional and time series stability of factor shares was postulated as a major growth stylized fact (Kaldor, 1961), factor shares display marked differences in levels across countries as well as substantial fluctuations over time.

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Based on national accounts, labor shares appear prima facie to be much lower in developing than in developed countries (Gollin, 2002). However, part of this result seems to be due to poor measurement. A well-known problem with national accounts is that the compensation of self-employed workers is not included in measures of labor income. Gollin (2002) suggests that once self-employment is properly considered, factor shares are much more similar across countries. This is of importance in LAC, where a sizeable proportion of the workforce is self-employed.

There is substantial evidence suggesting that the labor share is declining all over the world. There is growing consensus about the decline of the labor shares in developed countries, particularly during the 2000s (IMF, 2017; Autor et al. 2017).[1] The labor share seems to have also declined in developing countries, but its evolution has been more heterogeneous. Using panel data of more than one hundred countries over the 1960 to 2000 period, Harrison (2005) shows that in poor countries the labor share fell on average by 0.1 percentage points per year prior to 1993, and by 0.3 thereafter. Rodriguez and Jayadev (2010) estimate a declining average trend in labor shares using an equally weighted set of 129 countries. Except for East Asia, every region of the world for which there are adequate data has experienced a decline in the labor share of income. Similarly, in a sample of 54 emerging market and developing economies, Dan, Das, Koczan, and Lian (2017) show that the labor share declined in 32 countries that account for approximately 70 per cent of 2014 emerging market GDP.

Within countries, the labor share seems to be changing differently for different sectors. However, based on 27 advanced economies and 13 emerging market and developing economies, Dao, Das, Koczan, and Lian (2017) show that the decline in the labor share between 1993 and 2014 fundamentally took place within industries. Their results suggest that the allocation of factors across sectors has not been a significant driver of changes in the labor share. Karabarbounis and Neiman (2014) study the labor share within the corporate sector (which avoids some of the measurement difficulties related to self-employment), separating the labor and capital income earned by entrepreneurs, sole proprietors, and unincorporated businesses. They argue that most of the global decline in the labor share is attributable to within-industry changes rather than to changes in industrial composition.

Determinants of the decline in the labor share

Offshoring, Trade, and Technical Change. Karabarbounis and Neiman (2014) argue that the rapid advance in technology has affected factor shares through reductions in the relative price of investment goods, lowering firms' cost of capital and giving them incentives to replace labor. In developed countries, this technological progress through the automation of routine tasks has fundamentally affected middle-skilled workers, who have seen their relative

[1] Some economists have argued that part of the decline in the labor share is due to poor measurement. Bridgman (2014) argues that U.S. labor share has not fallen as much once items that do not add to capital, depreciation and production taxes, are netted out. Rognlie (2015) also shows that the net capital share has risen more modestly than the gross capital share in the United States. Koh et al. (2018) argue that the capitalization of intellectual property products can completely explain the decline of the U.S. labor share.

incomes and employment prospects decline (Autor, Levy, and Murnane, 2003, and Autor and Dorn, 2013). Gaggl and Eden (2018) suggest that the decline of routine labor triggered by the adoption of information and communication capital can account for about half of the decline in the labor share in the United States.

A somewhat puzzling result, is that there is no apparent role of technology in the fluctuations of the labor share of income in developing countries (IMF, 2017). A potential explanation is the relatively mild decline in the price of investment goods, as well as much lower exposure to routinization, which has limited labor displacement arising from routine-biased technological change.

Acemoglu and Restrepo (2018) propose a model in which two opposing forces determine the evolution of the labor share. New technologies gradually replace labor tasks, reducing employment and the labor share in income. However, technological change other than automatization can generate novel labor-demanding tasks, potentially reinstating the labor share. The interplay of these forces needs not necessarily yield a balanced growth path, and during this process the labor share may decline. Autor and Salomons (2018) show that technological progress has generated employment losses in the industries directly affected. However, it also generated new jobs through general equilibrium effects. The net effect on employment, according to their estimates, was positive. However, their findings also suggest that technological change has contributed to the reduction of the labor share in value added within industries.

Economic integration has promoted the reallocation of lower-skill, labor-intensive stages of production to cheaper locations in emerging and developing economies. By increasing competitive pressure on domestic firms and credibly raising their ability to relocate abroad, trade and financial integration may have also lowered workers' bargaining power (Dao, Das, Koczan, and Lian, 2017), possibly contributing to a reduction of the labor share. Autor, Dorn, and Hanson (2016) and Pierce and Schott (2016) document employment losses in U.S. industries more exposed to import competition from China. Elsby, Hobijn, and Şahin (2016) show that the labor share decreases the most among industries exposed to import shocks, and this indicates that the decline may be due to the offshoring of labor. They further argue that a falling labor share has been dominated by within-industry declines in payroll shares, particularly in manufacturing and trade, as opposed to compositional shifts.

Dao, Das, Koczan, and Lian (2017) show that, in developing countries and emerging markets, global integration is an important factor behind the decline in the labor share of income. Its impact has been partly offset by financial integration, which has conceivably raised labor shares through a reduction in the cost of capital in a context in which the substitutability between labor and capital is limited. The benefits of financial integration accrue largely to high-skilled workers, whose skills are more complementary to capital (see Berman, Bound, and Griliches, 1994, and Jaumotte, Lall, and Papageorgiou, 2013).

The role of markups, competition, rent-sharing, and the rise of the "mega-firms." Loecker, Eeckhout, and Unger (2018) show how a generalized rise in markups in the developed world naturally leads to a decline in the labor share because firms' optimization indicates that

market power reduces expenditure on inputs such as labor. Barkai (2017) proposes a general equilibrium model with imperfect competition and finds that a decline in competition and an increase in markups have played a significant role in the decline of the labor share. He also shows that industries that experience a larger increase in concentration have also seen a larger decline in the labor share. The market power channel is consistent with evidence provided by González and Trivín (2018), who show that changes in the labor share are associated with changes in stock market valuations relative to corporate physical capital. In their model, though, an increase in asset prices not only reflects the size of markups but also depresses investment because higher stock market valuations allow investors to receive a higher return for each unit of investment. This general equilibrium mechanism further depresses the labor share if labor and capital are aggregate complements. Azar and Vives (2019) argue that the rise in market power has been fostered by the widespread rise of common ownership and, using a calibrated multisector sector model of the US economy, find that the rise in common ownership may account for the broad evolution of the labor share in the period 1985-2015.

Using micro panel data from the United States, Autor, Dorn, Katz, Patterson, and Van-Reenen (2019) challenge the view that the changes in the labor share are taking place within firms. They argue that market concentration rises as industries are dominated by "superstar" firms. Since these firms have higher markups and lower labor share in value added, the aggregate labor share falls. Thus, changes in product market structure that favor agglomeration and employment shifts across firms are a prominent source of labor share movements.

Hartman-Glaser, Lustig, and Zhang (2017) also argue that "megafirms" now produce a larger output share, but their labor compensations have not increased proportionally. In the same vein, Kehrig and Vincent (2017) show that from the 1980s the aggregate labor share declined by almost 5 percentage points per decade even though the labor share of the median plant rose. In the U.S. manufacturing sector, they argue that the reallocation of production towards "hyperproductive plants," as well as a downward adjustment of the labor share of those plants over time, accounts for almost all the trend changes in the aggregate labor share.

Although companies share their profits with employees (see Card et al., 2016, for a recent review), in recent decades the extent of rent-sharing may have declined. Based on a panel of the top 300 publicly quoted British companies over 35 years, Bell, Machin, and Bukowski (2018) show that workers' bargaining power has decreased and firms with market power share much less of their profits with workers. Declines in the labor shares are also attributed to the weakening of the organizational strength of unions and the decline of employment-protection policies (see Blanchard and Giavazzi, 2003; Bassanini and Duval, 2006; and Annett, 2006). Kristal (2010) also shows that the dynamics of the labor share can be largely explained by indicators for workers' bargaining power. Azmat, Manning, and Van Reenen (2012) argue that privatization has also led to a decline in the labor share because it shifts the incentives of senior managers towards maximizing shareholder value.

Labor Share Movements and Inter-Personal Inequality

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Reductions in the labor share may lead to higher dispersion of income across households. Capital ownership is typically concentrated among the top of the income distribution and hence an increase in the share of income accruing to capital tends to raise income at the top (Wolff, 2010). Similarly, Piketty (2014) argues that when capital income is more unequally distributed than labor income, a transfer from labor to capital will result in higher inequality across household incomes. Milanovic (2017) proposes that the channel through which a rising income share of capital income boosts inter-personal inequality depends on the social system in place and on how skewed the distribution of capital assets is. More generally, most theoretical models predict that the association between the share of capital and inequality depends on production technology, the structure of personal incomes, and the institutional context (Glyn, 2009; Atkinson, 2009).

Empirically, IMF (2017) shows that lower labor shares are strongly associated with higher income inequality (measured by the Gini coefficient) in a cross-section of countries and over time within countries. Similarly, using cross-country micro-data from the late twentieth century, Frassdorf et al. (2011), Schenkler and Schmid (2013), and García-Peñalosa and Orgiazzi (2013) attribute an important role to capital income and overall inequality. In the United Kingdom and Germany, Ryan (1996) and Adler and Schmid (2013) find a positive correlation between capital shares and the dispersion of household incomes. Daudey and García-Peñalosa (2007) also show a positive association between capital shares and income inequality in a panel of OECD countries from the 1970s to 1990s. As expected, the relationship is mediated by labor market institutions. Checchi and García-Peñalosa (2010) show that the strength of those cross-country correlations depends on the institutional arrangements that regulate labor markets in each country.

Milanovic (2017) shows that a rising capital share is associated with increasing inequality in a sample of 17 advanced economies covering the period 1969-2013. He also reports that this association became stronger in the last years. Using long-run historical cross-country data for 19 developed and developing countries, Bengtsson and Waldenström (2015) find that capital shares and income inequality are strongly correlated.

Historically, rapid technological progress has been associated with declines in labor shares and inter-personal inequality during certain periods of time and for some groups of workers (IMF, 2017). During the nineteenth century in the United Kingdom, workers employed in manufacturing with low capital intensity and productivity were the most affected by technological displacement. While factory wages increased, the real incomes of most domestic workers and independent artisans fell, and inequality increased (Lyons, 1989). During the 1990s and 2000s, workers in middle-skilled occupations have been the most affected by the decline in the labor share due to persistent declines in middle-skill occupations (Autor and Dorn, 2013; Goos, Manning, and Salomons, 2014).

III. Objectives

We are interested in several areas related to analysis of recent levels and trends of the labor share in LAC, as well as contributions linking the shares of rents, wages, interests and profits

to inter-personal inequality. This is a (non-exhaustive) set of questions that may be worth pursuing:

- Global analysis of the labor share, comparing LAC with the rest of the world
- Descriptive cross-country analysis of the recent evolution of the labor, capital and profit shares in the region.
- Methodological contributions that propose methods to deal with the high share of self-employed workers in the region when discussing the functional distribution of income.
- Analysis of the labor share at the subnational, sectoral or firm level.
- Studies that allow for a causal interpretation that improves understanding of the determinants of the labor share in the region, linking labor share movements to automatization, globalization, trade, the commodity boom, rent sharing, financial development, and other potential drivers.
- Studies linking the distribution of capital or land across households and its contribution to inter-personal inequality, including top incomes.
- Studies linking technology and movements in the labor share. Across countries, or within countries across sectors and/or firms.
- Studies examining the role of firm concentration, and concentration of firm ownership across individuals, in trends and levels of inter-personal inequality.

We welcome multi-country and single country papers. In single-country studies we particularly appreciate efforts to discuss findings obtained from a combination of data sources, including household surveys, social security records, matched employer-employee data, and tax data.

IV. Contents of the Proposal

Research institutions must submit a proposal (**maximum of 5 pages**) detailing the following:

- The proposal should specify the country/countries that will be analyzed and the main research question. It should provide a review of the literature related to that research question and highlight how the proposed study contributes to and fits into that literature.

- A detailed description of the data that will be employed, including whether the datasets are publicly available or restricted. For the latter, the team should show that access to the data is possible.

- A detailed description of the methodology to be used. For instance, in the case of studies that try to assess the effect of market/policy changes, the proposal should provide a detailed description of the identification strategy including a discussion of the main threats to identifying causal effects and how they will be addressed.

In addition, proposals must include:

- A list of the researchers (in a separate annex) who will be involved in the project. The center should present a research team justification of their capacity to meet the objectives of the project, including relevance of prior experience. Curricula vitae of all the researchers should be included. Subsequent substitutions for researchers originally specified in the proposal may be made with prior approval from the IDB Network coordinator, but the project leader should lead the entire project to completion.
- A budget (in a separate annex) indicating the time and resources that will be used within the context of the research work plan. The budget should distinguish between amounts assigned to professional honoraria, data collection, overhead and other major categories of research expenditures. The proposal and corresponding budget must be sent in separate files.

Note: Proposals must be submitted in English.

VI. Proposal Submission

Proposing research institutions should be registered as Research Network members (contact Elton Mancilla at eltonma@iadb.org) and should be based in the Latin American and Caribbean (LAC) region. Institutions from outside LAC do not qualify as members of the Research Network. However, researchers based in institutions outside of LAC can participate in the call as part of research teams from proposing institutions.

Proposals should be submitted using the Web Submission Form that is provided in the Call for Proposals announcement. Proposals are due **September 9, 2019**. Please note that there are two options within the submission form: one for institutions and another for individual researchers. Please make sure to choose the institutions option.

VI. Selection Criteria

The proposals will be selected according to three main factors:

i) Relevance. Researcher must spell out in detail the relevance of the country case and the period/episode chosen to meet the overall project objectives stated above.
ii) Data and Methodology. The proposals should explain in as much detail as possible how they will approach the subject under study. Data collection issues and estimation strategy should be spelled out very clearly.
iii) Experience. The experience of the lead researcher (and his/her team) for the proposed project

VII. Coordination and Schedule

The project will be administered by the Research Department (IDB/RES) under the technical coordination of Julián Messina (IDB/RES), and featuring a scientific committee that includes Matías Busso (IDB/RES), Samuel Berlinski (IDB/RES), Mariano Bosch (IDB/LMK), and external advisors Orazio Attanasio (UCL), Ignacio González García (AU), and Joana Silva (World Bank).

The tentative schedule of activities is as follows:

- **September 9, 2019:** Due date for proposals submissions. Institutions should make sure to submit complete documentation to the evaluation committee. Complete documentation includes: registration form with all requested information, the research proposal, budget, and curricula vitae of each member of the team.
- **September 20, 2019:** Announcement of selected proposals.
- **November 18-19, 2019:** First Discussion Seminar in Washington, D.C. The purpose of this first seminar is to present preliminary versions of the work and receive feed-back from the group on how to make adjustments for meeting the requirements of the project. The seminar will also serve to promote cross-fertilization of ideas among teams. Presentations shall include data description, identification strategy, descriptive statistics and preliminary results (if available).
- **December 15, 2019:** Due date for submitting a revised research plan.
- **July 15, 2020:** Due date for submitting a first draft of the research paper.
- **October (TBD), 2020:** Second Discussion Seminar in Washington, D.C. or location and date to be determined with the Technical Directors of the projects and the coordinating committee to discuss the research papers.
- **March 15, 2021:** Due date for final version of the research paper. Research papers must follow the IDB Manual of Style for working papers. Studies that are of sufficient quality at this stage will be considered for publication as working papers. A selection of the best papers may be invited to participate in a special issue of a recognized academic journal or an edited volume.

VIII. Financial Aspects

The IDB will contribute up to US$25,000 or its equivalent in local currency to the total budget of each study, depending on the scope of work proposed and the number of studies selected. The IDB will finance up to seven studies. The payment schedule is as follows:

- 20 percent within 30 days of signing the formal agreement between the IDB and the respective research center.
- 20 percent within 30 days of approval by the IDB of the revised research plan.
- 40 percent within 30 days of presenting and approval by the IDB of the first draft of the research paper.
- 20 percent within 30 days of presenting and approval by the IDB of the final draft of the research paper.

IX. References

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