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Deconstructing income
inequality in Costa Rica: An
income source
decomposition approach

**Alberto González
Pandiella,
Mabel Gabriel**

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ECONOMICS DEPARTMENT

**DECONSTRUCTING INCOME INEQUALITY IN COSTA RICA: AN INCOME SOURCE
DECOMPOSITION APPROACH**

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By Alberto González Pandiella and Mabel Gabriel

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ABSTRACT/RÉSUMÉ

Deconstructing income inequality in Costa Rica: an income source decomposition approach

Despite an improvement in overall macroeconomic performance in Costa Rica, income inequality has risen and is currently at its maximum historical value. This is in stark contrast with other Latin American countries, which have recently made significant progress in reducing inequality. This study analyses the drivers of inequality in Costa Rica by decomposing the Gini coefficient by income source, finding that the main contributor to inequality in Costa Rica is labour income. In the period 2010-2014, public sector wages made the largest contribution to inequality, in particular wages of qualified workers. Within the public sector, wages of those working in public agencies outside central government contributed the most. Inequality has also been driven by a large and increasing skills premium in the private sector. Workers holding a tertiary degree earn, on average, nearly four times as much as those with only primary education. Social programmes, such as non-contributory pensions, do contribute to reduce inequality but their impact is limited given its small share in households' total income. The analysis also quantifies the marginal effect on inequality of the different income sources, finding that an increase in wages of low qualified workers in the private sector would have the largest marginal impact to reduce inequality. Conversely, increases in wages of qualified workers in public and private sector would result in the highest increases in inequality.

This Working Paper relates to the 2016 *OECD Economic Survey of Costa Rica* (www.oecd.org/eco/surveys/economic-survey-costa-rica.htm).

JEL classification: D31, J30, J31, H53 O15

Keywords: Costa Rica; income inequality; gini coefficient; income source decomposition; wages; skills premium.

Déconstruction de l'inégalité des revenus au Costa Rica: approche de la décomposition des sources de revenus

Malgré une amélioration généralisée de la performance macroéconomique au Costa Rica, l'inégalité des revenus d'activité a augmenté et se situe actuellement à sa valeur maximale historique. Cela fait vivement contraste avec d'autres pays d'Amérique latine où des progrès significatifs ont déjà été faits dans la mise en œuvre de mesures de réduction des inégalités. Ce document analyse les facteurs d'inégalité au Costa Rica en décomposant le coefficient de Gini par différent type de revenus. La présente étude conclut que les revenus du travail sont le principal facteur à l'origine des inégalités au Costa Rica. Au cours de la période 2010-2014, les salaires du secteur public ont été le facteur qui a le plus activement contribué au niveau des inégalités de revenu des travailleurs, notamment dus aux salaires des travailleurs les plus qualifiés. Dans le cadre du secteur public, ce sont les salaires des personnes travaillant dans des organismes publics en dehors de l'administration centrale qui ont le plus considérablement apporté aux écarts de salaires. Les inégalités de revenu ont également été stimulées par une forte hausse de la rentabilité de l'investissement dans l'éducation. En effet, les travailleurs titulaires d'un diplôme d'études tertiaires gagnent, en moyenne, près de quatre fois plus que ceux qui n'ont que l'enseignement primaire. Certains programmes sociaux, tels que les pensions non contributives, aide à réduire l'inégalité des revenus. Cependant, leurs impacts restent limités en raison de la faible part de ce type de revenus dans les revenus totaux des ménages. Cette étude quantifie également l'effet marginal que chaque type de rendement a sur l'inégalité des revenus, constatant qu'une augmentation des salaires des travailleurs peu qualifiés dans le secteur privé serait la forme la plus efficace de compenser la dispersion croissante des revenus. À l'inverse, une hausse des salaires des travailleurs les plus qualifiés dans les secteurs public et privé entraînerait à l'aggravation des inégalités.

Ce Document de travail se rapporte à l'*Étude économique de l'OCDE de la Costa Rica 2016* (www.oecd.org/fr/eco/etudes/etude-economique-costa-rica.htm).

Classification JEL : D31, J30, J31, H53 O15

Mots clés : Costa Rica; inégalité des revenus; coefficient de Gini; décomposition des sources de revenus; salaires; compétences prime.

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Deconstructing income inequality in Costa Rica: an income source decomposition approach

Mabel Gabriel and Alberto González Pandiella¹

Introduction

This paper assesses recent developments in income inequality in Costa Rica using an income source decomposition approach as proposed by Lerman and Yitzhaki (1985). According to this approach each income source contribution to the Gini coefficient results from the product of its own Gini, its share in total income, and its correlation with total income. This approach also allows quantifying the marginal effect of various income sources on overall inequality.

The contributions of this analysis are threefold. First, it undertakes the most extensive decomposition of income inequality undertaken up to now for Costa Rica. Traditionally, income inequality studies have been based on three or four income sources. Trejos and Oviedo (2012) and Trejos (2015) extended this analysis for Costa Rica by differentiating private and public salaries and incorporating as well government transfers. This study goes further and disentangles the contribution to income inequality of wages in central government and in other public agencies. This is an important and relevant distinction since remunerations in the Costa Rican public sector are very heterogeneous (MIDEPLAN, 2012; CGR, 2009; Academia de Centroamérica, 2014). In addition, this analysis quantifies the impact on inequality of different government cash transfers such as non-contributory pensions, scholarships, subsidies as well as other private transfers.

As a second contribution, this study looks at the most recent period, the years from 2010 to 2014. Income inequality has been increasing in Costa Rica in those years (Estado de la Nación, 2014), contrary to what has been observed in other Latin America countries where progress in reducing inequality has been significant, especially in Brazil. Therefore, analysing the causes of the increase in inequality in Costa Rica in that particular period is important. The study also provides estimates for some of the key elements underpinning recent changes in inequality such as skills premium by education level.

The third contribution of this analysis is that it provides updated estimates of the impact that marginal increase in a particular type of income would have on inequality. Trejos and Oviedo (2012) provides these estimates for 2001, 2005, and 2009 for Costa Rica. This paper updates those estimates up to 2014.

1. Mabel Gabriel and Alberto González Pandiella are with the Economics Department of the OECD, contact emails: mabel.gabriel@oecd.org and alberto.gonzalezpandiella@oecd.org. The authors would like to thank Horacio Levy (OECD Directorate for Employment, Labour and Social Affairs), Patrick Lenain and Mauro Pisu (OECD Economics Department) and Adolfo Rodríguez Vargas (Costa Rican Central Bank), for their valuable comments and suggestions. Special thanks are due to Raquel Paramo (OECD Economics Department) for technical preparation.

The paper is structured as follows. The first two sections describe the methodology and data employed in the paper. Section III presents an overview of the recent evolution and composition of income per capita in Costa Rica. Section IV discusses the relative contributions to inequality of different income sources. Section V and VI present the estimates for the Gini elasticity and the marginal effects respectively. Section VII examines how unequally distributed income is across different socioeconomic groups. Finally, the central conclusions are presented in section VIII.

I. The Methodology

This analysis follows the methodology proposed by Lerman and Yitzhaki (1985) to decompose income inequality, which allows to identify the contribution of a given income source to income inequality as measured by the Gini coefficient. This methodology has been applied to various countries. In its seminal paper, Lerman and Yitzhaki (1985) applied it to the United States. More recently Hungerford (2013) also used this methodology to assess recent developments in inequality in the United States. Milanovic and Yitzhaki (2002) use it to decompose inequality in the world income and assess whether there is a world middle class or not. It has also been applied to 14 OECD countries in chapter 6 of OECD (2011). Medina and Galván (2008) rely on this approach to provide a comparative overview of the evolution of inequality across Latin America from 1999 to 2005. Trejos and Oviedo (2012) and Trejos (2015) apply it to Costa Rica.

The starting point of the income source decomposition approach is the mathematical expression where the Gini coefficient is expressed as a covariance between income and the observations position in the distribution curve. If y is the total income per capita, which is composed of k sources of income ($y_1, y_2, \dots, y_k$), so that $y = \sum_{k=1}^K y_k$, $F(y)$ represents the distribution function of income y , and μ_y is the average income per capita, then the Gini coefficient can be represented as (1) (see Lerman and Yitzhaki (1985) for additional details).

$$G_y = 2 \frac{\text{cov}[y, F(y)]}{\mu_y} = \sum_k S_k R_k G_k \quad (1)$$

According to this expression inequality in per capita household income, as measured by the Gini coefficient, G_y , can be decomposed into three elements:

- G_k , the Gini coefficient of income source k
- S_k , the share of income source k in total income, i.e. $S_k = y_k / \sum_{k=1}^K y_k$
- R_k , the Gini correlation between the income source k and the total income

The Gini correlation coefficient between income source k and total income, R_k , can be obtained as:

$$R_k = \frac{\text{cov}[y_k, F(y)]}{\text{cov}[y_k, F(y_k)]} \quad (2)$$

Where $F(y)$ is the distribution function of total income, and $F(y_k)$ is the cumulative distribution function of income source k . R_k takes values between -1 and 1. R_k is positive (negative) when the source k is an increasing (decreasing) function of total income. A given income source would have a positive Gini correlation coefficient if such income source becomes more important the higher the total household

income. This is typically the case of capital income. Conversely, R_k is negative when the income source decreases when considering higher total income levels. In most countries, this tends to be observed for transfers received from the government.

One fundamental advantage of decomposing inequality by source is that it allows quantifying how marginal changes in a particular income source would affect overall income inequality. Following Lerman and Yitzhaki (1985), if e represents the percentage change in the k^{th} source of income, then the absolute marginal variation in the Gini coefficient is:

$$\frac{\partial G_y}{\partial e_k} = S_k (R_k G_k - G_y) \quad (3)$$

Dividing expression (3) by the Gini coefficient (G), we obtain the marginal change in the Gini coefficient resulting from the relative change in the source of income:

$$\frac{\partial G_y / \partial e_k}{G_y} = \frac{S_k R_k G_k}{G_y} - S_k \quad (4)$$

Equation (4) shows that the percentage change in the Gini coefficient caused by a change e in the income source k is equal to the relative contribution of this source to total inequality minus its participation in total income.

According to Yitzhaki (1990) and Wodon and Yitzhaki (2002) the Gini income elasticity of source k (η_k) can be defined as:

$$\eta_k = R_k G_k / G_y \quad (5)$$

Thus, equation (4) can be expressed as:

$$\frac{\partial G_y / \partial e_k}{G_y} = S_k (\eta_k - 1) \quad (6)$$

Equation (6) shows that a percentage increase in an income source whose Gini income elasticity is lower than unity would reduce inequality. Conversely, if the Gini income elasticity is above 1, an increase in that income source would raise inequality. The lower the Gini income elasticity the higher its redistributive impact would be.

Gini decomposition analyses have some limitations, such as the violation of the property of uniform addition, as discussed by Jurkatis and Strehl (2013). Thus, an equally distributed income source will have a zero contribution to total income inequality, though adding a constant income source to the existing income distribution would lower total income inequality. Nevertheless, the decomposition herein presented remains of significant analytical value as it provides an intuitive interpretation of all the elements making

up each source's contribution to inequality. Viewing each source contribution as the product of its own inequality, its share in total income, and its correlation with the rank of total income, it appears more compelling and less arbitrary than other decompositions, such as those proposed by Shorrocks (1982), which require devising somewhat arbitrary weighting coefficients, or approaches whose results depend on the ordering of the income sources (Lerman and Yitzhaki, 1985). Besides, the approach followed in this study provides estimates of the marginal effects of changes in a given income source. As argued by Jurkatis and Strehl (2013), these marginal effects provide unambiguously interpretable results and thus are appropriate to examine the role that income sources play in total income inequality.

II. The Data

This analysis is based on the Costa Rican National Household Survey (Encuesta Nacional de Hogares, ENAHO), which takes place in July each year to collect information at national and regional levels on the socioeconomic conditions of individuals and households in Costa Rica. ENAHO started in 2010, and replaced the previous Household Survey of Multiple Purposes (Encuesta de Hogares de Propósitos Múltiples, EHPM).

Previous income decomposition analyses undertaken for Costa Rica were based on the EHPM. Estimating the Gini decomposition based on ENAHO data allows for a more granular analysis as it has incorporated additional sources of income to its collection, in particular as concerns transfers. It also makes adjustments for no response and underreporting, which should help to provide a more accurate picture of the situation of groups where these problems tend to be more acute, such as poor households. The sample design of ENAHO, probabilistic, stratified and two-stage, has also been improved and concepts and methodology have been better aligned to international standards. Based on the technical and budgetary capacity of INEC and the accuracy levels obtained in previous surveys in major research variables, the sample size of approximately 13,440 households nationwide was maintained. But the distribution by region and zone was improved, trying to homogenize the relative accuracy of the variables of interest in these strata. The sample is made of 1120 primary sampling units (PSU) at the national level, and 12 households by PSU. All this makes ENAHO an appropriate data source for analysing inequality in Costa Rica.

III. The Composition and evolution of per capita income by source

The analysis presented in this paper considers and makes full use of 32 income sources collected in ENAHO as detailed in the Annex. The income variable considered for the analysis is the gross per capita income which refers to the total household gross income coming from each source, divided by the household size. The per capita income concept differs from the equivalence scale concept used in the OECD income distribution database, but its use ensures better comparability with previous related studies on Costa Rica and Latin America.

The first income source analysed is labour income, which includes income coming from wages and salaries as well as business income. Wages and salaries are broken down into five subcomponents depending on the nature of the employer: central government, other public sector institutions outside central government, private companies, domestic service, and international organizations. ENAHO also provides an additional break down of wages, differentiating those earned by employees that have attained secondary school or more (labelled as “qualified” workers) and those that have a lower qualification (“unqualified”).

Moreover, business income is broken down into two main income categories: the income of self-employed, differentiating professionals and technicians and the rest, and the income of employers. Capital income remains as a separate source as the survey captures it as a single category. Current transfers are broken down into four groups: i) contributory pensions; ii) government transfers, which in turn are subdivided into non-contributory pensions, cash transfers provided by the Costa Rican Institute of Social Welfare (Instituto Mixto de Ayuda Social, IMAS), subsidies and scholarships; iii) private transfers (remittances and other monetary assistance between families); and iv) non-monetary transfers.

Table 1 shows the evolution and composition of per capita income and how these different income components have evolved in the most recent years, from 2010 to 2014. Real per capita income increased by 6% in the period 2010-2014. Labour income, which represent around 82% of per capita household’s income, increased by nearly 8% during the same period. Wages and salaries increased by 10% and account for 67% of all income. Within wages and salaries, the private sector represents 40% of total income, while the public sector accounts for 24%. In both sectors the salaries of qualified individuals account for a larger share of total income. Nevertheless, the share represented by income earned by unqualified individuals is much larger in the private sector than in public sector institutions. Within the public sector, it is noteworthy that the salaries of those employed in public agencies outside central government represent a larger share of income than central government employees. Public sector agencies outside central government account for 13% of household’s per capita income. Central government accounts for 11%. This gap has been diminishing since 2010, following permanent increases in central government salaries implemented in 2008-2010.

Table 1. Evolution and composition of gross income per capita by source

Income Source	Relative Composition					% Change in Real Average Income 2010-2014
	2010	2011	2012	2013	2014	
Total Household Per Capita Income	100	100	100	100	100	6.3
Labor income	81.3	82.9	81.9	82.5	82.4	7.7
Wages and Salaries	64.6	66.1	65.3	65.2	66.9	10.0
Public Employees¹	23.9	25.0	23.0	24.5	24.1	6.9
Qualified ²	21.3	22.3	20.7	22.1	21.6	7.6
Unqualified	2.6	2.7	2.3	2.4	2.5	1.4
Central Government Employees	9.9	10.8	10.2	11.4	11.3	21.6
Qualified ²	8.8	9.7	9.2	10.4	10.4	25.4
Unqualified	1.1	1.1	1.0	1.0	1.0	-7.8
Other Public Sector Employees	14.1	14.3	12.8	13.1	12.8	-3.4
Qualified ²	12.6	12.6	11.5	11.6	11.3	-4.8
Unqualified	1.5	1.6	1.4	1.4	1.5	8.4
Private company employees	38.5	38.9	40.1	39.1	41.0	13.1
Qualified ²	21.4	21.8	23.5	23.7	24.8	23.2
Unqualified	17.1	17.0	16.6	15.4	16.2	0.6
Domestic service	1.7	1.8	1.6	1.5	1.7	1.9
International orgs. and others	0.4	0.5	0.5	0.2	0.1	-71.5
Business income	16.7	16.8	16.6	17.3	15.6	-1.1
Self-employed	10.9	9.9	10.6	10.8	8.5	-17.0
Professionals and technicians ³	3.9	2.8	2.7	4.1	2.4	-33.1
Other self-employed	7.0	7.0	7.8	6.7	6.1	-8.2
Employers	5.8	7.0	6.1	6.5	7.0	29.0
Capital income	7.0	6.3	6.9	6.1	6.0	-8.5
Current transfers	11.7	10.8	11.3	11.3	11.6	4.8
Contributory pensions ⁴	8.6	8.1	8.3	8.6	8.7	7.8
State aid	1.2	1.1	1.0	1.0	1.3	10.6
Non-contributory regime transfers	0.5	0.5	0.5	0.5	0.5	6.7
IMAS transfers	0.4	0.4	0.3	0.3	0.4	-0.3
Subsidy transfers	0.0	0.0	0.0	0.0	0.1	144.7
Scholarship transfers	0.3	0.2	0.2	0.2	0.3	15.7
Private transfers ⁵	1.4	1.1	1.4	1.1	1.1	-14.2
Non-monetary transfers	0.5	0.5	0.5	0.6	0.5	-7.5

1. Central government and other public sector employees

2. Academic or technical secondary school or more.

3. Professional, scientific, intellectual, technical and medium professional level.

4. Alimony, national pension, pension from abroad, pension bonuses.

5. Transfers from abroad, at home and other.

Source: Authors' calculations based on data from ENAHO survey.

Business income, which represents around 15% of all per capita income, remained relatively stable until 2013, but fell 2 percentage points in 2014, in line with the deceleration of domestic demand that Costa Rica experienced that year. Capital income has also slightly decreased recently.

Regarding current transfers they have remained almost constant over the period under analysis, both the aggregate and its components. State aid accounts for 1.3% of total income while its most important components are non-contributory pensions followed by cash transfers provided by the Costa Rican Institute of Social Welfare (IMAS).

Further deepening the analysis, the composition and evolution of per capita income by income quintiles is also examined (Table 2), providing additional relevant insights. While on average the weight of labour income has remained constant in the period analysed, looking at different income quintiles provides valuable insights about how recent macroeconomic and labour market developments have affected different segments of the Costa Rican population. Thus, for poorest households, income salaries and wages represent a lower share in their total income in 2014 than in 2010, falling from 55% to 47%. Conversely, transfers have markedly increased their share from 26% to 33%. This indicates that the relatively weak labour market is impacting particularly the income of poorest households, which have become more dependent on social transfers. On the other end of the income spectrum, labour income represents 63% of total income earned by richer households in 2014, 3 percentage points higher than in 2010. This increase mainly took place in the category of “qualified workers”, both in the private and central government sector, and indicates that labour market conditions have not deteriorated much for individuals in the top income bracket.

Table 2. Evolution and composition of gross income per capita by source/

	Quintile I		Quintile II		Quintile III		Quintile IV		Quintile V	
	2010	2014	2010	2014	2010	2014	2010	2014	2010	2014
Labor income	73%	66%	83%	84%	86%	87%	87%	85%	78%	81%
Wages and Salaries	55%	47%	68%	72%	73%	73%	71%	73%	60%	63%
Public Employees	3%	3%	8%	8%	16%	13%	24%	25%	31%	31%
Qualified	1%	0%	4%	4%	10%	9%	20%	21%	30%	30%
Unqualified	2%	3%	4%	4%	5%	4%	4%	4%	1%	1%
Central Government Employees	1%	2%	3%	4%	7%	6%	12%	13%	12%	14%
Qualified	1%	0%	2%	2%	5%	4%	10%	11%	11%	14%
Unqualified	1%	1%	2%	2%	3%	2%	2%	2%	0%	0%
Other Public Sector Employees	2%	1%	5%	4%	8%	6%	12%	12%	19%	17%
Qualified	0%	0%	2%	2%	6%	4%	10%	10%	19%	16%
Unqualified	2%	1%	3%	2%	3%	2%	2%	3%	1%	1%
Private Company employees	46%	39%	55%	58%	53%	57%	45%	46%	28%	31%
Qualified	4%	5%	11%	14%	18%	22%	27%	28%	23%	28%
Unqualified	42%	33%	43%	45%	35%	35%	19%	18%	4%	3%
Domestic service	5%	5%	5%	5%	4%	4%	2%	2%	0%	0%
International orgs. and others	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Business income	18%	19%	15%	12%	14%	14%	15%	13%	18%	18%
Self-employed	17%	18%	13%	11%	12%	11%	12%	8%	9%	7%
Professionals and technicians	1%	1%	1%	1%	2%	1%	3%	2%	5%	4%
Other self-employed	16%	17%	12%	10%	10%	10%	9%	7%	4%	3%
Employers	1%	1%	2%	2%	2%	2%	4%	4%	9%	11%
Capital income	1%	1%	2%	1%	3%	2%	4%	4%	11%	9%
Current transfers	26%	33%	16%	15%	11%	11%	10%	11%	11%	10%
Contributory pensions	10%	14%	8%	8%	7%	7%	7%	9%	9%	9%
State aid	11%	14%	4%	4%	2%	2%	0%	1%	0%	0%
Non-contributory regime transfers	5%	7%	2%	1%	1%	1%	0%	0%	0%	0%
IMAS transfers	4%	4%	1%	1%	1%	0%	0%	0%	0%	0%
Subsidy transfers	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Scholarship transfers	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%
Private transfers	3%	4%	2%	2%	2%	1%	1%	1%	1%	1%
Non-monetary transfers	2%	2%	1%	1%	1%	1%	0%	0%	0%	0%

Source: Authors' calculations based on data from ENAHO survey.

Other interesting features to note when looking at the income structure per quintile level are the following:

- Income from public sector jobs represents a low share in the income of the poorest individuals. It accounts for 3%, while it represents 30% of the income of richest individuals. This reflects that public sector wages are particularly high in Costa Rica, as compared with the private sector (OECD, 2016). Thus, those not making it into the public sector are more likely to fall in the low-income bracket.

- Income received by self-employed represents a largest share for poor individuals than for richer ones, mainly explained by self-employed other than professional and technicians. It is the opposite for employers, and as result, the distribution of business income is U shaped.
- The proportion that capital income represents in the total income of wealthier individuals fell 2 percentage points from 2010 to 2014. It remains constant for the other quintiles although the shares are relatively small.
- The share of income that contributory pensions represent in total income has increased (or remained constant) for all income quintiles. This is reflecting demographic trends. The percentage of people under 20 peaked in 2003 and by 2024 is expected that Costa Rica will become an “aged” economy, i.e. older persons will consume more (of all goods and services, both public and private) than youth, for the first time in the history of the country (CELADE, 2013). In addition to demographic trends, it also reflects that the coverage of the Costa Rican contributory pension systems is relatively broad, encompassing also individuals of the lowest income levels. Thus, 70 per cent of Costa Rican workers contribute or are affiliated with a pension scheme, the largest coverage in Latin America and Caribbean, where coverage reaches 45 per cent on average (OECD/IDB/The World Bank, 2014).

Information about the evolution of income from each source for the period 2010-2014, broken down by income quintiles is displayed in the Annex, Table A.1, showing that inequality has increased because incomes at the bottom fell in real terms while increasing in all other income groups.

IV. The Relative contributions to inequality

Based on the additive decomposition of the Gini coefficient, it is possible to quantify the contribution of each income source to overall inequality. Table 3 shows the evolution of Gini coefficients and the contribution made by each income source. As explained in the previous section, the contribution of each income source to overall inequality depends on its relative share in total income, on how unequally the source is distributed and on the correlation of this source with respect to the distribution of total income.

Inequality, as measured by the Gini index, has remained relatively high in the period 2010-2014. Despite the increase in per capita income experienced in the period 2010-2014, inequality increased from 2010 to 2013, and fell very slightly in 2014, when the Gini stands at 0.518. Comparing Gini index based on different income concepts (Figure 1) we observe that, although tax and transfers contribute to reduce inequality, this reduction is relatively small. This is in line with what is observed in other Latin American countries such as Chile or Mexico, and also in emerging economies (OECD, 2011). But this contrasts with OECD countries, where income inequality is greatly reduced through redistribution – typically, taxes and transfers such as unemployment and other benefits (OECD, 2015).

Looking at the relative contributions of the different income sources to the Gini coefficient (Table 3), the highest contribution to inequality is made by labour income. This is in line with evidence from OECD countries (see Hoeller et al., 2012), where earned labour income is also the main determinant of income inequality. In Costa Rica, both salaries in public and private sector contribute significantly to inequality, particularly salaries of qualified workers. Interestingly, in the period under review, the highest contribution to inequality among all income sources is made by the wages of qualified workers in the public sector. Its contribution averaged 31% in the period 2010-2014, while the contribution made by their peers in the private sector was 28%. Within the public sector, it is notable that wages of qualified staff employed in public agencies outside central government made a larger contribution to inequality than the wages of their peers in central government. Public wages of unqualified workers outside central government also contributed more than the wages of their peers in central government.

Table 3. Relative Contribution of each Source of Income to Total Inequality/

Income Source	2010	2011	2012	2013	2014
Gini Coefficient	0.5110	0.5189	0.5192	0.5246	0.5179
Total Household Per Capita Income	100	100	100	100	100
Labor income	80.4	82.9	81.3	83.0	83.0
Wages and Salaries	62.9	65.1	63.4	63.5	66.5
Public Employees¹	32.6	34.2	31.0	32.5	32.5
Qualified ²	31.2	32.5	29.7	31.0	31.1
Unqualified	1.5	1.7	1.3	1.5	1.5
Central Government Employees	12.9	14.4	13.5	14.9	14.9
Qualified ²	12.3	13.8	13.1	14.5	14.6
Unqualified	0.6	0.6	0.4	0.4	0.4
Other Public Sector Employees	19.8	19.9	17.5	17.6	17.6
Qualified ²	18.9	18.7	16.6	16.5	16.5
Unqualified	0.9	1.1	0.9	1.1	1.1
Private company employees	29.6	30.2	31.4	30.8	33.8
Qualified ²	26.0	26.6	28.0	28.2	30.2
Unqualified	3.6	3.7	3.4	2.6	3.6
Domestic service	0.1	0.1	0.0	0.1	0.1
International orgs. and others	0.5	0.6	0.9	0.2	0.0
Business income	17.5	17.8	18.0	19.5	16.5
Self-employed	8.9	7.7	9.3	10.1	6.1
Professionals and technicians ³	5.5	4.0	3.8	6.2	3.4
Other self-employed	3.4	3.7	5.5	3.9	2.8
Employers	8.6	10.1	8.6	9.3	10.4
Capital income	11.0	9.4	10.3	9.0	9.1
Current transfers	8.7	7.8	8.3	8.0	7.9
Contributory pensions ⁴	8.5	7.8	8.0	8.0	8.1
State aid	-0.8	-0.7	-0.7	-0.8	-0.9
Non-contributory regime transfers	-0.4	-0.3	-0.3	-0.4	-0.4
IMAS transfers	-0.3	-0.3	-0.3	-0.3	-0.3
Subsidy transfers	0.0	0.0	0.0	0.0	0.0
Scholarship transfers	-0.1	-0.1	-0.1	-0.1	-0.1
Private transfers ⁵	0.9	0.5	1.1	0.6	0.6
Non-monetary transfers	0.1	0.1	0.0	0.1	0.1

1. Central government and other public sector employees

2. Academic or technical secondary school or more.

3. Professional, scientific, intellectual, technical and medium professional level.

4. Alimony, national pension, pension from abroad, pension bonuses.

5. Transfers from abroad, at home and other.

Source: Authors' calculations based on data from ENAHO survey.

Figure 1. Gini coefficient of different income concepts

Note: 95% confidence intervals estimated based on Jackknife resampling techniques.

Source: Authors' calculations based on data from ENAHO survey.

Regarding the evolution of public sector wages in the period 2010 to 2014, it is noteworthy that its contribution increased significantly from 2010 to 2011. This seems to be related to the permanent increases in central government salaries occurred from 2008 to 2010 with the aim of equalizing pay among different parts of the Costa Rican public sector. Thus, contribution made by public agencies outside central government fell from 2010 to 2012 and then remained constant. Conversely, the contribution of wages in central government has been on the rise. This reflects that the wage distribution in central government has become more unequal, with an increasing share of workers in higher income quintiles (see Table 4).

Table 4. Number of central government civil servants by income quintile ¹

Income quintile per capita	2010	2011	2012	2013	2014	2015 ²
I	2.6%	6.3%	6.4%	5.0%	2.2%	1.9%
II	1.8%	1.8%	1.7%	1.4%	1.3%	1.4%
III	3.3%	2.8%	2.7%	2.1%	2.5%	2.6%
IV	20.3%	19.3%	18.7%	18.4%	19.2%	18.6%
V	72.1%	69.9%	70.6%	73.0%	74.8%	75.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table note: 1. Based on the average salary per year and following the monthly income quintile classification calculated by the Instituto Nacional de Estadísticas y Censos. It includes civil servants in central government only. 2. Based on data from January to October.

Source: Costa Rica's Ministry of Finance

In the private sector the contribution made by wages of qualified workers has also been on an increasing trend in the period under review. This can be explained by the existence of large skills premium in Costa Rica. In fact Costa Rica has one of the largest skills premium in Latin America (Tsounta and Osueke, 2014), and contrary to other Latin American countries the premium has been increasing. Workers holding tertiary qualifications earn on average nearly four times as much as those with only primary education and around two times as much as those with secondary education (Figure 2). Such education premia are increasing. Also, there are important differences in income between those that have completed secondary education and those that did not; holders of a secondary degree earn around 1.8 times as much as those with primary education or less.

It is also noteworthy that in Costa Rica individuals holding secondary technical qualifications earn as much as those who follow more academic educational tracks (Figure 3) and that the skill premium of technical secondary qualification with respect to primary education is also quite large.

Figure 2. Skills premium in Costa Rica by education level

Note: The estimated skills premium based on individual gross income instead of household per capita gross income shows similar results.

Source: Authors' calculations based on ENAHO.

Figure 3. Skills premium in Costa Rica: technical education

Note: The estimated skills premium based on individual gross income instead of household per capita gross income shows similar results.

Source: Authors' calculations based on ENAHO.

After wages in public and private sectors, business income is the third highest contributor to overall inequality in Costa Rica, accounting for 16% in 2014. Its relative contribution has been slightly decreasing since 2010. On the one hand, the contribution made by income received by self-employed has fallen, and on the other hand, the contribution made by income accrued to employers has increased.

Outside labour income, capital income is the income sources making the largest contributions to inequality, reaching 9%. This is similar to equivalent computations for 14 OECD countries, where, on average, income from capital was found to contribute about 10% to inequality (OECD, 2011). The contribution of contributory pensions in Costa Rica - about 8% - is slightly above the one found in the OECD average (3%), but similar to the one found in Israel (7%) or Canada (5%).

State aid cash transfers are the only income sources making a negative contribution to the Gini coefficient, reducing overall inequality. Nonetheless, their contribution is relatively small, slightly below one percent. Conversely, means-tested transfers and social insurance benefits are an important policy tool in the redistribution of income in OECD countries. This is particularly the case in Nordic countries - in Denmark social transfers reduce inequality by 30% - but also in other countries such as Australia, Czech Republic or United Kingdom, where their contributions reaches 10% (OECD, 2011). The small contribution in Costa Rica reflects that these transfers represent only 1.3% of total per capita income. Non-contributory pensions and cash transfers provided by IMAS are those having the largest impact on reducing inequality.

V. The Gini elasticity

The analytical value of Gini elasticity lies in the fact that they indicate how inequality would respond to an increase in a given income source. If the elasticity is above one, inequality would increase. The higher the value of the elasticity the higher the increase in inequality would be. Conversely, if the Gini elasticity is below one an increase in that income source would result in a reduction of inequality.

Table A.2 in the Annex shows the Gini elasticity estimates of each income source based on formula (5) for the period 2010-2014. Figure 4 ranks the 2014 estimates according to their impact on inequality. Capital income is the income source with the highest Gini elasticity, reflecting that a large share of the income source accrues to high-income households. Thus, an increase in capital income, provided that its distribution among income households remains unchanged, would make inequality rise. A similar pattern is observed for income received by employers and for wages of qualified workers in the public sector, both working in central government and in other public sector agencies.

Figure 4. Gini elasticities, 2014

Note: Gini elasticities are computed as described in formula (4). If the Gini elasticity is below one an increase in that income source would result in a reduction of inequality.

Source: Authors' calculations based on data from ENAHO survey.

On the other hand, IMAS transfers and non-contributory pensions are the income sources with the lowest Gini elasticity. These are the two income sources whose increase would contribute the most to reduce inequality. Within labour income, increases in wages of domestic service and of unqualified workers in the private sector are those that would make inequality fall more markedly.

VI. Redistributive effects of marginal increases in individual income components

The Gini elasticity provides a useful description of how potential changes in a given income source would affect inequality based on how such an income source is distributed across the population. Nevertheless, the final effect on inequality would also depend on how large such an income source is within total income. Thus, it is useful to analyse what would be the marginal effect of a percentage increase in a given income source would have on inequality. This information can be of particular interest for policy makers, for instance as concerns the potential impact on overall inequality of increasing a given social transfer, or to assess how potential changes in public and private wages would affect inequality. One of the key advantages of the income source decomposition approach is that it provides as a by-product an estimate of marginal effects for each income source.

Table A.3 presents the marginal effect of each income source for the period 2010 to 2014. . Figure 5 displays the marginal effects for 2014 ordered by size, indicating the percentage change in inequality due to a 1% increase in individual income components.

Figure 5. Marginal effects of changes on income sources

Note: Marginal effects are computed as described in formula (6).

Source: Authors' calculations based on data from ENAHO survey.

The highest reduction in inequality would come from an increase in wages of low qualified workers in the private sector. Conversely, inequality would increase most if wages of qualified individuals in the public and private sector continue to increase. ... Increases in the income from self-employed other than professionals and technicians and wages of workers in domestic service would also imply relatively large falls in inequality. It is also noteworthy that, although government cash transfers are the income source with the lowest Gini elasticity, their impact on reducing inequality would be smaller than increasing wages of unqualified workers, self-employed or domestic services, reflecting that transfers are relatively small and represent a low proportion of income for all, including the poorest.

VII. Inequality by gender, age, and level of education

In the first part of this paper we have looked at the overall development in the distribution of incomes in Costa Rica. In this section we will take the analysis a step further by looking at income distribution with respect to age, gender, education or migration status. In addition, looking at different concepts of income, allows us to see how government social programmes trickle down to different population groups and how such programmes impact inequality. The “market income” concept encompasses labour income, capital income and contributory pensions.. The “market plus transfers” concept includes as well private transfers and more importantly monetary public transfers such as non-contributory pensions and transfers, subsidies and scholarships provided by IMAS. Last the “net income” concept incorporates as well direct taxes and social security contributions.

Looking at inequality per age group provides useful results to assess the role that government social transfers may play in those stages in the life cycle when income may be lower. In Costa Rica, as in other advanced economies (see for example Bjørnskov et al., 2012), we observe that inequality is highest for the youngest and for the older individuals of the population (Figure 6, panel A). This reflects that some young people do not have a high income because they have student status, and that part of the oldest age group has low earnings because of their status as retired.. Looking at Gini based on different income concepts shows the role that the effect of social transfers across the life cycle. First, we observe that the largest impact of the transfer system in reducing inequality occurs particularly for the oldest (above 65 years, Figure 6, panel B), and to a lesser extent for the young (below 25 years). For the oldest group this reflects the impact of the non-contributory pension scheme and highlights that the non-contributory pension scheme, which is relatively well targeted and have most of its beneficiaries among those poverty and extreme poverty (OECD, 2016), is effective in reducing inequality and cushioning the effect of the fall in income which low-income individuals experience when they retire. For the young individuals this relates to cash transfers linked to attendance to education such as *Avancemos*. The reduction in inequality reflects that these programmes do not have too many beneficiaries among medium and high income earners (OECD, 2016). Nevertheless it has few beneficiaries among those in extreme poverty (Estado de la Nación, 2014), preventing it from having a greater role in reducing inequality.

Figure 6. Inequality by age

Source: Authors' calculations based on data from ENAHO survey.

When looking at inequality per gender, we observe that, market income inequality is higher for women than for men. The difference is not large, although this is partly due to the use of the household per capita income concept. This turns after considering the redistributive impact of transfers and direct taxes. For women they reduced inequality by more than 5% while for men it decreases around 4% (Figure 7, panel B). This difference reflects that women in Costa Rica are more likely to be poor, to be unemployed or to work in the informal sector (González Pandiella, 2016). Therefore they are more likely to be beneficiaries of social assistance programmes, such as non-contributory pensions.

Figure 7. Inequality by gender

Source: Authors' calculations based on data from ENAHO survey.

Costa Rica hosts an increasing immigrant population, particularly from Nicaragua. Thus, in 2013, 10% of those employed were foreign born. Immigrants tend to be low qualified and, immigrants women unemployment rates are particularly high, nearly doubling the unemployment rate of native women. Thus, it is interesting to assess inequality based on migration status and to examine whether government programmes trickle down to all. It is found that income inequality is higher for internal migrants, i.e. those whose birth place in Costa Rica differs from current residence place in Costa Rica, and even higher for external migrants, i.e. those that migrated to Costa Rica from abroad (Figure 8, panel A). The non-migrants are the less unequal group. Nevertheless, if we look at the impact of government transfers and taxes, the highest redistributive impact is also observed for non-migrants. Those with the lowest impact are migrants from abroad (Figure 8, panel B), stressing that Costa Rica social assistance do not seem to be reaching out external migrants.

Figure 8. Inequality by migrant status

Source: Authors' calculations based on data from ENAHO survey.

Despite an important commitment by Costa Rica to invest in education, educational gaps remain large in Costa Rica, with important differences in educational attainment depending on socio-economic status (OECD, 2016). Thus, it is important to assess how these gaps are translated into income inequality depending on education level and social assistance programmes operate. The largest inequality is for people with no education or low education levels while the lowest inequality is for individuals with technical secondary, tertiary or graduate higher education (Figure 9, panel A). This suggests that the more educated have the opportunity of working in jobs not only with higher wages, as discussed in previous sections, but also with more equal wages. Conversely the least educated have a higher spread of earnings. This is in line with similar analysis undertaken for advanced economies (see for example Bjørnskov et al., 2012 for the Danish case). The largest impact of transfers and direct taxes in reducing inequality is observed for those with lowest levels of education (panel B in Figure 9). Nevertheless, considering that skills premia are large and that completing secondary education is associated with much higher income, differences across education levels appear relatively modest, reflecting that the redistributive role of direct taxes is small in Costa Rica (OECD, 2016).

Figure 9. Inequality by education level

Source: Authors' calculations based on data from ENAHO survey.

VIII. Conclusions

This study intends to analyse the drivers of recent changes in inequality in Costa Rica. To do so it follows an income source decomposition approach and makes use of the 32 different income sources identified in the Costa Rica's Household Survey. The analysis finds that the main contributor to inequality in Costa Rica is labour income, explaining around 83% of all inequality. In the period 2010-2014, the largest contribution to inequality was made by public wages, notably the wages of qualified workers. Within the public sector, wages of those working in public agencies outside central government made the largest contribution. This contribution fell slightly from 2010 to 2012, while the contribution made by central government qualified workers wages increased. This is due to permanent increases in central government salaries aimed at equalizing pay among different parts of the Costa Rica public sector.

Recent changes in inequality have been driven by a large and increasing skills premium in the private sector. Those holding a tertiary degree earn on average four times as much as those without only primary education. There are also important differences in income between those that have completed secondary education and those that do not; holders of a secondary degree, both academic and technical degrees, earn around two times as much as those with primary education or less. Social programmes, such as non-contributory pensions, do contribute to reduce inequality although their impact is limited given its small share in the total income received by households.

This study also quantifies the marginal effect of various income sources on overall inequality finding that wages of low qualified workers in the private sector is the income source that would have the largest marginal impact to reduce inequality. Hence, progress to ensure a higher compliance with the minimum wage level would have a positive effect on inequality. The Costa Rica minimum wage system is relatively complex. A simplification of its structure would facilitate a higher compliance (OECD, 2016). A more comprehensive strategy to reduce informality, which is increasing and affects predominately low-qualified workers, would also help to curb inequality. On the other hand, increases in wages of qualified workers in public and private sector would result in the highest increases in inequality. Hence, further increases in public wages of qualified workers do not seem optimal from an inequality perspective. Concerning the private sector, strengthening the links between education and the labour market would help to reduce existing high skills mismatches (OECD, 2016) and would also contribute to reduce inequality by reducing skill premia.

An examination of inequality by socio-economic groups reveals the important role that non-contributory pensions play in safeguarding standards of life among all the elderly, but also reflects that social assistance programmes do not currently reach out immigrants, which is an increasingly large community in Costa Rica.

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ANNEX

Table A.1. Evolution of income per capita per income source and quintile (percentage change in income from 2010 to 2014)

	Poor	Quintile II	Quintile III	Quintile IV	Rich
Total Household Per Capita Income	-6.3	1.9	7.4	9.3	7.1
Labor income	-15.8	3.7	8.3	7.4	10.9
Wages and Salaries	-19.9	8.0	8.7	11.4	12.9
Public Employees¹	-18.4	7.5	-12.0	14.7	8.2
Qualified ²	-63.9	25.9	-11.0	13.7	8.6
Unqualified	1.2	-8.1	-13.9	20.2	-3.8
Central Government Employees	7.2	18.0	-7.7	17.4	30.0
Qualified ²	-64.3	30.1	-5.5	22.1	31.8
Unqualified	74.1	6.9	-11.5	-8.6	-36.0
Other Public Sector Employees	-37.8	-0.4	-15.8	12.1	-5.0
Qualified ²	-63.0	22.5	-15.5	5.2	-5.6
Unqualified	-32.9	-18.6	-16.5	45.3	9.6
Private company employees	-22.2	8.9	15.5	10.6	19.9
Qualified ²	14.0	25.6	27.2	14.0	27.5
Unqualified	-25.9	4.6	9.3	5.8	-20.2
Domestic service	-7.8	3.4	0.3	-7.5	37.7
International orgs. and others	1036.7	-86.4	2.7	-22.6	-94.9
Business income	-3.3	-15.5	5.8	-10.7	4.3
Self-employed	-2.4	-19.1	4.1	-22.0	-23.3
Professionals and technicians ³	-35.9	-23.9	-40.6	-41.8	-29.4
Other self-employed	0.3	-18.8	13.7	-14.4	-15.0
Employers	-15.3	15.5	15.0	26.6	33.2
Capital income	27.1	-16.8	-2.0	9.7	-10.1
Current transfers	18.6	-5.8	3.1	25.6	-2.0
Contributory pensions ⁴	25.4	-3.5	5.7	38.1	-0.7
State aid	18.2	5.5	18.9	13.7	-51.7
Non-contributory regime transfers	31.2	-21.0	22.0	2.7	-43.7
IMAS transfers	-1.6	21.0	-19.1	-23.4	80.9
Subsidy transfers	261.3	553.9	282.5	312.6	-93.6
Scholarship transfers	9.0	12.6	41.8	28.5	-35.9
Private transfers ⁵	17.2	-23.3	-19.1	-18.0	-13.3
Non-monetary transfers	-10.3	-28.7	-5.1	-15.7	17.4

Source: Authors' calculations based on ENAHO survey.

Table A.2 Gini Elasticity of each Income Source

Income Source	2010	2011	2012	2013	2014
Labor income	0.99	1.00	0.99	1.01	1.01
Wages and Salaries	0.97	0.99	0.97	0.97	0.99
Public Employees¹	1.36	1.37	1.35	1.33	1.35
Qualified ²	1.46	1.45	1.43	1.40	1.44
Unqualified	0.56	0.64	0.58	0.62	0.58
Central Government Employees	1.30	1.33	1.33	1.30	1.32
Qualified ²	1.40	1.42	1.42	1.39	1.41
Unqualified	0.51	0.56	0.44	0.43	0.38
Other Public Sector Employees	1.41	1.39	1.36	1.34	1.38
Qualified ²	1.50	1.48	1.44	1.42	1.47
Unqualified	0.60	0.70	0.68	0.74	0.72
Private company employees	0.77	0.78	0.78	0.79	0.82
Qualified ²	1.22	1.22	1.19	1.19	1.22
Unqualified	0.21	0.21	0.21	0.17	0.22
Domestic service	0.06	0.05	0.02	0.05	0.08
International orgs. and others	1.41	1.27	1.70	1.47	0.30
Business income	1.05	1.06	1.08	1.12	1.06
Self-employed	0.81	0.78	0.89	0.94	0.72
Professionals and technicians ³	1.42	1.41	1.41	1.51	1.37
Other self-employed	0.48	0.53	0.70	0.58	0.45
Employers	1.48	1.44	1.42	1.43	1.48
Capital income	1.56	1.49	1.51	1.47	1.51
Current transfers	0.74	0.72	0.74	0.71	0.69
Contributory pensions ⁴	1.00	0.96	0.96	0.93	0.93
State aid	-0.63	-0.63	-0.71	-0.74	-0.68
Non-contributory regime transfers	-0.66	-0.65	-0.66	-0.68	-0.76
IMAS transfers	-0.78	-0.76	-0.88	-1.16	-0.82
Subsidy transfers	0.25	0.50	-1.00	-0.25	-0.44
Scholarship transfers	-0.46	-0.50	-0.53	-0.45	-0.41
Private transfers ⁵	0.63	0.48	0.80	0.60	0.57
Non-monetary transfers	0.15	0.25	-0.02	0.17	0.28

1. Central government and other public sector employees

2. Academic or technical secondary school or more.

3. Professional, scientific, intellectual, technical and medium professional level.

4. Alimony, national pension, pension from abroad, pension bonuses.

5. Transfers from abroad, at home and other.

Source: Authors' calculations based on data from ENAHO survey.

Table A.3 Marginal Effect of each Source of Income to Total Inequality

Income Source	2010	2011	2012	2013	2014
Labor income					
Wages and Salaries					
Public Employees¹					
Qualified ²	0.098	0.102	0.089	0.089	0.095
Unqualified	-0.012	-0.010	-0.010	-0.009	-0.010
Central Government Employees					
Qualified ²	0.035	0.041	0.039	0.041	0.042
Unqualified	-0.006	-0.005	-0.006	-0.006	-0.006
Other Public Sector Employees					
Qualified ²	0.063	0.061	0.051	0.049	0.053
Unqualified	-0.006	-0.005	-0.004	-0.004	-0.004
Private company employees					
Qualified ²	0.047	0.047	0.045	0.045	0.054
Unqualified	-0.135	-0.134	-0.132	-0.128	-0.126
Domestic service	-0.016	-0.017	-0.016	-0.014	-0.015
International orgs. and others	0.001	0.001	0.004	0.008	-0.001
Business income					
Self-employed					
Professionals and technicians ³	0.016	0.012	0.011	0.021	0.009
Other self-employed	-0.037	-0.033	-0.023	-0.028	-0.033
Employers	0.028	0.031	0.026	0.028	0.034
Capital income	0.040	0.031	0.035	0.029	0.031
Current transfers					
Contributory pensions ⁴	0.000	-0.003	-0.004	-0.006	-0.006
State aid	-0.020	-0.018	-0.018	-0.019	-0.022
Non-contributory regime transfers	-0.009	-0.008	-0.008	-0.009	-0.010
IMAS transfers	-0.007	-0.007	-0.006	-0.006	-0.007
Subsidy transfers	0.000	0.000	0.000	0.000	-0.001
Scholarship transfers	-0.004	-0.004	-0.003	-0.003	-0.004
Private transfers ⁵	-0.005	-0.006	-0.003	-0.004	-0.005
Non-monetary transfers	-0.005	-0.004	-0.005	-0.005	-0.003

Table A.4 Income source: list, definitions and variable names

Income source	Definition	Survey Variables
Labor income	Sum of wages and salaries as well as business income as described below.	
Wages and Salaries	Sum of public sector, private sector, domestic service and international organizations' employees labour income as described below.	
Public Employees	Sum of central government and other public sector employees' labour income as described below.	
Qualified	Sum of qualified central government and other public sector employees' labour income as described below.	
Unqualified	Sum of unqualified central government and other public sector employees' labour income as described below.	
Central Government Employees	Central government employees labour income.	Sector Institucional Principal (SecInsAgrupPri)= 1, Gobierno Central
Qualified	Complete academic secondary school, complete technical secondary school, undergraduate or graduate higher education, or postgraduate higher education.	Nivel de Instrucción (NivInst)= 4, 6, 7 or 8
Unqualified	Without education, incomplete primary, complete primary, incomplete academic or technical secondary school.	Nivel de Instrucción (NivInst)=0, 1, 2, 3 or 5
Other Public Sector Employees	Other public sector employees labour income.	Sector Institucional Principal (SecInsAgrupPri)= 2, Resto del sector público
Qualified	Complete academic secondary school, complete technical secondary school, undergraduate or graduate higher education, or postgraduate higher education.	Nivel de Instrucción (NivInst)= 4, 6, 7 or 8
Unqualified	Without education, incomplete primary, complete primary, incomplete academic or technical secondary school.	Nivel de Instrucción (NivInst)=0, 1, 2, 3 or 5
Private company employees	Private sector employees labour income	Sector Institucional Principal (SecInsAgrupPri)= 3, Sector privado; and Posición en el Empleo Principal (PosiEmpPri)=12 or 13, salariada de empresa or auxiliar no remunerado
Qualified	Complete academic secondary school, complete technical secondary school, undergraduate or graduate higher education, or postgraduate higher education.	Nivel de Instrucción (NivInst)= 4, 6, 7 or 8
Unqualified	Without education, incomplete primary, complete primary, incomplete academic or technical secondary school.	Nivel de Instrucción (NivInst)=0, 1, 2, 3 or 5
Domestic service	Domestic service employees labour income	Sector Institucional Principal (SecInsAgrupPri)= 3, Sector privado; and Posición en el Empleo Principal (PosiEmpPri)=11, Asalariada de hogar privado
International orgs. and others	International organisations and other employees labour income	Sector Institucional Principal (SecInsAgrupPri)= 4, Organismos internacionales; or Sector Institucional Principal (SecInsAgrupPri)= 9, No bien especificado
Business income	Sum of self-employed and employers labour income as described below.	
Self-employed	Sum of professionals, technicians and others self-employed's labour income as described below.	
Professionals and technicians	Self employed professional and technicians labour income	Sector Institucional Principal Agrupado (SecInsAgrupPri)=3, Sector privado; and Posición en el Empleo Principal (PosiEmpPri)=22, Cuenta propia; and Ocupación en el Empleo Principal (OcupEmpPri)=1, 2, or 3, Directores y gerentes, Profesionales científicos e intelectuales, Técnicos y profesionales de nivel medio
Other self-employed	Others self-employed labour income	Sector Institucional Principal Agrupado (SecInsAgrupPri)=3, Sector privado; and Posición en el Empleo Principal (PosiEmpPri)=22, Cuenta propia; and Ocupación en el Empleo Principal (OcupEmpPri)>3
Employers	Employer labour income	Sector Institucional Principal Agrupado (SecInsAgrupPri)=3, Sector privado; and Posición en el Empleo Principal (PosiEmpPri)=21, Empleadora
Capital income	Household property income	Ingreso por renta de la Propiedad del Hogar (irph)
Current transfers	Sum of contributory pensions, state aid, private and non-monetary transfers as described below.	

Contributory pensions	Sum of Alimony ; national pension, pension from abroad, and pension bonuses.	Transferencias por pensión alimenticia (tpa) + Transferencias por pensión nacional (tpn) + Transferencias por pensión del extranjero (tpe) + Transferencias por aguinaldo de pensión (tap). For some surveys, these sources are also adjusted to minimize sub-declaration by multiplying by a coefficient (c_pen)
State aid	Sum of non-contributory regime, IMAS, subsidy, and scholarship transfers as described below.	
Non-contributory regime transfers	Non-contributory regime transfers	Transferencias regimen no contributivo (trnc)
IMAS transfers	IMAS transfers	Transferencias del IMAS (timas)
Subsidy transfers	Subsidy transfers	Transferencias por subsidios (ts)
Scholarship transfers	Scholarship transfers	Transferencias por becas (tbc)
Private transfers	Sum of transfers from abroad, from within the country and other transfers.	Ttransferencias del extranjero (te) + Transferencias dentro del país (tdp) + Otras transferencias (ot)
Non-monetary transfers	Non-monetary transfers	Transferencias no monetarias (tnm)