

**Economic and Social Council**Distr.: General
12 February 2024

Original: English

Economic Commission for Europe

Conference of European Statisticians

Group of Experts on National Accounts**Twenty-third session**

Geneva, 23-25 April 2024

Item 2 (e) of the provisional agenda

Towards the 2025 System of National Accounts: Well-being and sustainability**Costa Rica's National Accounts: Household Income
Distribution, Consumption and Savings****Prepared by the Central Bank of Costa Rica¹***Summary*

The distributive national accounts of households make it possible to measure, study the evolution and identify the elements that explain inequality. This study describes the development of distributive measures of income, consumption, and savings according to household income quintile, gender, and economic activity of the household's reference person as of 2018. The methodology used to deliver the initial experimental results was based on the integration of micro and macro data sources, following the recommendations of the Organization for Economic Cooperation and Development (OECD) Expert Group on Disparities in National Accounts Frameworks (EG DNA) and the Statistical Office of the European Union (Eurostat), concerning disparities within a national accounts framework, in accordance with the concepts and aggregates of the national accounts system. The results of the study indicate that only households in the fifth quintile exhibited a positive savings rate. Meanwhile, households with shared leadership displayed the highest savings rate compared to households led by men (although the latter showed the highest concentration in terms of savings), while those organized by women exhibited a negative savings rate. By economic activity, the highest savings rate was generated by real estate activity, whereas domestic services had the most negative savings rate.

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I. Introduction

1. National accounts report on the economic situation and provide a comprehensive set of macroeconomic statistics for each country. Gross domestic product (GDP), an indicator of economic growth, is often used to represent a country's social progress, however, that is not its goal. Other national accounts indicators, such as gross disposable income and adjusted gross disposable income of households² and net household wealth³, are better suited for this purpose and even more so if they are analyzed according to the distribution of specific groups of households.
2. It is possible to obtain data on disposable income, consumption expenditure and savings for an average household in the national accounts, but these measures hide information about the disparities between the least advantaged compared to the richest households according to income quintile, as well as of other differences in the composition of households. Therefore, the information of an average household is not enough to make public policy decisions that promote equality. These aspects are crucial to guide and improve the efficiency of economic policies and thus improve economic well-being.
3. The Banco Central de Costa Rica (BCCR) publishes macroeconomic statistics on the household sector within the framework of the System of National Accounts (SNA). In order to provide relevant information for decision-making that promotes efficiency in the application of economic policy, it participated in a first experimental statistical exercise⁴ for Costa Rica on household distributional measures led by the World Bank⁵ (WB) for 2017 and subsequently updated to 2018.
4. The development of the exercise on household distributional measures required the integration of micro and macro sources of information, because it was based on the recommendations of the Organisation for Economic Co-operation and Development (OECD) and Eurostat Expert Group on Disparities in a National Accounts Framework (EG-DNA).
5. The micro information sources used are the household surveys produced by the National Statistics Office (Instituto Nacional de Estadística y Censos - INEC). BCCR is grateful to INEC for the participation in developing the results presented here.
6. This document shows the results of the distribution of income, consumption and savings according to household income quintile, gender and economic activity of the household reference person in 2018.
7. Hereinafter, the document is structured as follows: Section II details the factors that motivated this study; Section III presents the methodology and sources of information used; Section IV shows the different sources of household income distributed by quintile, as well as the use of income in consumption and savings by each household group; Section V compares the results of Costa Rica to other countries; Section VI disaggregates the information by gender and economic activity of the household reference person. Finally, Section VII raises some considerations derived from the current study and reflects on the future of the analysis presented.

II. Motivation

8. The SNA provides the totals for the different components of household income, consumption and savings and the linkages between them. This system provides a complete

² It includes social transfers in kind, such as education and health services provided by the general government sector and non-profit institutions.

³ Household net wealth is the sum of total assets (financial assets plus non-financial assets) minus the sum of liabilities (total debt).

⁴ Experimental statistics are official statistics that are in the testing phase and are not yet fully developed, therefore they are still subject to testing for quality, volatility and ability to meet the needs of users. In addition, they can be modified after user feedback on their usefulness and credibility.

⁵ The BCCR thanks Mr. José Pablo Valdés Martínez, a World Bank official, for his leadership in the preparation of this work.

and coherent view of macroeconomic statistics, but does not capture disparities in income, consumption, and savings among different groups of households. The need for statistics that reflect people's economic well-being was highlighted in the "Report by the Commission on the Measurement of Economic Performance and Social Progress (2009)", prepared by Joseph E. Stiglitz, Amartya Sen and Jean-Paul Fitoussi:

"The time has come for our statistical system to focus more on measuring the well-being of the population than on the measurement of economic output, and that it is desirable that such measures of well-being be restored in a context of sustainability." (p. 10).

9. In 2011, the OECD and Eurostat organized a joint expert group⁶ (EG-DNA) to create a comparable international methodology to generate measures of inequality in line with national accounts concepts and totals, using existing microdata sources (e.g., surveys and administrative records) that provide measures of economic inequalities among households. This combination of sources (national accounts and household microdata) to produce distributive national accounts provides a comprehensive view of the distribution of household income, consumption and savings.

10. The exercises carried out by this group of experts are considered as experimental statistics. However, its methodological documentation allows other countries (outside the expert group) to make their own calculations.

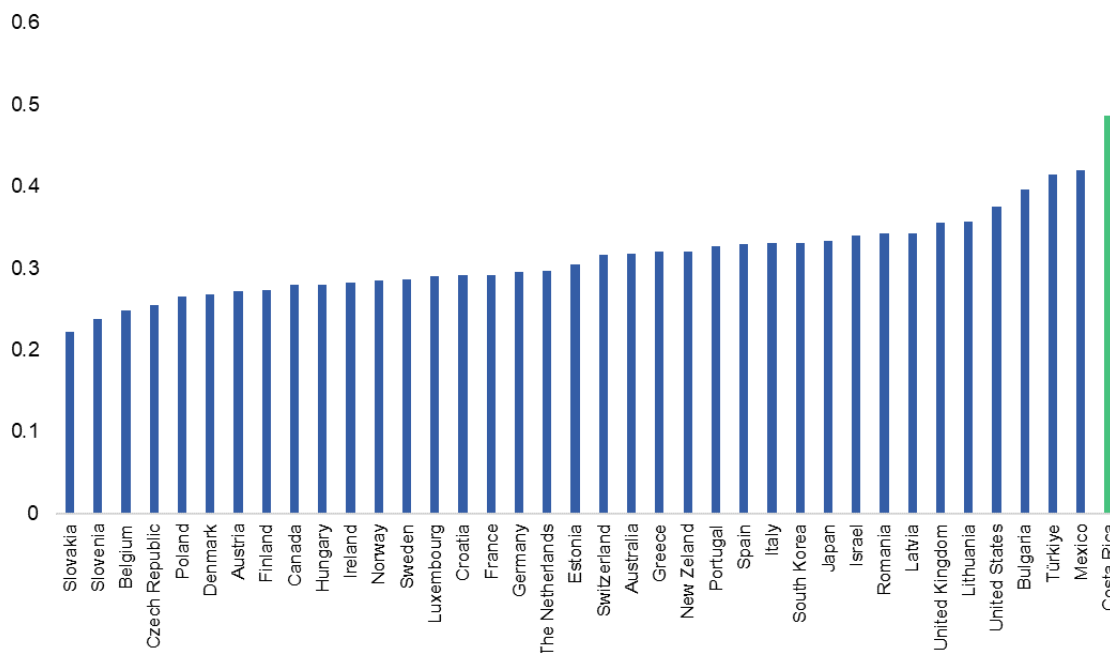
11. In addition, distributive national accounts allow to study the characteristics of inequality among households according to their composition. This issue is very relevant for our country, given the increase in inequality registered in recent years as measured by the Gini coefficient⁷. This indicator was estimated at 0.524 in 2021, the highest figure since 1987⁸. This ranked Costa Rica with the highest inequality among the 38 OECD member countries, as shown in figure 1.

⁶ The expert group has participated in three exercises.

⁷ It is an indicator of people's income inequality in society. Calculated by INEC, it varies between 0 and 1, when it is close to 1 it shows that there is a greater concentration, while if it is close to 0 it indicates that income is distributed more evenly. INEC, retrieved from <https://inec.cr/indicadores/coeficiente-gini-persona>

⁸ According to State of the Nation Report 2022, p. 84.

Figure 1
Income inequality



Note: Measured by the Gini coefficient

Source: OECD (2023), Income inequality (indicator), doi: 10.1787/459aa7f1-en (Accessed on 14 July 2023)

12. The OECD (2015)⁹ estimates that, over a 25-year horizon, a 1-point increase in the Gini coefficient reduces average GDP growth by around 0.12 percentage points per year, with a cumulative loss of 3% over that period. In addition, it argues that inequality has a negative impact on growth through human capital, since the wider the income inequality, the less likely it is that low-income people will invest in education. Therefore, it concludes that reducing inequality contributes to a fairer and stronger economy.

13. Studying inequality through national accounts can help overcome some challenges faced by microdata to measure inequality, including capturing the top tail (higher-income households). Zwijsenburg (2022)¹⁰ indicates that national accounts are based on a harmonized system of concepts and definitions in which multiple data sources are brought together to arrive at comprehensive and interlinked results, and they can capture missing elements in the underlying statistics and thus provide more reliable estimates for elements that may be more prone to quality issues in micro statistics. This implies that aligning microdata with national accounts aggregates can improve the overall quality of distributional data, as well as enable international comparability.

14. The BCCR, as a compiler of national accounts statistics, is interested in contributing to the expansion of statistical information, in order to support decision-making and economic policy. For this purpose, it developed a first exercise on distributive national accounts, classified as experimental statistics.

⁹ OECD (2015), *In It Together: Why Less Inequality Benefits All*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264235120-en>

¹⁰ Zwijsenburg, J. The Use of Distributional National Accounts in Better Capturing the Top Tail of the Distribution. *J Econ Inequal* 20, 245–254 (2022). <https://doi.org/10.1007/s10888-022-09534-w>

III. Methodology and sources of information

15. The approach to distributive measures is based on obtaining results according to the distribution of households, so it is important at the start to define the household sector according to the 2008 SNA:

A household can be defined as a group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food. In general, each member of a household should have some claim upon the collective resources of the household. At least some decisions affecting consumption or other economic activities must be taken for the household as a whole (See § 24.12).

16. The household is considered an institutional unit in the SNA and constitutes the unit of observation in the compilation of distributive national accounts.

17. The elaboration of the distributive accounts of household income, consumption and savings for Costa Rica was based on the methodology of the EG-DNA expert group¹¹. The paragraphs below outline the main compilation steps.

A. Step 1: Adjusting national accounts totals

18. The distributive measures refer only to private households, so the need to adjust the national accounts totals was assessed with respect to: (i) separating households from non-profit institution serving households (NPISHs), if they were compiled and published together; (ii) excluding the expenditure of non-residents on the economic territory from total final consumption, if the totals of the country's national accounts included it; and (iii) excluding institutional households (such as prisons, retirement homes, etc.), as the sampling frame of household surveys generally does not cover them.

19. In the case of Costa Rica, it was not necessary to make these adjustments, because NPISHs are compiled separately in the national accounts, and household final consumption expenditure excludes non-resident expenditure. With respect to institutional households, these are included in other institutional sectors.

B. Step 2: Establishing the micro-macro link

20. The next step was to select the relevant variables from the micro data sources and link them to the corresponding national accounts variables to be distributed by household group.

21. The variables of micro statistics should be chosen based on the availability of information, their consistency with the national accounts in terms of concepts and definitions, their coverage, and above all their quality.

22. In most of the countries that are part of the EG-DNA, the main sources of information for distributive measures are household surveys, mostly household budget surveys, and surveys on specific products and services, such as surveys on food consumption, health, education, etc.

23. For the preparation of the national distributive accounts for Costa Rica for the year 2018, the main source of micro information used was the National Survey of Household's Income and Expenditure 2018 (ENIGH). For its part, the National Survey of Household's Microenterprises 2018 (ENAMEH) was also used to obtain distributive information on the informal activity of households as producers of goods and services.

¹¹ OECD (2020), "Distributional information on Household income, consumption and saving in line with national accounts – Guidelines", Version December 2020. <https://www.oecd.org/sdd/na/OECD-EG-DNA-Guidelines.pdf>

C. Step 3: Imputing and aligning microdata to national accounts totals

24. Some elements considered in national accounts may not be covered by microdata, for example: financial intermediation services indirectly measured (FISIM) and social transfers in kind are not covered by household surveys, these are specifically defined under the SNA. Because of this, it was important to impute this information in order to reduce the micro-macro gaps.

25. In addition, the remaining gaps were eliminated to arrive at distributive results aligned with national accounts data. The way this alignment is carried out could also have a significant impact on distributional outcomes.

26. The methodology of the EG-DNA group describes four methods for micro-macro alignment:

- (a) Simple calibration method: This consists of applying the same adjustment coefficient (total macro/total micro) to all households;
- (b) indirect method based on related variables: it is based on applying the distribution of a certain related variable, assuming that the corresponding macro variable is distributed in a similar way. For example, the distribution of FISIM on the basis of the distribution of interest received and paid, or of employers' imputed social contributions, according to the distribution of wages and salaries;
- (c) indirect method based on exogenous data: involves the use of exogenous data available at individual or at household level. For example, using socio-demographic information to distribute social transfers in kind, or land registry information to distribute imputed rent;
- (d) aligning without using distributive data of the main aggregates: this consists of assuming the distribution of the different aggregates for those components for which distributive information is not available.

27. The methods used to perform the alignment in Costa Rica were methods (b) and (c) for most of the income components, and method (a) for consumption groups.

D. Step 4: Household grouping based on reference microdata

28. Households were grouped according to the adjusted disposable income per unit of consumption (hereinafter, equivalent adjusted disposable income), the gender of the household reference person, and the economic activity of the household reference person.

- Grouping based on equivalent adjusted disposable income.

29. For the distribution by income quintiles, households were grouped based on adjusted disposable income per unit of equivalent consumption¹², in order to account for differences in household size and composition.

30. The procedure consisted of calculating disposable income for each household based on the SNA definition. In addition, the number of equivalent consumption units in each household was obtained, according to the OECD-modified equivalence scale, which gives a value of 1 to the household's reference person¹³; 0.5 to each additional person aged 14 and over; and 0.3 to each child under 14 years of age. Subsequently, the equivalent disposable income per unit of consumption of each household was calculated by dividing its disposable income by the number of units of consumption and grouped by income quintiles (I, II, III, IV and V) so that each quintile represents 20% of households.

- Grouping based on the gender of the household reference person.

¹² The measure in terms of consumption units is related to the fact that two people in the same household achieve economies of scale in consumption, for example, young children consume less than adults.

¹³ The reference person is the one who has the greatest responsibility in decision-making and in general contributes most of the economic resources of the household.

31. Three groups of households were defined: those in which the reference person¹³ is male, female, and those who report that the head of household is shared.

- Grouping based on the economic activity of the household reference person.

32. The grouping was based on the branch of activity of the reference person¹³ according to the Classification of Economic Activities of Costa Rica (CAECR 2011)¹⁴. Table 1 lists the economic activities.

Table 1
Grouping by economic activity

<i>Economic activity</i>	<i>Identification code</i>
Agriculture, forestry and fishing	1
Mining and quarrying	2
Manufacturing	3
Electricity, gas, steam and air conditioning supply	4
Water supply; sewerage, waste management and remediation activities	5
Construction	6
Wholesale and retail trade; repair of motor vehicles and motorcycles	7
Transport and storage	8
Accommodation and food service activities	9
Information and communication	10
Financial and insurance activities	11
Real estate activities	12
Professional, scientific and technical activities	13
Administrative and support t service activities	14
Public administration and defense; compulsory social security	15
Education	16
Human health and social work activities	17
Arts, entertainment and recreation	18
Other service activities	19
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	20
Non-recipients of earned income	NA

Source: BCCR, with information from INEC

¹⁴ INEC developed this classifier as part of a national adaptation of the International Standard Industrial Classification of All Economic Activities (ISIC) revision 4.

E. Step 5. Building indicators relevant to household groups

33. Inequality among households, according to the results of the distributive national accounts, is analyzed in terms of three indicators expressed in terms of consumption units:

- Ratio to the average: This is the ratio of the value of each household group relative to the average household value.

$$\text{Ratio to average}_i = \frac{\bar{X}_i^{CNaj}}{\bar{X}^{CNaj}}$$

- Ratio of the highest to lowest: This is the ratio of the value of the highest household group to the value of the lowest household group.

$$\text{Ratio highest to lowest}_z = \frac{\text{Max}_{tez}\{\bar{X}_i^{CNaj}\}}{\text{Min}_{tez}\{\bar{X}_i^{CNaj}\}}$$

- Disparity index: coefficient of variation (CV) that shows the variation from the average, i.e., the ratio of the standard deviation to the mean.

$$CV_z = \frac{\sqrt{\frac{1}{N} \sum_{iez} [n_t * (\bar{X}_i^{CNaj} - \bar{X}^{CNaj})^2]}}{\bar{X}^{CNaj}} * 100$$

$$\bar{X}^{CNaj} = \frac{1}{N} \sum_{iez} n_t * \bar{X}_i^{CNaj}$$

34. In the above formulas:

X: income/consumption component

z: identifies the household grouping variable

i: identifies each household group

n_t: total consumption units of households in group *i*

N: consumption units in the population

\bar{X}_i^{CNaj} : national accounts value adjusted by consumption unit for group *i*

\bar{X}^{CNaj} : national accounts value adjusted by consumption

35. The greater the CV value, the greater the disparity of the variable; the lower the CV, the greater the homogeneity (less disparity) in the variable. For example, if A has a CV of 40% and B has a CV of 60%, it means that B is more unequal than A or is more heterogeneous.

36. In addition, when analyzing the disparity index above, two elements should be considered:

- It assumes that each household receives (or spends) the average income (or expenditures) of its group, i.e., the disparity within a household group is assumed to be zero, implying that the index underestimates household disparities. This issue is of minor importance when considering the classification by income quintiles since households are classified according to their income level.
- The results depend on the structure of the households in each country. Consequently, divergences in the CV between two countries can be explained by two factors: differences between countries in the extent to which a given group of households deviates from the average; and differences between countries in the share of household groups in the total.

37. The calculated indicators are derived from recommendations of the EG-DNA expert group¹⁵, which allows comparisons to be made between two points in time for a country and between countries.

IV. Distribution by household income quintile

A. Income

38. Household income can be grouped into the following categories: income from house rental, income received by owners of unincorporated household enterprises, income from compensation of employees, net property income, and transfers. On the other hand, some components that affect household income are taxes on income and wealth and social contributions.

39. Table 2 shows the amounts in millions of Costa Rica Colon (CRC) of the components of gross and adjusted disposable income of households for 2018, as well as the average value per household.

Table 2
Household disposable income components 2018

(In millions CRC)

<i>Components of income</i>	<i>Total</i>	<i>Average Household¹</i>
(+) Operating surplus from actual and imputed rentals	2,303,374	1.5
(+) Mixed income	3,168,108	2.1
(+) Compensation of employees	16,140,559	10.5
(+) Net property income	3,724,514	2.4
(-) Current taxes on income and wealth	676,994	0.4
(-) Net social contributions	4,698,606	3.1
(+) Social benefits other than social transfers in kind	2,519,491	1.6
(+) Other current transfers (net)	1,669,332	1.1
Gross disposable income	24,149,778	15.7
(+) Social transfers in kind	4,301,268	2.8
Adjusted gross disposable income	28,451,047	18.5

Note: ¹It is calculated as the total amount divided by the number of households according to ENIGH 2018 (1,538,704 households).

Source: BCCR, with information from the 2018 integrated economic accounts

40. The distribution of the components of adjusted disposable income, household consumption and savings according to equivalent adjusted disposable income quintile, hereinafter equivalent income quintile, is presented below. Indicators that relate each quintile to the average for the total number of households are included, as well as the average value

¹⁵ Fesseau, M. and M. Mattonetti (2013), "Distributional Measures Across Household Groups in a National Accounts Framework: Results from an Experimental Cross-country Exercise on Household Income, Consumption and Saving", OECD Statistics Working Papers, No. 2013/04, OECD Publishing, Paris.

<http://dx.doi.org/10.1787/5k3wdjqr775f-en>.

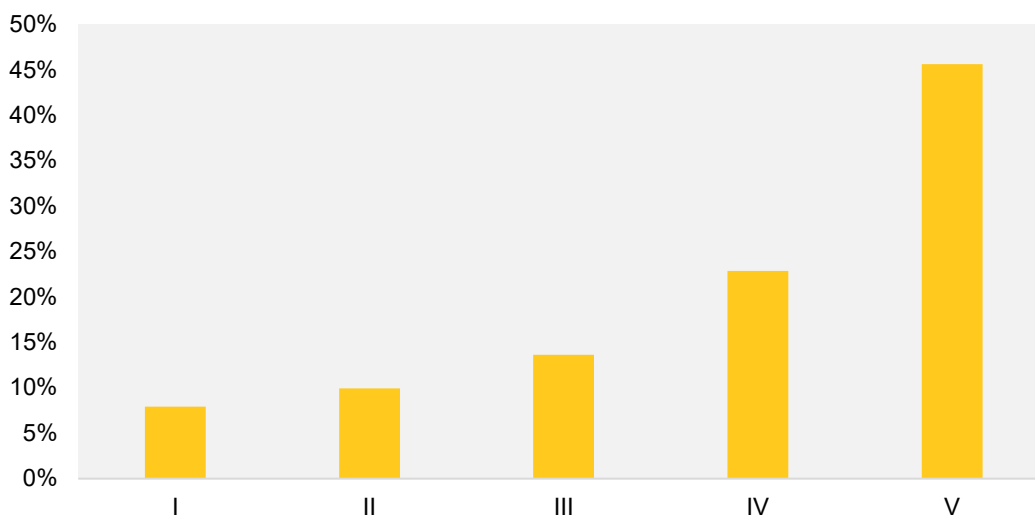
of the highest to the lowest quintile, CV for Costa Rica and the comparison with other countries. These relationships allow us to measure the inequality in our country.

1. Rental income (operating surplus, gross)

41. The gross operating surplus in the household sector comes from the real and from the imputed rental¹⁶ on owner-occupied housing, for which all value added equals operating surplus.

Figure 2

Operating surplus, gross (Percentage distribution)



Note: According to equivalent income quintile
Source: BCCR, with information from INEC

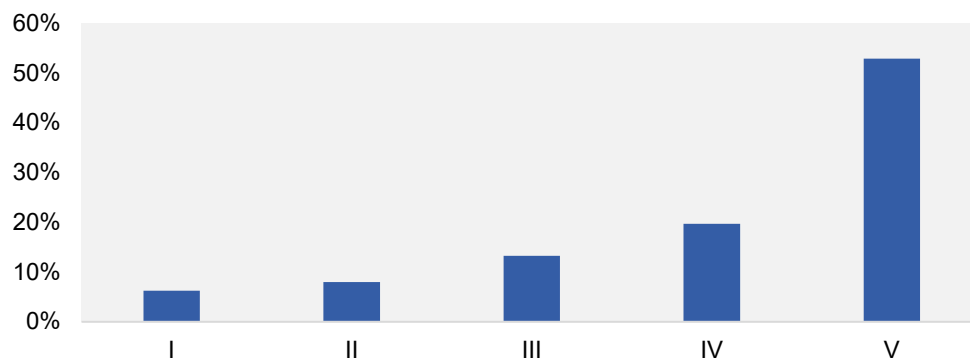
42. House rental income in 2018 amounted to CRC 2,303,374 million, of which the richest households (fifth quintile) accounted for 46% of the total, while those with the lowest incomes (first quintile) accounted for 8% (figure 2). The degree of inequality is evident, with the average of the fifth quintile being around 2.4 times higher than the global average, in terms of units of equivalent consumption.

2. Mixed income

43. Mixed income is generated by unincorporated enterprises owned by households, where the owner or members of the household provide labor, and the element of implicit compensation cannot be identified separately from the profits obtained in the production process.

¹⁶ The 2008 SNA specifies that imputed rental on owner-occupied housing should be included in the production boundary and form part of household consumption. (See §20.64).

Figure 3
Mixed income, gross
 (Percentage distribution)



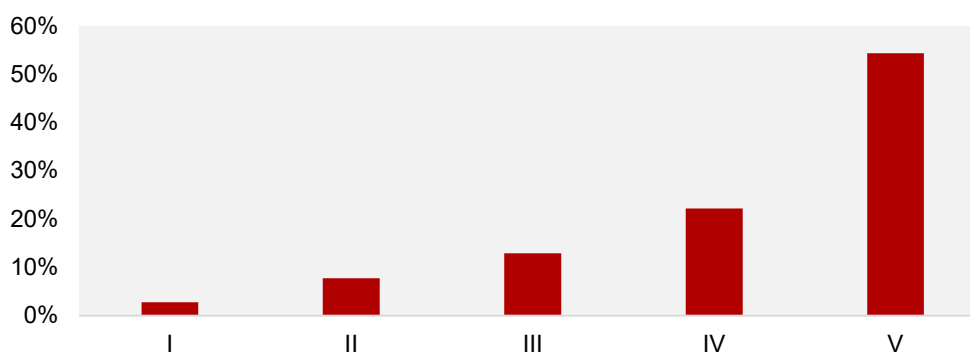
Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

44. The gross mixed income of households in 2018 reached the sum of CRC 3,168,108 million, of which the richest 20% of households received 53%, while the 20% with the lowest incomes received only 6%, in addition the cumulative income of quintiles I to IV (47%) does not reach quintile V (figure 3). In terms of equivalent consumption units, the average for the fifth quintile was 2.8 times higher than the global average, revealing a high disparity between households.

3. Compensation of employees

45. Compensation of employees presents the wages and salaries payable in cash and in kind and incorporates social insurance contributions payable by employers.

Figure 4
Compensation of employees
 (Percentage distribution)



Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

46. The compensation of employees in 2018 was CRC 16,140,559 million. The richest households (fifth quintile) accounted for 54%, while those with the lowest incomes (first quintile) accounted for only 3% (figure 4), so that compensation of employees is among the most unequal components of income. The average of the fifth quintile is about 2.9 times higher than the global average, in terms of units of equivalent consumption. In turn, on average, the richest households receive a remuneration 21.1 times higher than that of the poorest.

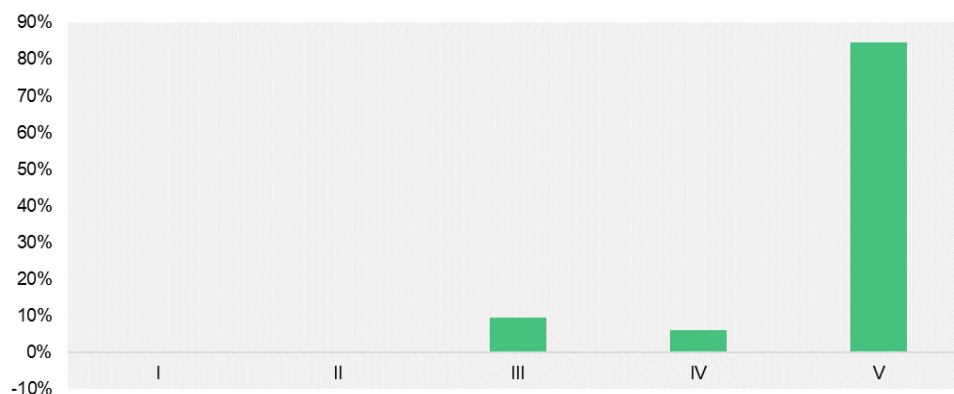
4. Net property income received

47. The net property income received by households is mainly withdrawal from income of quasi-corporations¹⁷, dividends, income associated with pension entitlements¹⁸ and from investments in investment funds shares.

Figure 5

Net property income received

(Percentage distribution)



Note: According to equivalent income quintile

Source: BCCR, with information from INEC

48. Property income received by households in 2018 amounted to CRC3,724,514 million, of which the richest households received 84%, while those with lowest incomes received just 0.3% (figure 5). This component presents the highest inequality with respect to the previous components, with the average of the fifth quintile being around 5.3 times higher than the global average, in terms of units of equivalent consumption. The CV reached a value of 208% compared to 97.2% for the compensation of employees, which indicates that property income is much more heterogeneous than the compensation of employees.

5. Current taxes on income and wealth

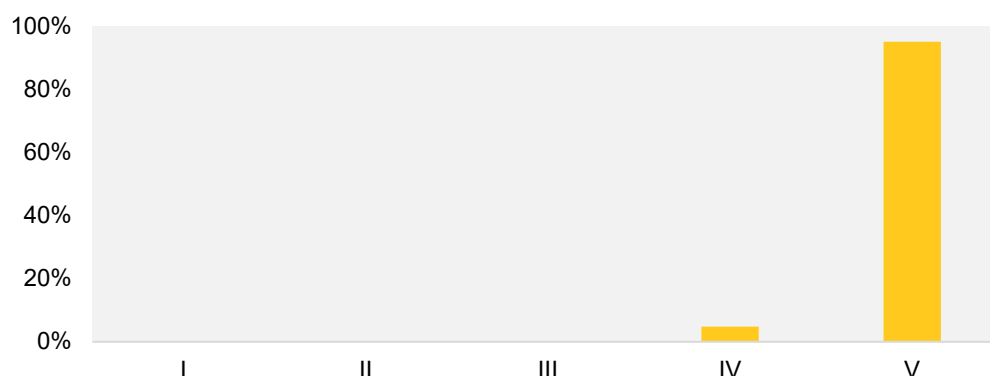
49. The current taxes on income and wealth¹⁹ paid by households in 2018 was CRC 676,994 million, with households in the highest quintile paying 95% and the rest (from quintile I to IV) 5% (figure 6). The value ratio of the highest quintile to the global average was 5.1 times, in terms of equivalent consumption units.

¹⁷ A quasi-corporation is an unincorporated company owned by households that has sufficient information to compile the complete sequence of accounts and is managed as if it were a separate company and whose de facto relationship with its owner is that of a corporation with its shareholders.

¹⁸ The central framework of national accounts does not provide for pension rights associated with social security funds (Caja Costarricense del Seguro Social (Costa Rican Social Security Fund), Junta de Pensiones y Jubilaciones del Magisterio Nacional (National Teachers' Pensions and Retirement Board), Régimen de Capitalización Colectiva del Magisterio Nacional (National Teachers' Collective Capitalization Scheme), Fondo de Pensiones y Jubilaciones del Benemérito Cuerpo de Bomberos (Pension and Retirement Fund of the Meritorious Fire Brigade) and Fondo de Pensiones y Jubilaciones del Poder Judicial (Pension and Retirement Fund of the Judiciary).

¹⁹ Among the most notable for Costa Rica are income tax, and property taxes and transfers.

Figure 6
Current income taxes
 (Percentage distribution).

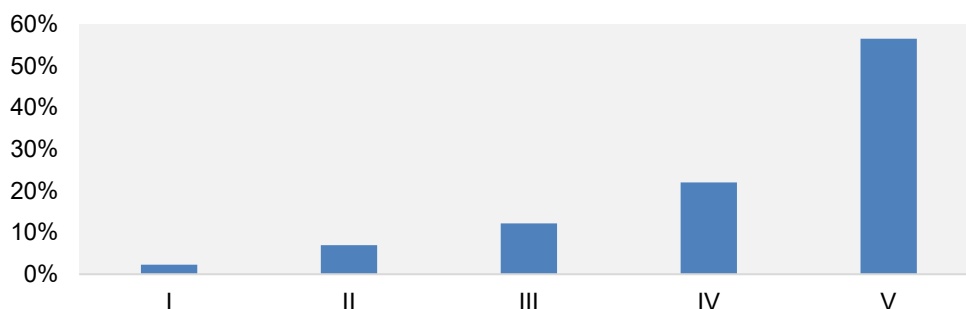


Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

6. Net social contributions

50. Social contributions are actual or imputed payments to the social security system, these contributions can be paid by employers on behalf of employees and are part of the compensation of employees. In turn these contributions are recorded as payments made by the same households together with those made by households as employers.

Figure 7
Net social contributions
 (Percentage distribution)



Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

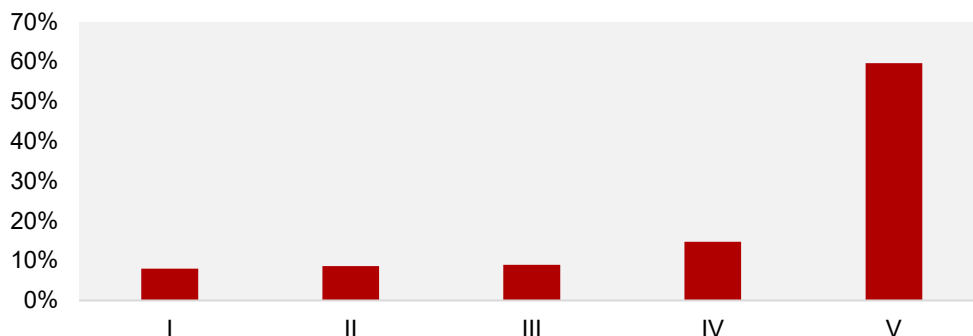
51. The net social contributions of households in 2018 reached the sum of CRC 4,698,606 million, of which there is a progressive increase in the percentage distribution according to quintile of equivalent income, where the richest households (fifth quintile) concentrated 57%, households of the fourth and third quintile 34%, while those with the lowest incomes (first and second quintile) 9% (figure 7). The value ratio of the highest quintile to the global average was 3.0 times, in terms of units of equivalent consumption.

7. Social benefits other than social transfers in kind

52. Social benefits are the current transfers received by households to meet circumstances such as illness, retirement, among others²⁰.

²⁰ The national pension system is based on four pillars: the compulsory contributory pillar, the compulsory complementary pillar, the voluntary complementary pillar and the non-contributory pillar, which give rise to the payment of social benefits to households, as well as sickness and maternity benefits.

Figure 8
Social benefits
 (Percentage distribution)



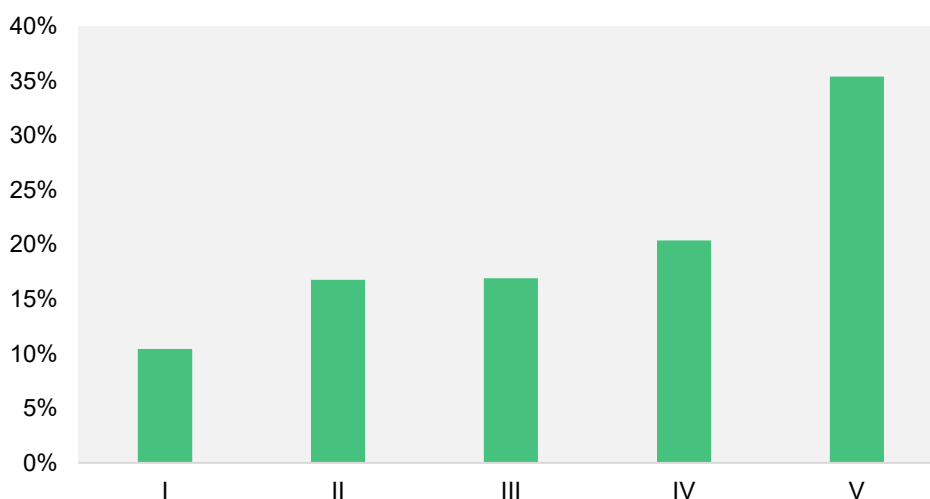
Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

53. Social benefits other than social transfers in 2018 amounted to CRC 2,519,491 million, of which the richest households (fifth quintile) accounted for 60%, while those with the lowest incomes (first and second quintiles) accounted for 17% (figure 8). The distribution from the first to the fourth quintile is less unequal, however, the value ratio of the highest quintile to the global average was 3.2 times higher, in terms of units of equivalent consumption.

8. Other net current transfers

54. This component includes current transfers between households and other sectors of the economy or the rest of the world, for example, remittances, current transfers made by NPISHs to households, current transfers made by the general government sector to households such as scholarships for education.

Figure 9
Other net current transfers
 (Percentage distribution)



Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

55. Other net current transfers from households in 2018 reached an amount of CRC 1,669,332 million, of which the richest households (fifth quintile) accounted for 35%, households in the fourth and third quintiles reached 37%, while those with lower incomes (first and second quintiles) accounted for 27% (figure 9). Lower inequality is observed in this component of household disposable income. In fact, its CV is lower (45.9%) when compared

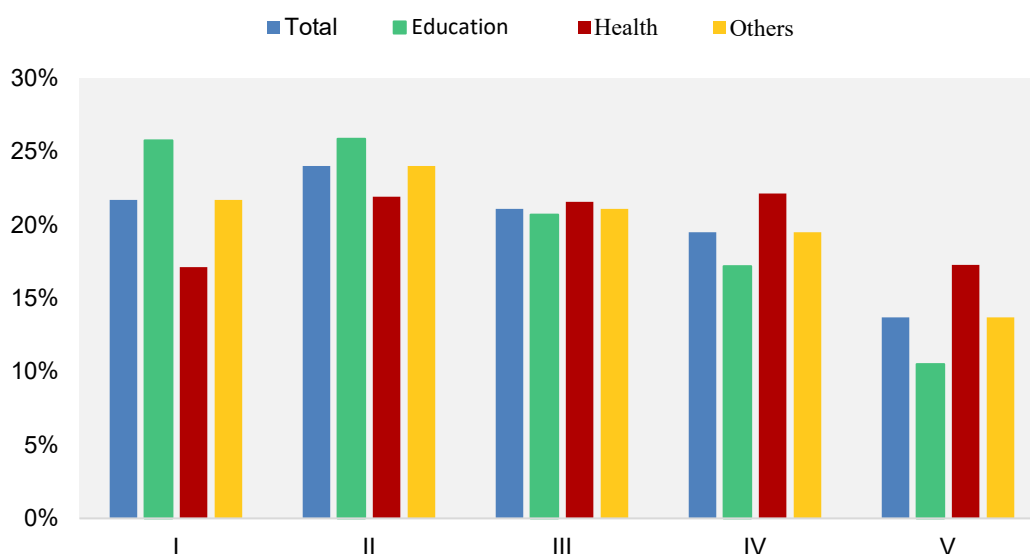
to the previous ones. Meanwhile, the value ratio of the highest quintile to the global average was 1.9 times, in terms of units of equivalent consumption.

9. Social transfers in kind

56. Social transfers in kind includes the goods and services provided to households by the government sector and NPISHs, the main examples being public education and health services. Such services are provided in kind in order to ensure that the needs of the population are met.

Figure 10

Social transfers in kind (Percentage distribution)



Note: According to equivalent income quintile

Source: BCCR, with information from INEC

57. In 2018, social transfers in kind amounted to CRC 4,301,268 million, of which 45% were related to public education, 39% to public health services and the remaining 16% to other transfers associated with NPISHs. On the other hand, the distribution by quintile of equivalent income shows a concentration of 67% in quintiles I to III, and the remaining 33% corresponds to IV and V (figure 10). When analyzing the distribution according to type of social transfer in kind, it is observed that education has a concentration of 72% in the lowest quintiles (from I to III) while health shows 61%, that is, households with higher incomes use public health services more than public education services. In addition, the distribution of other social transfers in kind was more homogeneous. In general terms, there is less inequality in the distribution of social transfers in kind by quintile, when compared with other variables, the ratio of quintile V to the global average is 0.7 times, in terms of units of equivalent consumption.

58. In addition, the CV of social transfers in kind is the lowest of all the components of disposable income (14.1%), reflecting the homogeneity in the distribution of the variable.

10. Disposable Income

59. Households adjusted gross disposable income shows the maximum value of final consumer goods and services that a household can afford to consume without the need to reduce its savings, dispose of other assets, or increase liabilities. In addition, it includes social transfers in kind, while gross disposable income excludes them.

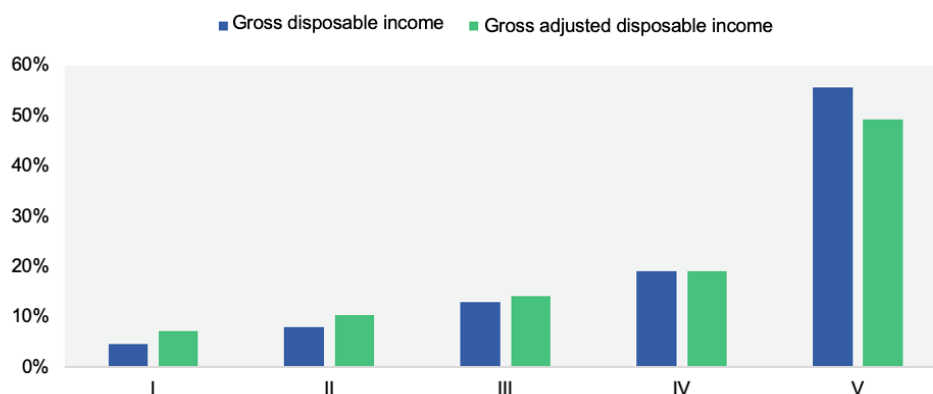
60. Gross disposable income and adjusted gross disposable income in the highest household quintile accounted for 56% and 49% of the total, respectively, while for the lowest income quintile (quintile I) it was 5% and 7% respectively (figure 11). Households in the lowest quintile showed a higher share of adjusted disposable income with respect to

disposable income, while households in higher incomes (quintile V) decreased their share, due to the incorporation of social transfers in kind. It is also observed that the share within the total gross and adjusted gross disposable income of households according to each income quintile increases from the lowest to the highest.

61. The degree of inequality in gross and adjusted gross disposable income is notorious, with the average of the fifth quintile being around 3.0 and 2.6 times respectively, higher than the global average, in terms of units of equivalent consumption. However, it is worth highlighting the importance of social transfers in kind, which contribute to reducing inequality.

Figure 11

Disposable income
(Percentage distribution)



Note: According to equivalent income quintile
Source: BCCR, with information from INEC

B. Final consumption

62. Table 3 shows the amounts in millions CRC of household final consumption expenditure for 2018 according to purpose and the average consumption expenditure per household. These were distributed to household income quintile according to the adjusted disposable income per unit of equivalent consumption.

Table 3
Household final consumption expenditure 2018
(In millions CRC)

<i>Consumption according to purpose to</i>	<i>Total</i>	<i>Average Household¹</i>
Food and non-alcoholic beverages	5,011,787	3.3
Alcoholic beverages, tobacco and narcotics	372,132	0.2
Clothing and footwear	706,129	0.5
Housing, water, electricity, gas and other fuels	3,553,739	2.3
Furnishings, household equipment and routine household maintenance	1,229,740	0.8
Health	1,317,498	0.9
Transport	3,123,851	2.0
Information and communication	712,324	0.5

<i>Consumption according to purpose to</i>	<i>Total</i>	<i>Average Household¹</i>
Recreation, sport and culture	1,955,842	1.3
Education services	1,023,420	0.7
Restaurants and accommodation services	1,063,040	0.7
Other goods and services	2,901,223	1.9
Final Consumption Expenditure	22,970,726	14.9
Actual Final Consumption Expenditure	27,271,995	17.7

Note: ¹Calculated as the total amount divided by the number of households according to ENIGH 2018 (1,538,704 households)

Source: BCCR, with information from the 2018 integrated economic accounts

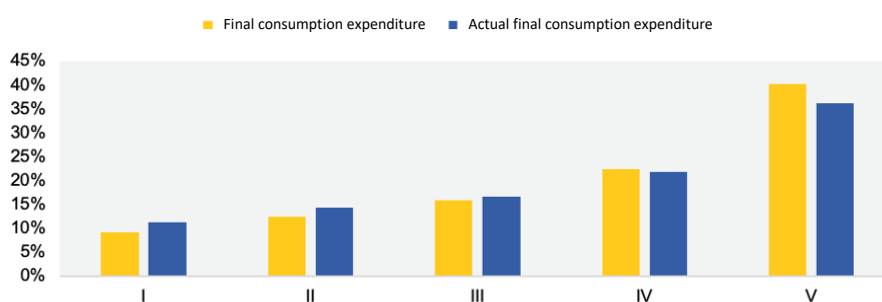
63. Household final consumption expenditure in 2018 amounted to CRC 22,970,726 million, of which the richest households (quintile V) accounted for 40%, while those with the lowest incomes (quintile I) accounted for 9% (figure 12). The ratio of the highest quintile to the global average was 2.2 times, in terms of units of equivalent consumption. This means that the distribution of consumption is less unequal compared to that of households gross and adjusted gross disposable income.

64. When comparing the distribution of final consumption expenditure with actual consumption expenditure (including social transfers in kind), households in the fifth quintile decrease their share of the total, while the rest of the quintiles increase it. At the same time, the value ratio of the highest quintile to the global average decreases to 1.9 times, in terms of units of equivalent consumption.

Figure 12

Household consumption

(Percentage distribution)

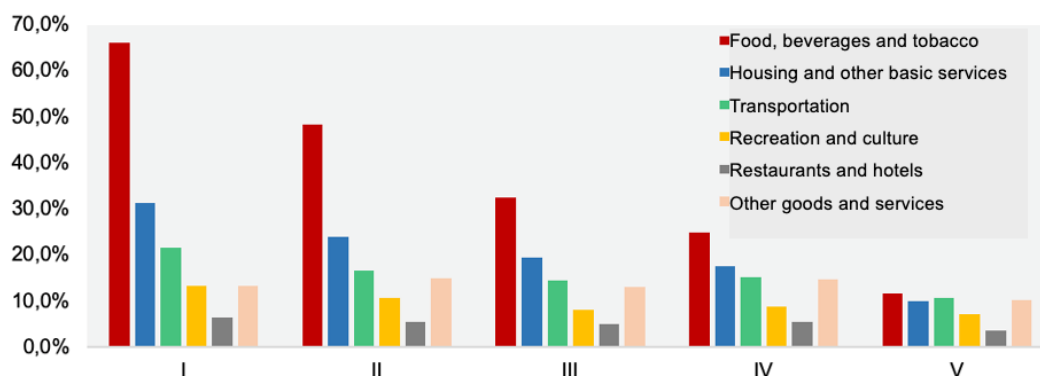


Note: According to equivalent income quintile

Source: BCCR, with information from INEC

65. In 2018, the gross disposable income of households in the highest quintile amounted to CRC 13,424,672 million, while that of the lowest quintile was CRC 1,103,849 million. Expenditure on basic consumer items such as food and beverages, housing and utilities, and transportation by households in the highest quintile was about 32% of their gross disposable income, while households in the lowest quintile consumed 119% of their gross disposable income on these types of goods and services (figure 13).

Figure 13
Consumer spending for selected product groups
 (Percentage of gross disposable income)

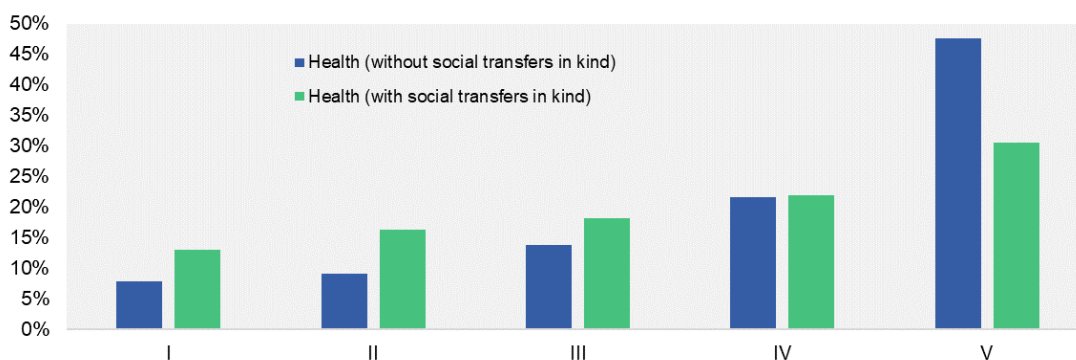


Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

66. Household health expenditure was CRC 1,317,498 million in 2018, of which the fifth quintile consumed 48% of the total and the lowest quintile 8% (figure 14), however, when incorporating health expenditure derived from social transfers in kind (CRC 1,697,612 million) the inequality in the distribution by quintiles reduces (the highest quintile represents 31% of the total and the lowest 13%).

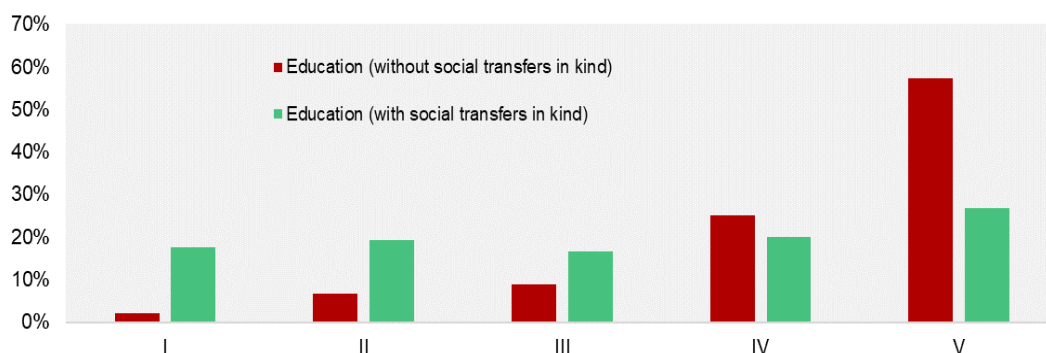
67. Household spending on education was CRC 1,023,420 million in 2018, of which the fifth quintile spent 57% and the lowest quintile 2% (figure 15). As expected, the effect of in-kind social transfers associated with education (CRC 1,922,382 million) is similar to that of health, the distribution by quintiles shows a significant improvement (the highest quintile represents 27% of the total and the lowest 18%).

Figure 14
Health expenditure
 (Percentage distribution)



Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

Figure 15
Education expenditure
 (Percentage distribution)



Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

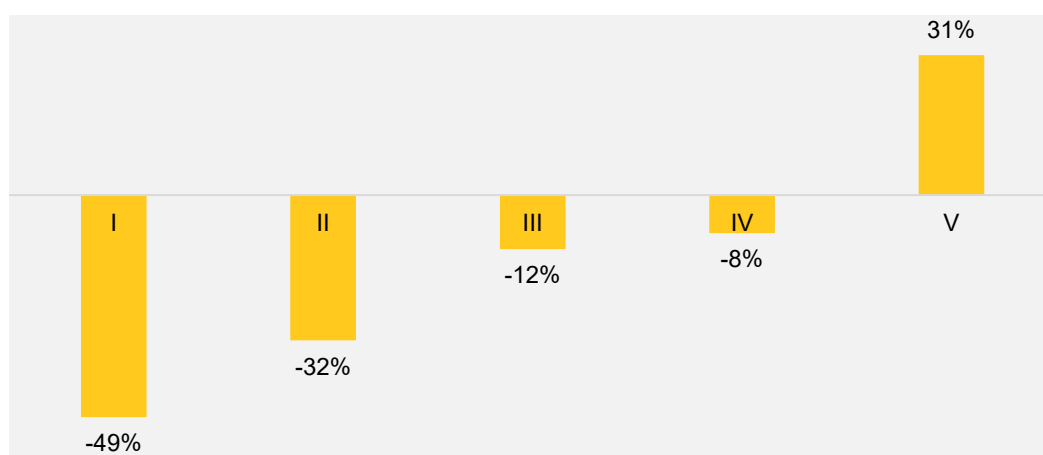
68. The greatest inequality among household equivalent income quintiles in their consumption was unsurprisingly in the consumption of more "luxurious" goods, such as vehicles, as well as in (private) education and insurance services, while in-kind social transfers contributed to improvement in terms of equality.

C. Savings

69. Savings correspond to the difference between disposable income and actual final consumption plus the change in household net worth in pension funds (adjustment for changes in pension entitlements).

70. In 2018, the gross savings of all households was CRC 1,468,093 million, and the savings rate calculated as savings with respect to adjusted disposable income was 5.2%. The savings rate calculated by equivalent income quintile showed that all are negative (their spending exceeds income) except for the fifth quintile (figure 16).

Figure 16
Savings rate
 (Savings as a percentage of adjusted disposable income)



Note: According to equivalent income quintile
 Source: BCCR, with information from INEC

71. Although these results require further analysis to understand their causes, as they section below will show, it is not a phenomenon exclusive for Costa Rica but exists in other economies.

V. Comparison of Costa Rica's National Distributive Accounts with Other Countries

72. Indicators for Costa Rica compared with a sample of 12 countries²¹ that relate each income group to the average, high-to-low ratios, and CV, in terms of units of equivalent consumption are presented below.

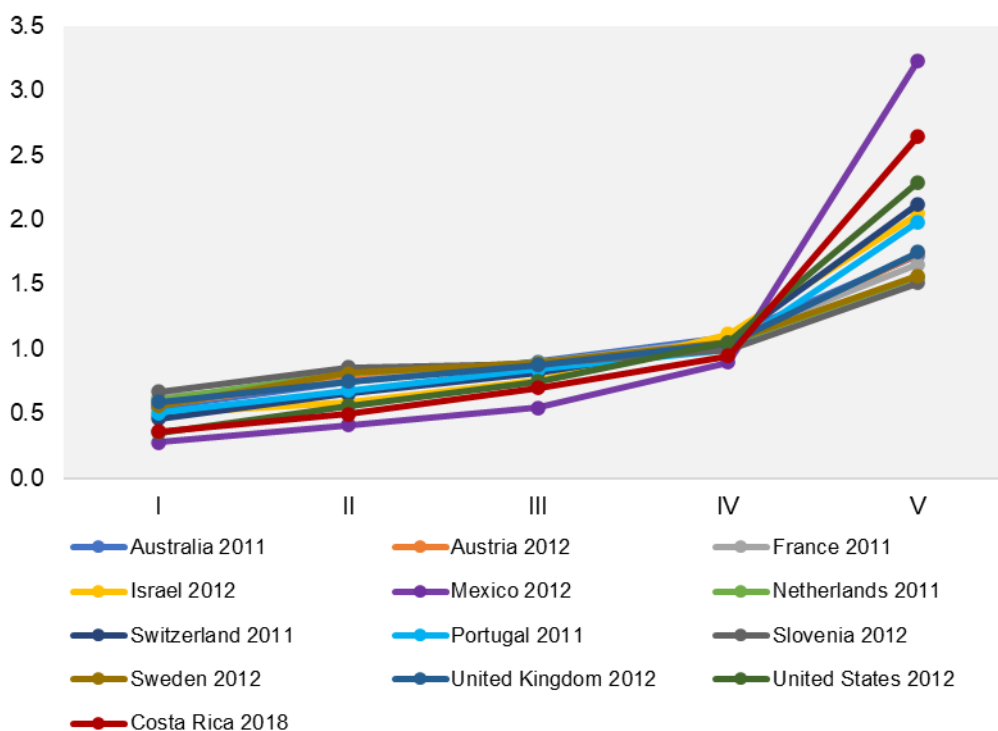
A. Ratio to average

1. Adjusted disposable income

73. Figure 17 presents disposable income adjusted by income quintile relative to the average for each country, in terms of units of consumption equivalent. In Costa Rica, the average of the fifth quintile is 2.6 times higher than the total average of the country, these results follow a similar trajectory in the other countries, however, as a measure of inequality it is only below Mexico (country with the highest ratio of the fifth quintile to the average). The country with the lowest ratio is Slovenia, followed by Sweden. In addition, there is a great similarity in the results of the first to fourth quintile between Costa Rica and the United States, however, when incorporating the highest income quintile, Costa Rica is more unequal than the United States.

Figure 17

Adjusted disposable income. Relative position of each group of households with respect to the average



Note: According to quintile of equivalent disposable income

Source: BCCR, with information from the second exercise of the EG-DNA group

2. Consumption

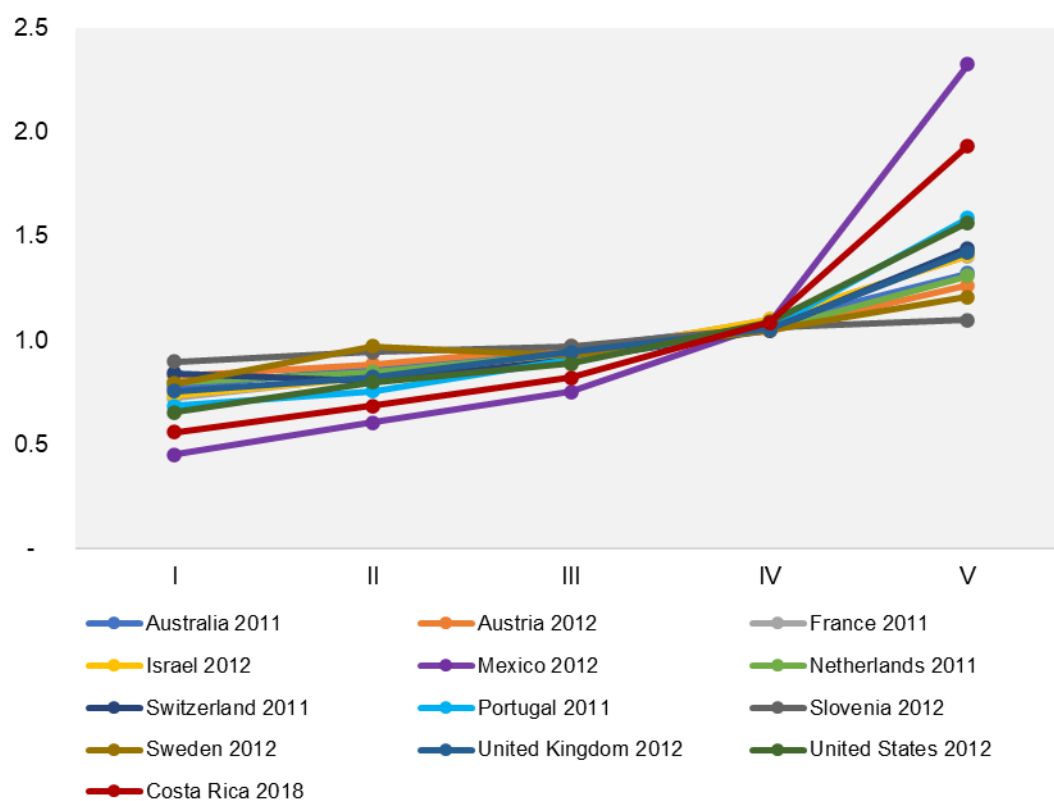
74. In Costa Rica, the average effective final consumption of the fifth quintile is 1.9 times higher than the total average of the country, the results are very similar in other countries. In all countries, the disparities between the quintiles are smaller for consumption compared to

²¹ The countries under consideration participated in the OECD's second distributive measures exercise conducted in 2017.

income. As a measure of inequality Costa Rica is only below Mexico (country with the highest ratio of the fifth quintile to the average). On the other hand, Slovenia and Sweden are the countries with the lowest ratio (figure 18).

Figure 18

Actual final consumption. Relative position of each group of households with respect to the average



Note: According to quintile of equivalent disposable income

Source: BCCR, with information from the second exercise of the EG-DNA group

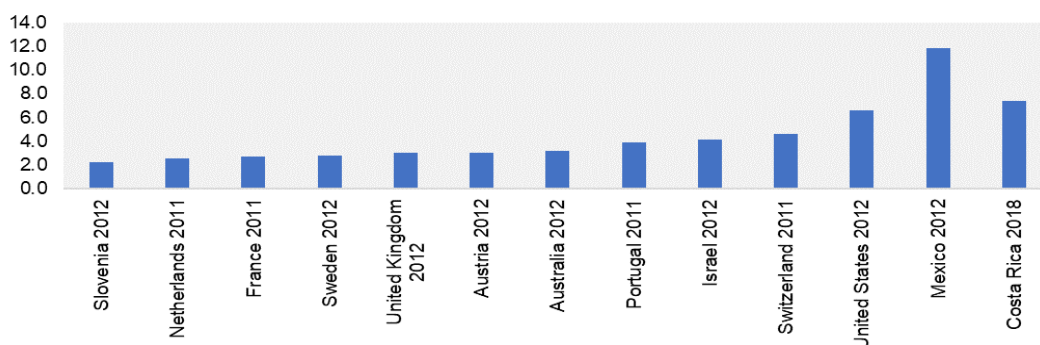
B. Ratio of the highest to lowest

1. Adjusted disposable income

75. Figure 19 shows the relationship between the value of the highest group of households and the lowest value, in the case of Costa Rica, on average, the richest households receive an adjusted disposable income²² 7.4 times higher than that received by the poorest. Mexico shows a higher proportion (11.8 times), while Slovenia and the United States range between 2.3 and 6.6 times.

²² It corresponds to gross disposable income plus social transfers in kind.

Figure 19

Adjusted disposable income. Relative position of the fifth quintile to the first quintile

Note: According to equivalent income quintile

Source: BCCR, with information from the second exercise of the EG-DNA group

2. Consumption

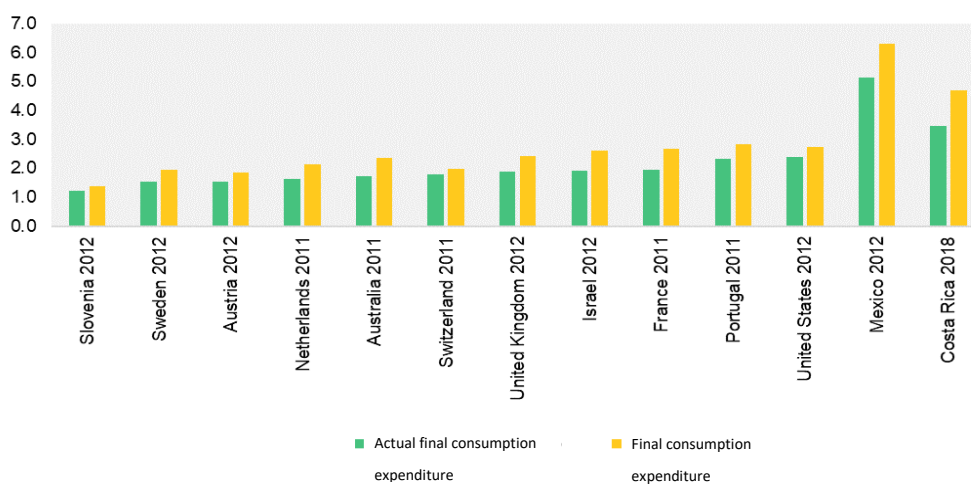
76. On average, the richest households spend between 4.7 and 3.5 times more on final and actual consumption (final consumption plus social transfers in kind) than the poorest. Mexico shows a higher proportion than Costa Rica, 5.1 and 6.3 times respectively. Slovenia and Sweden have the lowest ratios (figure 20).

77. Once social transfers in kind are incorporated into consumption, Costa Rica and Mexico reduce by more than one the inequality between the richest and the poorest.

Figure 20

Final consumption expenditure and actual final consumption

Relative position of the income quintile with the highest consumption to the one with the lowest consumption



Note: According to equivalent income quintile

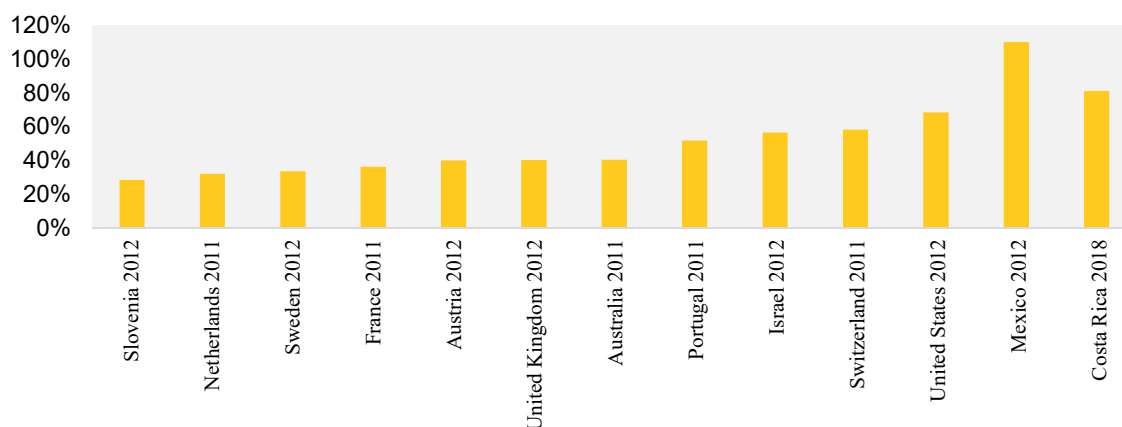
Source: BCCR, with information from the second exercise of the EG-DNA group

C. Coefficient of variation

1. Adjusted disposable income

78. Figure 21 shows the highest levels of disparity (variation with respect to the average) of disposable income adjusted per unit of consumption and the great difference between countries. The index in Mexico reaches 110%, followed by Costa Rica with 81%, while Slovenia showed 28%. Income disparity is 3.9 times greater in Mexico than in Slovenia and only 1.4 times greater than in Costa Rica.

Figure 21
Coefficient of change in adjusted disposable income

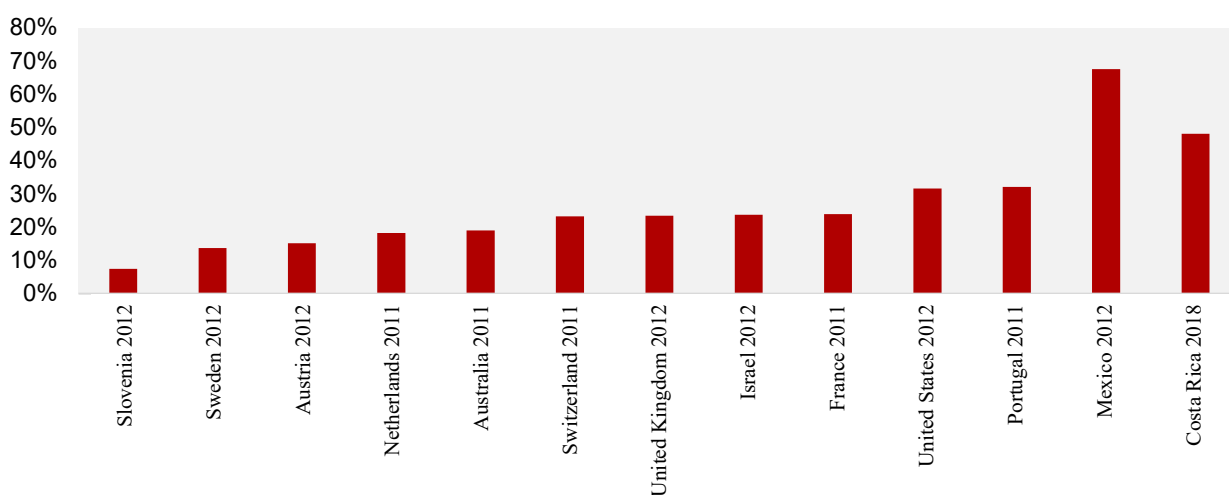


Note: According to quintile of equivalent income per unit of consumption
Source: BCCR, with information from the second exercise of the EG-DNA group

2. Consumption

79. The disparity in actual final consumption²³ in majority of the countries ranges from 7% in Slovenia to 32% in Portugal, Mexico reaches 68% and below is Costa Rica with 48%. The consumption disparity is 4.3 times greater in Portugal compared to Slovenia, Mexico and Costa Rica is 9.0 and 6.4 times greater.

Figure 22
Coefficient of variation of actual final consumption.



Note: According to quintile of equivalent income per unit of consumption
Source: BCCR, with information from the second exercise of the EG-DNA group

3. Savings

80. The distribution of savings shows greater differences between countries compared to adjusted disposable income and consumption. Seven of the compared countries (Australia, Austria, France, the Netherlands, Switzerland, Slovenia and the United Kingdom) showed negative savings rates only for the first income quintile. Israel and the United States had negative savings rates in the first three income quintiles, while Mexico and Costa Rica showed negative savings rates for all quintiles except the highest (fifth quintile). France stands out for showing smallest inequality in savings rates among quintiles (figure 23).

²³ It includes social transfers in kind.

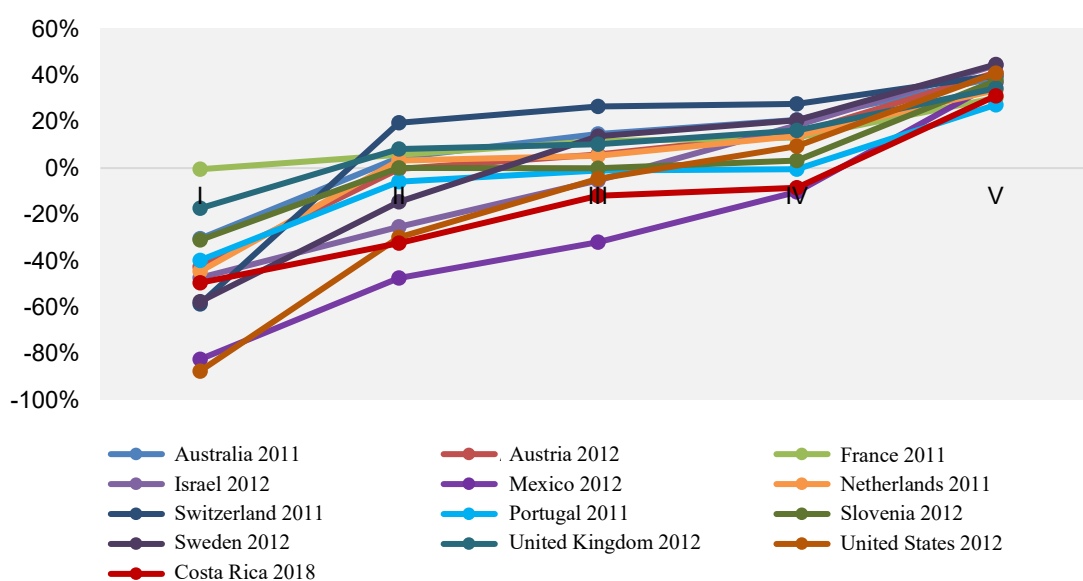
81. The most negative savings rates in the first quintile were reported in the United States, Mexico, Switzerland and Sweden, while the highest savings rates in the richest quintile were in Sweden and Israel.

82. In Mexico and Costa Rica, the richest households, on average, save more than 34% of their annual adjusted disposable income, while the rest of the households decrease their savings, that is, on average they consume more than their annual income during the year.

83. In this regard, it is important to clarify that the fact of consuming more than the income received in a year does not necessarily indicate that households increase their indebtedness, because they can use financial assets accumulated (such as savings deposits) in previous years to finance their current consumption. Additionally, a negative savings rate for a quintile does not mean that every household belonging to the quintile has a negative savings rate since it is an average of the quintile.

Figure 23

Savings as a percentage of adjusted disposable income.



Note: According to equivalent income quintile

Source: BCCR, with information from the second exercise of the EG-DNA group

VI. Distribution according to gender and economic activity of the household reference person

84. The household reference person apply to the head of the household who is considered as such by others, is the one who has the greatest responsibility in decision-making and, in general, contributes most of economic resources.

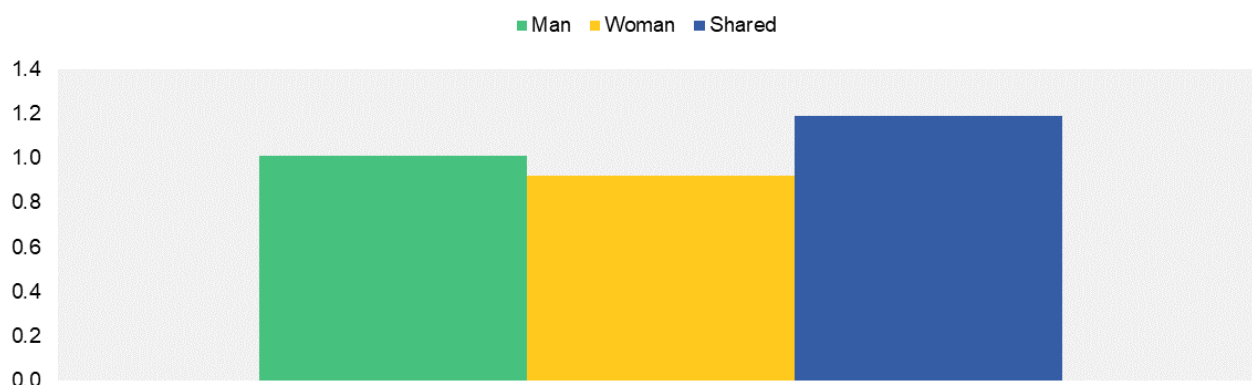
A. Grouping according to gender of the household reference person

85. Three groups of households were defined: those in which the reference person is male; in which is female; and those that report that the responsibility is shared. The results are expressed in terms of units of equivalent consumption.

1. Adjusted disposable income

86. The adjusted disposable income gross of male-headed households accounted for 59% of the total, while female-headed households accounted for 29% and the remaining 12% for co-headed households. The average ratio of each group to the total average is less unequal when compared with the distribution by income quintile (figure 24).

Figure 24

Adjusted disposable income**Relative position of each group of households with respect to the average**

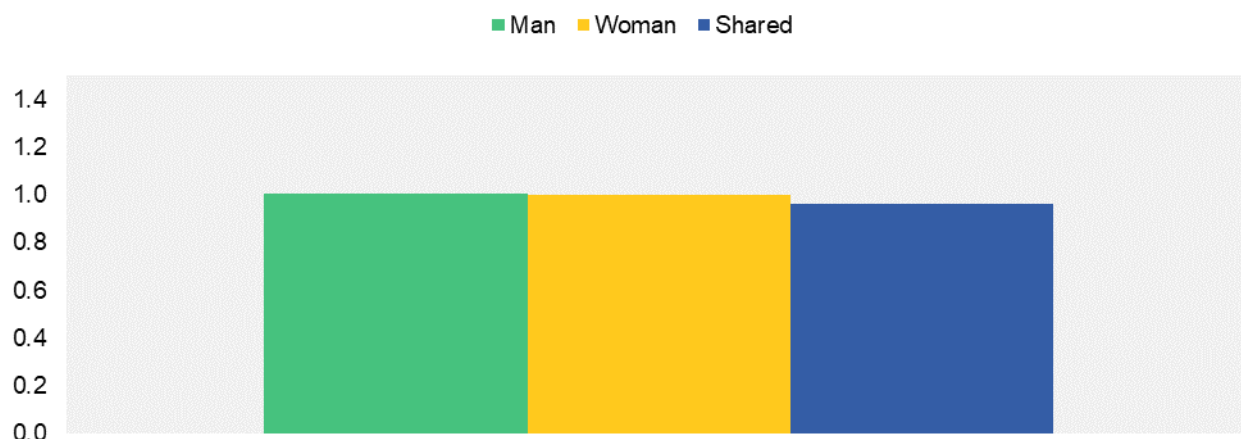
Note: According to the gender of the household reference person

Source: BCCR, with information from INEC

2. Consumption

87. Households headed by men accounted for 58% of the total actual final consumption, 32% for female-headed households, and 10% for households headed with shared responsibility. The disparities in consumption are similar when comparing the average of each group with the total average of households (figure 25).

Figure 25

Actual final consumption**Relative position of each group of households with respect to the average**

Note: According to the gender of the household reference person

Source: BCCR, with information from INEC

3. Savings

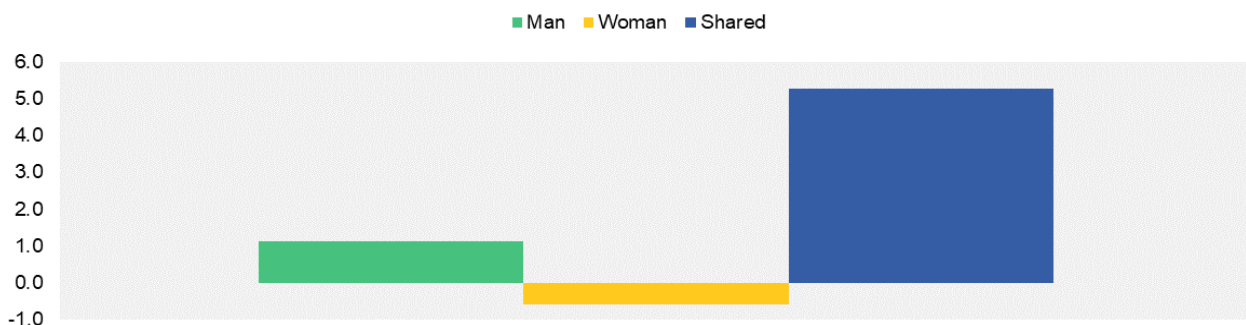
88. The distribution of savings among households according to the gender of the reference person reflects greater inequality than that observed in the distribution of adjusted disposable income and actual final consumption.

89. Male-headed households saved 66% of the total households, while co-headed households accounted for 54% of savings, while female-headed households reported negative saving of - 20%. However, the greatest inequality with respect to the total average of households is presented by the group of households with shared heading, in which the average savings are 5.3 times higher than the total average (figure 26).

Figure 26

Gross savings

Relative position of each group of households with respect to the average



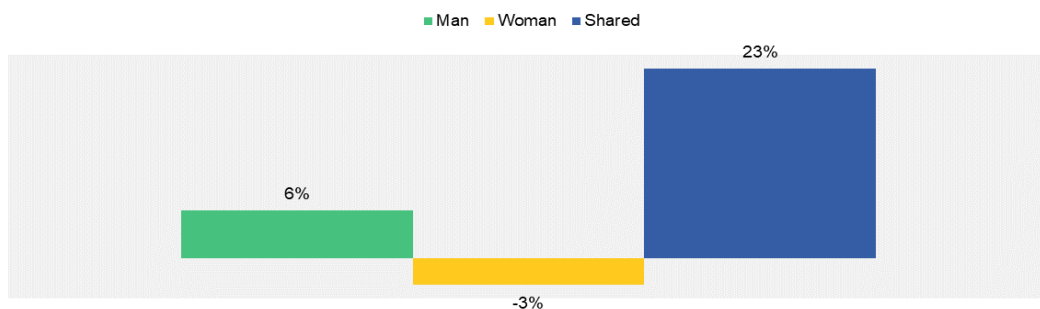
Note: According to the gender of the household reference person

Source: BCCR, with information from INEC

90. In line with the above, the savings rate of households (figure 27) with shared heads is higher (23%) than in households headed by men (6%), while those organized by women had a negative savings rate (-3%). This is due to a lower propensity to consume in households with shared heads compared to those headed by a man or a woman, the latter reflecting a greater propensity to consume.

Figure 27

Savings as a percentage of adjusted disposable income



Note: According to the gender of the household reference person

Source: BCCR, with information from INEC

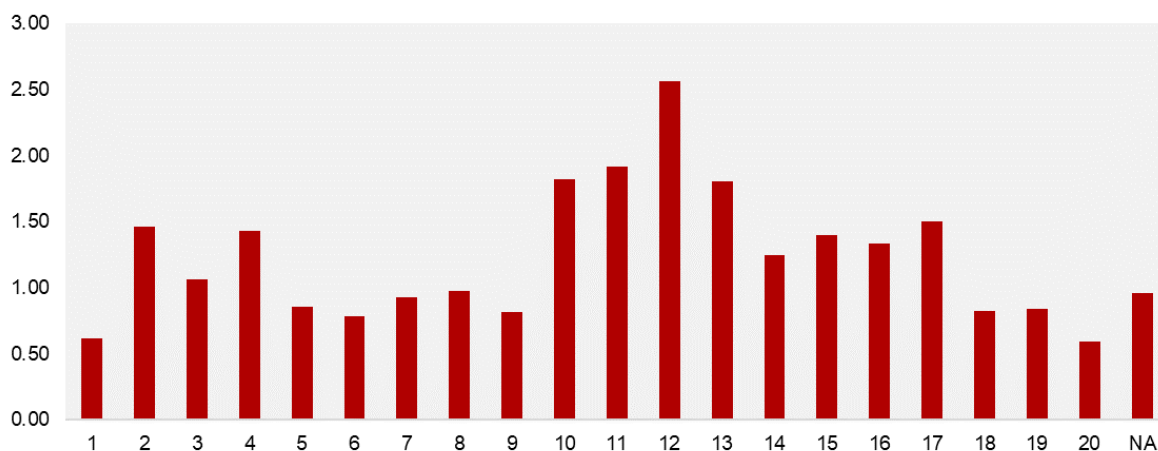
B. Grouping according to the economic activity of the household reference person

91. The grouping by economic activity of the household reference person (according to branch of occupation) was carried out according to the sections of the CAECR 2011 (Table 1). For this grouping, an inequality analysis similar to that carried out for the previous groups of households (adjusted disposable income quintile and gender of the household reference person) was carried out, expressed in terms of consumption units.

1. Adjusted disposable income

92. In 2018 households whose reference person was not a recipient of labour income reached 29% of the total adjusted disposable income, followed by those engaged in trade and repair of motor vehicles (11%), manufacturing (8%) and agriculture (7%). However, in terms of inequality, the average gross disposable income of real estate economic activity (identifier code 12) was 2.6 times higher than the average for all households, while domestic service (identifier code 20) showed the lowest ratio (0.6 times the average income) (figure 28).

Figure 28
Adjusted Disposable Income
Relative position of each group of households with respect to the average

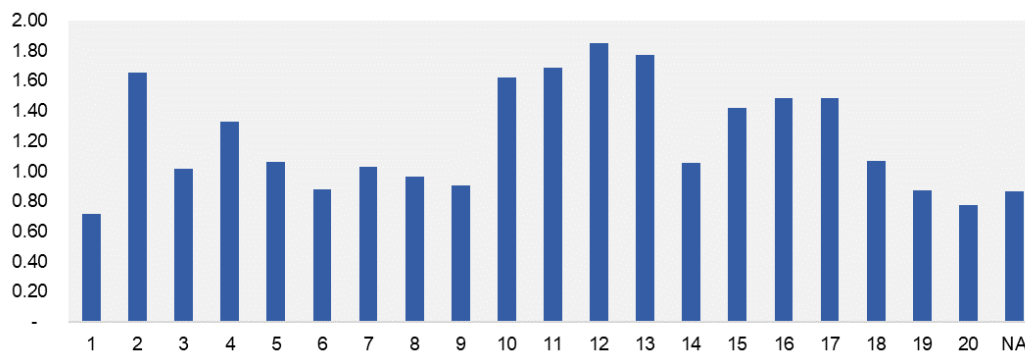


Note: According to the economic activity of the household reference person
 Source: BCCR, with information from INEC

2. Consumption

93. The actual final consumption of households whose reference person was not a recipient of labor income (NA) accounted for 26% of the total, followed by those engaged in the trade and repair of motor vehicles (7) with 12%. In terms of inequality, households where the reference person is engaged in real estate activities (12) stand out, with an average of 1.9 times higher than the country's total average (figure 29).

Figure 29
Effective final consumption
Relative position of each group of households with respect to the average

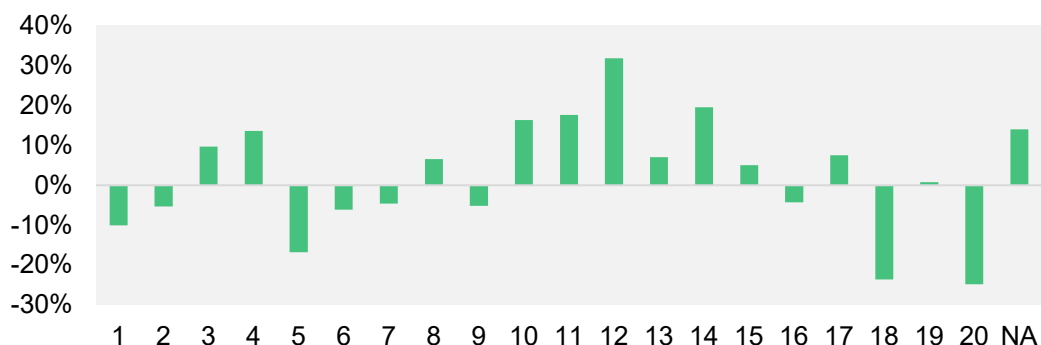


Note: According to the economic activity of the household reference person
 Source: BCCR, with information from INEC

3. Savings

94. When comparing the distribution of adjusted gross disposable income and actual final consumption with savings, the latter presents greater inequality in terms of units of equivalent consumption. Households whose reference person is mainly engaged in real estate activities had the highest savings rate (32%), while domestic service and artistic and recreational activities showed the most negative savings rates (figure 30).

Figure 30
Savings as a percentage of adjusted disposable income



Note: According to the economic activity of the household reference person

Source: BCCR, with information from INEC

VI. Key findings and challenges

A. Conclusions

95. Expanding statistical information to measure inequality is not an easy path, and it represents a challenge, especially when Costa Rica is one of the most unequal countries (measured by the Gini coefficient) among OECD members. For this reason, studies such as the one on distributive measures of national accounts are essential to monitor the economic well-being of specific groups of households. In addition, this type of research responds to the recommendation of the Stiglitz-Sen-Fitoussi Commission to develop a statistical system that complements GDP measurements with data on people's well-being.

96. The distribution of household income, consumption and savings from national accounts provides a link between macroeconomic statistics and distributional analysis according to household surveys. The methodology used to deliver the first experimental results was based on the EG-DNA expert group.

97. The results of the distributive accounts for 2018 show inequalities in income, consumption and savings among households classified according to equivalent income quintile. However, these show a reduction in inequality when analyzing the impact of social transfers in kind (mainly public education and health), the gross disposable income of the richest households is 13.1 times higher than that of lowest-income households, in terms of equivalent consumption units. Once social transfers in kind (adjusted disposable income) are incorporated, this ratio becomes 7.4 times. On the other hand, the ratio of the fifth quintile to the first quintile in the final consumption of households is 4.7 times higher, and, when adding social transfers in kind (actual final consumption) it becomes 3.5 times.

98. The above relationships indicate that income inequality is greater than consumption disparity, resulting in savings rates (savings as a percentage of adjusted disposable income) that are negative for the first four quintiles and positive for the highest income quintile. Savings rates are less and less negative as income increases, however, the difference between quintiles IV and III is much smaller (i.e., they are quite similar) compared to the V quintile. The highest quintile generates greatest inequality, since its savings are 15.7 times higher than the global average savings in terms of equivalent consumption units.

99. Countries such as Israel and the United States showed negative savings rates in the first three income quintiles, while Mexico, like Costa Rica, reflected negative savings rates for all quintiles except the highest (fifth quintile), while France stands out for showing lower inequality among income quintiles. In addition, it was observed that in Costa Rica and Mexico, social transfers in kind have a greater impact on income distribution compared to other countries.

100. About the grouping by gender of the household reference person, the adjusted gross disposable income of households headed by men accounted for 59% of the total, while households headed by women accounted for 29% and the remaining 12% corresponded to households headed by co-heads. On the other hand, the savings rate of households headed by shared heads is higher than that of households headed by men (although the latter had the highest concentration in terms of savings), while those headed by women showed a negative savings rate. This is due to a lower propensity to consume in households with shared heads compared to those headed by a man or a woman, the latter reflecting a greater propensity to consume.

101. The grouping according to economic activity of the household reference person reflected a concentration of 29% of the total adjusted disposable income in the group that did not receive labour income²⁴, followed by those engaged in trade and repair of motor vehicles (11%), manufacturing (8%) and agriculture (7%). The highest savings rate was generated by real estate activity, as domestic services was the most negative.

102. The statistics presented above results from an exercise that is still in process of improvement, following updates in the recommendations of the EG-DNA expert group, which aims to develop methodology that allows international comparability. Therefore, the BCCR is willing to receive comments from users on the usefulness of the presented datasets as this will help to assess the social and economic impacts of public policies.

B. Challenges

103. One of the most relevant challenges is the reconciliation between household survey data and national accounts statistics. Examining the reasons for the existing gaps is a priority to assess the distribution according to household income and consumption component. In addition, there are elements in the national accounts that are not included in the microdata and in these cases, it is necessary to make imputations. In order to improve data gaps, we intend to explore the use of administrative records in addition to household surveys.

104. Distributive national accounts rely heavily on the quality of microdata, so it is important that both aggregated data and information sources used for distributional analysis meet the quality standards set for statistical products²⁵, which is why extending the analysis to more granular data is not desirable as it could compromise the accuracy of the results.

105. The BCCR is committed to continuing the research so that distributive measures of household income, consumption and savings can become regular, following an established and internationally comparable methodology. In addition, work is being done to include measures of household net wealth (assets minus liabilities), according to Stiglitz, Sen and Fitoussi (2009). This is relevant given that a household that spends its wealth on consumer goods increases its current well-being, but at the expense of its future well-being and the consequences of this behavior are reflected in the household's balance sheet.

106. Obtaining a comprehensive view of the distribution of income, consumption, savings and wealth is relevant to improve the analysis of inequality and the impact of monetary policy on household's economic decisions. In this respect, a low-income household with above-average wealth is not necessarily more disadvantaged than a middle-income household with no wealth at all. Such measures would tend to reflect people's well-being more accurately.

²⁴ This is because the household reference person is not employed.

²⁵ According to the Costa Rican Code of Good Statistical Practices (INEC 2014): relevance, precision and reliability, timeliness and timeliness, consistency and comparability, accessibility and clarity. https://inec.cr/wwwisis/documentos/INEC/Reglamentos_Institucionales/Codigo_De_Buenas_Practicas_Estadisticas_De_CR.pdf

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