

## Mixed income calculation and their impact on the Costa Rican life-cycle estimation

The purpose of the document is to discuss mixed income calculations and their impact on life-cycle deficit when NIPA data is not available.

Most of the National Statistical Offices, calculates the System of National Accounts, a comprehensive set of accounts of the economic activity such as: the production of goods and services account, the generation of incomes by production, the distribution and redistribution of incomes, and the use of incomes accounts. (SNA, 2008). The operating surplus is “a balancing item in the generation of income account”<sup>1</sup>, and the mixed income concept <sup>2</sup> (UN; 2008) refers to this account balance item but only for unincorporated enterprises owned by households. However, some National Statistical Offices such as the Costa Rican Central Bank do not calculate mixed income, because it requires collecting economic data separated by type of firms.

The net operating surplus in National Transfer Accounts includes the net operating surplus of corporate business and households, both are considered as return to the capital. However, the Costa Rican Central Bank produces data on aggregate operating surplus, without any distinction for mixed income, which is defined in NTA such as the portion of entrepreneurial income which is a return to labor; therefore it is necessary to separate them, for calculating labor income. The labor income is the sum of earnings, fringe benefits and 2/3 of mixed income.

For estimating the mixed income two approaches will be used 1) Central Bank estimations based on subjective criteria of mixed income estimations. 2) calculations from the Income and Expenditure Survey 2004 that collects information about benefits of independent workers in their economic activities.

The Central Bank reported the net operating surplus in 2004 in 2,943,897.62 millions of colones (exchange rate=438 colones/\$), and preliminary calculations of the Central Bank estimated the mixed income in 445,441.85 millions of colones (around 15.13% of the net operating surplus defined here as the sum of household operating surplus, incorporated business operating surplus and mixed income), which is relatively low compared to

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<sup>1</sup> <http://unstats.un.org/unsd/sna1993/tocLev8.asp?L1=7&L2=5>

<sup>2</sup> Mixed income: it is the surplus or deficit accruing from production by unincorporated enterprises owned by households <http://data.un.org/Glossary.aspx?q=mixed%20income>

other American Countries. Accordingly, for Chile, Mexico, Uruguay, US this represent 28%, 39,5%, 38%, 25% respectively.<sup>3</sup>

The main challenge under the second approach is to determine which enterprises should report mixed income according to the survey. Four definitions of unincorporated business based on the Income and Expenditure Survey are included:

- 1) Small enterprises: less than 10 workers. They are probably sharing assets with the owner and liabilities are not clear either.
- 2) Small enterprises: less than 30 workers<sup>4</sup>
- 3) Enterprises which are included in the National Registry<sup>5</sup>.
- 4) Enterprises with a formal accounting.

The mixed income estimations includes the profits from economic activities. Also, the payment done by the enterprise in behalf of households, and it might include a sort of imputed wage. The survey separate between formal and informal workers. For those who are formal workers, they ask whether in addition to their profits they deduct a salary for their own work. A main point of discussion would be if that deducted salary (sort of imputed wage) of independent workers should be included as mixed income or as wage compensation.

It's important to mention that from the Survey, more than 96% of the firms have less than 10 workers, and some of them are included in the National Registry.

Several combination of scenarios were done using the previous definitions and the allocation of the "imputed" wage. The total revenue from independent workers is 1,011,264.05 millions of colones (34% of the total OS), however 32% of them are "imputed wages" (320,038). If "imputed wages" are considered as wages the total income of independent worker will be 690 960,25 (23.7% of total OS)

a) If the "deducted salary" is considered as wage, for each of the scenarios described above, therefore we have that mixed income is 1)639,011 (21.71%) 2) 669,233 (22.73%) 3) 424,172 (14.1%), 4)397,791 (13.5%) respectively.

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<sup>3</sup> Information provided by the respective NTA countries in August 2008

<sup>4</sup> The Central Bank consider a small business less than 20 employees, however the survey only asks for less than 10 workers and less than 30.

<sup>5</sup>Firms registered in the National Registry have a separate legal identity (as " legal" person) creating a new taxpayer, such as individual enterprises of limited responsibility, partnerships, limited liability partnerships (among others).

b) If the “imputed wage” for formal workers is allocated to wages when it is considered as incorporated business (more than 10 workers, more than 30 workers, registered or with formal accounting), otherwise it is included as mixed income, the results are: 1) 895,622 (30.42%), 2) 968,173 (32.89%) 3) 669,223 (22.73%), 4) 397,791 (13.5%)

c) The imputed wage is completely allocated to mixed income :1) all income is included 34% 2) whole revenue from informal firms is included, but only benefits from non registered ones in the Public Registry (26%)

The Central Bank advises to consider this imputed wage as wages (already included in NIPA). This recommendation might seem consistent with the Survey results because only formal firms report that they deducted a wage. Finally, small firms (less than 10 workers) 639,011 (21.71) seems a reasonable criteria for defining mixed income according to the Central Bank. However, the share is still below to the other American Countries. The question therefore is whether this share is consistent for comparative purposes? Or a better criteria is to include all benefits reported in the survey, or to consider this imputed wage as mixed income.

We also separated the mixed income by 4 digit ISIC in order to compare those results with Central Bank estimates.

The amount of the life-cycle deficit and the surplus span is sensitive to those results, (and therefore, asset income, intra-household transfers, income taxes among others). For example, with the 15% reported by the Central Bank the life cycle deficit is 1,531,549.75 millions of colones and the life-cycle deficit is positive since 27-54 years old. A share of 21% gives a deficit of 1,402,503 and the same surplus span. For 34%, the surplus span is 26-55 years old and the life cycle deficit 1,154,335 millions of colones.