ANNEX 2 - MEASURING INCOME USING THE ENCOVI 2000

INTRODUCTION

This note summarizes the components and the methodology used to construct the income aggregate using the ENCOVI 2000, Guatemala.

The income aggregate measures the income obtained by a household in a year. The total household income can be divided between (i) income earned from labor activities; and (ii) income not related to labor activities. In addition, labor income can be further divided between wage and self-employed income, agricultural and non-agricultural, formal and informal. Non-labor income consists of income such as interest earned from savings, pensions and remittances.

The above income components are calculated for each household member and transformed in annual income. The total household income is the sum of each of these components for each household member. All variables are previously "cleaned" and reviewed to remove "outliers", missing data and other data problems. All values are also adjusted to account for regional price differences.

This notes continues as follows: the next section summarizes the components of the income aggregate. Then the labor income components are discussed in specific detail, followed by a discussion of the non-labor income components (directly using the information in the ENCOVI 2000 data). A list of all the variables used is then provided at the end.

INCOME AGGREGATE COMPONENTS

Household income can be divided between labor and non-labor activities. The components for each category are summarized as:

Labor income

- Wages from formal non-agricultural activities
- Wages from informal non-agricultural activities
- Wages from formal agricultural activities
- Wages from informal agricultural activities
- Self-employed income from formal non-agricultural activities
- Self-employed income from informal non-agricultural activities
- Self-employed income from agricultural activities

Non-labor income

- Rental of equipment and property
- Interest and dividends
- Remittances
- Public assistance and donations
- Private assistance and donations
- Pensions and compensations
- Other income (inheritance, scholarships, lottery winnings)

Labor income classifications

Labor income is constructed using chapters X (economic activities) and XVI (agricultural activities) of the ENCOVI 2000. The first issue to address is the classification of labor activities. Labor activities are divided between wages and self-employed income. Income is defined as wages if a person is an employee in the government or a private company (P10B14B < 5 or >6)[1]. Otherwise, labor income is classified as self-employed. Income is derived from agricultural activities if the person works in any of the agricultural occupational classifications (P10B02 = 1 or 2 or 5) and as non-agricultural otherwise. Finally, income is classified as formal if a person works for the government, or in the private sector in a company with more than 5 workers, or in a farm that employs more than 5 people (P10B14 = 1, P10B12 > 2 and P10B14 = 2 or 3 or P10B14 > 4). Otherwise, it is classified as informal.

Wages. For each person, the ENCOVI 2000 reports up to three jobs. The following components of annual wages are constructed for each of the three jobs:

- Wages and salaries times months worked during the year; (P10B04 * P10B22, P10C05 * P10C16, P10D05 * P10D10);
- Bono 14 (P10B20B, P10C14B, P10D08B);
- Payment in aguinaldo (P10B27B);

less

- Payment to social security – IGSS (P10B13 * P10B04);
- Income tax. [2]

The level of annual wage income is constructed by first summing the above components for each of the three jobs and then aggregating them at the household level. The income is divided between agricultural and non-agricultural as well as formal and informal based on the definitions above to give the following four wage income categories:

- Wages and salaries from formal non-agricultural activities;
- Wages and salaries from informal non-agricultural activities;
- Wages and salaries from formal agricultural activities;
- Wages and salaries from informal agricultural activities;

Self-employed non-agricultural income. This refers to independent entrepreneurs that work in non-agricultural activities. For them, their income is the reported net income multiplied by the number of months that they received it for each of the three possible jobs (P10B15A * P10B15C, P10B15A * P10B15C, P10B15A * P10B15C). The total income from this activity is constructed by summing income from same type jobs for every person in the household. Self-employed income from non-agricultural activities is divided between formal and informal:

- Self-employed income from formal non-agricultural activities
- Self-employed income from informal non-agricultural activities

Self-employed income from agricultural activities

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[1] In parenthesis, the corresponding variable names and appropriate formulae to construct each variable is provided.

[2] Income taxes in Guatemala are based on disposable income (DI). This is calculated as: Net income- Q 36,000 (exempt income)- less social security contributions. Given that, the tax rates are: (i) DI less than Q 65,000: 15%; (ii) DI between Q 65,000 - Q 180,000 : Q 9,750 + 20% of amount in excess of Q 65,000; and (iii) DI between Q 180,000 - Q 295,000 : Q 61,500 + 31% of amount in excess of Q 295,000.

Income from independent agricultural activities is the sum of all income minus the costs related to that. In this context, this income represents the net income from agricultural activities.

In particular, household self-employed agricultural income is derived from the following:

- Revenue from the rent of owned land to others (P16A11)
- Revenue from the sale of crops (P16B06)
- Revenue from the sale of processed crop products (P16H03CA through p16H03CG)
- Revenue from the sale of forest products (P16I04A through P16I04E)
- Revenue from animal sales (P16J08B and P16J11B)
- Revenue from the sale of animal products (P16L03CA through P16L03CJ)
- Consumption of own produced output (constructed in the consumption aggregate)

less

- Cost for renting land from others (P16A22 if P16A21> 1 and P16A23A * Period (using P16A23B) if P16A21 = 1)
- Cost for agricultural inputs. These are further divided in:

  - ✓ Crop and forest production related inputs (P16C02A through P16C02E, P16D02A through P16D02I)
  - ✓ Labor inputs (P16E02A * P16E02B, P16E03A * P16E03B, P16E05, P16E06C)
  - ✓ Cost for technical assistance (P16F05)
  - ✓ Cost for inputs related to livestock activities (P16M02A through P16M02E)
  - ✓ Depreciation of agricultural capital equipment.[3]

NON-LABOR INCOME

Income from non-labor income is divided in the following categories:

- Rental of equipment and property. This includes the income received from rental of properties, construction, equipment and goods[4] (P13A02A) and the estimated rental value of owned housing (P010C7 and constructed in the consumption aggregate).
- Interest and dividends from savings accounts and stock holdings (P13A02B)
- Remittances. This is support in cash by friends and family (P10E09, P13B03E if in cash)
- Donations. These include donations and help in cash or in kind gifts received by the government, church, private organizations and friends and family (P10E06, P13B03A through P13B03E) and public program assistance (P04C04, P04C08, P04C12, P13A02H-I). The support in cash by friends and family is reported as remittances. This income is divided between private and public.
- Pensions and compensations. This includes child care allowances, orphan and widow pensions, retirement benefits, compensations for work or contract termination, life insurance.
  (P10E01B*12, P10E02B*12, P10E03B*12, P13A02C, P13A02D, P13A02E, P13A02G).
- Other income. This income includes inheritance, scholarships and lottery winnings. (P13A02F, P13A02H through P13A02L).

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[3] This represents the value of the annual use of durable goods used in agricultural activities. To estimate this value, the average age of each equipment is calculated (average of P16G04 by equipment type if P16G01 = 1). This is multiplied by 2 to obtain the expected lifetime of the equipment. Then, the reported age is subtracted from the expected lifetime to get the remaining lifetime of the equipment for each household[3]. Finally, the current value of the equipment (P16G07) is divided by the remaining lifetime to obtain the annual use of the equipment.

[4] Not related to agricultural activities.