

Components of the Income Aggregate: “Encuesta de Condiciones de Vida, Guatemala 2000”

Prepared for the Rural Income Generating Activities (RIGA) Project¹

of the Agricultural Development Economics Division,

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This document provides the survey-specific details associated with the income aggregate construction. For more information about the RIGA project, please refer to <http://www.fao.org/es/esa/riga>. For additional detail regarding the overall RIGA income aggregate construction approach, please refer to Carletto, et al (2007), “Rural Income Generating Activities Study: Methodological note on the construction of income aggregates,” found on the RIGA website.

The Guatemala Encuesta de Condiciones de Vida (Living Conditions Survey; ENCOVI) was carried out over a period of four months in 2000. Household surveys took place from July 3 until November 30, 2000.

The sample for this ENCOVI was drawn using a two-stage stratified sampling procedure using the 1998 Encuesta de Ingresos y Gastos Familiares from which the Primary Sampling Units (PSUs) were obtained. These were based upon the census segments (not divided by urban/rural areas). The sampling unit was the individual occupied or vacant household. Twelve households per PSU in rural areas and 6 households per PSU in urban areas were randomly selected for the sample, totaling 8,940 households. Attrition was expected to be approximately 10% such that the expected final sample size would be 8,046 households. In effect, the total sample of completed surveys was 7,276 households.

There are 3,852 rural households and 3,424 urban households in the dataset. In the original datasets, URBANO is the variable distinguishing urban from rural households. Urban is defined as the Guatemala Department, its urbanized suburbs, and the officially recognized centers of other departments and municipalities.² Rural is not specifically defined but, by definition, it

¹ The RIGA Project is a collaboration between FAO, the World Bank and American University in Washington, D.C. Original data can be obtained from the World Bank’s Living Standards Measurement Study by visiting the LSMS website at: <http://www.worldbank.org/lsm>.

² The definition is valid for the 1964, 1973 and 1981 Census, and estimates for 1990 and 1994. For the 1950 census the definition was "Localities of more than 2000 inhabitants and localities of 1500-2000 inhabitants if running water is supplied to houses." Source: UN World Urbanization Prospects: The 1999 Revision; <http://157.62.21.4/SHARE1/UN%20Demographics/technote/english/notes/table02.htm> (United Nations Demographic Yearbook-Historical Supplement 1st issue, DYB-CD, data from 1948 to 1997).

applies to all areas not encompassed by the definition of urban. In the calculation of the income aggregate, URBANO is renamed to URBAN in order to use the same variable name across different surveys.

Since the sample is not self-weighting, household weights (expansion factors) were calculated based upon the probability of selection. The average household size in Guatemala is 5 persons.³ All money amounts are in the local currency, Quetzals. In 2000, the official exchange rate was 7.76 Qz = 1.0 USD.⁴ **The income aggregates are calculated at the household level and all aggregates are annualized.**

The household-level modules of the ENCOVI survey can be linked using the unique household identifier, HOGAR. This variable is renamed HH for consistency across countries within the study. To merge the community and price questionnaire modules with the household questionnaire, the variables REGION, DEPTO and MUPIO should be used.

Regarding income from different sources, revenues and costs were disaggregated when such information was available. The disaggregated sources for each income component are summarized in output variables column of Table 1. The net variables and the data files included in the final total income aggregate are in **bold**. **All variables included in the aggregate income variable are net of costs, unless otherwise noted.**

Comments

- The original data codes responses such as “don’t know,” “ignored,” “not sure”, and so on, with a “99”, “999”, “9999” etc. These values are recoded to missing “.” in all files.
- Household weights were created using the expansion factor “factor”. All households were assigned household weights in estimating income.
- In all sections, the raw data undergoes a transformation (it is annualized, aggregated, taken from person to household level, etc) before a check for outliers takes place.
- In the Crop Production section, the reference period is the previous 12 months, which contains the previous crop season. Two total crop income variables are created: *cropincome1* and *cropincome2*. *Cropincome1* includes estimates of own crop consumption based on the agricultural production module of the household questionnaire. *Cropincome2* includes estimates of own crop consumption based on the two-week Food Booklet completed by each household surveyed.
- For the Livestock, Other Income, Rentagric and Transfers sections, the reference period is the previous 12 months.
- Other Income includes income from nonfarm rental assets.
- For Transfer income, two estimates are calculated: gross and net. The household income aggregate, however, considers the gross value rather than net.
- Rentagric calculates gross income from the rental of agricultural land.
- In the Wage employment section, the reference period is the duration of employment as specified in the questionnaire for the primary and secondary full-time and part-time jobs held in the last 7 days and, if not in the last 7 days, all work in the last 12 months.

³ Estimate based on results of the XI National Population Census and VI National Housing Census. Results available from the Guatemala National Statistical Institute at: <http://www.ine.gob.gt/>.

⁴ Exchange rate used comes from the World Bank World Development Indicators database..

- The classification of wage employment activities into industries and skilled/unskilled categories follow the United Nations International Standard Industrial Classification (ISIC) and the International Standard Classification of Occupations (ISCO) 88 codes. Given the survey classification of each employed household member by industry, the employment sectors include: (1) Agriculture, Livestock, Hunting and Fishing, (2) Mining, (3) Manufacturing, (4) Electricity and Utilities, (5) Construction, (6) Commerce, (7) Transportation, Storage and Communications, (8) Finance, Insurance and Real Estate, (9) Services and (10) Other Industries.
- Earnings from wage employment are net and include all in-cash and in-kind benefits in cash received from the employer.
- The Self Employment (SelfEmp) section accounted for income from nonfarm enterprises owned by the household. The reference period was the last 12 months. Income from nonfarm enterprises is disaggregated by industry (following the ISIC Codes) in order to convey information regarding the diversity of household activities.
- For all sections, whenever information was available regarding the share of a business, enterprise, or any other income activity owned by the household, the income earned from that activity was weighted by the share owned by the household.
- A final outlier check is imposed at the end of the Aggregateincome.do file in which households with income shares from any given activity greater than or less than 3 (300%) are dropped from the final income aggregate. Using this criteria, 17 households are dropped from this survey.
- Only present household members who are not heads are kept in the final income aggregate. Present is defined as a having been absent from the households for 6 or fewer months in the previous 12 months for non-head household members. Household heads are included regardless of their location status because in their position they can still serve as primary income sources. Thus, drop if P05B07>6 & P05A02~=1.
- Participation and income share variables are also included in the final income aggregate

The programs that calculate each household's income aggregate component are summarized in Table 1. Tables 2 and 3 summarize the results from the created income aggregate.

Table 1

Program Name (.do)	Input Data Files	Output Data Files	Output Variables
Sample	CONSUMO5	Sample	
Prices	ECV13G12 ECV24A16 ECV31A16 PRECIOS	Prices	pricedata1 pricedata2 pricedata3 pricedata4 pricedata5 pricedata6 pricedata7 pricedata8 pricedata9 pricedata10

			pricedata11 pricedata12
Food	ECV13G12 Prices	Food Food_Crop Food_livestock	foodpurchyrimp foodnonpurchyrimp ownconsyrimp foodown
Agbyprod	ECV29A16 ECV01H01	agbyprod	cropbyprimp
Cropincome1	ECV25A16 ECV26A16 ECV27A16 ECV27A16 ECV01H01 cropinput farmexp aglabor techassist	cropinput farmexp aglabor techassist cropexp	amountimp amount2imp permexpimp npermexpimp farmtechexpimp cropexpimp
Cropincome2	ECV24A16 ECV30A16 ECV01H01 agrbyprod forestsales cropexp Food_crop.dta	cropinc forestsales Cropincome	cropincimp cropinputimp ownconsimp forestsalesimp cropincome1imp cropincome2imp
Employment1	ECV11P10 ECV01H01	employ1 employ2	wage1imp wage2imp
Employment2	ECV11P10 ECV01H01 employ1 employ2 employ3	employ3 Employment	wage3imp wgeimp1_1 wgeimp2_1 wgeimp3_1 wgeimp4_1 wgeimp5_1 wgeimp6_1 wgeimp7_1 wgeimp8_1 wgeimp9_1 wgeimp10_1 wgeimp1_3 wgeimp2_3 wgeimp3_3 wgeimp4_3
			wgeimp1_2 wgeimp2_2 wgeimp3_2 wgeimp4_2 wgeimp5_2 wgeimp6_2 wgeimp7_2 wgeimp8_2 wgeimp9_2 wgeimp10_2 wgeimp6_3 wgeimp7_3 wgeimp8_3 wgeimp9_3

			wgeimp5_3	wgeimp10_3
Livestock1	ECV31A16 ECV32A16 ECV01H01	livstrevenues livstbyprod	livstsoldimp livstbyprodsoldimp	
Livestock2	ECV33A16 ECV01H01 Food_livestock livstinput livstrevenues livstbyprod	livstinput livestock	livstinptimp livstincimp	
Otherincome	ECV16I13 ECV01H01	otherincome	nonfarmrntimp otherincimp	
Rentagric	ECV21A16 ECV01H01	rentagric	farmrntimp	
Selfemp1	ECV11A16 ECV19N15 ECV11P10 ECV01H01	hhrev1 hhrev2 hhrev3	hhrevimp	
Selfemp2	hhrev1 hhrev2 hhrev3	Selfemp	selfempincimp selfemp1 selfemp2 selfemp3 selfemp4 selfemp5 selfemp6 selfemp7 selfemp8 selfemp9 selfemp10	
Transfers	ECV11P10 ECV08P04 ECV16I13 ECV01H01 pensions socialbenefits pubprivtransf	pensions socialbenefits pubprivtransf Transfers	pensionsimp socialassistimp socialtransimp privtransimp privtrans pubtrans transferstotimp transfersgrossimp	
AggregateIncome	Sample	Income	agr_wge	

	Cropincome Employment Livestock Otherincome Selfemp Transfers		nonagr_wge crop1 crop2 livestock selfemp transfer other totincome1 totincome2
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Table 2

Guatemala 2000		3,833 Rural HH Observations		Rural, Weighted, Quetzales				Rural, Weighted, USD	
Variable		# Participants	Participation Rate	Returns to Participation- Participant HHs	Returns to Participation- All HHs	Share of Total Income- All HHs (Mean of Shares)	Share of Total Income- All HHs (Share of Means)	Returns to Participation- Participant HHs	Returns to Participation- All HHs
agr_wge	Wage Employment- Agriculture	1,619	42.60%	5,881	2,505	22.56%	19.78%	10,373	4,419
nonagr_wge	Wage Employment- Nonfarm	1,348	34.50%	11,664	4,025	21.26%	31.78%	20,575	7,099
crop1	Crop Production	2,682	69.91%	2,100	1,468	19.23%	11.59%	3,705	2,590
livestock	Livestock Production	2,536	65.99%	455	300	3.41%	2.37%	802	529
selfemp	Non-ag Self Employment	1,083	30.68%	7,757	2,380	13.43%	18.79%	13,683	4,197
transfer	Total Transfers	2,497	65.27%	2,877	1,878	19.59%	14.83%	5,074	3,312
other	Other Income Sources	136	3.67%	2,946	108	0.52%	0.85%	5,197	191
totincome1	Total Household Income	3,829	99.38%	12,743	12,664	100.00%	100.00%	22,478	22,338

Percent Rural (Weighted)	56.69%
Quetzales/USD (July 1, 2000)	7.76

Notes:

1. Source data: 2000 Encuesta de Niveles de Vida (ENCOVI).
2. Exchange rate used comes from the World Bank *World Development Indicators* database.
3. The variable "crop1" is distinguished from "crop2" in the way home consumption of own production of crops (owncons) is calculated. In crop1, owncons is calculated from the question in the agricultural production section of the household questionnaire that asks about household consumption of agricultural production. For crop2, owncons is calculated from the Food Expenditure section of the household questionnaire. Total household income "totincome1" and "totincome2" are therefore calculated with the corresponding crop income variable.
4. All values reported are annual and net of costs (with the exception of income from transfers and land rent, which are gross receipts).

Table 3

<i>Guatemala 2000</i>	3,833 Rural HH Observations	Rural, Weighted, Quetzales					Rural, Weighted, USD			
<i>Variable</i>		<i># Participants</i>	<i>Participation Rate</i>	<i>Returns to Participation- Participant HHs</i>	<i>Returns to Participation- All HHs</i>	<i>Share of Total Income- All HHs (Mean of Shares)</i>	<i>Share of Total Income- All HHs (Share of Means)</i>	<i>Returns to Participation- Participant HHs</i>	<i>Returns to Participation- All HHs</i>	
agr_wge	Wage Employment- Agriculture	1,619	42.60%	5,881	2,505	19.92%	17.84%	758	323	
nonagr_wge	Wage Employment- Nonfarm	1,348	34.50%	11,664	4,025	20.18%	28.66%	1,503	519	
crop2	Crop Production	3,325	87.75%	3,248	2,850	27.62%	20.29%	419	367	
livestock	Livestock Production	2,536	65.99%	455	300	2.56%	2.14%	59	39	
selfemp	Non-ag Self Employment	1,083	30.68%	7,757	2,380	12.38%	16.94%	1,000	307	
transfer	Total Transfers	2,497	65.27%	2,877	1,878	16.87%	13.37%	371	242	
other	Other Income Sources	136	3.67%	2,946	108	0.47%	0.77%	380	14	
totincome2	Total Household Income	3,835	99.78%	14,076	14,046	100.00%	100.00%	1,814	1,810	

Percent Rural (Weighted)	56.69%
Quetzales/USD (July 1, 2000)	7.76

Notes:

1. Source data: 2000 Encuesta de Niveles de Vida (ENCOVI).
2. Exchange rate used comes from the World Bank *World Development Indicators* database.
3. The variable "crop1" is distinguished from "crop2" in the way home consumption of own production of crops (owncons) is calculated. In crop1, owncons is calculated from the question in the agricultural production section of the household questionnaire that asks about household consumption of agricultural production. For crop2, owncons is calculated from the Food Expenditure section of the household questionnaire. Total household income "totincome1" and "totincome2" are therefore calculated with the corresponding crop income variable.
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