

Unreliable Data: A Serious Obstacle for Evaluating NAFTA

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Poverty incidence evolution taking income data at face value

If an analyst disregards the reliability and comparability problems of household income data and takes them at face value, the story of poverty incidence (defined as $H=q/n$ where q is the number of poor persons and n the population, usually expressed as a percentage) in Mexico since NAFTA *would be* as follows: First of all, H was at a similar level in 2000 as it was in 1992. 'Official' poverty figures on patrimonial poverty were 53.1% (1992) and 53.6% (2000). Patrimonial poverty was defined by the Mexican government as the condition of those households whose income per capita is below the necessary to meet the pattern of basic consumption of food, dressing, shoes, housing, health services, public transportation and education.

According to the Integrated Poverty Measurement Method (IPMM) (which combines income poverty—the only dimension considered in the official method—with unsatisfied basic needs and time poverties) the figures were 75.4% and 75.3%. Both data sets rely on the National Survey of Household Income and Expenditures (ENIGH), carried out by the National Institute of Statistics and Geography (INEGI). In both cases the bi-annual evolution of H shows stability between 1992 and 1994, a huge increase between 1994-1996, a decrease from 1996-1998 and a more rapid decrease from 1998-2000.

In 2006, patrimonial poverty was 42.6%, ten points less than in 2000, and five points less than its 2000 levels according to IPMM. Finally, in the official calculation, H during the whole NAFTA period shows a decrease from 53.1% in 1992 to 42.6% in 2006, while the IPMM calculation shows a decrease from 75.4% in 1992 to 70.9% in 2006.

An optimistic (or apologetic) interpretation of the above figures would focus on the period from 1996-2006 and on official calculations suggesting that NAFTA is rapidly reducing poverty (from 69% in 1996 to 42.6% in 2006). On the other hand, a pessimistic (or critical) view would focus on IPMM and the entire 1992-2006 period, and would state that NAFTA is actually associated with a very slow *decrease* in H.

Neither interpretation would be accurate. Since both of them would be based on taking ENIGH's data at face value.

A Critical Look at Mexico's Survey of Household Income and Expenditure (ENIGH)

Mistrust of ENIGH began in 2002, when ENIGH data indicated, in comparison with ENIGH 2000, a substantial *decrease* in H (3.6 points), in a period where the economy was in a recession (GDP per capita decreased 2.2%) and despite evidence of a *growing* polarization of income during the same time period. Changes in sample size and design, as well as important changes to the questionnaire, were made in the ENIGH 2002 and maintained in subsequent surveys.

These changes made data from the 1992-2000 and 2002-2006 ENIGH'S noncomparable. In fact, a detailed analysis of the 2002-2006 ENIGH's, shows the following problems, inconsistencies and biases:

Underestimation of income. In 2004, ENIGH's total household income represented only 51.6% of the net disposable income in the household account (HA) of national economic accounts. In 1994, 1996 and 1998 these proportions were 57.3%, 46.9% and 46.0% respectively. These figures imply an overestimation of the extent of income poverty and also that the evolution of poverty can be biased through the use of non-adjusted ENIGH income data.

Overestimation of the decrease in household size. Since poverty is measured officially only by per capita income, poverty incidence would decrease over time if the decrease over time in household's size (HS) was overestimated. Also, in any given year, H tends to be underestimated if HS is underestimated.

This is the case in the ENIGH surveys. National average HS in the 2000 and 2006 ENIGH's were 4.15 and 3.95, yet in the 2000 and 2005 Census/Conteo the figures were 4.38 and 4.04. In addition to a general underestimation of household size, ENIGH's figures indicate inconsistencies by area. ENIGH's observed HS decrease in 2000-2006 was only 4.9% at the national level but 10.4% in rural settlements (RS) (settlements smaller than 2,500 persons), and more than 14% in the most impoverished groups within RS. This is significant for two reasons: 1) The reduction in absolute terms of patrimonial poverty was concentrated (70% of it) in localities smaller than 15,000 persons, and all of it took place in RS; and 2) according to the ENIGHs, HS *increased* in localities sized 2,500 to 15,000 (which

can be called *semi-urban*), so that the impact of HS reduction on poverty is only applicable in RS.

Inconsistencies in the evolution of income. 2000-2006 saw a low growth rate in GDP per capita (7% increase in the period), but according to ENIGH, households have increased their current total income per capita (CTIPC) twice as much (15.3%). Furthermore, while primary sector GDP (not per capita but total) grew 14.9% in the same period, the CTIPC of households in RS, according to ENIGH, grew 62.6%, decreased 20.9% in semi-urban settlements, and grew only 13.9% in urban settlements (larger than 15,000 inhabitants). In addition, ENIGH reported that RS per capita income from wages grew 83.4%, contributing much more to the now apparent *rural miracle* than family remittances.

Increasing overestimation of occupied population. Partly explaining the overestimation of income and wage growth, is the fact that ENIGH overestimated occupied population (OP) in 2000 by a bit more than *0.5 million* persons compared with the National Occupation Survey (ENOE): 39.48 vs. 38.96 million. This overestimation increased sixfold in 2006, when it reached *2.85 million* (45.45 vs. 42.60 million).

Increasing underestimation of the rate of dependency (RD). As a consequence of the downward bias in HS and the upward bias in the OP, the RD is highly underestimated by ENIGH. At the national level the RD decreases from 1.77 to 1.52 dependents per occupied person, while in RS the corresponding figures are 1.97 and 1.66. In this case while HS diminishes from 4.61 to 4.13, the number of occupied persons per household remains the same (1.55) and dependents per

household decrease from 3.05 to 2.58. The total number of occupied persons in RS grows due to the increase in the number of households (460 thousand).

Overestimation of living conditions in RS. Table 1 shows the percent change in living conditions in rural, semi-urban and urban settlements. In these figures, living conditions in RS are improving at very high rates (up to 246.6% for drainage). In contrast, urban rates of improvement are very moderate, and semi-urban areas seem to be taking a turn for the worse; where negative indicators like the use of wood for cooking or lack of sanitary services are increasing, and positive indicators like fridge availability, indoor plumbing, and sewage facilities, are decreasing. While these figures depict stagnation in urban areas and regression in semi-urban areas, the rural picture is one of radical positive transformation. This rural 'miracle' is not supported by any other evidence.

Necessary change in sources for evaluating NAFTA

It is difficult to argue that despite all the above quoted problems and biases of the ENIGH's, the reported drop in patrimonial poverty during the 2000-2006 period is accurate. Once the figures of this period are severely challenged, the optimistic post-NAFTA view no longer holds water. Under this framework, it is necessary to evaluate the impact of NAFTA based on different sources and sets of variables such as real wages, formal employment, emigration, GDP, and private consumption, to name a few. On all these counts the pessimistic (or critical) view is much more probable.

Table 1. Changes in living conditions in rural, semi-urban and urban areas. Percent change (2000-2006) in availability or use of the specified item.			
Item	Rural	Semi-urban	Urban
Fridge	48.4	-6.8	3.5
Washing machine	83.9	14.3	14.7
Gas for cooking	66.7	-1.9	0.01
Wood for cooking	-58.3	22.2	-33.0
Piped water inside the dwelling	108.8	-13.6	7.2
Toilet connected to Drainage	127.1	-27.5	4.3
No sanitary service	-51.3	2.5	-54.6
Drainage	246.6	-6.9	5.4
Burns garbage	-42.8	-12.1	-52.8
Garbage pick-up service	161.3	1.8	-2.2
Source: own calculations using ENIGHS 2000 and 2006 data bases.			