Has Economic Integration increase or decreased the Homogeneity of Rural and Urban Mexican Consumers

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Abstract

Economists, beginning with Pareto (1897), have utilized income distribution as a measurement of welfare. Recently, researchers have turned their attention to the distribution of expenditures. This study adds to this growing literature by providing an a priori selection criterion for consumer expenditure share distributions before computing the Gini coefficient. It uses Mexican household data prior and after the North American Free Trade Agreement and the Peso Crisis of The mid-nineties to show changes in consumer behavior.

Resumen

Los economistas, comenzando con Pareto (1897), han utilizado la distribución de ingresos como medida del bienestar. Recientemente,

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los investigadores han puesto su atención en la distribución de gastos. Este estudio se agrega a esta creciente literatura al proporcionar un criterio a priori para la selección de la distribución que más apropiadamente explica el gasto del consumidor antes de que se compute el coeficiente de Gini. Utiliza datos de los hogares mexicanos antes y después del Tratado de Libre Comercio de América del Norte y la crisis del Peso a mediados de los noventa para demostrar cambios en el comportamiento del consumidor.

Economists, beginning with Pareto (1897), have utilized income distribution as a measurement of welfare. Recently, researchers have turned their attention to the distribution of expenditures. The arguments for analyzing expenditure distributions ranges from understating the impact of taxes on consumption (Garner, 1993) to the "estimates of income inequality are not particularly informative summary of statistics of the distribution of well-being" (Slesnick, p.678, 1994). In the study of income distributions there is a long standing debate on whether to use an inequality measure that is based on a particular distribution or one that is distribution-free (Silber, 1999). At present, those studying expenditure distributions have primarily taken the approach that the inequality measure should be a distribution-free measurement (Attanasio et al. (2004), Del Rio and Ruiz-Castillo (2001), Garner (1993), Wang (1995), Yitzhaki (1994),), with Basmann et al. (1984) and Scott and Rope (1993) being some notable exceptions. Ryu and Slottje (1999), in advocating the use of parametric distributions, point to several benefits of estimating the Lorenz curve in this manner. These benefits include the ability to summarize thousands of observation points with a few parameters, the ability to estimate the density function at any point, an enhanced ability to construct inequality measures, and the ability to formulate possible "laws" that would otherwise not be possible to detect. The purpose here is to show that the use of a parametric distribution to analyze expenditure behavior may provide evidence of some plausible structural changes in the consumer behavior. Scott and Rope (1993) indicate that choosing a density function "may be helpful in identifying patterns in expenditure distributions" (p. 6). Their basic argument is that perhaps there may be similar behavior for certain

expenditures even across demographic groups. In this paper I add to this argument by showing that the Gini coefficient along with the stability of the underlying distribution being used provides important information concerning changes in consumer behavior. I focus my attention not on the distribution of actual expenditures but on the distribution of expenditure shares. Previous research has only looked at the distribution on actual expenditures and the method used here is clearly valid for such approach. Such analysis would provide information on the appropriate parametric functional form for expenditure inequality and it is left to a further study. The purpose of using the shares is that the information obtained would more likely provide evidence of expenditure habits rather than emphasizing the expenditure abilities of the consumer. I use the consumer expenditure surveys in Mexico[1] to review the expenditure share distribution on 24 categories of urban and rural consumers during a period that includes the signing of the North American Free Trade Agreement (NAFTA). In the next section I present a technique for establishing an *ex-ante* expenditure technique to determine the "appropriate" functional distribution for either the actual expenditure or the expenditure shares as well as two Gini coefficients that are used here. In the third section I present the results for the Mexican consumer. In the final section I present some concluding remarks.

Ex-Ante Expenditure Distribution Analysis and the Beta I and the Beta II Gini Coefficient

Many of the frequently used income distribution belong to a group known as the Pearson family of distributions that have the common property that their density functions, p's, are the solutions to the following differential equation (Kendall and Stuart, 1977):

$$\frac{1}{p(x)}\frac{dp(x)}{dx} = \frac{a + x}{c_0 + c_1 x + c_2 x^2} \tag{1}$$

[1] I use data from de Mexican Consumer Survey conducted by INEGI known as ENIGH.

Among them there is Beta I (Thurow, 1970), Beta II (Basemann et al., 1984), Gamma (Salem and Mount, 1974), Logistic (Johnson and Kotz, 1970), Log-normal (Aitchison and Brown, 1957), Pareto (Pareto, 1897), and the Weibull (Johnson and Kotz, 1970) to name a few. Elderton (1969) developed an *ex ante* test to select among the Peasron family of distributions, known as the κ criterion, that is a transformation to a real line based on whether the roots of the underlying quadratic function have equal or opposite signs or whether they are complex.[2] Simply put, the κ criterion checks to see if the hypothetical variance, skewness and kurtosis of a given Pearson family distribution intersect with the empirical measurements of the data under consideration. Consequently, the first raw moments (μ'_i) and the first three moments about the mean (μ_i) must be computed for every expenditure category as presented in equations (2a-c)

$$\mu_2 = \mu'_2 - (\mu'_1)^2, \tag{2.a}$$

$$\mu_3 = \mu'_3 - 3\mu'_1\mu'_2 + 2\,(\mu'_1)^3, \text{ and} \tag{2.b}$$

$$\mu_4 = \mu'_4 - 4\mu'_1\mu'_3 + 6\,(\mu'_1)^2\,\mu'_2 - 3(\mu'_1)^4. \tag{2.c}$$

Following Elderton (1969, p. 45) we can define the κ criterion as

$$k = \frac{\beta_1\,(\beta_2 + 3)^2}{4(4\beta_2 - 3\beta_1)\,(2\beta_2 - 3\beta_1 - 6)}, \tag{3a}$$

where

$$\beta_1 = \frac{\mu^2_3}{\mu^3} \text{ and} \tag{3.b}$$

$$\beta_2 = \frac{\mu^2_4}{\mu^2_2}\,. \tag{3.c}$$

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[2] Details of the Kappa Criterion can be found in Elderton (1969) and its use in income distribution selection can be found in Basnmann, Hayes and Slottje (1994) or Jewell, McPherson, and Molina (2004). The Kappa criterion is also used to establish the appropriate distribution of the behavior of international stock returns (Erruza et al., 1996).

The κ criterion establishes 4 grand regions. The first (I) is the negative region $\kappa < 0$. The next region (II) is zero ($\kappa = 0$), followed by the region (III) between zero and one ($0 < \kappa < 1$). Finally the fourth region (IV) is above one ($\kappa > 1$). Hirschberg and Slottje (1996) and Hirschberg et al. (1989) show that the Beta I distribution is found in region I, the Double Exponential, the Gumble, the Logistic, and the Student's t belong in region II. Chi-Square is the only distribution exclusively in region III. The Beta II is the only distribution to be exclusively in region IV. Several distributions can be found in regions III and IV: Lognormal, the Pareto, and the Weibull. The Gamma distribution can occur in all regions so for it the κ criterion is not a useful a priori test. It is worth nothing that the Beta I distribution has the characteristic of being the one distribution in region I and that, with the exception of the gamma distribution, does not intersect with any of the other distributions.

The purpose of choosing the appropriate distribution, as Scott and Rope (1993) pointed out, is to fined whether the pattern of expenditure behavior has changed. Combining this information with the Gini coefficient it provides information about the homogeneity of the rural and urban consumers that the Gini coefficient alone could not. For instance, if the Gini coefficient differences remain the same for the rural and urban consumers but the underlying distribution is altered between the two geographical regions that will indicate that the dispersion has not changed but that the underlying pattern of the distribution has. Similarly, should the Gini coefficient change but the underlying distribution does not that would imply that while the dispersion has changed the underlying expenditure pattern has not been altered. Recalling that I am only using the expenditure shares these differences are significant. In the case where the dispersion does not change but the underlying distribution does, implies that the percentage that consumers are spending on the good on average has not changed but within the group (e.g. rural or urban) the variance, skewness and kurtosis have been altered considerably. Similarly, the Gini coefficient not changing much but a change in the underlying distribution implies a change in the variance, skewness and kurtosis.

In the next section is clear that only two regions of the $\varkappa$ criterion apply for the expenditure shares of the urban and rural Mexican consumer. These two regions are the first one (I) (i.e. the negative region $\varkappa < 0$) and the fourth one (IV) (i.e. $\varkappa > 1$). Two very common distributions are included in these regions: The Beta I and the Beta II distributions. Hence, I provide below the Gini coefficient for each of these two distributions.

The Beta I distribution use here is from Thurow (1970)):

$$F(u; p,q) = \frac{1}{B(p,q)_{u=0}} \int^{Y} u^{p-1} (1-u)^{q-1} du$$

The Gini coefficient for this distribution can be found in Jewell, McPherson and Molina (2004):

$$G_{Beta\ I} = \frac{\Gamma(p+q)\Gamma(p+\frac{1}{2})\Gamma(q+\frac{1}{2})}{\Gamma(p+1)\Gamma(q)\Gamma(\frac{1}{2})\Gamma(p+q+\frac{1}{2})}$$

The Beta II distribution used here can be found in Molina and Cobb (1992)[3]:

$$F(u; \alpha,\beta) = \frac{1}{B(\alpha,\beta)_{u=0\,(u+1)}} \int^{1} \frac{u^{\alpha-1}}{\beta+\alpha} du$$

Molina and Cobb (1992) show that Gini Coefficient for this distribution is:

$$G_{Beta\ I} = \frac{\Gamma(\alpha+\beta)\Gamma(\alpha+\frac{1}{2})\Gamma(\beta+\frac{1}{2})}{\Gamma(\frac{1}{2})\Gamma(\alpha+1)\Gamma(\beta)\Gamma(\frac{1}{2})\Gamma(\alpha+\beta+\frac{1}{2})}(1+\frac{2\alpha}{2\beta-1})$$

[3] Note that in Molina and Cobb(1992) this distribution has a K, making it a three parameter distribution. Here only two parameters are used and so this distribution does not have a K. More importantly, the Gini coefficient is unaltered.

Results

There is clear evidence that income distribution has deteriorated in Mexico after the implementation of NAFTA (Attanasio and Szekely, 1998, Bouillion et al., 2003, and Molina and Peach, 2005). McKenzie (2006) has shown that the Mexican consumer reduced their consumption on durables and nonessential goods after the 1995 peso crisis. The question to be addressed here is whether the period that includes the implementation of NAFTA as well the Peso Crisis has had a long term impact on the behavior of consumers as observed by the distribution of expenditures shares. The data used here is similar to the US consumer expenditure survey. The surveys are conducted by INEGI (Instituto Nacional de Estadística, Geografia e Informática 1992–2002[4]). The title of the surveys is "Encuesta Nacional de Ingresos y Gastos de los Hogares" (ENIGH), or the National Survey of Income and Expenditures of Households. It has been conducted every two year starting in 1992 (prior to this date it had been produced sporadically, see Molina and Peach, 2005). It includes on average about 10,000 households and includes household income and expenditure data as well as estimates of many other variables including educational attainment and employment characteristics of the population.[5] The two demographic groups analyzed are the urban and the rural consumer. The 24 commodities used are: 1) food and beverages consumed at home, 2) food and beverages consumed outside of home, 3) tobacco, 4) public transit, 5) household cleaning items, 6) personal hygiene, 7) education, 8) recreation, 9) communications, 10) use and maintenance of private transportation, 11) mortgage, 12) rent, 13) alcoholic drinks, 14) conservation fees, 15) gas and electricity, 16) clothing and shoes, 17) household items, 18) medical expenses, 19) household appliances, 20) furniture, 21) home repair, 22) electronic appliances, 23) inter-city public transit, 24) private transportation.

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[4] The Survey for 2004 was available at the time of the writing of this document, however, certain changes in the sampling and new variable construction made it difficult to construct consistent data set.

[5] see Peach and Molina (2002) for more details on this data.

Table 1 presents, for both rural and urban consumers, the region of the $\varkappa$ criterion for each of the 24 expenditure share categories for each survey between 1992 and 2002. In reviewing Table 1, it is clear that all commodities fall in one of two of the regions described above. That is the first one (I) (i.e. the negative region $\varkappa < 0$) and the fourth one (IV) (i.e. $\varkappa > 1$). Consequently, the two Beta distributions (I and II) are applicable here. The fact that only two of the four regions are the only ones found is in itself a very interesting result. For instance, this could imply that neither regions (II) or (III) are useful for finding appropriate distribution functions for expenditure shares. In addition, with the exception of the gamma distribution, there is no overleaping distribution in these two regions. Consequently, this implies the Mexican consumer patterns are very distinct between the different commodities and levels of integration. Below we will analyze the significant of this finding.[6]

The results from Table 1 are also interesting in that it shows that for commodities such as food (whether at home or away), use of maintenance of private transportation, rent, medical expenses, home repair, and private transportation the Beta I distribution is always the preferred no matter what year it was or whether it was a rural or urban setting. Hence, the Mexican consumer has a very stable distribution for this type of goods no matter location or level of economic integration. It is interesting that for these basic consumer goods there is such stability. On the other hand, only personal hygiene and mortgage payment was better estimated using a Beta II regardless of year or setting. This result is also intriguing since while these are generally considered basic goods they clearly are different based on income and taste. Finally, it is interesting in all the other commodities neither one of the two regions was consistently the best underlying distribution, yet when comparing with the data in Table 2, the Gini coefficients do not change considerably regardless of the appropriate underlying distribution. Recalling the discussion in the previous

[6] Unfortunately, many more estimations with different years and other consumers must be done before such generalization can be done for consumers other than the Mexican consumer.

section, this implies that while the underlying variance, skewness, and kurtosis has changed the dispersion itself as measured by the Gini coefficient does not. This is a fascinating result in that it implies that while the consumers remain with similar inequalities, the location of the mode has changed. In other words, where most of the consumers are found has changed yet their dispersion has not.[7]

The data presented in Table 2 are the Gini coefficients for the 24 expenditure shares. The Gini coefficients in bold are the ones obtain from the Beta II distribution, while the others are for the Beta I. The first observation of Table 2, is that in most cases the consumers in the urban region are more homogenous in terms of their expenditure shares than the consumers in rural areas. This is an interesting since what these means is that consumers in rural areas have a greater dispersion in their expenditure shares than in their counterparts in the urban area. The amount of expenditure in food at home is among the most homogenous of all commodities. Other expenditure categories where consumers have similar amount spend on them are: household cleaning supplies, gas and electricity, clothing and shoes, and household items. Commodities where the share amount spend by the household differ considerably are all the others (food and beverages consumed outside of home, tobacco, public transit, personal hygiene, education, recreation, communications, use and maintenance of private transportation, mortgage, rent, alcoholic drinks, conservation fees, medical expenses, household appliances, furniture, home repair, electronic appliances, inter-city public transit, and private transportation).

Looking at changes between the first year presented here (1992) and ten years later (2002) several observations are worth noting. For a few commodities the Urban consumer expenditure shares dispersion has been consistently been decreasing in the period after the implementation of NAFTA. These commodities are food away from home, use and maintenance of private vehicles, and electronic appliances. This is an interesting finding since the implementation of NAFTA was supposed to increase access to global markets and

[7] This is an intriguing result that most be analyzed but remains out of the scope of present work and is left for future research

all of these three are the types of goods that generally increase with increased economic integration. It is also interesting to note that the dispersion of expenditure shares has consistently decreased for communication devises even before the NAFTA period for the urban consumer and with one exception for the rural consumer. Interestingly, the dispersion of expenditure shares for hygiene products has increased for urban consumers. Finally, it is worth noting that in almost all cases the dispersion of expenditure shares among urban consumers is less than for the rural consumer with a logical notable exception: inter-city public transit.

Concluding Remarks

I have presented here a method that can be used to provide an *ex ante* analysis to select the distribution that best fits the expenditure share of different commodities. I find that for the Mexican Consumer, only two of four regions are applicable. More interestingly, these are regions that, other than the gamma distribution, do not have overlapping distributions. These two regions imply that both the Beta I and the Beta II distribution are appropriate distributions to represent the expenditure shares. This result supports the hypothesis suggested by Scott and Rope (1993) who suspected that certain commodities could be explained best by one distribution regardless of the type of consumers. Our result here not only supports their hypothesis, it adds the fact that level of economic integration also does not impact the underlying distribution for several basic commodities. In addition, the urban consumer appears to be spending their expenditure shares more evenly than the rural consumers and in some instances the dispersion has been steadily decreasing the ten years period studied here. This result would lead one to conclude that the rural areas are seeing a large disparity in expenditure distributions. This result suggests that perhaps some external factor is increasing the dispersion of expenditures in the rural area. Future research could perhaps focus on whether the remittances have had a greater impact in the living standards in the rural area.

Table 1

KAPPA CRITERION

Location	*Year*	*K1*	*K2*	*K3*	*K4*	*K5*	*K6*	*K7*	*K8*	*K9*	*K10*	*K11*	*K12*
Urban	1992	-0.04964	-8.46856	179.7408	204.1764	-277.115	3.278971	-8.71629	155.7613	-60.6632	-6.64339	105.2238	-73.7021
Urban	1994	-0.04969	-14.7285	4424.472	-7.25437	13.15981	2.692845	-6.46348	87.07501	38.30302	-12.2689	86.33977	-51.8455
Urban	1996	-0.14785	-16.8114	125.5964	-3.25985	9.592259	2.472491	-18.2735	95.20591	1351.991	-14.8746	921.4926	-51.2287
Urban	1998	-0.1129	-28.433	-297.803	-4.87798	-251.935	3.595198	112.5995	-88.6435	-363.003	-10.4804	-116.686	-376.493
Urban	2000	-0.06395	-11.688	-22.0841	-3.38659	8.831935	1.523885	6.493353	48.32537	-13.0621	-3.78466	-5313.64	-46.595
Urban	2002	-0.03046	-11.1355	-565.759	-4.96507	5.093623	2.684344	-93.8648	-40.9415	239.1374	-7.73097	5.466432	-39.5416
Rural	1992	-0.00251	-5.74012	222.3531	39.71145	4.238955	1.326151	-3.13687	13.77986	-63.4251	-6.83465	-20.2132	-4.17962
Rural	1994	-0.00424	-5.34519	91.88256	2.718143	9.364157	1.543633	-2.41935	8.443752	7.789887	-6.08441	-15.4302	-3.19702
Rural	1996	-0.01579	-8.53566	64.37885	6.356105	3.4263	1.551173	-9.4937	26.38343	772.0395	-49.814	-10.407	-3.96546
Rural	1998	-0.00081	-6.84745	892.2216	-26.6786	4.857015	1.74186	-6.07535	6.650172	11.05761	-4.77361	-15.4614	-3.15319
Rural	2000	-0.00375	-6.04845	340.3887	137.781	2.919997	1.919962	-5.20906	3.319475	6.633449	-2.37016	-42.0377	-4.4949
Rural	2002	-0.03915	-8.45389	113.1887	-46.1656	5.400792	1.848046	133.8108	10.27543	2.16817	-2.99504	4.427667	-2.79278

Continuation...

location	*year*	*K13*	*K14*	*K15*	*K16*	*K17*	*K18*	*K19*	*K20*	*K21*	*K22*	*K23*	*K24*
Urban	1992	-53.8032	-624.319	9.237896	12.26104	57.7755	-10.4434	-23.9476	60.67607	-21.5129	-36.5112	-86.0389	-62.6815
Urban	1994	-47.3959	-71.0525	4.129298	4.214791	-50.5749	-14.1273	107.4969	-39.9848	-25.4316	-36.1838	57.8895	-37.335
Urban	1996	-49.743	-46.6333	6.04007	4.220208	-49.9762	-15.9118	-159.665	-139.082	-18.6587	-146.291	25.30833	-26.9428
Urban	1998	-44.374	-192.515	4.99781	11.36835	-30.7981	-7.85395	-22.2737	-51.0924	-26.1108	-23.4174	-155.332	-38.14

Continuation...

Location	*Year*	*k13*	*k14*	*k15*	*k16*	*k17*	*k18*	*k19*	*k20*	*k21*	*k22*	*k23*	*k24*
Urban	2000	-30.321	-1032.79	3.410644	1.688303	-21.3301	-9.3298	-62.8557	-17.7067	-25.7955	-19.2321	-36.2352	-30.3717
Urban	2002	-44.4011	-300.229	-82.2778	2.724446	15.84278	-9.29778	-26.6071	-66.8471	-20.7863	-29.7247	-31.6903	-39.6148
Rural	1992	1504.568	43.1048	5.380168	2.493019	-40.7835	-194.579	-32.8091	-25.5013	-16.5151	-11.2024	-122.938	-13.2161
Rural	1994	-281.63	46.72025	2.543571	1.493529	20.61225	-129.798	-16.7321	-24.7921	-18.8685	25.09501	404.5126	-22.6597
Rural	1996	-2879.76	60.86714	1.823238	2.440993	9.191911	-34.4424	271.4128	-26.6711	-25.3665	-43.2848	383.6845	-22.5743
Rural	1998	-99.9827	58.02943	1.391153	1.487702	498.4168	-260.933	-11.159	-40.6863	-23.5072	-28.373	35.29263	-18.0475
Rural	2000	-57.9953	18.38254	2.469075	1.794273	11.15064	-20.6224	-32.0134	-20.8606	-27.0007	-12.5073	33.16527	-15.0941
Rural	2002	-154.08	75.44419	69.2751	-7064.47	388.7739	-28.3058	22.60333	-41.0358	-22.414	747.6157	130.0241	-16.9892

1) food and beverages consumed at home, 2) food and beverages consumed outside of home, 3) tobacco, 4) public transit, 5) household cleaning items, 6) personal hygiene, 7) education, 8) recreation, 9) communications, 10) use and maintenance of private transportation, 11) mortgage, 12) rent 13) alcoholic drinks, 14) conservation fees, 15) gas and electricity, 16) clothing and shoes, 17) household items, 18) medical expenses, 19) household appliances, 20) furniture, 21) home repair, 22) electronic appliances, 23) inter-city public transit, 24) private transportation.

Table 2

GINI COEFFICIENTS FOR 24 COMMODITIES

Year	*Location*	*GX1*	*GX2*	*GX3*	*GX4*	*GX5*	*GX6*	*GX7*	*GX8*	*GX9*	*GX10*	*GX11*	*GX12*
1992	Rural	0.545627	0.93267	0.873526	0.673779	0.553341	0.506899	0.820051	0.946638	0.954363	0.918959	0.89065	0.9937
1994	Rural	0.512219	0.953576	0.922792	0.754175	0.451285	0.459033	0.793782	0.915332	0.902483	0.9149	0.86014	0.99161
1996	Rural	0.505422	0.948857	0.953742	0.762262	0.426279	0.446044	0.791308	0.938923	0.895128	0.902965	0.87377	0.98948
1998	Rural	0.537178	0.932644	0.976542	0.794501	0.538309	0.462306	0.774557	0.947361	0.920954	0.890593	0.92954	0.995
2000	Rural	0.491442	0.941729	0.95329	0.753166	0.423479	0.399958	0.742719	0.898117	0.839527	0.867827	0.90044	0.98684
2002	Rural	0.521217	0.919267	0.974316	0.798278	0.43368	0.40222	0.929333	0.945203	0.840012	0.891337	0.88324	0.98683
1992	Urban	0.488283	0.876305	0.862855	0.57781	0.444679	0.435422	0.751398	0.810598	0.846892	0.815217	0.88604	0.91357
1994	Urban	0.469414	0.876796	0.930689	0.57798	0.440326	0.419254	0.771244	0.754307	0.749749	0.795169	0.87496	0.90813
1996	Urban	0.460066	0.897991	0.953615	0.560751	0.402598	0.38997	0.741039	0.777905	0.729761	0.803271	0.88102	0.90449
1998	Urban	0.470315	0.883959	0.9444	0.640966	0.418253	0.403479	0.746754	0.764611	0.651179	0.778277	0.87368	0.89114
2000	Urban	0.457141	0.863929	0.959478	0.56954	0.401148	0.41355	0.736086	0.730008	0.613045	0.769048	0.88017	0.88205
2002	Urban	0.4635	0.838126	0.958636	0.633699	0.431781	0.40555	0.72556	0.75136	0.574921	0.755762	0.55885	0.90256

Continuation...

Year	*Location*	*GX13*	*GX14*	*GX15*	*GX16*	*GX17*	*GX18*	*GX19*	*GX20*	*GX21*	*GX22*	*GX23*	*GX24*
1992	Rural	0.982853	0.998233	0.53967	0.504407	0.840215	0.859501	0.937612	0.949745	0.976246	0.927742	0.867253	0.990579
1994	Rural	0.981448	0.987655	0.512709	0.509838	0.864363	0.848184	0.925458	0.946077	0.971322	0.950863	0.854311	0.986677
1996	Rural	0.981319	0.97287	0.53913	0.527413	0.869684	0.843854	0.954767	0.949667	0.975032	0.961339	0.868451	0.987245
1998	Rural	0.978727	0.987284	0.543879	0.532641	0.867595	0.840473	0.928875	0.953695	0.979893	0.949278	0.890126	0.989213

Continuation...

year	*location*	*GX13*	*GX14*	*GX15*	*GX16*	*GX17*	*GX18*	*GX19*	*GX20*	*GX21*	*GX22*	*GX23*	*GX24*
2000	Rural	0.969218	0.97682	0.515678	0.501851	0.823204	0.838468	0.928753	0.948069	0.981914	0.930558	0.870621	0.987747
2002	Rural	0.985438	0.978122	0.877385	0.495876	0.81478	0.870406	0.947348	0.972878	0.97464	0.954537	0.854513	0.990925
1992	Urban	0.969824	0.872484	0.517695	0.448391	0.845942	0.83565	0.907819	0.933925	0.966898	0.88453	0.874651	0.971116
1994	Urban	0.991216	0.874197	0.473481	0.469174	0.85642	0.834663	0.914282	0.931597	0.970058	0.891986	0.884031	0.978198
1996	Urban	0.980638	0.867031	0.460317	0.489692	0.874733	0.845258	0.914077	0.946428	0.973903	0.932019	0.891177	0.982503
1998	Urban	0.973852	0.848616	0.446242	0.500171	0.844527	0.838876	0.903842	0.936521	0.973904	0.91899	0.892441	0.978448
2000	Urban	0.966497	0.842841	0.444726	0.46111	0.788377	0.800755	0.887977	0.931374	0.973206	0.884687	0.873655	0.976084
2002	Urban	0.982256	0.900236	0.939635	0.511386	0.833325	0.849255	0.889089	0.952639	0.968523	0.883315		

1) food and beverages consumed at home, 2) food and beverages consumed outside of home, 3) tobacco, 4) public transit, 5) household cleaning items, 6) personal hygiene, 7) education, 8) recreation, 9) communications, 10) use and maintenance of private transportation, 11) mortgage, 12) rent 13) alcoholic drinks, 14) conservation fees, 15) gas and electricity, 16) clothing and shoes, 17) household items, 18) medical expenses, 19) household appliances, 20) furniture, 21) home repair, 22) electronic appliances, 23) inter-city public transit, 24) private transportation

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