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Abstract
This paper examines the evolution of welfare inequality and its origins in Tunisia. The study is based on consumption expenses using household budget and consumption surveys (1975-1980-1985-1990). The relationship consumption/welfare will be treated with brief descriptions of the inequality indicator. The empirical study shows a decrease in global inequality. The decomposition of the Gini index shows that this movement may be explained by the decrease in the inequality of the food expenditures. Moreover, this decomposition has allowed for the analysis of the specific contribution of each type of expenses in the overall inequality.

Introduction

Many studies have emphasized the increase of inequality of income in developed and developing countries (Piquetty, 1994). These empirical evidences had deep impacts on theoretical investigations. As a matter of fact they have entailed the manifestation of a remarkable vitality of the economic theory of inequality measurement and a special interest to decomposition of inequality indexes.

Decomposition analysis can be divided into two categories. The first concerns the decomposition of income between subgroups of the population. It shows that the total inequality corresponds to the sum of inequalities "within groups" and inequality "between groups" (Bourguignon, 1979; Cowell, 1980; Shorrocks, 1980). The practical importance of the distinction between individual groups lies partly in the insights that it affords to the underlying economic and social factors' contribution to inequality and in the design of policies influencing it. It also lies in the impact of some economic policies on vulnerable groups and the role that groups rather than unorganized individuals may play in influencing the course of economic inequality (Champernowne and Cowel, 1998). The second category decomposes incomes of individuals or households into different factors or components and evokes the contribution of these components to the total income inequality. A problem in these analyses concerns the methodology of the decomposition and the choice of the appropriate indicators (Fei, Ranis and Kuo, 1987; Lerman and Yitshaki, 1985; Shorrocks, 1982).

Based on the National Budget and Consumption Surveys carried out in 1975, 1980, 1985 and 1990, the present paper is related to the second category of analysis. It examines the evolution of welfare inequality and its sources in Tunisia with reference to the consumption expenses data. First, the relationship consumption /welfare is treated with brief description of methods of inequality measures. Then, an empirical study of the evolution and sources of the inequality of per capita consumption expenses, since 1975, is presented.

I. The Measure of Welfare

The measure of welfare appears through the economic literature as a subject of debate due to the fact that its definition is difficult and its components are fuzzy. Consequently, we only illustrate some factors which may influence the individual welfare.

The concern of welfare components' determination is the result of issues in relation to its measure. The problem of measurement is raised by cardinal theorists in order to establish interpersonal comparisons. Those comparisons appear under the assumption that the utility is related to the same determinants or components for all individuals. However, the parameters characterizing the individual functions may be different. Then the determination of welfare components is an objective evaluation through the material aspects of the society such as health, education, job, available goods and services, housing... (Strumpel, 1974). At this level, it is interesting to specify that the goal is to identify the components which have a significant role in satisfying human needs or in the happiness of Men, without being preoccupied with the distinction between economic welfare and social welfare.

These components can be divided in several categories. First, we can distinguish material components such as feeding, clothing, caring. Secondly, we can quote components capable of satisfying mental or spiritual needs such as pleasure to hear music and curiosity to understand and to know. Other components affect individual welfare such as education, nature of the productive activity, environment quality, national and international security (Timbergen, 1991). In addition, welfare is affected by the political, climatic and cultural environment and all other non-material attributes related to non-economic areas of life.

Thus, the individual situation may be correctly judged only if all factors are taken into account. This requirement seems to be ideal because sensations and attitudes are similar to a "black box" that can probably be opened only by psychologists and sociologists. Nevertheless, economists always tend to identify the most significant indicators (Levy-Garboua and Monmarquette, 1993).

In spite of those remarks, to measure welfare inequality, empirical studies refer to income (Atkinson, 1970; Dasgupta, Sen and Starrett, 1973; King, 1983) or to consumption expenditures (Tinbergen, 1991). Indeed, income is considered as a good tool to improve welfare (Kolm, 1995), and individual behavior analysis of altruism and malevolence adopt an economic state

definition characterized by a vector of monetary income; utilities are then related to the latter (Hochman and Rodgers, 1961). These analyses suppose that income, which has various sources, fulfils functions of an economic status indicator. The analyses permit in addition, an objective appreciation of welfare greatly correlated with the subjective situation demonstrated through satisfaction (Strumpel, 1974).

However, although income or consumption expenditures are considered as one of the main sources of an individual's happiness and the basis of welfare inequality comparisons, they are not systematically uncritical. In fact, the correlation between welfare and the possibility to buy goods and services is not as important. Indeed, welfare is derived from merchant and non-merchant goods and services. Besides, income excludes factors like leisure or social and political individual rights that do not have market value but contribute to welfare. If we consider, for instance, leisure as an economic commodity desired by individuals with modest income more than by those with high income, then the disparity of income can be higher than that of the welfare. Moreover, if political rights such as voting or eligibility, and social rights such as basic education and basic health were guaranteed to all individuals in society without discrimination, then the inequality of welfare would be necessarily inferior to that of income.

II. The Welfare Inequality

The optimal allocation of resources is a situation where one's position can't be improved unless at the expense of the position of another; it refers to an objective situation. This economic optimum is compatible with a multitude of patterns of distribution. Thus, it may be socially unacceptable because of inherent inequity. Public intervention is then required to establish equity because the optimum of consumption and production is necessary but not sufficient to reach social optimum. It is therefore necessary to define the concept of "distributive equity." For this purpose, one may refer to four approaches of ethical principles:

1. The Neo-Classical Approach

This approach is based upon the recognition of special individual merits. Each individual has to be remunerated according to his efforts and his endowments in factors. High pay must go to the person with rare skills. Thus, each distribution of National income that is derived from factors'

reward to marginal productivity, is considered as equitable. In this context, analysis of inequality is based on the comparison between marginal productivity and wages. The divergence of the two variables (marginal productivity and wage) indicates the presence of inequity, while convergence entails distributive equity.

In this approach, inequality is tolerated because it may have economic advantages and a favorable impact on efficiency. It provides a reward for and an inducement to acquire skills, bear risks and take responsibility. In this way, it is opposed to the next approaches, which are in the context of an exchange economy where the redistribution has no impact on the allocation of resources (Cazenave and Morrisson, 1977).

2. The Utilitarian Approach

This approach results from utility theory, which was founded by Bentham (1789) and developed by Marshall (1830); Pigou (1920) and Robertson (1952). According to this approach income must be distributed in order to produce the maximum welfare for the collectivity (Van Praag, 1991). Utilities are related to income, they are supposed to be cardinal and therefore, they are measurable and additive, marginal utilities are decreasing. If utility functions are identical, equity is reached when incomes are equally distributed. If, on the contrary, utility functions differ and individuals have different aptitudes to enjoy their income, then norms of equity imply that the highest income benefit goes to those who have the biggest faculty to enjoy them. So the maximization of the social welfare leads to the unequal distribution of income (Cazenave and Morrisson, 1977).

3. The Egalitarian Approach.

According to this approach income must be distributed in order to produce the same welfare for each member of the society. Egalitarianism has been first introduced by Lerner (1946) in a determinist universe. Then it has been developed in a context of uncertainty by Harsanyi (1955) and Sen (1970).

Lerner supposes that individual (i) has the same utility and capacities to enjoy a monetary income y_i: marginal utilities of income are decreasing and prices are constant. In addition, Lerner considered a social utility function as the sum of individual utilities $W = \sum u^i(y_i)$. In the case where incomes

are unequally distributed, redistribution that benefits the poorest implies an improvement of the total welfare. Consequently, egalitarian distribution of the national income leads to the maximization of social welfare.

The recognition that individuals may have special needs and different tastes has been introduced by Sen (1973) whose aim was to deduce a norm of equity in terms of satisfaction based on the principle "to each according to his needs," expressed analytically through individual utility functions. Thus, according to Sen's 'Weak Equity Axiom,' in an economy of N individuals i and j among others, if the person i has a lower level of welfare than person j for each level of individual income, then in distributing a given total amount of income among n individuals, including i and j, the optimal solution must give i a higher level of income than j. So egalitarianism, in a universe of certainty with different preferences, leads to an unequal distribution of the income.

Harsanyi and Sen who introduced the hypothesis that individuals don't know the consequences of their decisions have developed the uncertainty context. If people have identical probabilities to perceive any income, then social utility is maximal for an egalitarian distribution of income. One can say that the uncertainty of Sen has only approved the egalitarianism of Lerner (Deboissieu, 1977).

4. Rawls Maxi-Min Principle

Rawls proposed a new social contract opposed to utilitarian or egalitarian principles. His equity approach is derived from some primary hypothesis. People are supposed to have a veil of ignorance; they don't know what position they may have in the society. They are rational and mutually neutral, they have no altruism or malevolence. In this initial situation, the social contract must respect two fundamental principles. According to the first principle, equality of rights and liberties are non-negotiable, all calculations of maximization, leading to the loss of some fundamental rights by some individuals are meaningless. According to the second principle (the difference principle), the rational individual considers as equitable the maximization of minimum utility. Hence, Rawls maxi-min principle grants the privilege to all distributions that can raise the income of the poorest without considering the inherent degree of inequality (Cazenave and Morrisson, 1978).

Whatever is the adopted normative approach of equity, one must compare different distributions of income or consumption expenditures to appreciate whether one moves toward a more egalitarian situation. Inequality indicators must be developed for this purpose.

III. Inequality Indicators

To describe income distribution and the origins or the level of inequality, two methods can be adopted: The Lorenz curve and acceptable inequality indicators (Sollogoub, 1985).

1. The Lorenz Curve

To obtain a ranking of distributions, we can use a conventional device: the Lorenz curve. Two Lorenz curves, each one referring to a distribution, allow comparing inequality.

If we consider Y the income vector of N individuals:

$$Y \in R^n / Y = (y_1, y_2, \ldots y_n)$$

$$D : \{Y \in R^n / \sum y_i > 0\}$$

$$D_+ : \{Y \in R^n / y_i \geq 0 \text{ et } \sum y_i > 0\}$$

D_+ is a restriction of D to the only distributions where income is not negative.

Incomes y_i are arranged in ascending order $y_1 \leq y_2 \leq y_3 \leq \ldots \leq y_n$, the Lorenz curve of the distribution is constituted by the totality of points of co-ordinates, $[Pi, L(Pi)]$ such that

$Pi = \dfrac{i}{N}$ is the proportion of the population receiving an income no greater

than Y_i , $L(P_i) = \dfrac{1}{N \overline{Y}} \sum_{j=1}^{i} y_j$ is its income share.

Therefore, the Lorenz curve is the graph of $L(P_i)$ plotted against P_i.

In the case of two distributions X and Y, X dominates Y in the Lorenz sense if the X curve lies everywhere above the Y curve. The distribution "X" is

then more egalitarian than "Y" since the poorest people in "X" receive a share superior to that of their equivalents in "Y". Nevertheless, when two curves intercept, comparisons based on Lorenz classification become impossible. Then, to characterize the picture of inequality, we have to calculate some numerical indicators.

2. Axiomatic of Inequality Indicators

The inequality value for a population of N individuals, with the income distribution vector $Y(y_1, y_2,..., y_n)$ is noted by I (Y).

I is a function $I(Y): D \rightarrow R^+$, such that to each vector of D corresponds a positive or null real number. To be an inequality indicator, the function I must satisfy a set of basic requirements such as:

- the no coarseness: $I(Y) \neq I(X)$ for $X, Y \in D$

- the orientation: $I(Y) \geq I(\overline{Y}e)$ with e a unit vector (1, 1, ...1) with n components.

- standardization: $I(\overline{Y}e) = 0$; if incomes are equally distributed, the inequality is nil.

In addition to these basic properties, it is shown that to classify two distributions with similar size, inequality measures must satisfy symmetry requirement, the property of mean independence or income homogeneity and the principle of transfers initially formulized by Dalton (1920).

A. Symmetry or anonymity (Axiom 1): this axiom corresponds to the idea that the personality of the earners is irrelevant in measuring inequality (Bourguignon, 1979). Thus, if X and Y are two distributions of D, and if X is obtained from Y by a simple permutation of income, then I(X) = I(Y) (Sollogoub, 1985).

B. Income homogeneity or mean independence (Axiom 2): this is the requirement that the value of the index remains unchanged when the Yi are all multiplied by the same positive scalar (Bourguignon 1979, Shorrocks 1980).

C. Principle of transfers (Axiom A3): The Pigou-Dalton axiom says that if we make a transfer (d) from a person with income y_1 to a person with a lower income y_2 (where $y_2 \leq y_1 - d$); then the new distribution should be preferred (Atkinson, 1970). Indeed, a mean preserving transfer from rich to poor person must reduce inequality. It is an essential characteristic of the inequality index.

D. Population homogeneity (Axiom 4): Since the inequality indicator is defined for different population sizes, it's worth to specify whether an index defined over a population of k individuals is the same as the one defined for N individuals. Hence, inequality indicators must satisfy the population homogeneity axiom. According to this axiom, the inequality of a given distribution is the same as that of the distribution obtained by replicating any number of times each individual income is in the initial distribution. If r groups, each containing n individuals and having an identical distribution Y are aggregated into a single population of rn individuals, then aggregate inequality is the same as each of the constituent groups (Dasgupta et al. 1973; Bourguignon, 1979; Shorrocks, 1980).

3. Decomposition by Sources of Income

Among usual indicators of the inequality we present only the Gini coefficient which can be decomposed by sources of income. The Gini coefficient is a measure that has been widely used, to represent the extent of inequality. It is derived from the Lorenz curve and corresponds to the ratio of the difference between the line of absolute equality (the diagonal) and the Lorenz curve to the triangular region underneath the diagonal. It satisfies the basic requirements and axioms.

Analytically, the Gini coefficient is expressed by various ways (Jallouli, 1997). The decomposition of Gini indicator leads to analyze the contributions to total inequality of the different income sources (salaries, dividends, private income…), it also allows to grasp the extent of their marginal effects on inequality (Fei, Ranis and Kuo, 1978; Lerman, Yetshaki, 1985; Shorrocks, 1980). In this paper, we will confine ourselves to adopting the Gini coefficient for a decomposition of total inequality of expenditure according to every item of expenditure.

Let's have $G = \dfrac{2cov(Y.F(Y))}{\overline{Y}}$ (Lerman and Yitshaki, 1985)

* $Y = (Y_1, Y_2, ... Y_n)$ the distribution of total expenditure and Y_i^k the expenditure of the person i in item k where $k = 1...K$.

*$Y^1, Y^2, Y^3, ..., Y^K$ are the income components and $Y = \sum Y^k$

Given the properties of the covariance, we have $G = \dfrac{2\sum\limits_k \text{cov}(Y^k; F(Y))}{\overline{Y}}$

where $\text{cov}(Y^k; F(Y))$ represents the covariance of the expenditure in item k with the cumulative distribution of total expenditure.

When $\text{cov}(Y^k; F(Y))$ is multiplied and divided by $\text{cov}(Y^k; F(Y^k))$ and by Y^k, we obtain the rule of decomposition according to the component, that is:

$$G = \sum \left[\frac{\text{cov}(Y^k; F(Y))}{\text{cov}(Y^k; F(Y^k))} * \frac{2\text{cov}(Y^k; F(Y^k))}{\overline{Y}^k} * \frac{\overline{Y}^k}{\overline{Y}} \right]$$

Let's note:

-the Gini correlation between the component k and the total expenditure: $R_k = \dfrac{\text{cov}(Y^k; F(Y))}{\text{cov}(Y^k; F(Y^k))}$,

-the Gini coefficient related to the component k: $G_k = \dfrac{2\text{cov}(Y^k; F(Y^k))}{\overline{Y}^k}$,

-the proportion of the component k in the total income $S_k = \dfrac{\overline{Y}^k}{\overline{Y}}$,

Then $G = \sum R_K G_K S_K$.

The relative contribution of an item k to total inequality is $R_k G_k S_k / G$. the sum of the relative contributions of the various items being equal to unit. The decomposition of the Gini index also allows determining the marginal effect of a variation in each expenditure on total inequality. Let e_k be a scalar slightly superior to the unit, an increase in the incomes derived from the source k results in the passage to vector $e_k Y^k$ and will involve a variation of G. The variation in the value of G brought about by this change at the margin of the income source is obtained from the partial derivative of G in relation to e_k. We show that:

$$\frac{\partial G}{\partial e_k} = S_k (R_k G_k - G)$$

$\dfrac{\partial G}{\partial e_k}$ is the marginal contribution of source k to total inequality.

The relative marginal effect is obtained by dividing the above expression by G, that is to say:

$$\frac{\left(\partial G / \partial e_k \right)}{G} = (R_k G_k . S_k / G) - S_k$$

It is clear that the sum of the relative marginal effects is nil, multiplying all the sources of income by e leaves Gini's global index unchanged.

Thus, the decomposition of the Gini index as suggested by Lerman and Yitshaki (1985) allows to measure the inequality contribution of every item of expenditure to total inequality; it also allows to identify the impact of a marginal increase of a particular expenditure on total inequality. We will adopt it to analyze how the various expenditures have contributed to the development of expenditure inequality in Tunisia.

IV. Origins and Evolution of the Expenditures Inequality: 1975-1980-1985-1990

1. Data

Data are issued from the national surveys on household budget and consumption (1975-1980-1985-1990). These surveys are conducted by the National Institute of Statistics on a representative household sample spread all over the national territory and during a whole year. They provide information about households' consumption of goods and services. Consequently, they lead to examining the evolution of standards of living of households through their expenditures and they allow for analysis among several groups.

Data refer to all household consumption including the value of production for person's own consumption (goods which come from family gardens and agricultural exploitations or from trade activities by a member of the household) and the value of all kind of real advantages from which the household benefits such as shadow rents for those who own their dwelling or have free accommodation[1].

Thus, consumption expenditures are considered as largely reliable for the study of the standard of living of households and their welfare. They track living standards over several periods with comparative approaches. They are more suitable than income that may be characterized by understatement for fear of attracting high taxation, which may be inaccurate just because part of it is not priced and which often doesn't estimate transfers. Moreover, income may have a large transitory component, it even happens to be zero.

In fact the debate regarding income or consumption expenditure is much deeper. It's obvious that if our aim is to compare households' economic conditions, this doesn't mean that we compare their levels of happiness since happiness depends on many considerations apart from economic conditions, even if it is often believed that better economic conditions bring some more happiness. Comparing economic conditions is comparing those elements of happiness that might be bought. Happiness is in fact a kind of "black box" that economists can't open and that they name "economic welfare" (Levy-Garboua and Montmarquette, 1993). So that the supposed relationship behind economic conditions is [income→consumption→economic welfare]. The two links present numerous theoretical and practical problems (Champernowne and Cowel, 1998). Our hypothesis is that an individual who used to spend more on his own consumption has the greater economic welfare. If consumption was proportional to income as stated by the permanent income hypothesis,

income and consumption should have the same distribution, but if the consumption function is more sophisticated, then distributions will differ. For instance, if the consumption functions are of Keynesian type, inequality indicators based on consumption data underestimate the inequality of income.

2. Global Evolution of Inequality

The comparison of Lorenz curves (figure 1 and table 1) connected with the per capita expenditure distributions shows that inequality clearly decreased between 1975 and 1980 since the Lorenz curve of 1980 dominates that of 1975.

The same movement is observed between 1975 and 1985 and 1985 and 1990. There's vagueness between 1980 and 1985 since the curves intersect despite the increase in the portion of expenditures for the four poorest deciles.

The Gini coefficient confirms the results below. It reveals a general tendency to the decrease in inequality of expenditure accompanied by a virtual stability between 1980 and 1985 (table 1).

This tendency is rather surprising and runs counter to Kuznets law. We were in fact entitled to expect the economic growth witnessed by Tunisia during that period responsible for an increase in inequalities. We must inquire into the causes of reduction of inequality under the strong commitment of the state in the economy. This hold appears notably through:

> setting the prices of basic goods and their compensation.
> Providing free public services relating notably to Education and health.
> A policy of support to finance lodgings in general and social lodgings more precisely.

V. Contribution of the Consumed Items to Inequality

1. Contribution of the Food Expenditure

The information from table 2 below shows that the inequality of food expenditure is much weaker than the overall inequality. But, because of its

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[1] The distributions of the population are defined with reference to expenditure slices the members of which differ from one year to another. Since inequality indexes are sensitive to the number of slices, all data had been transformed in a way to compel with the 1990 scheme. In all the surveys the left side of the first slice of expenditure and the right side of the last class are not determined. Consequently, they were approximated case by case, with the supposition that the center of the class coincides with its average expenditures (Calot, 1964). Finally, it is worth reminding that since the expenditures inside each class are supposed to be uniformly distributed, the calculated inequality indexes are a lower boundary.

strong budgetary coefficient (S_k), its relative contribution to inequality remains important (30 percent approximately).

From 1975 to 1990, we notice a parallel evolution of the inequality of food expenditure and the overall inequality. The relative marginal effect of food expenditure is negative throughout the period, indicating that this item has an important equalizing effect (about 0.12). Thus, the decrease in global inequality is caused exclusively by the change in the inequality of food expenditure.

The reduction in the inequality of food expenditure complied with throughout the period, may be explained notably by the elasticity of food expenditure in relation to total expenditure. This elasticity is less than the unit, according to Engel's law, it points to the fact that the food expenditure, which responds to basic needs, tends to reach a saturation point when income increases (when income increases, food expenditure increases less fast). This explains the equalizing effect of food expenditure on total inequality.

The reduction in inequality of food expenditure complied with throughout the period may also be explained by the impact of the compensation fund. The basic products, notably the cereal crops, oil and sugar, benefit from a pricing policy favorable to consumers. This policy is likely to create the demand of the underprivileged classes while keeping their consumption level and reducing inequality of the corresponding expenditure. This hypothesis is confirmed when analyzing the sub-items of food consumption (table 3 in Appendix). Inequality in 1990 is in fact sharply reduced for the cereal crops (Gk = 0.11), oil and fats (Gk = 0.21), sugar and sugared products (Gk = 0.18). Although all in all inequality of food expenditure has decreased, we notice between 1980 and 1990 a rise in inequality of expenditure on oil, fats, drinks and eating out (sub-items n° 9 and n° 10). In addition, it would appear from table 3 that in spite of their decrease, the inequality of expenditure on meat and poultry, milk and its derivatives and eggs, on fruit and fish remain, over the period, relatively high in relation to those of the other expenditure. They have had increasing contributions.

In terms of marginal effect, it would appear from table 4 (in Appendix) that the expenditure on fish and fruit increases total inequality.

2. Contribution of Housing Expenditure

Inequality of the housing expenditure (G_{k75} = 0.53) is much higher than global inequality (Table 2 below), it follows a descending trend ($G_{k\ 90}$ = 0.45). Their budgetary coefficient (S_k) is fairly high but declining sharply too. Thus, while their contribution to the development of total inequality in 1975 was 35 percent, their share fell to 26.8 percent in 1990. Throughout the period, the relative marginal effect of housing expenditure, though declining, is positive. This evolution shows that the housing expenditure is a source of inequality and that its increase has always made total inequality worse. However, the extent of this global evolution conceals differentiated behaviors of consumption sub-items. Actually, the decline in the global indicators related to inequality of dwelling expenditure is essentially due to the strong decline in the inequality of expenditures on rent and energy. These two sub-items have relatively weak Gini indices (respectively 0.32 and 0.25 in 1990) (table 3 in Appendix). Their marginal effect is negative and they appear as equalizing expenditure. On the other hand, the other items connected with acquiring, repairing and equipping lodgings show high and/or growing inequality indices of expenditure, their marginal effect is positive, they increase inequality (table 4 in appendix).

3. Contribution of the Other Expenditure Items.

They include clothing expenditure, hygiene and care, transport and telecommunication, education, culture and leisure and other expenditure. In 1990, all of these items have a budgetary coefficient equal to 0.38 (compared to 0.3 in 1975) and contribute to the development of inequality 44.7% (compared to 34.2 percent in 1975).

From 1975 to 1990, the Gini indices specific to this expenditure declined on the whole but not so quickly as the global index. As a result, the contribution of this expenditure to total inequality was increasing. The relative marginal effect of an increase in this expenditure is rather positive.

Conclusion

The purpose of this research consisted in studying the evolution of welfare inequality and its sources in Tunisia. The analysis was based on the data of per capita expenditure according to the national surveys on budget and consumption. Resorting to these data is motivated by the absence of

complete data on incomes on the one hand, and the fact that they reflect welfare more than income on the other.

Grasping the evolution and sources of inequality was based notably on calculating and decomposing the Gini index according to categories of expenditure; this step is likely to give us information about:

global inequality of expenditure,
inequality of expenditures in each consumed item and sub-item,
marginal effect - equalizing or non equalizing- of the variation of a particular item on total inequality.

The results have shown that global inequality decreased from 1975 to 1990. The decomposition of the Gini index has shown that this movement may be explained solely by the decrease in inequality of food expenditure and more particularly the one corresponding to the consumption items benefiting from the intervention of the general equalization fund.

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Figure 1: Lorenz Curves
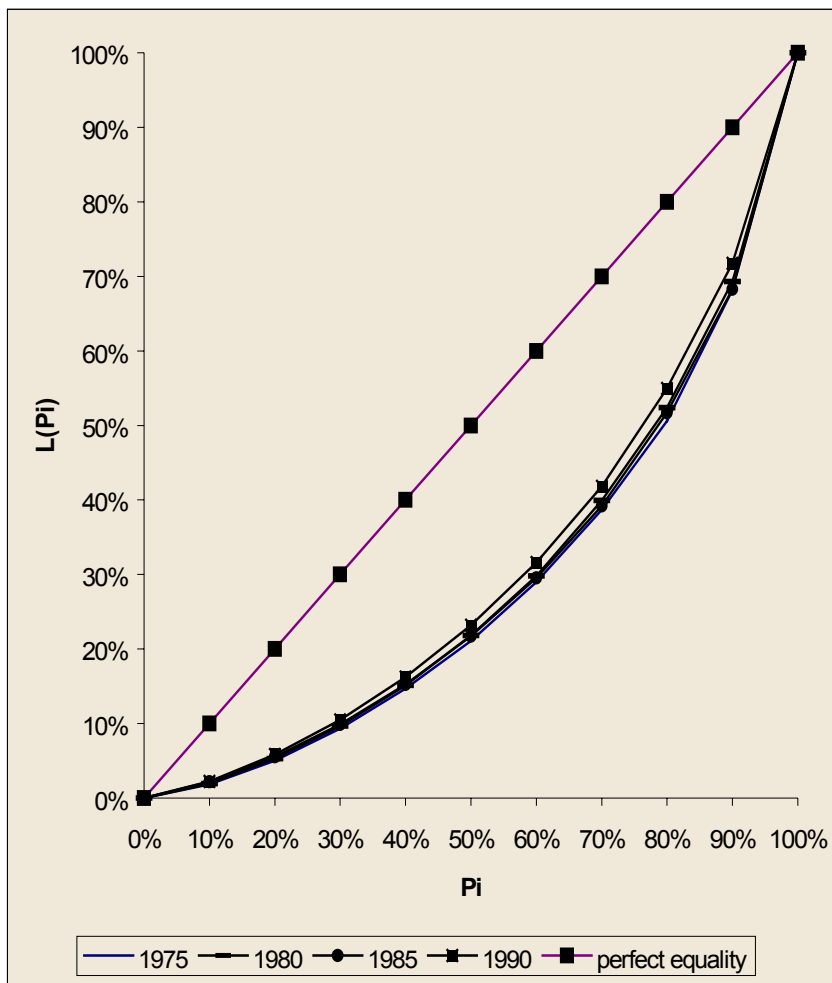
Table 1: Lorenz Distribution (%) and Gini Coefficient

Deciles	1975	1980	1985	1990
D1	1.85	1.95	2.17	2.23
D2	5.02	5.26	5.53	5.82
D3	9.32	9.66	9.88	10.46
D4	14.67	15.13	15.24	16.23
D5	21.09	21.80	21.72	23.20
D6	29.00	29.81	29.53	31.62
D7	38.69	39.91	39.22	41.80
D8	50.56	52.37	51.71	54.94
D9	68.14	69.28	68.26	71.75
D10	100	100	100	100
Gini	0.4181	0.4052	0.4058	0.3746

Table 2: Decomposition of Inequality According to the Expenditure Category in 1975 and 1990

	1975				1990			
	G_k	S_k	Relative Contribution %	Marginal Effect	G_k	S_k	Relative Contribution %	Marginal Effect
Nutrition	0.3042	0.4239	30.80	-0.1155	0.2664	0.4012	28.50	-0.1159
Housing	0.5339	0.2744	35	0.076	0.4595	0.2189	26.80	0.0496
Clothing	0.4046	0.0886	8.61	-0.0029	0.3797	0.1023	10.40	0.0014
Hygiene & Care	0.4706	0.054	6.13	0.0068	0.4186	0.0876	9.80	0.0103
Transport & Telecom. Education	0.5908	0.0453	6.42	0.0187	0.557	0.0814	12.10	0.0397
Culture, Leisure	0.4567	0.0799	8.70	0.0074	0.3756	0.0853	8.60	0.0002
Other	0.5355	0.0339	4.34	0.0095	0.6115		3.80	0.0147
Total	0.4181	1	100	0	0.3746	1	100	0

Appendix:

Table 3: Inequality by Sub-Items (Gk)

Sub-items		1975	1980	1985	1990
1	Cereal	0.1875	0.1185	0.1127	0.1117
2	Condiment	0.2917	0.2545	0.2696	0.2298
3	Vegetable	0.2660	0.2258	0.2228	0.2053
4	Fruit	0.4300	0.4161	0.3621	0.3752
5	Meats- poultry	0.3952	0.3378	0.3226	0.3073
6	Fish	0.4690	0.4496	0.4961	0.4498
7	Milk-eggs	0.3879	0.3486	0.3576	0.3314
8	Sugar- sugared prod	0.2064	0.2155	0.1993	0.1863
9	Oil- fats	0.2760	0.1649	0.2078	0.2144
10	Drinks- meals in the exterior	0.3778	0.3565	0.3766	0.3777
11	Rents	0.4788	0.4788	0.3860	0.3219
12	Energy	0.4084	0.3509	0.3263	0.2533
13	Reparation of house	0.5384	0.5559	0.5502	0.5513
14	Furniture	0.5850	0.5791	0.5740	0.6206
15	Menagerie machines	0.6288	0.5692	0.5983	0.6323
16	Utensil of kitchen	0.3905	0.3555	0.4276	0.4489
17	Linen of house	0.4726	0.4464	0.4292	0.4695
18	Acquisition of accommodation	0.7767	0.7409	0.7338	0.7696
19	Modern garment	0.5033	0.4489	0.3663	0.3423
20	Traditional garment	0.2434	0.1805	0.2017	0.2345
21	Under garment	0.4484	0.4195	0.4184	0.4280
22	Cloths	0.4806	0.4759	0.4997	0.5042
23	Shoes	0.3851	0.3917	0.3761	0.3565
24	Cover head	0.2731	0.0427	0.1547	0.3677
25	Personal effect	0.5207	0.3937	0.4311	0.5110
26	Haberdashery	0.3363	0.4844	0.4847	0.5763
27	Other clothing	0.0000	0.0000	0.4628	0.4143
28	Medical cares	0.5199	0.4654	0.4470	0.4757
29	Personal cares	0.4927	0.4454	0.3598	0.4119
30	Products of hygiene	0.3443	0.2751	0.2646	0.2587
31	Private transport	0.7418	0.7218	0.7126	0.6730
32	Common transport	0.3645	0.3307	0.3549	0.3902
33	Telecommunication	0.7303	0.7459	0.7553	0.6841
34	Tobacco-cigarettes	0.3267	0.2778	0.2482	0.2663
35	Spectacles	0.3823	0.4870	0.4886	0.6308
36	Articles of leisure	0.5307	0.5388	0.4999	0.5330
37	Culture	0.7896	0.4688	0.6192	0.5958
38	Education	0.3830	0.3394	0.3026	0.2770
39	Holidays and travel	0.6694	0.7127	0.6795	0.7009
40	Other expenditure	0.5355	0.5542	0.7338	0.6115

Table 4: Evolution of Marginal Effects of Each Sub-Item

	Sub-items	1975	1980	1985	1990
1	Cereal	-0.0511	-0.0581	-0.0445	-0.0437
2	Condiment	-0.0046	-0.0053	-0.0045	-0.0058
3	Vegetable	-0.0246	-0.0290	-0.0306	-0.0316
4	Fruit	0.0007	0.0007	-0.0024	0.0000
5	Meats- poultry	-0.0042	-0.0144	-0.0178	-0.0163
6	Fish	0.0014	0.0012	0.0027	0.0025
7	Milk-eggs	-0.0019	-0.0054	-0.0046	-0.0048
8	Sugar- sugared prod	-0.0107	-0.0084	-0.0054	-0.0061
9	Oil- fats	-0.0162	-0.0178	-0.0113	-0.0107
10	Drinks- meals in the exterior	-0.0039	-0.0055	-0.0039	0.0004
11	Rents	0.0141	0.0115	-0.0027	-0.0086
12	Energy	-0.0009	-0.0058	-0.0100	-0.0144
13	Reparation of house	0.0182	0.0223	0.0187	0.0266
14	Furniture	0.0080	0.0076	0.0065	0.0083
15	Menagerie machines	0.0026	0.0025	0.0025	0.0031
16	Utensil of kitchen	-0.0003	-0.0005	0.0002	0.0010
17	Linen of house	0.0008	0.0007	0.0002	0.0008
18	Acquisition of accommodation	0.0334	0.0728	0.0709	0.0329
19	Modern garment	0.0053	0.0040	-0.0023	-0.0032
20	Traditional garment	-0.0050	-0.0045	-0.0019	-0.0011
21	Under garment	0.0008	0.0004	0.0002	0.0024
22	Cloths	0.0007	0.0010	0.0005	0.0016
23	Shoes	-0.0014	-0.0007	-0.0009	-0.0014
24	Cover head	-0.0009	-0.0011	-0.0003	0.0000
25	Personal effect	0.0003	0.0000	0.0001	0.0018
26	Haberdashery	-0.0026	0.0002	0.0001	0.0010
27	Other clothing	0.0000	0.0000	0.0015	0.0004
28	Medical cares	0.0073	0.0049	0.0031	0.0125
29	Personal cares	0.0019	0.0011	-0.0029	0.0026
30	Products of hygiene	-0.0024	-0.0042	-0.0047	-0.0048
31	Private transport	0.0196	0.0204	0.0355	0.0339
32	Common transport	-0.0023	-0.0037	-0.0048	0.0014
33	Telecommunication	0.0014	0.0023	0.0032	0.0044
34	Tobacco-cigarettes	-0.0061	-0.0108	-0.0170	-0.0106
35	Spectacles	-0.0004	0.0011	0.0006	0.0029
36	Articles of leisure	0.0024	0.0036	0.0019	0.0027
37	Culture	0.0010	0.0004	0.0023	0.0028
38	Education	-0.0016	-0.0019	-0.0045	-0.0062
39	Holidays and travel	0.0117	0.0093	0.0077	0.0086
40	Other expenditure	0.0095	0.0092	0.0188	0.0147