A MECHANISM FOR THE ALLOCATION OF SOCIAL ASSISTANCE EXPENDITURE IN TIMES OF ECONOMIC CRISIS

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ABSTRACT
Increased social spending is in connection with growth procyclical reverse.
The conjugation effect of increased spending on social assistance with other measures related to tax adjustments may be offset by grant schemes of social assistance benefits compensatory role.
The main purpose of this study is to develop a mechanism for the allocation of social assistance expenditure that lead to efficient economic policy response in times of economic crisis.
The study aims at the model scheme to reduce social procyclical effect of granting aid to poverty and contribute to economic growth.
It proposes financing costs both in budgetary allocations but also in attracting private funds to use the work of potential beneficiaries.

KEYWORDS: *informational asymmetry, redistribution, social benefits*

JEL CLASSIFICATION *CD82, E24*

1. INTRODUCTION

The social programmes represent the redistribution of revenues collected from taxpayers toward persons considered to be in need according to the public policies.
Therefore, government - financed welfare programmes are often looked at as a type of a safety net of the state itself by groups of persons having certain features which are detected according to a selection process.
The state should grant the ultimate successive safety net to persons in whose cases the previous safety nets would have failed. The beneficiaries are persons selected by different decision-makers who are aware of the actual status of that person.
Therefore it reveals the sensitivity of the social programmes toward social controls or penalties, and has a stabilizing effect on the economic crisis.
Income redistribution policy can generate economic growth if reducing inequalities remove conflicts, increase productivity and lower income people who face restrictions on access to credit
Empirical econometric studies (Barro, 1990) stated that most significant effects of budgetary expenditure on social benefits are negative growth.
Barro (1990) examined the simultaneous impact of taxes and spending on economic growth. Capital expenditures and investments including investments in transport and communication infrastructure have a significant effect on growth.

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Budget for education related expenses have a significant effect in increasing GDP / capita especially if they are directed to sectors that have an impact on development.Therefore conditionality of school programs to attend courses is important.
Capital expenditures and investments including investments in transport and communication infrastructure have a significant effect on growth. A social assistance cost has an effect on increasing GDP/capital but rather stifles growth.
The redistribution of such amounts may raise controversies issued from the very definition of the „support", which requires reallocation of monies collected from other persons. Individuals may create safety nets to support themselves, by means of money savings.
Many of the controversies regarding the efficiency and the effectiveness of public policies regarding social protection come from a number of opinions about sources of poverty which generate the need for state social protection for the people in need. We can agree that the need for support may also occur unintentionally, as a misfortune, resulting in most cases from an accident.
Therefore, it seems reasonable for the individuals not to be responsible for their needs when such needs occur involuntarily.
This first finding is a premise for an informational asymmetry in granting social programmes, the entity granting such benefit being not aware of the precise situation of the aid beneficiary.The classic approach of the adverse selection and moral risk problem belongs to Mirrlees (1971). The adverse selection models, initially simple, have been developed in various theoretical and practical directions.
According to Marinescu and Marin (2011), contributions to the theoretical development belong also to Green and Laffont (1987), Myerson (1979), Dasgupta, Hammond and Maskin (1979). Coming to applicative studies, there are many and cover almost all the fields of economy: non-linear tarrification (Musa, Rosen (1978), Maskin, Riley, 1984), credit rationalization (Stiglitz, Weiss,(1981), Bester (1992), Harris, Raviv, (1992), optimal taxation (Mirrlees (1971,1986), Roberts (2000), Saez (2001), employment contracts (Chari (1983), Green, Kahn (1983), Grossman, Hart (1983), regulation, Laffont and Tirole (1993), insurance, Fluet, Parnnequin, (1997), Sloan, Norton (1997), Stiglitz (1997), Villeneuve (2000), Brunner, Pech (2006), Resende, Zeidan (2010).
Due to lack of funding during the economic crisis there is a high pressure on the provision of social benefits, and therefore required efficient allocation scheme. There are various financing schemes involving allocation of social benefits from both the state budget and also contributions from private sources.
The article proposes a new methodology for granting, to have regard to the work performed by them. In the analysis we used a model of adverse selection and ISLM model. The result was a possible new allocation scheme for social benefits.

2. ON A MODEL OF ALLOCATION EXISTING IN ROMANIA

Using a simplified model of granting these benefits in Romania will try to develop a funding scheme to underpin public policies on social assistance.
According to the distribution of the benefits in Romania, the people who require welfare assistance have to accomplish some work hours for the community service, and they could be punished if there are some inappropriate requirements (which they couldn't be known by those who evaluate).
The social welfare is stipulated in Law no. 416/2001 regarding the assured minimum income of the standard bylaws approved by the Government Decision no. 50/2011.
The families and the single people who own only the surviving goods benefit of the social welfare, such as:

- ***Goods with a personal purpose or for their house-keeping;***
- ***Provisions for their daily supply concerning the house-keeping;***
- ***Around house and traction animals;***
- ***Tools for their field work.***

The state provides a social program having as aim this objective (avoiding the poverty) the utility of the program (the increase of the general welfare), the cost and the possibility of control.The distribution of the minimum income provides an insurance web for the state towards those groups of people identified by certain characteristics.
Those who are going to benefit are poor people evaluated by social surveys through their application requests.
The person who requires this help knows for sure his/her real position without the acknowledgment of the one who gives the social help.
The social survey is done by the public service personnel of the welfare institution from the local board or depending on each case, by those with social assistance knowledge.
The payment of the social assistance is supported by the state (the state budget) through the local administration (decoys), without that one who pays the allowance (the state) to know clearly the situation of that person who is going to benefit.
The beneficiary will work on the account of the local community.

Beyond the previous matters, we have two operational levels: one is the relation between the requester and the town hall and the other the relation of the town hall and the state.
We are going to take into account a sample which will gather the two levels, as follows:

1. The request of the beneficiary to the town hall and the approval
2. The request of the town hall for the budget loans from the state and the payment.

1. The request of the beneficiary to the town hall

The requester with the minimum income earns by this incorrect application $\boldsymbol{w}$[4] (the received social welfare quantum) less when the welfare worker identifies and fines that individual who has a wrong application.
The equilibrium is accomplished at this level between the social welfare given and the value of the fine or the labour hours that the individual had to carry out.
On the behalf of the requester, the benefit of the social welfare $\boldsymbol{w}$ is composed by one part of the received income out of which it is dropped a stigmatization part caused by the involvement in the social assisted category (due to the labour of the beneficiary through the social welfare program).
We are going to think that the beneficiary has an income and assets level $\boldsymbol{v}$.
There are individuals who don't have any incomes and also who have incomes but the personnel from the local social security who approves the application can't grasp them.The town hall earns from this extension the $\boldsymbol{o}$ sum.
This value is given by the wage which is granted for the town hall **either from the beneficiary labour or from the earnings.**
Although it isn't the aim of our article, it is also questionable to mention about the political benefits and the benefits brought by those who receive social welfare for their labour.
If it is going to be an assessment on the beneficiary it will demand a cost which it is paid by the person who approves the application ($\boldsymbol{h}$) **and this cost implies either the shifting of the social worker or other parts.**
We mark with $\boldsymbol{a}$ the penalty given by the social worker to the beneficiary who requested wrong the social welfare. This is actually the paid fine. It isn't about the fine stipulated in the standard bylaws but the one which has to be paid.
From the fine the town hall could keep the cost of $\boldsymbol{a}$ (one percent, **k**, of the fine will go back at the welfare worker, for example as an input of the wage).

[4]We notice that for an individual the income (w) is given by the difference between the social welfare and the costs of the application.

The town hall which earns from the social welfare ***R*** (the earning according to the public benefit but also of the labour).

Table no. 1 – Sample of the social worker request

		x	**1-x**
		The welfare worker controls	The welfare worker doesn't control
y	The beneficiary applies	V – a , R+ k a- h	V+w , R-w
1-y	The beneficiary doesn't apply	V , 0	V , 0

Source: Brojba, L.C., Dumitru, C.G., Belciug, V.A. (2010), *On the Use of Some Optimal Strategies of Fiscal Administration during Economic Crisis* Romanian, Journal of Economic Forecasting, 13 (1), 151-164

It doesn't have a strategic equilibrium and the requester has to choose a mixed strategy.
The requester is irresponsive in case of applying or not when

$$y * (V - a) + (1 - y) * (V + w) = y * (V) + (1 - y) * (V); \quad (1)$$

$$Y_L = w/(a + w) \quad (2)$$

By figuring the equation (2) we are going to see a course of social welfare request concerning its quantum but also the quantum of the fine.

It will be regarded as the social welfare will vary between 0 and 10 currency units and the fine between 0 and 50 currency units. We mark that commeasured to the increase of the quantum welfare, the defraud course is growing and once the fine increases the illegal requests decrease.

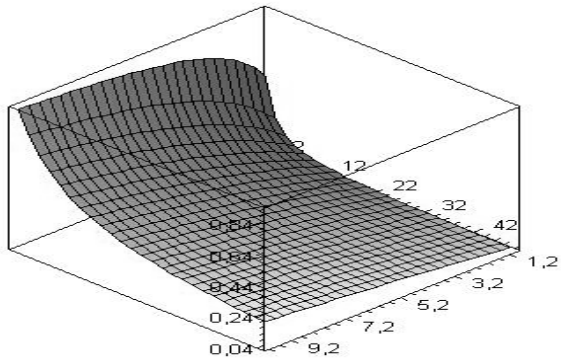

Fig. no. 1. The changing of the requester reaction for the social welfare
Source: projection of authors

If we establish the social welfare quantum (w) at a certain cost, we could control better the defraud course by applying a real fine.
Moreover the relation (2) gives a link between the performance quantum and the fine which the social worker is enforcing (the one who approves the request), so the program won't allow a bigger failure than the one committed (for example 10 at 100).
For the local welfare worker, the decision to inspect or not, it will change due to the following balance:

$$X (R+ k a- h) + (1 - x)(R-w) = 0 \quad (3)$$

$$xR + xka – xh + R – w –xR + xW = 0 \quad (4)$$

$$\mathbf{X_L = (w - R)/ (k*a-h+w) \quad (5)}$$

2. The equilibrium of the survey in case of the request sums from the budget

After the beneficiary request, the examination and the approval of the social worker, the demand is executed by the state budget and also by the town hall.
As I said the town hall which earns from the social welfare ***R*** (the earning according to the public benefit but also of the labour) could earn from the incorrect evaluation ***P***.
It is about the public earning undeserved due to the illegal approval.
In the case of the illegal approval, the state gives a fine ***b*** according to the social inspections.
The social programs are designed by the government in order to decrease the poverty and/or to support and to assist the crucial situations.
The government earns through this program the ***G*** value given by public politics which are granted. G value can be determined using various cost effective models described in Chapter 1
The accomplished evaluations have a cost of ***H*** according to the welfare inspectors' wages, the shifting costs and so on.

Table no. 2 – The request sample of the state budget

		x	**1-x**
		The government examines	The government doesn't examine
y	The town hall makes requests	R – b , G+ b- H	R+P , G- w
1-y	The town hall doesn't make requests	R, 0	R , 0

Due to this sample, we could notice the fact that the town hall should choose a mixed approvable strategy for the social demands taking into account the benefits that it has.
The town hall is insensible to the request approval, in terms of:

$$y * (R - b) + (1 - y) * (R + P) = y * (R) + (1 - y) * (R); \quad (6)$$

$$\mathbf{Y_S = P / (b + P)} \quad \mathbf{(7)}$$

It was certain that the request application was attached to the report between the extra benefit of the town hall towards the fine given to the welfare inspectors.
We represent graphically the course fluctuation of the town hall to approve the demands.
We are going to take into account the ***P*** value of the town hall benefit achieved illegally between 0 and 100 and the value of the fine enforced by the state which it will be between 0 and 50.

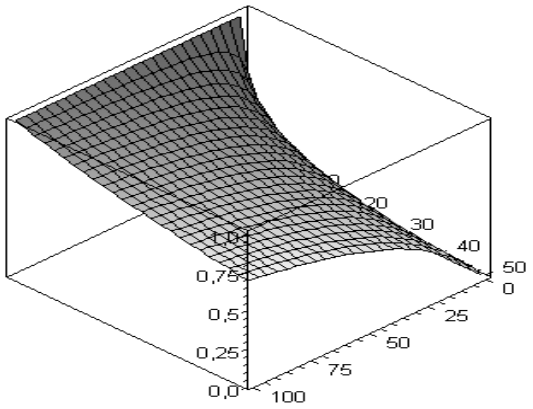

Fig. no. 2. The balance changing of the welfare worker-state
Source: projection of authors

It is noticeable that once with the increase of ***P*** value (for example, before the election processes), and the fraud also increases. In order to equilibrate this course the government can use the fines but it will be too late because of its ex post controls.
For the welfare inspection, the decision to inspect or not, it will change due to the following balance:

$$X (G + b - h) + (1 - x)(G - w) = 0 \quad (8)$$

$$\mathbf{X_S = (w - g)/ (b – h + w)} \quad \mathbf{(9)}$$

The equation system 2,5,7,9 allows to change the balance in a simple way when giving the social welfare and to plan the assembly environment which has to assure the efficiency of the public funds employment.

3. SENSITIVITY ANALYSIS MODEL

The state would have to continuously analyze all these balances and to correct them in accordance with the economical times and other external factors.
We are going to analyze the sensibility of the existing sample by the following equations according to the adjustable **labour of the potential beneficiary of the welfare**.

$$Y_1 = w/(a + w) \quad (10)$$

$$X_L = (w - R)/ (k*a-h+w) \quad (11)$$

$$Y_2 = P / (b + P) \quad (12)$$

$$X_2 = (w - g)/ (b – h + w) \quad (13)$$

Speaking about individual seeking social utility (a), I thought that the value of the fine was given by the applied penalty value but also about the stigmatize value (Akerlof & Shiller, 2009):

$$a = aa + st$$

I supported the idea that from the point of the requester of the welfare, the benefit of the social welfare *w* (the usefulness) is composed of a part given by the real income out of which it is subtracted the stigmatize part.
This part is caused by the enlistment of the poor families and it is a difficult work inside the welfare institution.
We are going to take into account that the utility of a person who requests welfare depends on the individual usage of the goods, the community reputation, an integrity variable in the society behavior and the personal preferences.

$$W = f (c, r, k) \quad (14)$$

$$Y_1 = w / (a+ w) \text{ becomes } Y_1=1/ ((a/w) +1) \quad (15)$$

We can notice that Y_1 is going to decrease along with the a/w value.
Consequently the aiming of the beneficiaries who are indeed poor could be done by the labour situation (not necessary for the community purpose).
The labour will influence the utility, especially at those individuals who are in a greater risk of fraud (due to the decrease of the fame), but also the increase of the penalty (caused by the increase of that component).
The labour functions like a self-adjustable process when it's about the increase of a potential beneficiary. We further analyze the impact of mixed public funding - private work have to support the use of beneficiaries.
We consider a model in which social aid allocation amounts can be made by a person or legal entity to provide such work to use such persons, with budget allocation for the beneficiary on payment of a values much higher than the social benefits.
In the proposed model targeting beneficiaries eligibility criteria will remain the responsibility of all City Hall, but the actual amount will be allocated by the state to beneficiaries on the basis of joint funding.

It also involves a transfer of management limited labor welfare recipients distinct entity or person to aim for profit using local development and employment potential of people receiving social assistance, and credit schemes.Stimulating work is done so by encouraging entrepreneurs fail to engage this workforce.

We will consider utility function (Akerlof & Kranton, 2010):

$$W = f(c, r, k) \qquad (16)$$

Thus in the case of public-private financing component can increase the amount of income through private contributions but growth of stigma component balance is maintained within the projected limits. The development of the social economy through intervention component states through this mechanism may lead to a new economic growth component (the assisted social work will increase GDP, private financing), but also to ensure social protection activities and to create jobs employment.

Thus, we are going to analyze the possibility of accomplishing differently the labour **in order to encourage the economy growth and to acquire the real net value.**

However the sample above shows that the town hall reaction isn't dependent of the labour volume. From this sample, it is issued that the membership of a social group such as the individuals who work, it could carry to an amendment of the individual utility, and at its turn to an amendment of the reaction by requiring welfare and finally creating a loop of the self-adjustment given by the labour.

The accomplishment of the labour hours, not necessary for the community purpose, would carry at a higher cognitive discord which would eventually carry to a change of the individual utility.

The public politic of the state assigned resources for the poverty programs and it could be developed through the beneficiaries' labour determined by the welfare.

This approach would have as result the increase of GDP and the encouragement of applying for jobs.With the same result, the labour hours carried out by the social welfare not necessary for the community purpose, it is issued from the consumer's theory, like:

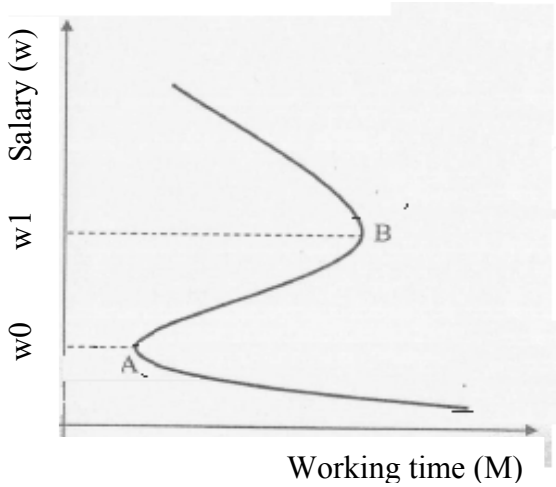

Fig. no. 3. The analyze of the sensible labour offer with the welfare terms
Source: projection of authors

The purchase of the goods has as main support the achieved incomes as a result of many hours of work or the receiving of welfare.On the other hand, the spare time and the spending of goods are for the individual two amusement sources which are in a way complementary.

Thus, if the income is really low, the fewer wages and eventually, the assignments of the individual are not interesting for this person, supplementary labour hours are hardly ever received by the person.

This explains at a certain level of incomes that individuals want the social welfare but with a lower volume of work than the higher income with a higher level of work.
The conclusions of the survey are approved by the relation of the income and the labour through analyzing the curve in Z of the individual work offer according to the increase of the wage.
Dealing with compulsory labour hours not necessary for community purpose and the payment of extra working hours shifts the balance area **a** in that one where the increase of the income would get to a higher level of work.
The income offered to the welfare worker would become equal with the welfare granted by the state, and in addition to this it's about another value offered by the institution who is hiring.
The balance will be accomplished at w_o level not at a_s level which doesn't stimulate the work.
It is accomplished now the approval of the labour towards the potential income according to a higher income offered by another employer.
According to Law 52/2011 - Law legal day labourers are able to perform work on a temporary basis. In the law is defined as follows:

a) ***day labourer*** *- individual who is capable of performing unskilled labour and, occasional, for a beneficiary. May conduct occasional individuals Romanian or foreign citizens under the law;*
b) the beneficiary works, referred to as the beneficiary - ***the legal entity*** *for which a casual laborer in activities;*

Besides the effect of stigma previously analyzed, we consider the opportunity of working for the benefit of private beneficiaries that are not necessarily legal entity, **but individual persons**.
A first finding is that during the economic crisis increases the need for social assistance, together with funding difficulties.
It also increases the supply of jobs and due to lack of funding.There are also private savings from individuals who can finance private investment projects (of individuals) using work from person who are assisted social.
The current situation requires:

- **The beneficiary will work on the account of the local community.**
- *The beneficiary works, to* ***the legal entity*** *for which a casual labourer in activities*

Efficient financing mechanism involves the possibility of performing the **work on the account of other persons**, **not necessarily legal entity**.
Remuneration will not be taken into account that social support in the eligibility criteria.Hours of work so made will be deducted from the hours of mandatory community service work.
Thus the social assistance each compartment within municipalities may be submitted by individuals request to use the assisted social work in exchange for remuneration.Officials from local community will refer the bids to the people assisted.
They, to maintain the social benefits will be obliged to not refuse them (several times in a row) and perform the work.Practical will be creating a market where demand will be created by person who wants to benefit from temporary employment of social assisted persons.
The effect will be a complementary financing of the social security system, in parallel with better targeting of potential beneficiaries, and stimulate economic stability and growth.
As shown in the analysis below private financing can bring lower tax burden and contribute to economic growth.
In what follows a funding opportunity to analyze the work of social assistances from a macroeconomic analysis.
Based on a simplified model IS-LM will present elements afferents social welfare spending, and their financing in order to identify a model that quantify efficiency (Hillman, 2003).
This model is based on the balance that is achieved primarily in the goods and services.
We note:

X = exports
M = imports
I = investments

The interest rate is higher prices of capital and lead lower investment activity.
Such investments can be modelled equation.

$I(r) = I_0 - I_1 * r$ (17)

S = saving

Saving is the part of disposable income that was not spent in the current.

$S = S(Y;r) = Y - T - C = -C_0 + (1 - C_1) * (Y - T) + C_2 * r$ (18)

The savings depend positively on income and interest rate.

G = public expenditure, we consider public expenditure as

G = government expenditure for social investment + government spending + other expenses

$G = \Sigma$ expenditure by expenditure on social assistance in public investment spending part + other costs ==

$G = \Sigma C_{SA} + J$ (19)

Where J = other types of expenses that are not used in social

T = fees and taxes

We consider each tax or fee of which are funded with public social spending in a given volume of

$T_i = a_i t_i - b_i t_i^2$ (Laffer model) (20)

$T = \Sigma T_t + U$ (16)

U = charges that are not used in social care.

The Laffer explains that changes in tax rates can have two effects on revenues: the arithmetic effect and the economic effect.
Arithmetic effect refers to the fact that the tax rate decreases when income decreases.
Economic effect, however, lead to a positive impact of lower tax rates on labor and production and, therefore, and on the tax base.

$I = \Sigma I_{cas\ I+} V$ (21)

V = other investments

IS balance equation can be written

$I + G + X = S + T + M$ (22)

$(S-I) = (G-T) + (X - M)$ (23)

We assume a simplified model of the economy is closed X = M
From the resulting balance equation:

$S-I = G-T$ (24)

$-C_0 + (1 - C_1) * (Y - T) + C_2 * r - \Sigma I_{cas\ I+} V = G = \Sigma C_{SA} + J - \Sigma a_i t_i - b_i t_i^2 + U$ (25)

The equation above represents the equilibrium condition on the goods and services if the social assistance benefits are paid based on fees, contributions or private investments.
LM curve represents all possible combinations of income and interest rate that balances the money market.

$$\frac{M^S}{P} = L(Y, r) \quad (26)$$

$M^S P$ is the supply of money in real terms (in fact, the purchasing power of money in circulation signs) and L (Y, r) - the demand for money.
This market is in equilibrium when the supply of money (the amount of funds, or money supply in circulation) is equal to the demand for money (the amount of money that economic agents need) (Akerlof, & Yellen, 1986).
Besides the equilibrium condition exists optimum condition in each type of financing it to be in the first part of the Laffer curve (Musgrave, 1959).

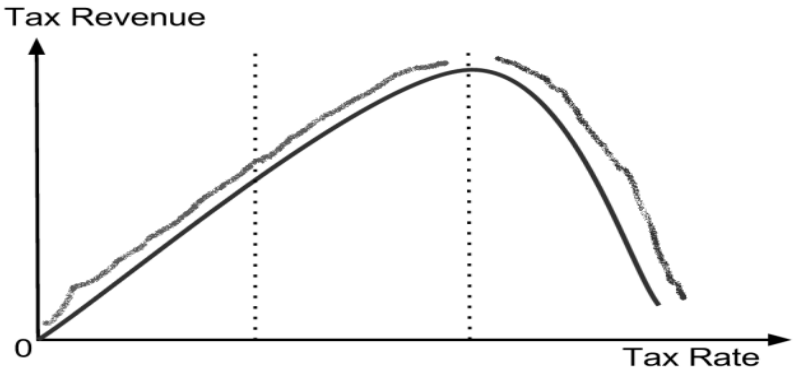

Fig. no. 4 Laffer model
Source: projection of authors

For each type of financing we will practice this type of curve with an amplitude higher or lower. Total funding amount representing their composition.
The above macroeconomic study relieves the effect of the complementary financing of the social security system.

4. CONCLUSIONS

Apart from the possibility of developing locale resources by creating social institutions at a local level, it could be drawn up programs fighting the poverty by the sole traders or legal people who receive welfare and hire poor families.The welfare workers are engaging themselves to perform work for those people on the properties they own.
However, the welfare workers could temporary work for those sole traders or legal people and they are going to receive the transfers from the state in exchange for a payment higher for the welfare beneficiaries.
The job offer (even temporary) of these sole traders or legal people could be managed on a certain site, and the welfare beneficiaries could require this type of approach which involves a higher income, but also a higher quantity of work. The welfare workers could not reject these offers.
During periods of economic crisis of social spending can contribute to economic growth by maintaining the utility of the beneficiaries on the basis of a scheme allowing the use of their work by individuals in exchange for co-financing a portion of the benefits associated.
The same scheme can be used with particular effectiveness in social groups the income component is less present in utility but to other components such as a social group or when the stigma is high (minority groups) is important (the gipsy community).
The proposed scheme has a positive effect on two components important in economic crises (employment and increase confidence).
Future directions of action will consist of econometric analysis to quantitatively determine model parameters.

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