Some relevant risk factors and causal mechanisms to understand crime in Romania

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Abstract. The objective of this paper is to provide some empirical evidence of relevant risk factors and causal mechanisms to understand criminal behavior in Romania. In order to achieve this goal, some socio-economic variables are considered: long-term unemployment rate and people at risk of poverty or social exclusion and, as crime variables we use four different types of crimes: domestic burglary, homicide, motor vehicle theft and robbery. At the regional level, the results of our panel data analysis, using data regarding the development regions of Romania for a time span between 2008 and 2010, supports the thesis of a direct and significant correlation between poverty and crime. Our results thus indicate that for Romania poverty is a significant risk factor in predicting crime and unemployment is not a significant risk factor even if we considered the long-term unemployment.

Keywords: crime, unemployment, poverty, Romania.

JEL Codes: J64, R23, I32, K42

1. Introduction

Identifying the risk factors, those which prefigure in the social-economic area or in the cultural one, under individual or aggregated form, but which can also be forms of crime, actually affect the knowledge of causes and conditions of occurrence of criminal conduct. This approach is presented in this paper because we think that it is efficient, especially in what concerns the mutual dependency between different macroeconomic variables and those of crime.

This perspective involves all those orientations, theories, theses, points of view which are connected to biological, constitutional, anthropological and psychological elements of the criminal’s personality. Therefore, considering the mismatch nexus between individual ideals, its value system and social offerings, in this paper, we focus on the external multicausal implications of crime. However, a consequence of this
approach lies in the need to structure and reduce the most important macroeconomic variables to those which are generating the entry on an upward trajectory of criminal behavior.

Thus, we seek to analyse the relationship between macroeconomics variables such as unemployment and standard of living (poverty) and crime, using data of all the 8 regions of Romania. From the beginning we base our analysis on disaggregated data regarding crime, considering four types of manifestation: *domestic burglary, homicide, motor vehicle theft and robbery*.

Even if European Union statistics defined six crime categories in order to reflect the diversity of policing and legal systems within the EU: homicide, violent crime, robbery, domestic burglary, motor vehicle theft and drug trafficking, in this paper we decided not to consider the expression of the criminal behavior by violent crime and drug trafficking, because the socio-economic determinants for these crime parameters are more complex than poverty and unemployment. It involves the consideration of the vulnerability of individual security system, and also several particularities of national security systems or cooperative relationships and partnership of the respective institutions, as well as the physiognomy of relationship of the new European and the Euro-Atlantic construction.

2. Literature review

The approach of risk factors presents two distinct characteristics, since they indicate a high probability of recidivism of a phenomenon, or represent a generating cause of one type of behaviour. It is highly unlikely that a single risk factor would be a causing element because, meanwhile, the risk factors interact in complex ways, either at the societal level or at the individual level.

The examination of any causal relationship and risk factors may provide an indication regarding the functional scenario of the personality of the individual and environment in which it manifests, as when one of these elements changes, the functionality of the modification of the environmental elements also changes. In fact, the relation between vulnerability, crime and risk is directly proportioned. This can shape the direction of public policy guidance in fighting major imbalances in the society, either nationally or regionally, or even locally.

In the specialized literature, for deciphering the criminal phenomenon, an important place is occupied by its causal explanation and emphasizing its causal determinants. Modern research in this domain identifies three major categories of infractional risk factors: biological, social-economical and psihological, due to the axiological orientation, or because of the value system of an individual involved in criminal activity. The causes of crime lie, basically, from the social structure of each country, which gathers wealth and well-being at one side, and on the other side suffering, poverty and misery, unemployed and poor education.

An important aspect of the research of the connections between crime and unemployment, or crime and poverty, is the determination of the area in which these two interact, noticing contradictory results on the urban-rural axe. The base of these studies are the first recorded results, in the first and most known works on social disintegration done by Shaw et al, 1929[1], and Shaw and McKay, 1942[2]. If the majority of the respective studies explain the manifestation of the criminal symptom in urban congested areas (Gumus, 2004[3]; Cahill, 2004[4]; Raphael and Sills, 2007[5]; Kneebone and Raphael, 2011[6]), in Albu et al (2013)[7] a particularity of Romania is represented; surprisingly, a unidirectional causality running from the density of population to crime, described by total level to persons charged investigated by the police by rural residence areas is remarked. The authors explain that the fact that the people living in the rural environment
are falsely remarked as farmers from the social status point of view, in fact they are exposed to the risk of extreme poverty.

Many criminologists have studied the relationship between poverty and crime, and the findings of such studies depend significantly on how the measure of what constitutes poverty is operationalized:

- Poverty defined according to an economic standard, based upon income considered necessary to meet basic living standards;
- Social Inequality defined as a comparison between the material level of those who have the least in society and the financial level of other groups;
- Relative deprivation based on the perception that there is a large distinction between the quality of life available to the poor and the middle classes, and the wealthy.

The recorded outcomes of the studies done with the purpose of analyzing the relationship crime - macroeconomic variables are contradictory because the assumptions on which it is based: (1) the relation between economic conditions and crime is an inverse one and (2) the relation between economic conditions and crime is a positive one. In addition, another factor generating contradictions is the method of investigation and measurement of these phenomena, especially those ones that involve interview-type data collection (Fougere et al, 2009[8]).

The common denominator of studies on the relationship crime - unemployment, find a significant positive, but also quantitatively large, impact of unemployment on several crime categories (Wang and Minor, 2002[9]; Janko and Popli, 2013[10]). From the crime type, property crime is the one that generates the most significant relation with unemployment, a fact that has been proved by Cantors and Land (1985)[11] a 20 year old analysis, which were later approved by Donohue and Levitt (2001)[12], or Machin and Meghir (2004)[13]. Nevertheless, there is a series of studies which find no causal correlation in this meaning.

In Europe, unemployment and income inequality have become markers of social cohesion, indicating a fracture of the "social contract". Therefore, when discrimination or lack of meritocracies appears in a society, its members may legitimately refuse to respect the norms, and due to the frustrating sentiment they can embrace criminal behaviour.

3. Methodology, data and results

The empirical analysis of the criminal behaviour on sub-types is investigated using data from one single country, for Romania - socioeconomic reality, using a traditional determinant of crime such as unemployment and a condition for choosing crime, such as poverty.

On the basis of the model developed, a number of four crime parameters are included to describe the criminal behaviour: *domestic burglary, homicide, motor vehicle theft and robbery*. The model presented in this paper is a macroeconomic individual crime decision model with a sample period for annual data 2008-2010, gathered from European Union statistics [14] for both dependent and independent variables of the model.

In Halicioglu (2012)[15], we find a brief literature review regarding different study's model and methodology, from ordinary least squares or Pearson pair wise correlation methodology, to two stage least
squares, vector error correction model or auto regressive distributed lag, using aggregate crime or disaggregate crime variables.

In our paper, data are better suited for a fixed effect model. We run a GLS specification allowing the presence of cross-section heteroskedasticity. Estimations are carried to yield robust coefficient covariance estimators. We do not impose any restriction on degrees of freedom. The model we estimated has the following functional form:

\[
\text{Log(crime)}_{it} = (\alpha + \mu_i) + \beta \text{Log (X)}_{it} + \varepsilon_{it}
\]  

Where crime stands for homicide, robbery or domestic burglary, X is a vector of the repressors’ poverty or unemployment; \( \varepsilon_{it} \) is the error term with constant variance. Slopes are constant. Random errors are supposed to be independent identically distributed with mean zero and variance \( \sigma^2 \). The model above is a fixed group effect. The parameter estimate \( \mu_i \) of the dummy variable is a part of the constant: \( (\alpha + \mu_i) \).

The following table summarizes the main results. Variables are expressed in logarithm form. The results concerning the variable unemployment are not significant and are not reported.

<table>
<thead>
<tr>
<th>Crime</th>
<th>Robbery</th>
<th>Domestic burglary</th>
<th>Homicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.889460*</td>
<td>10.46784*</td>
<td>1.055741</td>
</tr>
<tr>
<td></td>
<td>[22.12357]</td>
<td>[6.175876]</td>
<td>[1.189640]</td>
</tr>
<tr>
<td>Poverty</td>
<td>0.201110*</td>
<td>-0.855033**</td>
<td>0.760143*</td>
</tr>
<tr>
<td></td>
<td>[3.382052]</td>
<td>[-1.874708]</td>
<td>[3.183336]</td>
</tr>
<tr>
<td>R-sq = 0.984811</td>
<td>R-sq = 0.560930</td>
<td>R-sq = 0.963938</td>
<td></td>
</tr>
</tbody>
</table>

Significance levels: *1%, ** 5 % Between brackets are t- statistics

The estimated equations can be expressed as:

\[
\text{LOG (ROBBERY)} = 4.88945960972 + 0.201109665044*\text{LOG (POVERTY)} + [\text{CX=F}]
\]

\[
\text{LOG (BURGLARY)} = 10.4678369381 - 0.855032528643*\text{LOG (POVERTY)} + [\text{CX=F}]
\]

\[
\text{LOG (HOMICIDE)} = 1.05574118431 + 0.760143489885*\text{LOG (POVERTY)} + [\text{CX=F}]
\]

[\text{CX = F}] is the set of nuisance parameters in the fixed effects.

The results show that the relation between crime and poverty is significant for all types of crime. This relation, as expected, is positive for robbery and homicide. An increase in the poverty coefficients results in an increase in robbery and homicide rates. The results are even more pronounced for the variable homicide which exhibits a higher coefficient (0.76 against 0.20 for robbery). Moreover the constant is not significant for homicide unlike robbery and domestic burglar where it is at the 1% level. In addition, the table shows
high R-square for variables robbery and homicide, respectively 0.96 and 0.98.

Regarding the variable "domestic burglary", it also exhibits significant coefficients. Nevertheless, the coefficient associated with the variable poverty is somewhat intriguing. Its negative sign supposes that a reduction in poverty rates results in an increase of domestic burglaries. However this conclusion could be mitigated when we see that the associated error level is higher (5%) and, more important, the explaining power of the model is weak compared to the other crime variables ($R^2 = 0.56$)

Our results thus indicate that for Romania, poverty is a significant risk factor in predicting crime and, unemployment is not a significant risk factor even if we considered the long-term unemployment. Although such a surprising result, which shows no correlation between unemployment and crime, can be explained by the fact that official statistics on long term unemployment in Romania do not include many unemployed persons such are the rural persons and mining.

4. Conclusions

This study has attempted to identify relevant risk factors and causal mechanisms to understand the criminal behavior in Romania. Also, we wanted to note where Romania is in this respect and the economic and social commitment that is undertaken by our country. At the regional level, the results of our panel data analysis, using data regarding the development regions of Romania for a time span between 2008 and 2010 supports the thesis of a direct and significant correlation between poverty and all types of crime, except motor vehicle thief. Our results thus indicate that for Romania, the poverty is a significant risk factor in predicting crime, and unemployment is not a significant risk factor even if we considered the long-term unemployment. These findings are very important for the policy designers to identify causation amongst the variables.

One of the five objectives of the Europe 2020 Strategy is to reduce with 20 million the number of Europeans threatened of poverty and social exclusion. In this respect, the European Commission launched on 16 December 2010 the "European Platform for Combating Poverty and Social Exclusion: a European framework for social and territorial cohesion". The platform aims to become a support tool for the social objectives of the European Union and for the Europe 2020 Strategy; it aims at promoting and focusing actions around the European target to combat poverty, mobilization of new actors and strengthening political commitment.

Between the sizes of the fight against poverty, a special place is represented by integrated approach of inclusion policies to increase access to employment and ensuring social protection and access to essential services, namely the development of educational policies for youth and integration of migrants etc. However, the poverty is not only an explicative factor for poor educational level but rather a trigger pulse crime.

The main causes of this situation reside from the current conditions specific to the Romanian society, in which institutional and functional framework regarding prevention and fighting crime is insufficiently adapted, failing to provide a strong and effective riposte. The contemporary Romanian society in the absence of progressive models and strategies required may turn to the patriarchal model due to weaker standard of living, level of education and the negative social developments of institutional reconfiguration.

In this context, the prevention of crime, directly related to combat poverty, becomes a priority in terms of promoting relational patterns based on gender equality, and it is imperative to introduce in national legislation specific references to measures and actions to provide appropriate protection for women, children and elderly.
5. References


