
ECONOMETRIC MODELING OF BANKING EXCLUSION

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Abstract

It was intended to identify the main ways to reduce the phenomenon of exclusion based banking Romania achieve an econometric model. Financial exclusion and exclusion are implicit in the EU spotlight lately.

Key words: economic crisis, econometric model, banking exclusion, index of financial inclusion.

Year 2010 was the year to combat poverty and social exclusion. Normative acts at the level of governments of member countries of the European Union helped to reduce the social exclusion . Nevertheless, the phenomenon of social exclusion is at a fairly high in some EU countries and therefore more active involvement including those governments, non-governmental organizations and banks is essential for good results the reduction of financial exclusion and social exclusion default.

Financial exclusion is directly influenced by social exclusion. Poverty and exclusion are due to inequalities within a society, whether these inequalities are economic or social. Economic inequality comprises the difference in the distribution of money (assets and income) in the population. Economic inequality affects consumption of goods and services by individuals and by households, in terms of both volumes and quality¹. As a result, individuals in poverty can not afford basic services, such as heating, while other categories of people though can afford these basic services spend a higher proportion of their income on basic things care expenses such as housing, food, water, with very little disposable income for extra services. At the other extreme are individuals with higher wages, which consume a large part of their income on basic goods and services, and spend a greater proportion of their income on ancillary services, such as holidays, leisure activities, can afford to serve restaurant meals. The European Union has been involved in this, the year 2010 being the European Year for combating poverty and social exclusion.

At the end of 2009 the total number of credit institutions was 42, of which 25 Romanian legal entities with foreign private capital, four local private owned 10 branches of foreign banks, one state owned, one owned State and

CREDITCOOP. Regarding the degree of financial intermediation in Romania, Transylvania Bank is the first bank in Romania which was an important step in population and reducing exclusion bank current account by launching free individuals. There is no charge to account opening, no administration fee. For debit cards, the withdrawal fee from the bank's ATMs is zero, there is no fee for issuing and card management. The only condition for keeping the current account is to have at least one transaction in six months, regardless of the amount traded. Inclusion bank can be defined as a process that ensures ease of access, availability and use formal financial system by all members of the economy². If the U.S. is that by an act of 1997 (Community Reinvestment Act) has asked banks to provide loans to all categories of people, forbidding them to target the only certain categories of people with a higher income level. Including banking has many dimensions, and are found among the most important usability and accessibility. In 2010, Sharma, M., Pais, J., noting that a single indicator of financial inclusion fails to show the exact degree of inclusion of a country proposes financial inclusion index (**IFI** - Index of Financial Inclusion), comprising several variables (indicators), inspired by the Human Development Index (HDI - Human development Index).

Sarma, M., Pais, J. generally concludes that countries with a high human development index are also countries with high levels of financial inclusion. It is noted that Romania is lagging behind Bulgaria in terms of banking inclusion, whether using IFI index, or HDI. Of the 49 countries analyzed, Romania ranks 19 using IFI and 16th if using HDI, being middle class. It follows that there are many aspects to be improved in terms of banking inclusion. Best performance in terms of financial inclusion is recorded in countries such as Austria, Belgium, Denmark (IFI) and Norway, Belgium, Austria (HDI). In Romania currently can not say exactly how many current accounts are opened, and the more we do not know how many counties there accounts. In the 2000s, ABR (Romanian Banking Association) attempted a sort of „CNP” bank to be used for recording national bank accounts, but without success.

Based on those assumptions, based on **Multiple Linear Regression Model**, collecting primary data on the websites of the major 10 banks in Romania and National Institute of Statistics to identify the **Indebtedness Model**. The dependent variables of the models is the number of current accounts opened by individuals in lei in Romania⁵ and indebtedness of the population. These variables can be considered indicators of financial inclusion. The models show that the number of current accounts in lei and indebtedness of the population are determined by other independent variables: growth rate, unemployment rate, inflation rate and real earnings index. These

factors (economic growth rate, unemployment rate, inflation rate and real earnings index) are not the only factors influencing the banking inclusion. For realization of multiple linear regression were used socioeconomic data related to population, unemployment, average wages, number of ATMs, number of branches (branch network) and the number of current accounts in lei, implementing software package Eviews data extracted. Number of observations same as the number of counties (42). It was considered that the size of the observations is acceptable, more than 5 observations for each independent variable. Multiple regression allowed to determine the extent and nature of the relationship between the dependent variable and the endogenous number of accounts or banking availability. Interpretation of the regression function can be seen from three points of view: importance of the independent variables, the types found relations or relations between the independent variables.³

Form multiple linear regression model for the indebtedness of the population is as follows:

$$grad_indatorare_t = \alpha + \beta_1 * rata_crest_t + \beta_2 * rata_somal_t + \beta_3 * rata_infl_t + \beta_4 * indice_c_sal_real_t + e_t$$

t=1,2,...,42..

Introduce the initial data and estimating parameters of the regression model LS method (least squares) results were obtained:

Example: Indebtness of the population

Coefficients of the regression model	Coefficient	Standard Error	Test t	Probability
Intercept	20.7451	28.6543	0.4556732	0.00133
The coefficient of economic growth	0.0000234	0.000546	0.213908	0.0278
The coefficient of unemployment rate	0.000521	0.00110954	26.7432	0.0000
The coefficient of inflation rate	4.32234	2.654567	2.777654	0.00056
The coefficient for real earning index	1.123854	1.5144455	3.021445	0.0223

The predictive equation:

$$GRAD_INDATORARE\hat{E} = 20.7451 + 0.0000234 * RATA_SOMAJ + 4.32234 * RATA_INFLA\c{S}IEI + 0.123854 * INDICE_C\c{S}TIG_SALARIAL_REAL$$

The unemployment coefficient is positive and significant, largely determines indebtedness (endogenous variable). The unemployment rate is higher the indebtedness of the population is higher.

The inflation coefficient is negative and significant. As expected where inflation is high indebtedness of the population increases.

The real earning index coefficient is positive and significant. The real wage is higher, the leverage is lower.

Validation of the model:

The coefficient of determination $R^2 = 0.986321$ and we can say that the regression model is good. Approximately 98.6321% of the indebtedness of the population is explained by multiple linear regression model chosen.

The Fisher Snedecor test

What is the likelihood $666.9787 F = 0.00000$ and we can accept that the overall multiple linear regression model is good. It follows that the availability of banking and banking exclusion problem is hampered by unemployment utmost, and obviously can be reduced by reducing unemployment.

Financial inclusion of certain categories of persons disadvantaged should be permanent concern not only country governments facing financial exclusion problem, but also the banks. Banks are directly involved and interested in customers and thus increase profitability. If the bank's South Shore National Bank of Chicago (USA), which in 1992 has focused its lending to local minorities. Bank granted until July 1992 credits worth 150 million dollars, while in 1973, it had only two loans portfolio for home ownership loans totaling 59.000 USD.^[4]

For the reasons mentioned, identified during the study banking issues implicit or explicit exclusion, the European Union has included concern regarding the issue of financial exclusion. All of these reasons, among others, financial exclusion is a key theme for any EU Member State are in the process of integration, such as Romania. From this perspective typology in size to be associated numeric variable nature is a research direction that should be continued and refined. Some of the reasons for this are as follows. Firstly both because said Member State specificities and peculiarities of political decisions on it, not in all cases generic models provide information relevant to a particular decision-making level (such as the three listed above). Secondly, the type of economic dependency as between those levels and between various sectors do not always permit access to relevant data for the model that is theoretically relevant issues. Induced disability that does not exist in Romania the opportunity to know the total number of official bank accounts is basically a problem for knowledge through research the phenomenon.

However, they emphasized that allow inference of hypotheses relevant conclusions for both the studied problem and especially for its continuation. In this regard began with the simplest methods related to linear regression but supplemented by information statistical criteria - in particular for the results obtained values of the Akaike Information Criterion (AIC values that the indicator is = 7.65443) shows a good approximation of the phenomenon in relation to variables selected.

Conclusions

Financial Inclusion facilitates efficient allocation of resources and thus reduce the cost of capital. The importance of financial inclusion has become a priority in many countries, some governments regulating the banking industry. Including bank is significantly influenced by the growth rate, unemployment rate, inflation rate and real earnings index.

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