

# CONVERGENCE PROCESSES IN CENTRAL AND EASTERN EUROPEAN HOUSEHOLD CREDIT MARKET

Grzegorz Wałęga

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## Abstract

Rapid growth in credit market to the non-financial business and household sector in Central and Eastern European countries in recent years is noticeable. The lending boom has been particularly strong in household lending market, primarily mortgage-based housing loans. The aim of the study is to compare the similarities and differences of European consumer credit market. The hypothesis is that European integration affects the credit market and leads to its gradual real convergence. This process in household credit market in Central and Eastern European countries are presented in reference to EU-15. Clustering done using Ward's method made it possible to isolate groups of countries that are similar in terms of the size of their households credit market (measured in relation to percentage of final consumption expenditure of households and per capita) and its structure (the share of housing loans to total retail loans and average credit maturity). Analysis based on the aggregated data reveals that the volume of loans in Central and Eastern European countries is still low. However, credit market in post-socialist countries becomes gradually similar to EU-15 – share of loans on property in total households lending market constantly rises.

**Key words:** household credit market, convergence process, Ward's method,

**JEL Code:** F36, C23, G21

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## Introduction

A quick increase of household debts on account of credits observed at the beginning of the 21<sup>st</sup> century in Central and Eastern Europe makes this market one of the fastest developing segments of the financial market. Interest in the issues of transformations in the European household credit market is dictated by increasing integration processes.

Economic integration stimulates economic growth and diffusion of technical or organisational progress. Economies take advantage of the popularisation of institutional, legal and social solutions and standards. This leads to a real convergence of economies of individual states and the catch-up effect (Siviński, Socha, & Michałek, 2007). It should be

stressed that not only the degree of nominal convergence but also real convergence, i.e. structural similarity of the economies of individual countries to the Eurozone, affect the exploitation of the potential connected with EU membership and the possible adoption of the common currency.

This article is aimed at determining to what extent the processes of European integration influence the household credit market and lead to its gradual real convergence. On the basis of selected indicators describing the household credit market, the degree of market development and market structure in Central and Eastern European countries will be compared.

## **1 Size and dynamics of the household credit market**

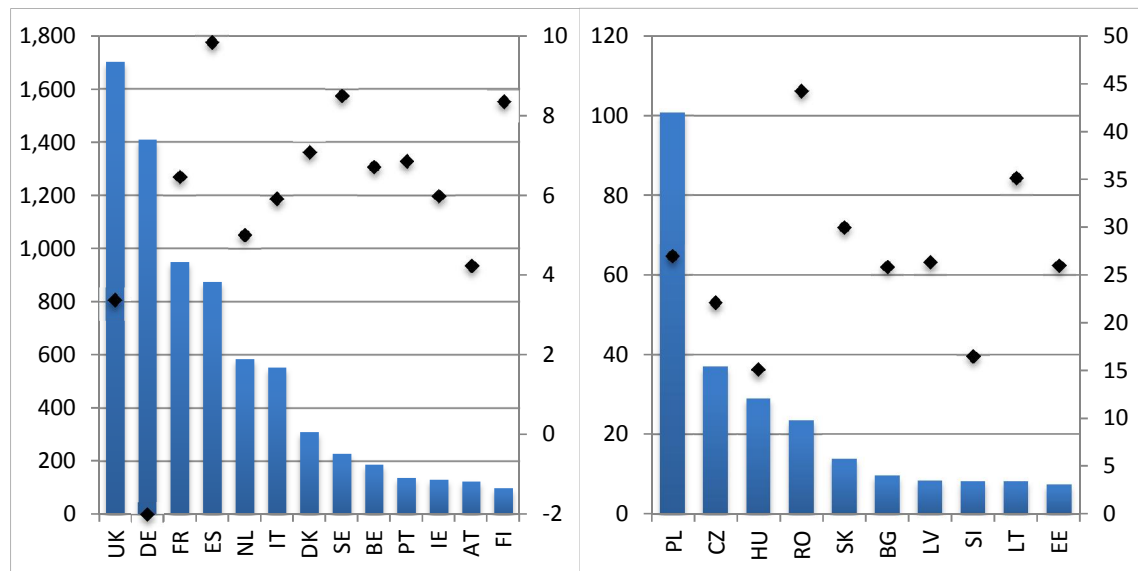
The household credit market is an important part of the financial market in EU countries, which is evidenced by its share in credits for the non-financial sector. The relation is on average approximately 60% (ECRI, 2010). Depending on the state, the percentage of household credits oscillates from around 30% (Slovenia, Bulgaria and Italy) to more than 70% (Great Britain). Among Central and Eastern European countries, the highest value of this indicator is observed in Poland, where household credits account for two thirds of all credits. Differences between individual EU member states result from historical conditions (Röller & Neven, 1999), yet in countries characterised by a higher level of economic development, household credits generally have a greater share.

When analysing the size of the household credit market in absolute values, one can generally distinguish three groups of states that have been separated owing to the size of their market (fig. 1). Countries where the household credit market is substantial (more than 500 billion EUR) include: Great Britain, Germany, France, Spain, Netherlands and Italy. In other countries belonging to the former EU-15, average-size retail credit markets (100–500 billion EUR) are specific. In the countries that joined the European Union after 2000, the analysed credit market sector should be considered small. Poland is the only exception, with the value of credits for households exceeding 100 billion EUR. Despite the considerable difference in the sizes of household credit markets between old and new members of the European Union, a quick reduction of the existing disproportions must be expected.

When considering the issue of convergence of credit market sizes of individual countries, the analysis of their dynamics in the first decade of the 21<sup>st</sup> century is justified. In the period 2005–2009, a real growth of the household credit market was observed in all

countries of the European Union (except for Germany) (fig. 1). Central and Eastern Europe countries, where the household credit market developed at a rate of about 25% per year, were characterised by the greatest change dynamics. The highest annual average dynamics were noted in Romania, Slovakia and Baltic countries while in the EU-15 countries the growth was definitely lower and did not exceed 10% per year. The above considerations allow for stating that the newly joined states catch up the other member states, with some exceptions obviously.

**Fig. 1: Value of the household credit and loan market (in EUR billions, left scale) and annual average rate of changes in the period of 2005–2009 (in %, right scale) in selected European Union countries**



Country codes according to ISO 3166-1 standard: AT – Austria, BE – Belgium, BG – Bulgaria, CZ – Czech Republic, DE – Germany, DK – Denmark, EE – Estonia, ES – Spain, FI – Finland, FR – France, HU – Hungary, IE – Ireland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, NL – Netherlands, PL – Poland, PT – Portugal, RO – Romania, SE – Sweden, SI – Slovenia, SK – Slovakia, UK – United Kingdom.

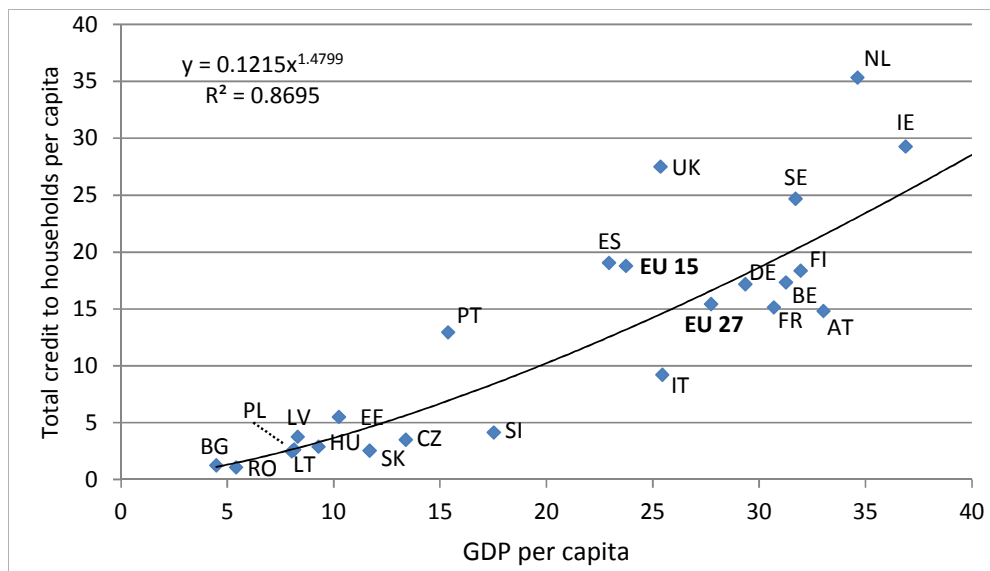
Source: own elaboration based on the data from (ECRI, 2010).

High dynamics of household credits in Central and Eastern European countries result from the low base effect and macroeconomic stabilisation of states following their accession to EU structures (Baele, Ferrando, Hordahl, Krylova, & Monnet, 2004). In consequence of joining the European Union, CEE countries observed increased dynamics of economic development at the macroeconomic level but this has also caused higher consumer income. On this basis, one can conclude that this segment of the credit market is to continue its

dynamic development in the years to come. Further processes aimed at strengthening the European integration (including the monetary union) will be important for this trend (Guardia, 2002).

The above observations are confirmed by the power regression model that describes the dependencies between the values of credits per capita incurred by households and GDP per capita (fig. 2). It can be supposed that with the improved material standing of households in newly accessed countries, the value of their credits will increase. It is also worth pointing out that increase in debt of households has a general positive influence on the dynamics of GDP; the changes in both categories strengthen one another.

**Fig. 2: Aggregate value of household credits per capita (in EUR thousand) and the gross domestic product per capita (in EUR thousand) in selected EU countries**



Country codes as in fig. 1.

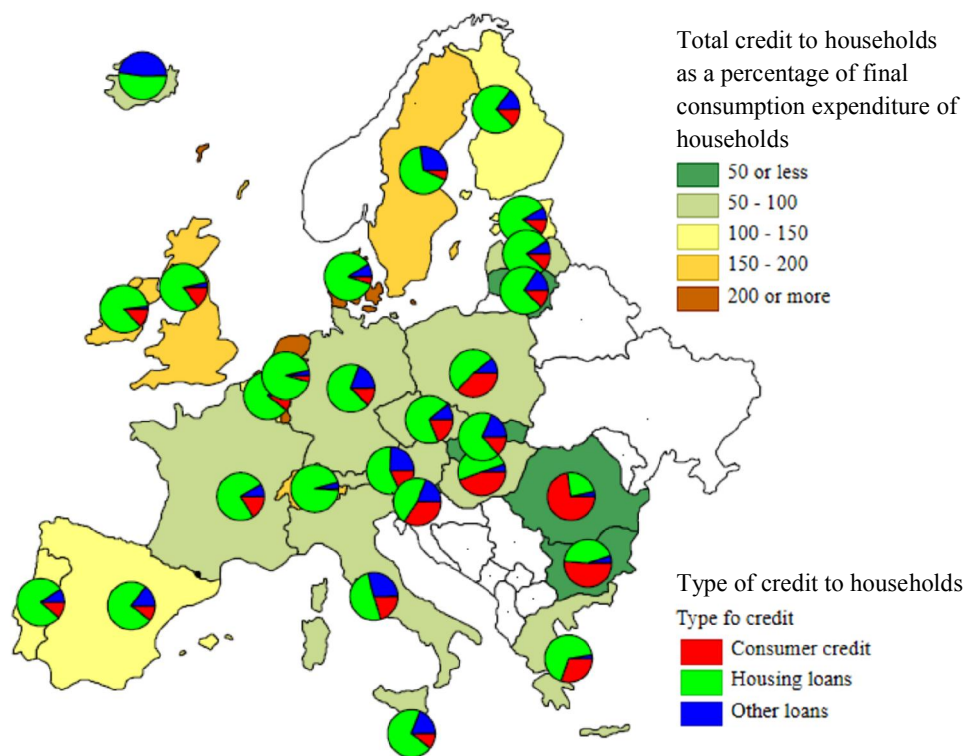
Source: own elaboration based on the data from (ECRI, 2010).

## 2 Structure of the European household credit market

The analysis of the household credit structure by credit types (fig. 3) provides interesting information. It is different for highly developed countries and CEE states. In the first group of countries, credits for real properties are predominant. In the countries with the highest ratio of household credits to consumption expenses, the general share of credits connected with real properties exceeds 80% of total credits for the household sector. The greatest number (more

than 92%) of all credits in Netherlands are intended for financing expenses connected with real properties. In case of new EU countries, one can note a considerable percentage of consumer credits; in 2009 they constituted respectively 73%, 51% and 45% of all household credits in Romania, Bulgaria and Hungary. Also in case of Poland, this share constantly exceeds one third of all credits.

**Fig. 3. Share (in %) of household credits in total consumer expenses and structure of household credits in selected European countries in 2009**



Source: own elaboration based on the data from (ECRI, 2010).

The analysis of historical data suggests that after the initial fast growth in demand for consumer credits in post-socialist countries the share of credits for real properties is to gradually increase (de Bandt, Bruneau & El Amri, 2009). Therefore, the type structure of household credits in these countries will become similar to the structure in highly developed countries. In a longer perspective, one should expect convergence in the way households use credits and loans; these will mainly become an instrument for long-term financing of

consumption, purchase of durable goods and real properties (Zajączkowski & Żochowski, 2007).

The analysis of the household credit market requires supplementation with other economic indicators that enable the examination of the relative size of credit markets. International comparison of data concerning the debt of households in relation to their consumer expenditures in recent years indicates that in principle in the majority of developed countries the level of household debt increased (OECD, 2010). This is particularly visible in case of Denmark, Netherlands and Estonia; in these countries the analysed indicator rose in 2000–2009 respectively by: 107 percentage points (to 281%), 94 percentage points (to 221%) and 89 percentage points (to 102%).

In the core EU members, the ratio of household credit values to household consumer expenses is high and exceeds 75% while in Denmark, Netherlands and Great Britain this ratio exceeds 160% (fig. 3).

Based on the above, household debt indicators in relation to household consumer expenses are relatively low in Central and Eastern Europe countries even though their dynamics are high. Only in case of Estonia and Latvia has the ratio of household credits to household disposable income converged with the average for EU–15 countries. In the case of these states, the catch-up effect was the strongest (Vandone, 2009).

### **3 Evaluation of convergence processes in the European market of household credits**

$\sigma$ -convergence has been used to evaluate convergence processes in the European household credit market. The following regression equation has been estimated in this approach (Rapacki & Prochniak, 2009):

$$\sigma_t = \alpha_0 + \alpha_1 t + \xi \quad (1)$$

where  $\sigma_t$  means standard deviation of the natural logarithm of credits per capita in EU countries in year  $t$ .

**Tab. 1: Regression results for  $\sigma$ -convergence for credits per capita in selected EU countries**

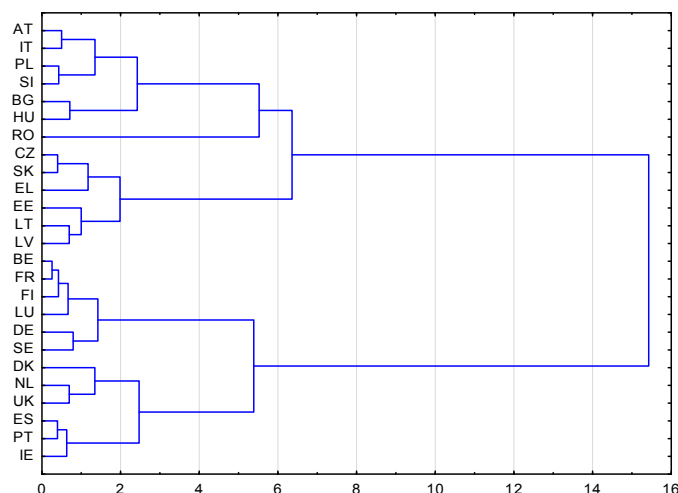
|          | $\alpha^*$ | Standard error | $\alpha$ | Standard error | t(8)    | p-value |
|----------|------------|----------------|----------|----------------|---------|---------|
| Constant |            |                | 2,399    | 0,054          | 44,762  | 0,000   |
| Time     | -0,987     | 0,058          | -0,147   | 0,009          | -17,057 | 0,000   |

Source: own calculations based on the data from (ECRI, 2010).

In the estimated model (tab. 1), parameter  $\alpha_1$  is negative, so it can be stated that  $\sigma$ -convergence occurs in the market of household credits in the period 2000–2009. This function has a coefficient of determination at the level of 97.32% and parameter  $\alpha_1$  in the light of statistics for t-student considerably differs from zero. The estimation results are consistent with other studies (Vodova, 2012).

Taking into account diversification in terms of size, structure and dynamics of the European credit market, it is also justified to examine the similarity of situations in individual countries. The relation between the size of household credit markets to GDP, the structure of the credit market and its dynamics in the first decade of the 21<sup>st</sup> century have been used as criteria of division. To this end, taxonomic Ward's method with Euclidean distances has been used.

**Fig. 4. Results of clustering selected countries with the use of Ward's method, according to the share of household credits in GDP and the total percentage of credits for real properties in retail credits in 2009 as well as the average annual dynamics of the credit market in the period 2000–2009**



Source: own elaboration based on the data from (ECRI, 2010).

The clustering led to the separation of five groups of countries (cf. fig. 4) that are similar in terms of the household credit market size (measured in relation to GDP), its structure (share of credits connected with real properties in total retail credits) and dynamics in the first decade of the 21<sup>st</sup> century.

The first group of countries are those in which the household credit market has a very substantial share in the economy (relation to GDP 80–140%). What is characteristic here is the dominance of long-term credits and credits for real properties that constitute more than 80% of all credits for the analysed sub-sector. To this group belong: Denmark, Netherlands, Spain, Portugal, Ireland, and Great Britain.

The second group involves countries with a mature household credit market with the share of GDP at the level of 50–75%. In the credit portfolio structure, more than two thirds of credits are those connected with real properties. As in the first group, average annual dynamics of this credit market sector are moderate; countries of this group: Belgium, France, Finland, Luxembourg, Germany, and Sweden.

Czech Republic, Slovakia, Estonia, Lithuania and Latvia, in turn, can be classified as candidates to the group of countries with a mature credit market. They are characterised by high average annual dynamics of the credit market in the period of 2000–2009, oscillating from 25% to almost 50%. Furthermore, the increasing share of credits in GDP (reaching 55%)



is observed, with the simultaneous considerable share of credits connected with real properties.

The fourth group of countries is not homogeneous and it includes countries in which both high (more than 20% per annum on average – Poland, Slovenia, Bulgaria, Hungary) and low (less than 10 % – Italy and Austria) market dynamics are observed. The household credit market in these countries is small (less than 45% of GDP) and credits for real properties do not make up more than 60% of the total value of credits for households.

Romania is a separate issue. As a result of clustering, it was categorised in the one-element sub-set. What distinguished this country from others was a low share of household credits in GDP (about 20%) and a definite predominance of consumer credits in the credit portfolio. This coincides with the swift development of the market in the last decade; an average rate of development of the analysed market amounted to more than 80%.

As the conducted analyses of the potential growth of the relative size of the credit market (measured by the share in GDP) shows, it is only possible by increasing the share of long-term credits for real properties (compare group I and II isolated in Ward's dendrogram).

## **Conclusion**

The conducted analyses demonstrate that even though the values of credits incurred by households in individual countries are diversified, certain regularities can be identified.

Throughout the recent years, it was observed that consumption financing patterns among European households converged. General trends lead to greater interest in household credits. The analysis of the dynamics of the consumer credit market in new member states shows a quick convergence in this sector. Dynamic development is also associated with changes in the structure of the credit market; credits increasingly become the source of long-term financing of household consumption (Finlay, 2005). This is especially visible in highly developed countries.

On the basis of the aggregated data, it can be stated that the value of credits per capita depends to a considerable extent on the affluence of the country. Reductions of interest rates in the pre-accession period as well as changes in lifestyles also influenced this process. The processes of integration and nominal convergence as well as benefits resulting from the macroeconomic stabilisation of EU member states will be conducive to further growth of the consumer credit market. Social acceptance of the financing of household expenses with

credits, which is becoming more and more common, considerably facilitates and accelerates the real convergence of the economies of newly accessed states.

However, as the quoted analyses show, already today the size of the retail credit market in relation to GDP in some countries has grown substantial. This issue inspires some apprehensions and it may be assumed that it will grow in importance, especially in the context of the observed economic slow-down at the beginning of the second decade of the 21st century. For this reason, the problems of the household credit market should be of particular interest.

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**Contact**

Grzegorz Wałęga

Cracow University of Economics, Department of Microeconomics

ul. Rakowicka 27, 31-510 Kraków, Poland

grzegorz.walega@uek.krakow.pl