A Convergence Process in Household Credit in Central and Eastern Europe
Robin Sainsot*
ECRI Commentary No. 16, 29 October 2015

The liberalisation of Eastern Europe’s market during the 1990s and the 2004 EU enlargement have had a great impact on the economies of Central and Eastern Europe (CEE). Indeed, prior to these events, the financial system and household credit markets in CEE were underdeveloped. Nonetheless, it appeared to numerous economists that the development of the CEE financial system and credit markets was following an intensely positive trend, raising the question of sustainability. Many variables impact the level and growth rate of credit; several economists point out that a convergence process might be one of the most important.

Using a descriptive statistics approach, it seems likely that a convergence process began during the 1990s, when the CEE countries opened their economies. However, it also seems that the main driver of this household credit convergence process is the GDP per capita convergence process. Indeed, credit to households and GDP per capita have followed broadly similar trends over the last 20 years and it has been shown in the literature that they appear to influence each other.

The consistency of this potential convergence process is also confirmed by the breakdown of household credit by type and maturity. There is a tendency towards similar household credit markets in Europe. However, it seems that this potential convergence process was slowed down by the financial crisis. Fortunately, the crisis also stabilised the share of loans in foreign currency in CEE countries. This might add more stability to credit markets in Eastern Europe.

* Robin Sainsot is a research intern at ECRI and he studied at the Université Paris-East Créteil.
1. Introduction

The 2004 European Union (EU) enlargement constitutes an historical step in the EU’s construction, for two main reasons:

- The EU never integrated so many countries at the same time. Ten countries joined the Union in 2004, increasing the number of members from 15 to 25 (Bulgaria and Romania joined in 2007 and Croatia in 2013, bringing the current number of member states to 28).
- Until this enlargement, only former liberal economies were member states, corresponding geographically to Western Europe. This enlargement opened massively the EU to ex-members of the Eastern bloc which, less than 15 years before, were still closed and planned economies.

The liberalisation of Eastern Europe’s market during the 1990s and the 2004 EU enlargement have had a great impact on the economies of Central and Eastern Europe (CEE). Indeed, prior to these events, the financial system and household credit markets in CEE were underdeveloped.

Nonetheless, it appeared to numerous economists that the development of the financial system and the credit markets in CEE was following an intense positive trend, hereby raising the question of the sustainability of these paths. Many variables impact the level and the growth rate of credit; several economists point out that a convergence process might be one of the most important. Originally, this process concerns the GDP per capita and it works as follows: the farthest is an economy from a steady-state GDP per capita, the largest is the growth rate of this GDP per capita. Therefore, the question to answer is to know if the figures are coherent with this convergence process applied on absolute and relative figures of total household credit and if the crisis had an important impact on it.

To answer this, a descriptive statistics analysis will be developed in this paper, mainly using the data of the ECRI statistical package. This package contains numerous figures on private non-financial credit in Europe over the period 1995-2014.

2. Descriptive statistics

Four considered aggregates of countries

A common way to execute comparative descriptive statistics at the European Union (EU) level is to divide the European countries into two aggregates: the EU15 countries and the new member states (NMS). The former refers to the European countries which integrated into the EU prior to the 2004 enlargement; the latter refers to the countries which integrated into the EU during or after the 2004 enlargement.

The division of Europe into these two main aggregates thus refers to a historical opposition of economic systems but also appeals to current differences in economic development. For the purpose of this analysis, each of these two aggregates will be divided into two groups:

On the one hand, the EU15 countries aggregate will be divided into the NEU and the SEU groups.

- **NEU**: Northern Europe. This group may also be referred to as the “European core”. This group includes Western European countries which resisted more effectively the recent financial crisis. Five of them are also founders of the European Coal and Steel Community, which is considered the oldest ancestor of the EU. Except when stated otherwise, NEU
includes Austria, Belgium, Denmark, Finland, France, Germany, Luxembourg, the Netherlands, Sweden and the United Kingdom.

- **SEU**: Southern Europe. This group may also be referred to as the “European periphery”. This group includes Western European countries which were more severely hit by the recent financial crisis. Except when stated otherwise, SEU is composed of Greece, Ireland, Italy, Portugal and Spain.

On the other hand, the NMS aggregate will be divided into the MC and CEE groups.

- **MC**: Malta and Cyprus. These two countries are considered NMS because they were part of the 2004 enlargement but they substantially differ from the other NMS countries because they were never part of the Eastern Bloc. Their economies are closer to the Western European economies to some extent because they opened up to them long before the other NMS did.

- **CEE**: Central and Eastern Europe: This group includes countries which used to be members of the Eastern Bloc leaded by the USSR. These countries opened and liberalised their economies during the 1990s, after the USSR collapsed. Except when stated otherwise, CEE includes Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and Slovakia.

**GDP and population**

Despite the fact that CEE represented 20.5% of the EU population in 2014, with more than 103 million out of the 505 million EU citizens (see Figure 1), they only produced 7.4% of the European real GDP the same year (see Figure 2).

More than 20 years after the liberalisation of their economies, CEE productivity remains highly inferior to that of the rest of the EU, which is mirrored by the level of their GDP per capita. In 2014, the average real GDP per capita in the CEE accounted for 27.2% of the real GDP per capita in the NEU (see Figure 3).

*Figure 1. Population in EU28, by region (2014)*

*Figure 2. European real GDP, by region (2014)*

Notes: EU28: European Union (28 countries), CEE: Central and Eastern Europe, NEU: Northern Europe, SEU: Southern Europe, CM: Cyprus and Malta.

*Source: ECRI Statistical Package 2015.*
Nevertheless, the growth of the average CEE real GDP per capita relative to the rest of the EU remains outstanding. Between 1999 and 2014, the average CEE real GDP per capita increased by more than +68.6% (representing a +3.5% average annual growth rate\(^1\)), while it reached only +13.4% for the NEU (+0.8% average annual growth rate\(^1\)) and even slightly decreased by -0.2% for the SEU (see Figure 4).

These facts are in line with a convergence process of CEE economies compared to the rest of Europe: their real GDP per capita is on average below the level of the other European countries, but the growth rate of this GDP per capita remains far higher.

Figure 3. Real GDP per capita in EU28 (€ thousands, 2005 prices)  
Figure 4. Real GDP per capita in the EU28 (€, 2005 prices, 1999=100)

Notes: EU28: European Union (28 countries), CEE: Central and Eastern Europe, NEU: Northern Europe, SEU: Southern Europe, CM: Cyprus and Malta.  

**Total credit to households**

At the European level, the situation of the total credit to households per capita is similar to the real GDP per capita. Indeed, CEE households are on average less indebted than the other European countries’ households. In 2014, the total credit to households per capita in real terms in CEE countries\(^2\) represented only 12.4% of the average household real indebtedness in NEU countries (see Figure 5).

Nonetheless, and still similarly to the GDP per capita, the growth rate of total household debt in the CEE countries has been astonishing (see Figure 6). Between 2004, when eight of the 11 countries which compose the CEE group entered the EU, and 2014, the average indebtedness of the CEE countries’ households almost continuously expanded and reached an increase of +241.9%, in comparison to +7.5% in NEU and +23.0% in SEU. However, as regards these two last aggregates, a peak was reached in 2008, when the financial crisis began (NEU: 12.5% and SEU: 42.2%, compared to 2004).

\(^1\) Geometric average.  
\(^2\) Latvia is excluded owing to a lack of data.
These facts are coherent with a convergence process of the level of households’ indebtedness in the CEE countries. This is also in line with Levine (2005), who expressed in his survey that the relationship between the financial system and the growth rate is co-evolutionary. For example, the financial sector will not supply the same financial products at different stages of economic development. Considering the fact that both variables have been evolving similarly in the last decade, and according to Levine’s proposition, one possible explanation is that the potential convergence process of household credit would be driven by the convergence process of the GDP per capita.

Chmelar (2013) highlighted the impact of credit on growth in the long and short runs. After the analysis of Ando & Modigliani (1963), it is common to consider credit a transfer of consumption over time, from the future to the present, in order for households to smooth consumption over their lifetime. Nonetheless, this transfer of consumption has an effect on intertemporal aggregate demand, diminishing future demand in order to increase present demand. From this perspective, credit is a way to boost short-term economic growth, by increasing the potential growth of present consumption. Nevertheless, in the case of overindebtedness, the burden of credit on economic agents has a negative effect on future aggregate demand and therefore a negative impact on long-term economic growth.

When looking at the national level, one can evaluate the impact that the financial crisis had on the household credit evolution. Considering the period 2005-08, right before the crisis, the CEE countries’ figures are all by far ahead of the EU (see Figure 7). Six CEE countries even had average year-to-year total credit growth rates superior to +30% (Romania almost reached +60%), when no NEU country and only two SEU countries exceeded 10% (Greece: +18.6%; Spain: +12.9%). On average, CEE countries household debt expanded by +32.0% per year, compared to +10.9% in the SEU countries and +6.2% in the NEU countries.

Notes: EU28: European Union (28 countries), CEE: Central and Eastern Europe, NEU: Northern Europe, SEU: Southern Europe, CM: Cyprus and Malta, LV: Latvia
Figure 7. Total credit to EU households in domestic currency by member state, 2005-08, average year-to-year growth rate, in real terms


Now, considering the period 2009-14, the situation has totally changed (see Figure 8):

- Firstly, almost every EU country recorded a decrease of its year-to-year household debt growth rate.
- Secondly, more than half of them even recorded a contraction.
- Thirdly, the countries are no longer ranked with respect to the aggregate they belong to; CEE and NEU countries are mixed. However, four SEU countries are found among the eight more severe contractions in the EU (Portugal: -2.4%, Spain and Greece: -4.1%, Ireland: -6.8%).
- Finally, it seems that the stronger the growth rate at the first period, the poorer the performance in the second period. For example, Romania, Lithuania, Estonia and Bulgaria registered among the largest household credit expansions in the first period, but they also registered among the largest contractions in the second period. This is in line with Chmelar (2013), who highlighted the fact that households’ deleveraging is positively correlated with the expansion of credit during the previous years. Nevertheless, Slovakia, Poland and the Czech Republic are counterexamples of this phenomenon. Although they recorded severe decreases of their household credit growth rates between the two periods, they all remain among the largest expansions compared to the rest of the EU.
In relative terms, the observation remains similar to the observations above: the total household credit to GDP ratio in the CEE countries is by far lower than those in the other groups of countries (see Figure 9), but CEE recorded an astounding expansion during the last decade (see Figure 10). However, despite this significant expansion, the total household credit to GDP ratio in the CEE countries, just as in most of the other European countries, remains under 85% (see Figure 11), which is the threshold brought to light by Cecchetti et al. (2011). According to them, over this threshold, household credit has a negative impact on growth. In their analysis, they pointed out that a high amount of credit significantly increases economic agents’ sensitivity to adverse shocks, such as decreases in income or increases in interest rates. “For a given shock, the higher [the] debt, the higher is the probability of defaulting”, leading to greater drops in consumption and investment.

In 2014, in the EU, only Denmark (119.9%) and Cyprus (124.81%) were over this threshold and the United Kingdom (83.8%) and Sweden (78.5%) remained close to it.
A CONVERGENCE PROCESS IN HOUSEHOLD CREDIT IN CENTRAL AND EASTERN EUROPE

Figure 9. Ratio of total household credit to GDP, 2004-14, in real terms

Figure 10. Ratio of total household credit to GDP, 2004-14, in real terms, index: 2004=100

Notes: EU28: European Union (28 countries), CEE: Central and Eastern Europe, NEU: Northern Europe, SEU: Southern Europe, CY: Cyprus, LV: Latvia.

Figure 11. Ratio of total household credit to GDP by EU member state, 2014, in real terms

**Inflation**

According to Kiss et al. (2006), inflation has two main effects on credit growth:

- Technically, inflation can only have an effect on nominal interest rates and not on real interest rates. Therefore, it should not have any effect on the real cost of credit. Nonetheless, this nominal cost of credit does have an impact on the length to which households can borrow from their private bank and therefore on the amount of borrowed liquidity. Inflation indirectly plays the role of liquidity constraint.

- Indirectly, inflation can impact credit growth by increasing uncertainty. Indeed, there is a positive correlation between the level of inflation and its volatility. In other words, inflation is more unstable when its level is high. Therefore, when inflation is high, there is a greater uncertainty on prices in the economy.

Considering the period 2000-14, inflation is always superior in CEE than in NEU or SEU, except in 2014 (see Figure 12). Logically, the inflation rates in the CEE countries are more unstable compared to NEU and SEU countries (see Figure 13). Therefore, inflation is expected to have a greater negative impact on household credit in these countries.

Graphically, the inflation rates in the different aggregates seem to follow the same variations after 2004. This fact is quite logical, because most of the CEE countries joined the EU that year and some of them adopted the euro since, harmonising the European national monetary policies.

![Figure 12](image1.png)  
**Figure 12. Inflation rate in EU28, 2000-14, GDP-weighted average (%)**

![Figure 13](image2.png)  
**Figure 13. Annual standard deviation of inflation rate in EU28, 2000-14, GDP-weighted average, in percentage-points**

**Notes:** EU28: European Union (28 countries); CEE: Central and Eastern Europe; NEU: Northern Europe; SEU: Southern Europe.  
**Source:** ECRI Statistical Package 2015.

**Interest rate**

The interest rate represents the cost of credit (Kiss et al., 2006) and therefore impacts credit demand in the same way that the price of a product impacts the demand for it. As a matter of fact, interest rates have decreased since the late 1990s (Chmelar, 2013), decreasing the cost of credit for European households.
Since the beginning of the financial crisis, in 2008, the nominal interest rates on the household credit markets are clearly on a downward trend (see Figures 14 and 15). Prior to 2008, they were on an upward trend since 2005 or 2006, depending on the considered interest rate. The financial crisis clearly signalled a break in interest rate evolution.

Overall, for any given credit maturity, the interest rates are lower on the housing credit market than in the consumer credit market (see Figure 14). Two theoretical reasons can explain this:

- Usually, the credits on housing markets are larger than the ones on consumer credit markets, owing to the nature of houses, which are expensive durable goods. As interest rates are considered as the price of credit, it decreases with the quantity of borrowed money.
- Housing credit is usually considered less risky than consumer credit, especially owing to the fact that houses can serve as collateral to secure the loan, as is the case with mortgage loans.

**Figure 14. Monetary and Financial Institution (MFI) average nominal interest rates on outstanding amounts of euro-denominated loans to households**

**Figure 15. Monetary and Financial Institution (MFI) average nominal interest rates on outstanding amounts of euro-denominated loans to households, index: 2003=100**

Source: ECB Statistical Data Warehouse.

Furthermore, the housing credit market was more severely hit by the crisis, as its long-term interest rate, which is used for more than 90% of housing loans, lost more than -46% of its value between 2008 and 2014. Nonetheless, the interest rates on the consumer credit markets also lost much of their value: around -18% for short- and medium-term loans and -25.8% for the long-term loans. This overall decrease of the nominal interest rates is expected to have a positive effect on the total credit to households.

---

3 The average interest rates used in Figures 13 and 14 are arithmetic averages of monthly data.
Credit to households by type and maturity

Credit to households is usually divided into three main categories: consumer loans, housing loans and other loans. Nowadays, there is a tendency at the European level towards a greater share of housing loans in the total amount of household credit. However, important disparities remain between the groups of countries considered.

In NEU, the share of housing loans was already high in 2004 (73.5% of total loans) compared to the other groups and increased by +6.7 pps over 10 years to reach 80.2% in 2014 (see Figure 16). This increase was comparable in SEU (+5.8 pps, from 64.1% to 69.9%) but was also far greater in CEE (+17.8 pps, from 44.3% to 62.1%), as shown in Figures 17 and 18.

One of the main explanations for this phenomenon can be found in the composition of housing loans, in terms of credit maturity. Over the period 2004-14, in the EU as a whole, more than 90% of the total housing loans was composed of long-term maturity credit (more than five years). This fact also holds homogeneously at the level of the considered aggregates. Taking out a loan on the housing credit market generally signifies to borrow a larger amount of

4 pps stands for percentage points.
money for a longer period of time, since a house is an expensive and durable good. Therefore, recording an increase of the share of housing loans in the total credit to households means that more households are confident in their future capacities of repayment.

In other words, these households are richer and they are more able to afford this kind of credit. This is in line with the economic development of the CEE countries in recent decades and a potential convergence of their financial system towards the NEU financial system pattern.

Credit to households in foreign currency (FX)

Fiorante (2011) observed an important new phenomenon over 2005-10, which is the major increase of household credit in foreign currency, especially in CEE. In his literature, Fiorante listed several determinants of the share of debt in foreign currency in a country:

- The major determinant of this kind of loan is the interest spread between loans in local currency and loans in foreign currencies. This kind of behaviour is actually called “carry trade”, which is the action of “borrowing in a low-yielding currency to fund investments in a high-yielding currency”.
- The presence of foreign-owned banks on the national territory.
- The stability and credibility of macroeconomic policies.
- The effect of the exchange rate regime.
- The accessibility of cheap and abundant credit.

Fiorante added that the crisis did not have any discouraging effect on this kind of loan and that it only added another risk dimension to the European economy. Indeed, as Barrell et al. (2009) developed, an excessively large share of foreign currency credit in total household credit makes the economy more sensitive to fluctuations in:

- both domestic and foreign currencies. A depreciation of the domestic currency or an appreciation of the foreign currency makes the loan more expensive for domestic economic agents.
- and the foreign interest rate.

Between 2004 and 2008, the share of total credit to households in foreign currency increased by +44.2 pps in these countries, from 7.8% to 52.0%. Nonetheless, in opposition to Fiorante’s analysis, the crisis did have a significant effect on the evolution of this variable. Indeed, after 2008, it stabilised around 52.0% until 2011, before progressively decreasing to 39.4% in 2014 (see Figure 19).

By spreading uncertainty and instability in the European economy, the financial crisis probably increased the fear of the potential riskiness of borrowing in a foreign currency. Furthermore, five countries of the CEE adopted the euro in the last decade. The euro is one of the most influential and stable currencies in the world, limiting the incentive to borrow in another currency.

Nonetheless, the share of foreign currency credit remains high in the CEE countries in 2014 (39.4%) and should be taken into consideration in order to prevent them from being vulnerable to adverse financial shocks on the exchange rate or the foreign interest rate.

---

Conclusion

The purpose of this paper was to analyse whether the figures on household credit in Europe might suggest a potential convergence process between Central and Eastern Europe and Western Europe. To do so, a descriptive statistical analysis was conducted with the data taken from the ECRI Statistical Package.

Indeed, graphically, it seems likely that there is a convergence process that began in the 1990s, when the CEE countries opened their economies. However, it also seems that the main driver of this household credit convergence process is the GDP per capita convergence process. Indeed, credit to households and GDP per capita have followed broadly similar trends over the last 20 years and it was brought to light in the literature that the two variables appear to be a co-evolution, which mean that they impact each other.

The consistency of this potential convergence process is also confirmed by the breakdown of household credit by type and maturity. There is a trend towards similar household credit markets in Europe. However, it seems that this potential convergence process was slowed down by the financial crisis.

Fortunately, the crisis also stabilised the share of credit in foreign currency in CEE countries. This might add more stability to credit markets in Eastern Europe.

Nonetheless, a descriptive statistical approach has limits and an econometric analysis would provide a complementary way to confirm these intuitions and could allow the introduction of variables, such as the interest rate and inflation, as explanatory variables. A Beta-convergence test seems to be appropriate to test the significance of this convergence process.
Bibliography


Data sources

ECB Statistical Data Warehouse (http://sdw.ecb.europa.eu/).

European Credit Research Institute

The **European Credit Research Institute** (ECRI) is an independent research institution devoted to the study of banking and credit. It focuses on institutional, economic and political aspects related to retail finance and credit reporting in Europe but also in non-European countries. ECRI provides expert analysis and academic research for a better understanding of the economic and social impact of credit. We monitor markets and regulatory changes as well as their impact on the national and international level. ECRI was founded in 1999 by the **Centre for European Policy Studies** (CEPS) together with a consortium of European credit institutions. The institute is a legal entity of CEPS and receives funds from different sources. For further information, visit the website: [www.ecri.eu](http://www.ecri.eu).

ECRI Commentary Series

**ECRI Commentaries** provide short analyses of ongoing developments with regard to credit markets in Europe. ECRI researchers as well as external experts contribute to the series. External experts are invited to suggest topics of interest for ECRI Commentaries.

The Author

Robin Sainsot is a research intern at ECRI and he studied at the Université Paris-East Créteil.

Disclaimer: The European Credit Research Institute is a sub-institute of the Centre for European Policy Studies (CEPS). The views expressed in this commentary do not necessarily reflect those of ECRI or CEPS' members.