Yulia V. Vymyatnina
European University at St. Petersburg
e-mail: yv@eu.spb.ru

Daria Antonova
Brand Science, BBDO Group, Moscow
e-mail: daryaad@gmail.com

CREDIT BOOMS IN THE COUNTRIES OF THE EURASIAN ECONOMIC UNION. ARE THEY RELATED?[1]

Summary: In this paper we analyze the dynamics of domestic credits in the three countries of the recently formed Eurasian Economic Union: Russia, Belarus and Kazakhstan to see if it affects the dynamics of major macroeconomic variables, and if any interactions between the countries can be found. We have identified one credit boom in each country in the period from 1995:2 to 2014:1. The timings of credit booms in different countries are not related to each other, but rather to external events like the world economic and financial crisis of 2007–2008 or the initiation of the Customs Union between the three countries in mid-2010. The analysis of changes in the real *per capita* GDP and its main components (consumption, investments and government expenditures) confirms the results of the previous studies regarding growth process in the three countries.

Keywords: post-Soviet integration, credit cycles, Eurasian Economic Union, Russia, Belarus, Kazakhstan.

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1. Introduction

The recent crisis of 2007–2008 has demonstrated the vulnerability of different economies – developed, developing, in transition – to the availability and price of credit. The crisis has demonstrated that all countries in the world are very

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[1] The authors would like to thank the anonymous referees for their helpful comments and suggestions.

interdependent, especially in terms of financial and trade relations, and mounting the problems of one large economy (or a group of economies) threaten the stability and development of the world economy as a whole. The response of countries to the problems of the recent economic and financial crisis has been very diverse. Some countries were quick in their recovery process, and some are still in recession or close to it. While there might be many competing or complementary explanations of this diversion in the post-crisis trends depending on the case chosen for analysis, the crisis has reinforced the importance of credit in the economy, and the importance of understanding the dynamics of credit, credit booms and credit recessions for understanding the dynamics of economic development.

An important issue in the analysis of credit dynamics is the identification of credit booms and the analysis of the corresponding dynamics of the main macroeconomic indicators in the periods of credit booms, i.e. unusually high credit expansion. In a recent paper by Mendoza [2006] it has been shown that high external credit exposure is responsible for the phenomenon of so-called "sudden stops" – cases of sudden reversals of current account positions and following severe recessions in emerging economies. The importance of credit, especially external credit, in producing adverse effects on economic development has been also documented for resource-dependent countries due to the propensity of both governments and private sector to borrow abroad in times of high resource prices [see e.g. Gavin et al. 1996; Kaminsky, Reinhart, Vegh 2005; Mendoza, Terrones 2008; Reinhart, Reinhart 2009; and Frankel 2010]. Appended with the now famous financial instability hypothesis of Hyman Minsky [see e.g. Minsky 1964, 1977, 1991], these considerations stress that credit is an important source of instability, especially for emerging economies with resource dependence. At the same time, credit – both domestic and international – is an important source of financing supporting economic growth and development for this group of countries.

It has been also well-documented empirically and grounded theoretically that credit developments and subsequent instability are contagious due to a number of reasons. Kaminsky, Reinhart, Vegh [2003] group all explanations into three major themes: *herding behaviour* (related to information constraints, observed behaviour and costs of being out of surrounding network – see e.g. [Banerjee 1992; Bikhchandani, Hirshleifer, Welch 1998; Calvo, Mendoza 2000]), *trade linkages* (extensive trade linkages create sensitivity to the economic stance or economic policy decisions of major trading partners, such as devaluation – see e.g. [Nurkse 1944; Gerlach, Smets 1996; Charemza et al. 2009]), and *financial linkages* (external credit, openness of capital flows, potential for speculative attacks – see e.g. [Shleifer, Vishny 1997; Kaminsky, Reinhart 2000; Kodres, Pritsker 2002]). Out of these three groups the latter two are especially relevant for countries that create an economic union of some sort, as first trade and then financial ties are the first to develop in such a setting.

The issue of interdependence, including trade and financial, is very relevant for the countries of the Eurasian Economic Union (EAEU), which was officially

announced on May 29, 2014 and is expected to start functioning on the basis of the Common Economic Area (CEA), which developed further the agreement on the Customs Union (CU) between Russia, Belarus and Kazakhstan. The aims of EAEU include the creation of a common market of goods, services, capital and labour, conditions for sustainable development and restructuring of the economies of the participating countries and increasing living standards, development of unified policies, such as tax, monetary, exchange rate, financial, trade, custom and tariff, as well as unified transport, energy and information systems; and creation of a common system of the measures of the state support of priority industries development, industrial and scientific cooperation.[2]

The development of this ambitious integration project depends on the existing economic interconnections and spillover effects between the participating countries. In case the countries are heavily economically related at present, a shock to the economic growth of one country will have repercussions on the others, decreasing, in the worst scenario, not only trade turnover, but also the economic growth of the counterparties, thus threatening the economic stability of the EAEU. The existing serious level of mutual economic dependence and spillovers might negatively affect the stability prospects of the EAEU at the initial stage of its existence, being at the same time a positive factor for potential deepening of economic integration. Important issues to discuss in this respect are (real) business cycles synchronization between participating countries and credit cycles and their influence on the economic situation of the EAEU countries. Since the issue of business cycle synchronization has been already addressed [Vymyatnina, Antonova 2014], in this paper we study credit cycles and their relation to the macroeconomic development of Russia, Belarus and Kazakhstan. The paper is structured as follows: the next section briefly describes previous studies of the CU and macroeconomic context of our study; further we present methodology and data followed by discussion of results and conclusions.

2. The Customs Union: previous studies and macroeconomic context

After the CU came into being, several studies of discussion character appeared trying to predict the future of this integration project. György [2010] held a highly pessimistic view of the union, stressing its incompleteness and describing in detail the absence of potential positive outcomes like a decrease of import reliance of the member states or an increase in the intra-union trade. Amirov [2010] considered the cooperation of Russia with different countries of Central Asia with a special emphasis on potential WTO acceptance of Russia and Kazakhstan, and – to a lesser extent – of Belarus both independently and within the framework of the Customs union

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[2] See: http://www.evrazes.com/customunion/eepr.

though mentioning the union as something *ad hoc* and non-functioning properly; thus stressing the skeptical view towards the union as an artificial creation.

Isakova, Plekhanov [2012] studied the impact of the Customs Union creation on Kazakhstan's imports. Their conclusion was that so far the trade creation effects had been insignificant, and the main change for Kazakhstan had been the substitution of imports from China with those from the countries of the Customs Union. A paper by Tarr [2012] supported these results noting that in fact Kazakhstan provided substantial transfers to Russia substituting Chinese goods for Russian analogues with lower quality and higher prices. He also mentioned problematic technical standards of the CU that are already in place in Russia and Belarus, but Kazakhstan has to adapt all its production to these standards. Netting the results, Tarr suggested that Kazakhstan is a loser, and Belarus is a winner, with Russia holding an almost "no changes" position. A paper by Libman, Ushkalova [2013] reinforced the conclusions of Tarr's paper in that Belarus is, for the moment, the only winner among the CU countries and an example of successful regional integration. Belarus relies on the import of Russian oil (with abolished duties for oil exports from Russia to Belarus), refining it in its two refineries and sending it further to the EU countries. A paper by Isakova, Koczan, Plekhanov [2013] reinforced the results from Isakova, Plekhanov [2012] in that trade creation effect is insignificant with the exception of Russia's trade with the third countries (in the cases of decreased tariffs). The trade diversion in Kazakhstan's imports from Chinese goods to the CU internal trade is confirmed, though the effect, admittedly, is very small. A call for the reduction of non-tariff barriers as a precondition for potential benefits of the Customs Union is repeated.

The study of business cycles synchronization by Vymyatnina, Antonova [2014] has concluded that synchronization is found between Russia and Kazakhstan, but this is described as a superficial result of similar resource endowment that happens to be in high demand and constitute a large part of exports rather than the result of deeper similarities between these two economies. To the extent it can influence the future of the CU, while Russia and Kazakhstan are likely to react in a similar manner to external shocks (which is not necessarily so for Belarus), as their mutual trade intensity is low, it can hardly threaten the stability of the CU. More specific shocks influencing some components of GDP are also likely to influence the three countries in different directions, and with almost none spillover effects between the countries in such cases again we can reasonably expect no threats to the CU stability. The conclusion is that the low synchronization of business cycles between the CU countries at the present stage of integration is a good sign for stability, and it is important to wait until the consequences of closer trade integration result in more intra- or inter-industry trade and thus determine the future type of economic integration between the participating countries (more synchronized cycles or more diversified economies with less synchronization).

Initial development of the EAEU integration project had no clear economic requirements applied to participating countries. Later on some rather vague

macroeconomic criteria, very similar in the spirit to (not really working) Maastricht criteria of the EU, were mentioned in the Agreement on unified macroeconomic policy (signed on December 9, 2010). However, these criteria are not taken into account at the present stage of integration development, with Belarus being clearly out of indicated threshold values on debt to GDP ratio (50%), budget deficit (3% of GDP) and inflation rate (minimal inflation rate among participating countries plus 5 percent points), and the integration process continuing (see Table 1). Integration proceeds without serious economic analysis that assumes potential serious problems.

Table 1. Major macroeconomic indicators of the CU countries

	Belarus		Kazakhstan		Russia	
	2005	2012	2005	2012	2005	2012
GDP, USD billon	30.2	63	57.1	201.7	764.1	2007
GDP growth, %	9.4	1.5	9.7	5.0	6.4	3.4
Population, million	9.8	9.5	15.2	16.6	143.1	143.0
GDP *per capita* (PPP), USD thousand	8.5	14.9	8.7	13.1	11.9	21.2
Unemployment, %	2.2	0	7.6	5.6	7.1	5.7
Inflation, y-y, %	10.3	59.2	7.6	5.1	12.7	5.1
Investments in fixed capital, USD million	7.0	18.2	18.2	36.6	128	395
Investments in fixed capital/ GDP, %	23.2	28.8	31.9	18.2	16.8	19.7

Source: [*Brief Statistics Yearbook 2005–2012*].

As shown in Table 1, the most developed country is Russia, Belarus and Kazakhstan are less developed with a similar GDP *per capita*. Belarus is the least stable country of the Custom Union, characterized by highest inflation levels, a low level of GDP and investment, and high dependence on Russia. Until 2009 its Central Bank included among the most important indicators of monetary policy an exchange rate to the Russian ruble and its expected change during the year. Its official statistics is often considered to be not very reliable (e.g. the unemployment rate of 0% in 2012 is a very suspicious number). Most of its GDP is produced in the services sector and in manufacturing (textiles and food industries, machinery production). Its macroeconomic policy is not sustainable, inflation remains high, external government debt to GDP ratio in 2012 was about 23% (the highest among CU countries), prices of many goods and services are set in an administrative manner and controlled by the government, and the country generally depends highly on a continuous demand for its products.

Kazakhstan relies mostly on its fossil fuels production (64.3% of industrial output and only 29.3% for manufacturing in 2012) and thus resembles Russia in many

ways. Both countries heavily rely on oil and gas exports, and have to suffer common problems related to the inflationary pressure of high export revenues since mid-2000s. It is not surprising therefore that both countries have similar monetary policy aims (keeping control of inflation); Central Banks in both countries have to intervene in the foreign exchange market to keep national currencies from appreciating fast, and in both countries these interventions were substantially reduced in the last years. A key difference of Kazakhstan from Russia is in its investment. As visible in Table 1, it has a high proportion of investments in GDP. It also has the highest share of foreign investments in its investment structure: 13.7% in 2012 (compared to 5.7% in Belarus and 1.2% in Russia). The share of foreign investments in Kazakhstan's GDP in 2008 was 62% and in 2009 – 54.5% (40.2% in 2012). Unlike in Belarus, where in foreign investments around 60% are from Russia in Kazakhstan, in Kazakhstan this share is about 13%. These high amounts of foreign investments help explain why Kazakhstan did not suffer a prolonged GDP decline after 2008 crisis, unlike Russia.

The countries are different, their macroeconomic policies are largely different, and it should be noted that they have quite different structure of banking sectors and financial markets. As noted in Vymyatnina, Antonova [2014], Kazakhstan has high absolute level of consumer credit (*per capita* short-term consumption credit in Kazakhstan is higher than in Russia[3]), while Belarus has the least developed internal credit markets. As shown in Table 2, credit exposure in Russia and Kazakhstan is much higher than in Belarus, and if for Kazakhstan and Belarus credit exposure before and after the crisis has changed very little, Russia has increased its credit exposure substantially (by 80%). Furthermore, in relative terms compared to GDP, Russia has increased its internal debt exposure, while Belarus and Kazakhstan decreased it following the crisis.

Table 2. Selected indicators of credit dynamics in EAEU countries.

	Total credit *per capita*, USD, end of period		Total credit/GDP, %	
	2008	2013	2008	2013
Russia	4088	7473	44.55	52.50
Belarus	1725	1638	25.71	23.60
Kazakhstan	3947	4350	46.01	33.14

Sources: authors' own calculations on the basis of data from Bank of Russia, National Bank of Kazakhstan, National Bank of Belarus.

Existing (and varying) credit exposure means that the countries are prone to financial instability to a varying degree, and while there is almost no synchronization

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[3] Note that Table 2 presents the total credit *per capita*, of which consumption credit *per capita* is a part.

in real terms, there might be financial connections with potentially contagious results. In the next section we describe methods and data we use to analyze credit booms in the EAEU countries.

3. Credit cycles: data, methodology and results

Our main hypothesis is that the credit cycles and credit booms in the CU countries are not related to each other due to the low intensity of financial integration. If this hypothesis is correct, it means that there are no spillover effects due to credit booms between the countries at the present stage. We use data on credit, GDP and GDP components (consumption, investments and government expenditures) to derive the credit cycles, identify credit booms and compare the credit booms with the cycles of GDP and its components to trace the connection between credit and major spending categories in the economy.

In our study the following data for Russia, Belarus and Kazakhstan are used:
- total outstanding credit to private and public non-financial sector (local currency);
- CPI (1995 = 100);
- population (million people);
- real GDP (1995 = 100);
- real consumption (1995 = 100);
- real investment (1995 = 100);
- real government expenditures (1995 = 100).

On the basis of these data, we calculate real *per capita* credit outstanding, GDP, consumption, investment and government expenditures. For Russia the period covered is 1995:2–2014:1, for Kazakhstan the period covered is 1995:4–2014:1, and for Belarus the period covered is 1999:4–2014:1. Different periods are explained by varying data availability. We preferred to keep all available data for each country rather than to make a common sample period, since the longer the period of analysis, the better the estimations of standard deviations are, and, hence, of credit booms.

Data sources are:
- Bank of Russia (http://www.cbr.ru/statistics/),
- National Bank of Belarus (http://www.nbrb.by/statistics/),
- National Bank of Kazakhstan (http://www.nationalbank.kz/?docid=275),
- Federal State Statistics Service, Russia (http://www.gks.ru/),
- National Statistical Committee, Belarus (http://belstat.gov.by/),
- Agency of the Republic of Kazakhstan on Statistics (http://www.stat.gov.kz).

To identify credit booms and their relation to GDP dynamics, we adopt the approach suggested by Mendoza and Terrones in their 2008 paper, further developed in their 2012 paper. The method proposed by these authors is *threshold method* allowing for disaggregation of real *per capita* credit into trend and cyclical components. Unlike Mendoza, Terrones [2008, 2012], we use quarterly data, and therefore before deriving trend and cyclical components, we first exclude seasonality from our data

using the additive Census X11 method built into the EViews 7 software, which we use in our estimations.

After the seasonal component is eliminated, we proceed with disaggregating time series we use for our study into long-run trend and cyclical components. For this we apply the Hodrick-Prescott (HP) filter. We favour its use compared to the Baxter-King filter since the latter cuts off some data at the beginning and the end of the times series, and since we have only 64 observations for the longest time series, we opted for HP filter that uses more information. The HP filter decomposes the time series into its long-run trend (T_t) and cyclical component (C_t) according to the following formula:

$$\sum_{t=1}^{m} C_t^2 + \lambda \sum_{t=2}^{m-1} ((T_{t+1} - T_t) - (T_t - T_{t-1}))^2,$$

where m is the sample size and λ is the smoothing parameter that equals 1600 for quarterly data [Hodrick, Prescott 1997].

Once the trend is accounted for, thresholds (of statistical nature) can be applied to determine the start and the end dates of the credit boom, denoting cyclical variations higher than average. More precisely, if l_{it} is the deviation of the logarithm of real *per capita* credit from its long-run trend and if $\sigma(l_i)$ is the standard deviation of the cyclical component of real *per capita* credit, then if on one or more particular sequential dates it is true that $l_{it} \geq \varphi\sigma(l_i)$ (φ is the *threshold*), we can claim that on this date(s) credit boom was observed. To check for robustness, alternative values of φ were used (1.75, 1.5 and 2.0 as suggested in [Mendoza, Terrones 2008]). The peak date of credit boom is the date when the difference between l_{it} and $\varphi\sigma(l_i)$ is the largest for a set of contiguous dates. The date preceding the credit peak with the smallest absolute difference between l_{it} and $\varphi_s\sigma(l_i)$ is the start date, and the date following the peak date with the smallest absolute difference between l_{it} and $\varphi_e\sigma(l_i)$ is the end date, where φ_s and φ_e we assume equal to 1, following Mendoza, Terrones [2012]. We also consider smaller values of φ_s and φ_e, with no substantial difference in results.[4]

Table 3 presents credit booms identified for the three countries in the periods of data availability for different values of φ. More details on the credit boom in Russia can be found in Figure 1, and in Belarus and Kazakhstan in Figure 2. As visible from these results, the first credit boom is found in Kazakhstan, it peaks in the third quarter of 2007 and ends at the end of 2008. This result goes well in line with our previous findings that growth in Kazakhstan is mostly investment-driven, and that it is foreign investment that drive growth in this country. By the third quarter of 2007 foreign investments were already in decline due to the crisis effects, and credit expansion also reverted to its earlier trend. Not surprisingly, credit developments in Russia and Kazakhstan have become more visible since the end of 2006 when a steady increase in oil prices has lasted for 7 years on average.

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[4] Details on the results with other values of φ_s and φ_e are available from the authors upon request.

Table 3. Credit boom periods for Russia, Belarus and Kazakhstan for different values of φ

	Russia			Belarus			Kazakhstan		
	Start	*End*	*Peak*	*Start*	*End*	*Peak*	*Start*	End	Peak
$\varphi = 1.75$	2007:4	2009:2	2008:4	2011:1	2012:3	2011:4	2007:1	2008:4	2007:3
$\varphi = 1.50$	2007:4	2009:2	2008:4	2011:1	2012:3	2011:4	2007:1	2008:4	2007:3
$\varphi = 2.00$	2007:4	2009:2	2008:4	2011:1	2012:3	2011:4	2007:1	2008:4	2007:3

Source: own study.

The second credit boom is found in Russia starting in the fourth quarter of 2007, and ending in the second quarter of 2009 with the peak at the end of 2008. This is also in line with our earlier findings and reported difficulties of the Russian corporate sector to refinance their debt internally after the crisis, when liquidity preferences of Russian banks increased dramatically. Our timing of credit boom diverges from the results of Mendoza, Terrones [2012], who indicate credit boom in Russia in 2007. The main difference is that we have quarterly data for 3 more years than in their sample; and therefore, our data account for the true end of the credit boom that started in Russia in 2007. What is the most interesting is the credit boom in Belarus, where credit boom begins in 2011 and ends in the third quarter of 2012 with the peak at the end of 2011. It is difficult to provide a convincing explanation for this credit boom, though the functioning of the Customs Union could provide the basis for domestic credit expansion.

It should be noted that for all three countries the duration of the credit boom is about 2 years (7 quarters for Russia and Belarus and 8 quarters for Kazakhstan), but in Russia and Belarus the upswing phase of the credit boom is longer (more than half of the credit boom – 5 and 4 quarters correspondingly), while in Kazakhstan the upswing phase is only 3 quarters, i.e. less than half of the credit boom identified. It is also interesting that in Russia and Belarus the method indicates that in the first quarter of 2014 a new credit boom potentially started (the difference between l_{it} and $\varphi\sigma(l_i)$ is positive, which is a sign of higher than average cyclical component of credit). It is also interesting to note that among the three countries, Kazakhstan's domestic credit has the highest volatility over the studied period, and therefore the threshold method provides results that are somewhat counterintuitive since the credit boom starts according to all definitions when visually (see Figure 2) we would conclude that it was already well under way for a few quarters. This shows some drawbacks of the suggested method – it works better for longer sample periods.

Once credit booms are identified, we analyze the cyclical behaviour of real *per capita* GDP, consumption, investments and government expenditures to check how the dynamics of GDP and its components is connected to credit booms. In Figures 3–5 we present the dynamics of real *per capita* GDP during credit booms in the EAEU countries; in Figures 6–8 we present the dynamics of real *per capita* investments in these countries; in Figures 9–11 – the dynamics of real *per capita*
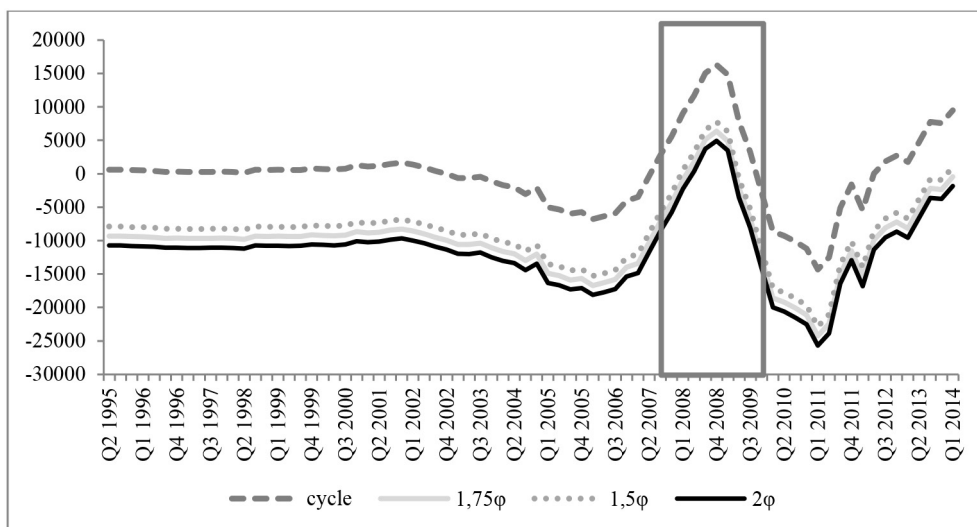
Figure 1. Credit cycle and credit boom definitions for various thresholds (credit boom highlighted) for Russia (in units of deviation of cyclical components from the long-run trend)
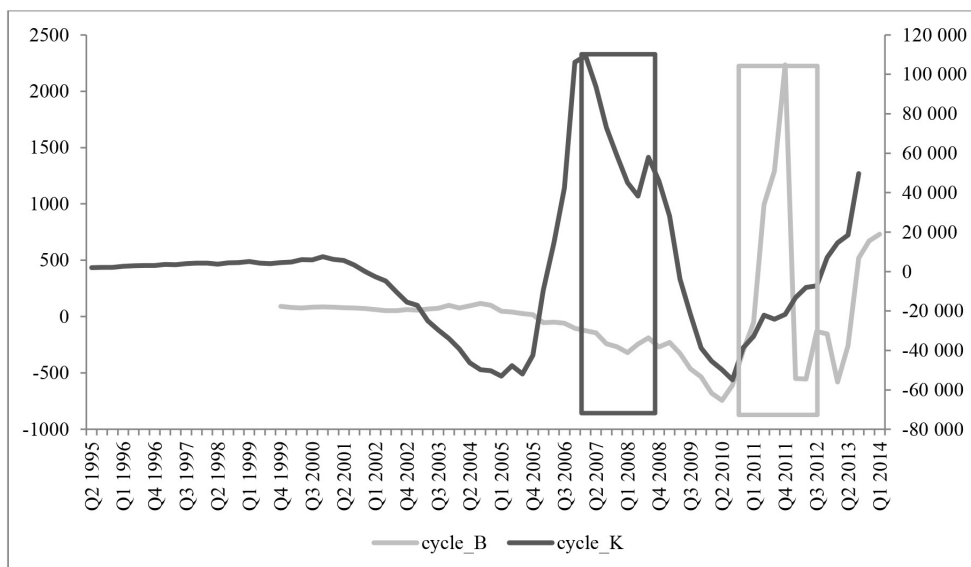
Source: own study.

Figure 2. Credit cycles and credit booms (credit boom highlighted) for Kazakhstan
(cycle_K, right-hand scale; in units of deviation of cyclical components from the long-run trend)
and Belarus (cycle_B, left-hand scale; in units of deviation of cyclical components from the long-run trend)

Source: own study.

consumption, and in Figures 12–14 – the dynamics of real *per capita* government expenditures. We use, when possible, the method of event analysis, also employed by Mendoza, Terrones [2008, 2012], to discuss the relation of credit booms and the dynamics of major macroeconomic variables in the context of events important for the EAEU countries. We prefer the event analysis supplemented by a visual analysis of cycles co-movement to more sophisticated methods like co-integration for two reasons. First of all, the times series are rather short for reliable results of co-integration analysis, especially taking into account that the cyclical part tends to have fractional analysis of integration calling for more advanced methods of econometric analysis that are even more problematic for the short time series that we use. Secondly, our major point of analysis was to find the length and timing of the credit booms, not the joint dynamics of time series in the long-run, since credit booms are short-lived by their very nature.
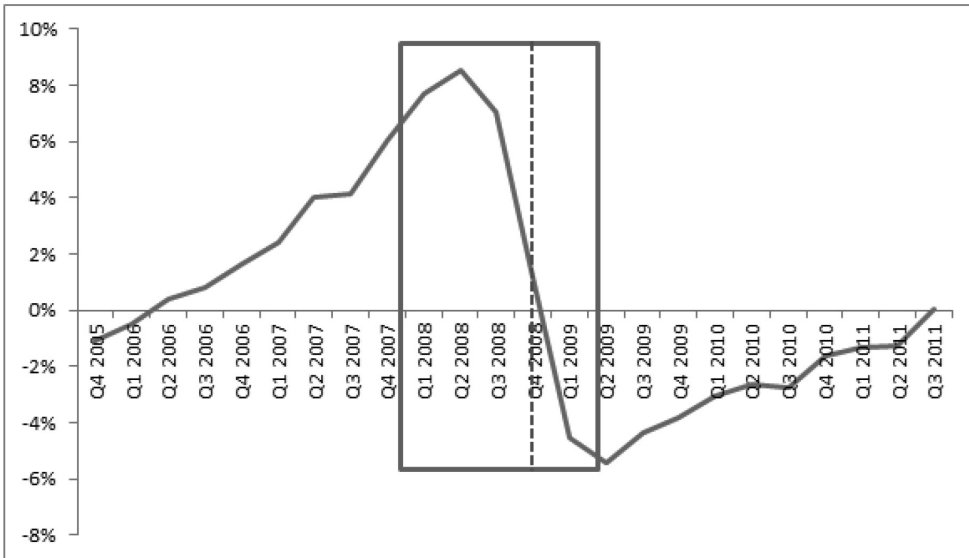
Figure 3. Cyclical dynamics of real *per capita* GDP in Russia (chain change in the cyclical component) around the credit boom period

Source: own study.

As shown in Figures 3–5, in Russia GDP dynamics somehow leads credit boom dynamics, with a GDP peak in 2008:2, and the period of credit boom includes the GDP peak and the recession phase. In Kazakhstan credit boom period covers to GDP peaks, and the first coincides with the credit boom peak. In both Russia and Kazakhstan credit booms and GDP cycles are logically related to the world economic and financial crisis of 2007–2008. In Belarus its credit booms also cover two local
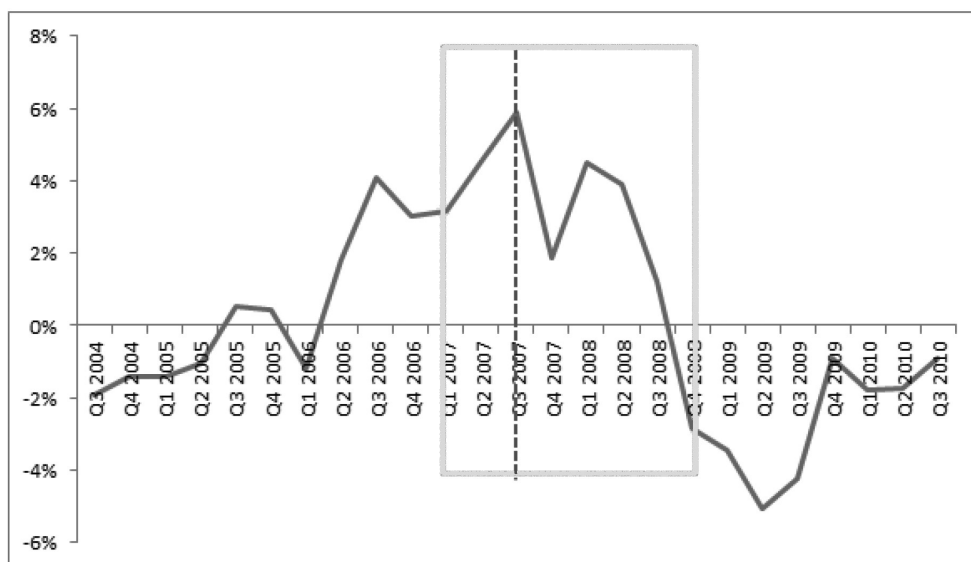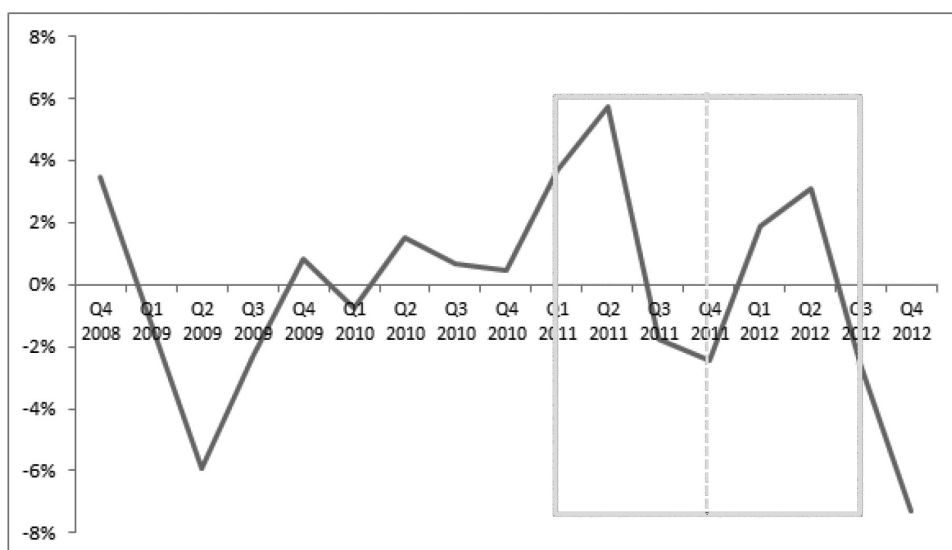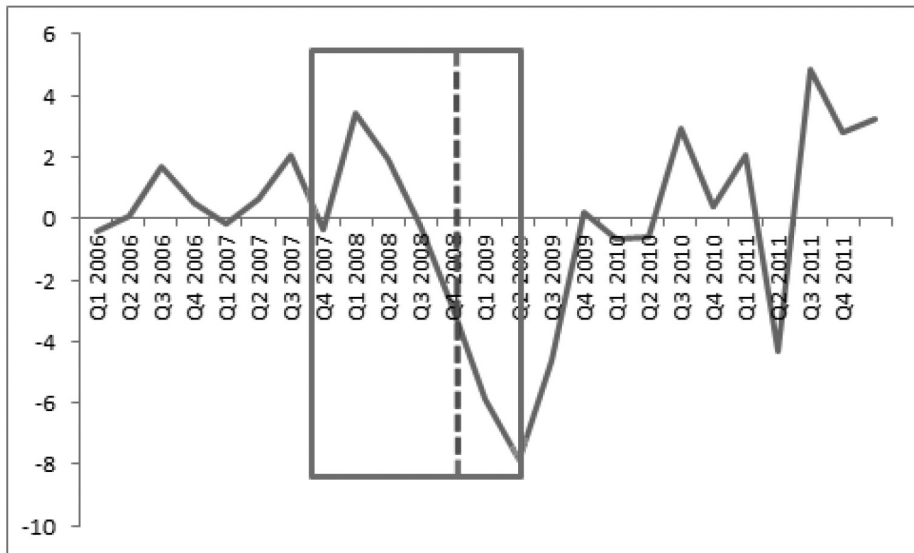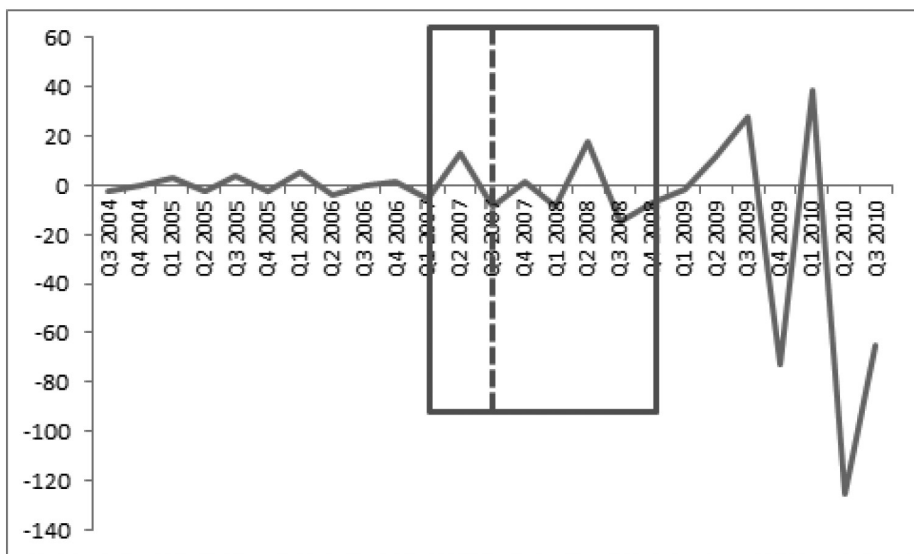
Figure 4. Cyclical dynamics of real *per capita* GDP in Kazakhstan (chain change in the cyclical component) around the credit boom period

Source: own study.

Figure 5. Cyclical dynamics of real *per capita* GDP in Belarus (chain change in the cyclical component) around the credit boom period

Source: own study.

Figure 6. Cyclical dynamics of real *per capita* investment in Russia (chain change in the cyclical component) around the credit boom period, in %

Source: own study.

Figure 7. Cyclical dynamics of real *per capita* investment in Kazakhstan (chain change in the cyclical component) around the credit boom period, in %

Source: own study.

GDP peaks, but the peak of credit boom coincides with the local low point in GDP dynamics. Interestingly, with the end of credit boom, GDP continues to fall.

Figures 6–8 demonstrate varying dynamics of real *per capita* investments in the context of credit booms. In Russia the credit boom covers a small investment cycle (from one low point to another), and interestingly the credit peak is also on the downside dynamics of investments. This can be explained by the fact that a large portion of internal credit is short-term, and before it could be reduced to account for the downfall in the economy, it had to be rolled over in order to restructure or close existing credit obligations. In the case of Kazakhstan investments are highly volatile, but the credit peak is followed by two local peaks in investments. This supports our previous observation that Kazakhstan depends largely on foreign investments and domestic credit that accompanies them. In the case of Belarus investments are also highly volatile and the credit boom peak coincides with a local peak in the investment cycle, though the end of the credit boom period also is marked by an even higher investment peak. While this behaviour requires a more specific analysis, it is not related to the crisis of 2007–2008, but rather to the Customs Union, which came in existence with its potential for more exports into Russia, new lines of credit from Russia to Belarus, and – most importantly – with the favourable export taxes on Russian oil, re-export of which brings substantial income into the Belarusian budget and also requires some investments into refining facilities.
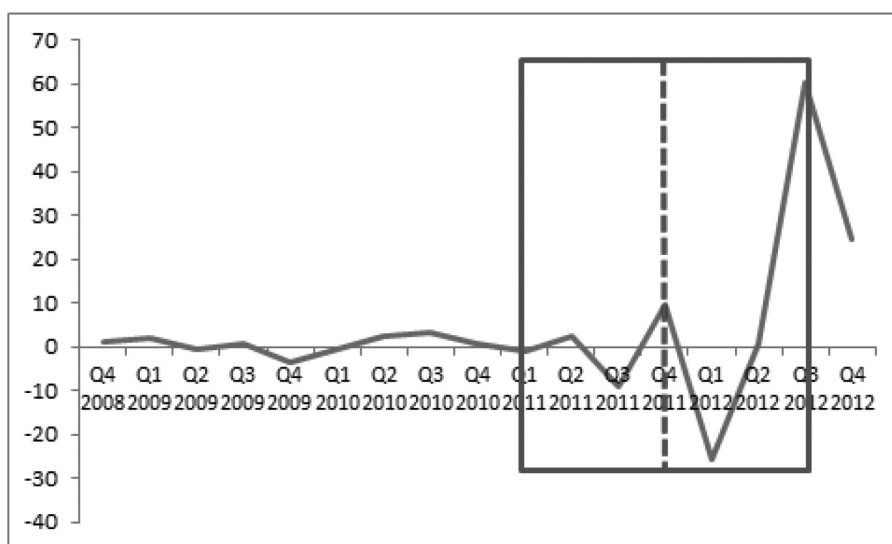

Figure 8. Cyclical dynamics of real *per capita* investment in Belarus (chain change in the cyclical component) around the credit boom period, in %
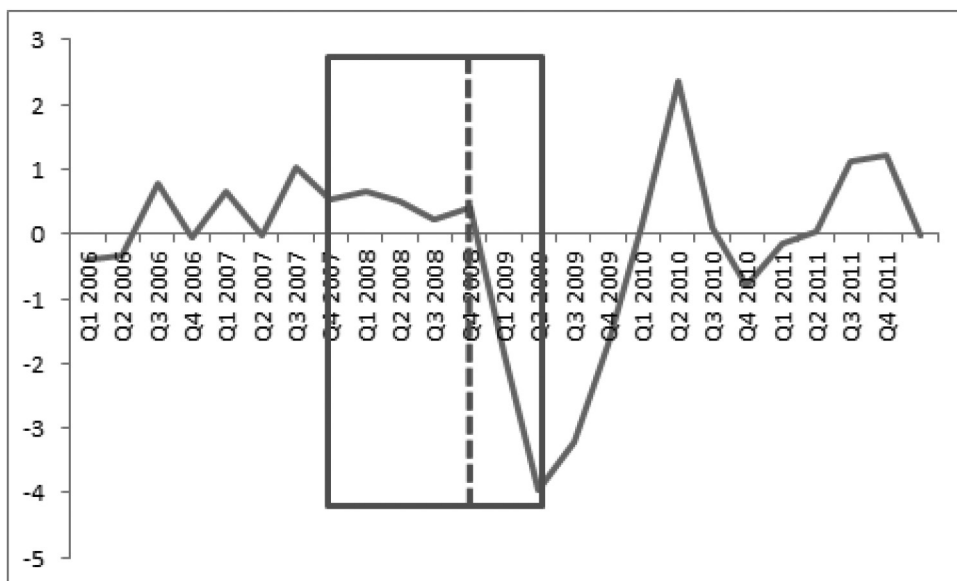
Source: own study.

Figure 9. Cyclical dynamics of real *per capita* consumption in Russia (chain change in the cyclical component) around the credit boom period, in %

Source: own study.

   Figure 9 confirms that the consumption in Russia is closely related to credit, as its cycle is in line with the credit boom cycle, and this also confirms that the Russian growth in the last years is driven more by consumption than any other GDP component. The consumption in Kazakhstan is volatile but with a weaker relation to the credit boom phase than is evident in Russia, and the magnitude of changes in the cyclical component of real *per capita* consumption becomes higher after the credit boom in Kazakhstan fades away. This is also in line with the story that the driving force of GDP growth in Kazakhstan is investment rather than consumption. In Belarus the credit boom covers also the consumption cycle, and thus suggests that part of favourable GDP dynamics in that period could be attributed to higher domestic credit to households for consumption needs – the level of this indicator was stable and grew while credit to local private non-financial business was in decline after a brief growth period.

   The evidence presented in Figures 12–13 does not support the hypothesis that governments of Russia and Kazakhstan behave in line with the general trend of resource-rich countries to borrow and spend more when resource prices are high – in both countries changes in government expenditures seem to be unrelated to the credit boom period. In Belarus the pattern of government expenditures seems to be also unrelated to the credit boom period. Thus, domestic credit neither substitutes for government expenditures nor amplifies them, but is rather unrelated to them.
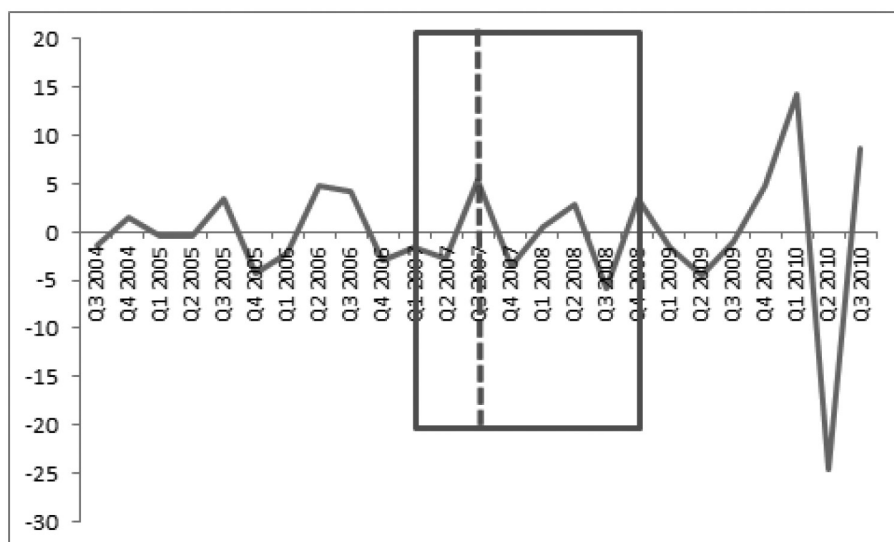
Figure 10. Cyclical dynamics of real *per capita* consumption in Kazakhstan (chain change in the cyclical component) around credit boom period, in %
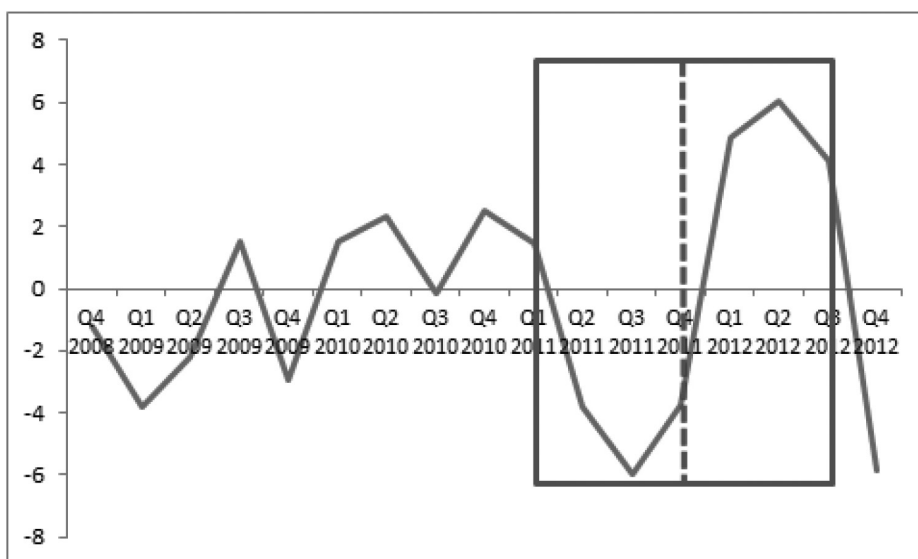
Source: own study.

Figure 11. Cyclical dynamics of real *per capita* consumption in Belarus (chain change in the cyclical component) around the credit boom period
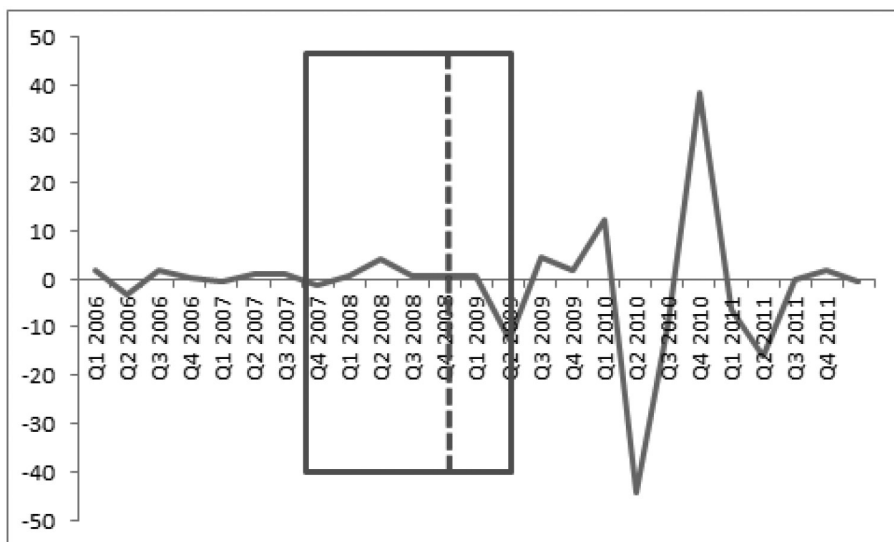
Source: own study.

Figure 12. Cyclical dynamics of real *per capita* government expenditures in Russia (chain change in the cyclical component) around the credit boom period, in %
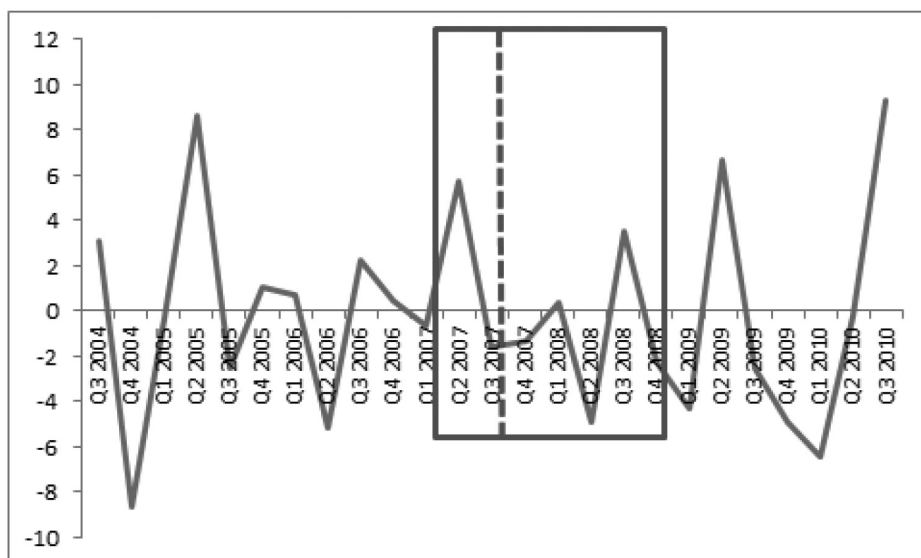
Source: own study.

Figure 13. Cyclical dynamics of real *per capita* government expenditures in Kazakhstan (chain change in the cyclical component) around the credit boom period, in %
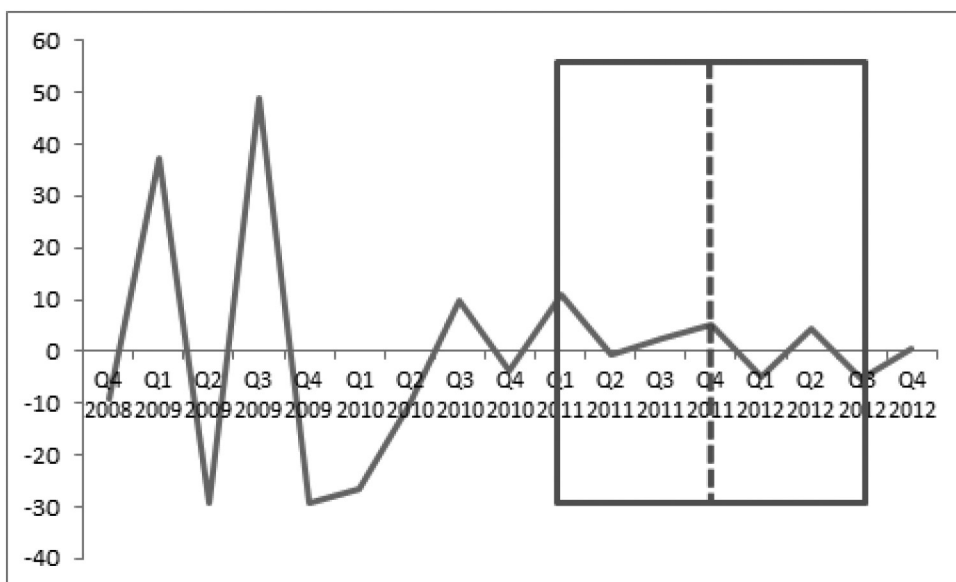
Source: own study.

Figure 14. Cyclical dynamics of real *per capita* government expenditures in Belarus (chain change in the cyclical component) around the credit boom period, in %

Source: own study.

4. Conclusions

In this paper we analyze the dynamics of domestic credit in the three countries of the recently formed Eurasian Economic Union: Russia, Belarus and Kazakhstan to see if it affects the dynamics of major macroeconomic variables, and if any interactions between the countries can be found. Using the methodology suggested by Mendoza, Terrones [2008, 2012], we have identified one credit boom in each country in the period from 1995:2 to 2014:1. The timing of credit booms seems to be unrelated between different countries and is more related to some external events. For Russia and Kazakhstan credit booms are registered around the world financial and economic crisis of 2007–2008 with the credit boom in Kazakhstan preceding the one in Russia. In Belarus the credit boom is identified in 2011–2012 and corresponds more to the initiation of the Customs Union between the three countries and to corresponding changes in the Russian valuation of oil exported to Belarus for further re-export of refined products to Europe.

The analysis of changes in the real *per capita* GDP and its main components (consumption, investments and government expenditures) confirms the results of the previous studies related to the specifics of growth of the three countries. In Kazakhstan the major driver of growth is foreign investments with supporting domestic credit developments, in Russia GDP growth (apart from oil prices) is

driven by consumption, and thus consumption cycle is closely related to the credit boom identified. Moreover, in Belarus growth is related to the possibilities of profitable re-exports of refined Russian oil and serves as a further driving force behind consumption growth supported by domestic credit. The timing of credit booms and general dynamics of domestic credit aggregates as well as of GDP and its components in the EAEU countries does not support the presence of spillover contagion effects between the countries in this respect. A more detailed analysis of external credit dynamics of the three countries could be the next step to verify the absence of credit spillovers between these countries.

References

Amirov V., 2010, Prospects for cooperation between Russia and the countries of Central Asia after the global crisis, *Problems of Economic Transition*, vol. 53(5), pp. 70–85.

Banerjee A., 1992, A simple model of herd behavior, *Quarterly Journal of Economics*, August, CVII:3, pp. 797–817.

Bikhchandani S., Hirshleifer D., Welch I., 1998, Learning from the behavior of others: Conformity, fads, and informational cascades, *Journal of Economic Perspectives*, Summer, vol. 2:3, pp. 151–170.

Brief Statistics Yearbook 2005–2012, Department of Macroeconomic Policy, Eurasian Economic Commission, http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/econstat/Documents/Brief_Statistics_Yearbook_2005-2012.pdf.

Calvo G., Mendoza E., 2000, Rational contagion and the globalization of securities markets, *Journal of International Economics*, June 51:1, pp. 79–113.

Charemza W., Makarova S., Prytula Y., Raskina J., Vymyatnina Y., 2009, A small forward-looking inter-country model (Belarus, Russia and Ukraine), *Economic Modelling*, vol. 26(6), pp. 1172–1183.

Frankel J.A., 2010, *The Natural Resource Curse: A Survey*, NBER Working Paper no. 15836.

Gavin M., Hausmann R., Perotti R., Talvi E., 1996, *Managing Fiscal Policy in Latin America and the Caribbean: Volatility, Procyclicality, and Limited Creditworthiness*, Inter-American Development Bank, RES Working Papers 4032.

Gerlach S., Smets F., 1996, *Contagious Speculative Attacks*, CEPR Discussion Paper No. 1055.

György S. Jr., 2010, On the customs union of Belarus, Kazakhstan and Russia, *Economic Annals*, vol. 5(184), pp. 67–92.

Hodrick R.J., Prescott E.C. 1997, Postwar U.S. business cycles: An empirical investigation. *Journal of Money, Credit, and Banking*, February, 29:1, pp. 1–16.

Isakova A., Koczan Z., Plekhanov A., 2013, *How Much Do Tariffs Matter? Evidence from the Customs Union of Belarus, Kazakhstan and Russia*. EBRD Working Paper No.154.

Isakova A., Plekhanov A., 2012, Customs union and Kazakhstan's imports, *CASE Network Studies and Analyses*, no. 422.

Kaminsky G., Reinhart C., 2000, On crises, contagion, and confusion, *Journal of International Economics*, June, 51:1, pp. 145–168.

Kaminsky G., Reinhart C., Vegh C., 2005, When it rains, it pours: Procyclical capital flows and macroeconomic policies, *NBER Macroeconomics Annual 2004*, vol. 19, pp. 11–82.

Kaminsky G., Reinhart C., Vegh C.A., 2003, The unholy trinity of financial contagion, *Journal of Economic Perspectives*, Fall, 17:4, pp. 51–74.

Kodres L., Pritsker M., 2002, A rational expectations model of financial contagion, *Journal of Finance*, April, LVII:2, pp. 769–800.

Libman A., Ushkalova D., 2013, Foreign trade effects of the Customs Union between Belarus, Kazakhstan and Russia, *George Washington University Central Asia Program, Central Asia Economic Paper*, no. 8, May.

Mendoza E.G., Terrones M.E., 2008, An anatomy of credit booms: Evidence from macro aggregates and micro data, *International Finance Discussion Papers 936*, Board of Governors of the Federal Reserve System (U.S.).

Mendoza E.G., Terrones M.E., 2012, An anatomy of credits booms and their demise, *Journal Economía Chilena (The Chilean Economy)*, Central Bank of Chile, vol. 15(2), pp. 4–32, August.

Mendoza E.G., 2006, Endogenous sudden stops in a business cycle model with collateral constraints: A Fisherian deflation of Tobin's Q, *NBER Working Papers 12564*, National Bureau of Economic Research.

Minsky H.P., 1964, Longer waves in financial relations: Financial factors in the more severe depressions, *The American Economic Review*, vol. 54, no. 3, Papers and Proceedings of the Seventy-sixth Annual Meeting of the American Economic Association (May, 1964), pp. 324–335.

Minsky H.P., 1977, The financial instability hypothesis: An interpretation of Keynes and an alternative to "standard" theory, *Nebraska Journal of Economics and Business*, vol. 16, no. 1 (Winter, 1977), pp. 5–16.

Minsky H.P., 1991, Financial crises: Systemic or idiosyncratic, *The Levy Economics Institute of Bard College*, Working Paper no. 51. April 1991.

Nurkse R., 1944, *International Currency Experience: Lessons of the Interwar Period*, League of Nations, Geneva.

Reinhart C., Reinhart V., 2009, Capital flow bonanzas: An encompassing view of the past and present, [in:] J. Frankel, C. Pissarides (eds.), *NBER International Seminar in Macroeconomics*, University of Chicago Press, 2008.

Shleifer A., Vishny R.W., 1997, The limits of arbitrage, *Journal of Finance*, vol. LII, no. 1, March 1997, pp. 35–55.

Tarr D. G., 2012, The Eurasian Customs Union among Russia, Belarus and Kazakhstan: Can it succeed where its predecessor failed? *SSRN Working Paper No. 2185517*, December.

Vymyatnina Y., Antonova D., 2014, *Creating a Eurasian Union: Economic Integration of the Former Soviet Republics*, Palgrave Macmillan.

CREDIT BOOMS W KRAJACH EUROAZJATYCKIEJ UNII GOSPODARCZEJ. ANALIZA POWIĄZAŃ

Streszczenie: W niniejszym artykule przeprowadzono analizę dynamiki kredytów w trzech krajach niedawno utworzonej Euroazjatyckiej Unii Gospodarczej, w której skład wchodzą Rosja, Białoruś i Kazachstan. Sprawdzono, czy mają one wpływ na dynamikę głównych zmiennych makroekonomicznych, a jeśli tak, to czy można znaleźć jakieś interakcje między tymi krajami. Zidentyfikowano boom kredytowy w każdym kraju w okresie od II kwartału 1995 do I kwartału 2014. Czas ich zaistnienia jest różny w każdym kraju i te okresy nie są ze sobą powiązane, ale raczej zależą od wydarzeń zewnętrznych, takich jak światowy kryzys gospodarczy i finansowy w latach 2007–2008 lub powstanie unii celnej między trzema krajami w połowie 2010 roku. Analiza zmian realnego PKB *per capita* i jego głównych komponentów (konsumpcji, inwestycji i wydatków rządowych) potwierdza wyniki wcześniejszych badań dotyczących procesu wzrostu w tych trzech krajach.

Słowa kluczowe: Euroazjatycka Unia Gospodarcza, dynamika kredytów, Rosja, Białoruś, Kazachstan.