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Financial instability, cycles and the role of institutions

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**THE ROMANIAN ACADEMY
THE “COSTIN C. KIRIȚESCU” NATIONAL
INSTITUTE FOR ECONOMIC RESEARCH**

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Financial Instability, Cycles and the Role of Institutions

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FINANCIAL INSTABILITY, CYCLES AND THE ROLE OF INSTITUTIONS

AUREL IANCU*

Abstract: *In this study I review the main scientific contributions of Minsky and other scholars to the financial instability and crisis issues, and the role of institutions in modeling the medium and long financial and business waves. The topics developed in this paper are the following: the relationships between financial instability, financial and business crisis and institutions; the thwarting of the explosive instability by the specific institutions' actions and regulations; the impact of the institutional changes on the financial and business cycles; an empiric approach to the financial and business cycles and their synchronization in the Central and Eastern European countries/ members of the EU, taking into account the main characteristics of the changes in these countries' institutions.*

Keywords: *financial instability, business cycles, financial cycles, institutions, long waves, basic cycles, supercycles, Central and Eastern European countries*

JEL: *B52; B52; D53; G01; G2; L51; P11; P21; P31*

1. Introduction

The crisis stirred up in 2007 in the USA and later in Europe and other parts of the world, as well as the present crisis in the Euro Area have significantly stimulated the scientific debates about their economic and social causes and effects. At the same time, there have been animated discussions about the methods and policies to be adopted for early signalling of crises and diminishing their negative effects. Although approached and clarified several decades ago by many researchers, the issues on the role of institutions¹ and their dynamics in relation to the cyclicity and the economic

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¹ Unlike the common meaning, *i.e.* the existence and functioning of the public institutions, the scientific meaning adopted in our paper for the notion of **institution** comprises the whole system of rules that guide individuals and social groups during their entire public, civic and private activity, as well as their living relationships. In the broadest sense, this system of rules is translated into and composed of the set of juridical rules, customs, beliefs, usual behavioural superstitions (individual and collective) as well as the multitude of public and private organisations, organized social groups functioning by written and unwritten rules or customs.

These rules and organisations, created and improved for centuries, are the pillars, architecture and infrastructure for the organisation and functioning of social groups at the local, national, regional

and financial crises receive, unfortunately, incomplete and improper explanations. In our paper we first survey past contributions to the research in cyclicity (Section 2) and then we deal with aspects of the financial instability, the causes and manifestation forms of instability (Section 3). Further (Section 4) we explain the economic and financial cycles under the impact of institutional changes, the structure and basic features, and in Section 5 we provide statistical data on the role of the institutional change in creating and designing the cycles and in synchronizing of some of their phases in the CEE countries. The conclusions are presented in Section 6.

2. Approaches to financial and business cycles

Knowing that the economic and financial evolution has a certain cyclicity and the boom periods are followed by crisis and depression periods, the economists were not surprised so much by the emergence of the last crises, but by their aggressiveness and duration.

One century and half ago, Juglar (1862), and other remarkable economists after him, found out that economy, when illustrated by long time series of economic and financial indicators, did not evolve smoothly, but in waves, with fluctuations or evolutions alternating approximately regularly between expansion periods and depression periods, then returning to expansion². According to Burns and Mitchell: “Business cycles are a type of fluctuations in the aggregate economic activity of nations that organise their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle”³. In the next decades, a deeper study of the

and global level. This network of rules and organisations form the institutional system, which, along with economic instruments (market, money, economic incentives, taxes and duties, etc.), form the functional mechanisms of the economy. The creation and functioning of the institutions mean a transition from anarchy to order by introducing and observing the rules for the economic and social life.

Regulation means enforcement of rules by governmental authorities or empowered organisations, by means of penalties aiming to change the economic behaviour of individuals and companies, either within the existing institutional system or by changing the system.

² In 1862, Clement Juglar published the first edition of *Des crises commerciales et leur retour périodique en France, Angleterre et aux Etats-Unis*, and in 1889, the second expanded edition. To it, one should add several articles on the cyclical commercial and financial crisis; among them, in 1857, “Des crises commerciales et monétaires de 1800 à 1857”, in *Journal des économistes* and, in 1900, *Les crises commerciales et financières et les crises économiques, Congrès international des valeurs mobilières*.

³ Arthur Burns, Wesley C. Mitchell, 1946, “Measuring Business Cycles”, NBER, in *NBER Book Series, Studies in Business Cycles*, p. 3.

phenomenon confirmed that cycles are fluctuating movements of the economies and of some of their segments/components under the impact of endogenous and exogenous factors, i.e. movements in the form of waves of different lengths and intensities induced by accelerators and multipliers. Dependent on the length and intensity of the waves and the field of action, cycles have different dimensions and duration, measured by the distance, in time, between two peaks of some essential economic and financial indicators – production, unemployment, asset price, current account deficit, etc.

Irrespective of the type of cycles referred to (depending on frequency, original cause and field), they are more or less similar as regards the synchronisation of the production oscillations, employment, capital markets, price of financial assets, credit markets. But the cycles differ by frequency, amplitude, field (technological, financial, business), determinants (investments, credits, institutional changes, fiscal and monetary shocks), geographic area (local, regional, global).

A controversial important classification is that concerning the cycle length. For example, by Schumpeterian tradition cycles are classified into short, medium and long terms by the characteristics of the determinants.

Over time, crises and their cyclicity were attributed by several authors to factors such as: significant innovations, investments, excessive indebtedness and deficit, seasonal ones, psychological or behavioural ones specific to the human nature. Each of these factors has been approached by various authors in relation to the knowledge level, area studies, prevailing thought or the vision of every author in the matter.

The systematic study of crisis cyclicity actually began in the early decades of the 20th century with the contribution of major authors:

- Kitchen (1923) who revealed, by means of financial time series and some wholesale price indices, the existence of ten-year major cycles, besides three-year minor cycles;
- Kondratieff (1935) revealed, by means of time series of wholesale and production prices, the existence of long fifty-year cycles;
- Schumpeter (1939) developed the theory of long cycles based on the life cycles of major innovations and taking into account the innovation clusters derived and the activities generated by innovations. At the same time, Schumpeter made a synthesis of fluctuations in terms of the so-called integrated cycles; we should point out that one long Kondratieff cycle covers six major Juglar cycles, and the latter covers three minor Kitchen cycles. In practice, the types of cycles mentioned above may overlap, which extends, deepens and worsens the crises and recession phases.

The study of cyclicity and disequilibria was carried on by many other top economists: Fisher, Hicks, Hansen, Samuelson, Kuznetz, Kalecky, Lucas, Madison, Krugman, Aglietta, Boyer, etc. They made use of ingenious ways to build models. Among them, we find the following:

- Those focused on the dynamics of disequilibria caused by capital accumulation through investment multipliers and accelerators, and on the dynamics of prices, wages and interest in response to disequilibria in the goods, labour and financial markets;

- Those focused on revealing the real cycle within the new economic classic theory (NEC), for reinterpreting the so-called circumstantial⁴ cycle, caused by financial, technological and productivity shocks. It means a return to pre-Keynesian theories;

- Those based on the new Keynesianism, considering fluctuations determined by a macroeconomic vision and the acceptance of the existence of major setbacks regarding the coordination of the capitalist world, competition distortion, information asymmetry, labour market rigidity. In formulating the new Keynesian theory, the authors considers the following fundamental elements: uncertainty, behaviour representation and the specific features of the goods and services markets, credit markets and labour markets as well as the role of the monetary system and the public intervention in various stages of the cycle;

- The Austrian School, represented by Mises (1912-1953; 1936) and Hayek (1933-1975; 1970), advances significantly in explaining the interaction of the real economy with the credit system within the cycle. These authors see the business cycle as a result of quick credit rise in conditions of extremely low interest rates, which causes overexpansion of investment expenditure at an unsustainable rate (Guttman R., 2012).

- Minsky is the economist who follows a new way of approaching, interpreting and understanding the crisis cyclicity. First, he approaches the financial cycle as a self-supporting one, and a sign of shifting the centre of gravity from the business cycle to the financial cycle. Of course, Minsky recalls and develops the theory of the monetarists regarding the role of the monetary-financial factor in the formation and dynamics of the business cycles. But unlike them, he considers the leading role of the financial sector owing to a higher level of financialisation and control of the economies in the second half of the century⁵.

⁴ According to Lucas (1973), the circumstantial cycle is that resulting from short and medium-term fluctuations in relation to the general equilibrium related to the long-term evolution of the economy.

⁵ Hawtrey (1929) considers changes in money circulation as the ultimate cause of the shift from the expansion stage to the depression stage. Hayek (1933/1975) thinks that a break in the economic

Secondly, although synthesizing the theories of Marx, Schumpeter, Keynes, Samuelson, Hicks, etc., Minsky deals, in his theories and assumptions regarding the system instability, with institutional changes, panic and euphoria as strong generators that deepen the fluctuations and the financial and business cycles.

It is worth mentioning that discussions about the cyclicity of the crises under the impact of the institutional changes are quite brief, and the theses or the assumptions are poorly analysed and empirically demonstrated, especially when referring either to long cycles or to medium cycles.

In spite of the impressive number of studies on the cycle and the crisis, along with satisfactory explanations and analyses, most of them are not consistent because the factors are not ranked so that the institutions hold the position they deserve, i.e. primary determinants of cyclicity. Interpreting the issues through the theory of institutionalism could help us understand and properly resolve the problems caused by the financial cycle and the financial crisis.

While, according to some opinions, the financial system is the most institutionalized and regulated sector in the entire economy (Croitoru, 2013), it does not mean that this sector would have the most rational and effective institutional architecture and construction. As the recent history of the financial crises shows, just the obvious inconsistency that has gradually appeared in this construction (in the USA, Eurozone and CEE area), as well as the continuously widening cracks cause financial disasters hard to control, with painful economic and social consequences. History has proved that neither the Marxian theory of instability up to the self-destruction of the capitalist system, nor the Keynesian theory of state intervention through public expenditure during major depressions, nor the theory of equilibrium by self-adjustment of the economic system can provide full clarification and proper solutions to major economic disequilibria and crises.

Among all the present theories, the Mynskyan theory of cycles (viewed from the perspective of the system instability hypothesis, by taking into account the institutional structure and financial innovation) seems to be the only one to ensure both the required internal coherence and the consistency with reality. Specifically, this theory is not formulated as a system, but spread as fragments and ideas published in papers over several decades. Several economists have tried to formulate and develop the Mynskyan theory for different sides of instability, especially the financial crises. Among them, we find first Palley (2009), who developed the theory

equilibrium is caused by monetary factors. Fisher (1933) points out that overindebtedness and deflation are fundamental factors determining the crises and cycles and causing cascade-like distortions.

of medium (basic) cycles and long cycles (supercycles) from the perspective of the system instability and the institutional limitations (contractions), and, second, Wray (2009), who approached on a broader basis the development stages of the financial capitalism in conditions of increasing complexity of the system through financialisation of the economies and financial innovation.

We intend to discuss and re-interpret below Minsky's theory through financial instability and its forms of manifestation as necessary explanations of the cycle and crisis.

3. Financial instability: causes and manifestation forms

To understand the question of economic and financial cycles and crises, first we have to deal with financial instability. It can provide explanations regarding the origin and the start of the crises, as well as the capacity to stabilize an unstable economy by delaying or controlling the crises or by diminishing their destructive effects.

3.1. The content of the term “instability”

The term “instability” is mainly used in sciences⁶, with specific and rigorous meanings and definitions. In economic sciences, this term has usually two meanings:

a) In a broad sense, at the level of the economic system and the financial system, revealing various features, such as: fluctuating character, process fluidity, system disequilibria, quantitative changes and qualitative mutations, process lability, uncertainty of predictions of the evolution of some vital economic and financial indicators – market price of capital assets, product price, profit, etc.;

b) In a narrow sense, related to the explosive (crisis) state of the economic system within the economic and financial cycle, revealing the stage features of the crisis, the accumulation of tensions in the pre-crisis time, the relaxation of the system in the crisis and post-crisis time, as well as the role of institutions and regulations in preventing collapse and reviving the capitalist system.

According to modern economic thought, instability is a natural process. Nor even Adam Smith's invisible hand and the Central Bank's and/or Government's intervention can fully eliminate financial instability,

⁶ The theory of systems, the theory of control, the solid mechanics, the fluid mechanics, climate, the study of plasma.

accompanied by its explosive effects – crises. Interventions can only delay crises or/and diminish the destructive effects as well as shorten the depression periods.

Economic cycles and crises are closely linked to financial instability. Finance is a factor with a crucial role in economic fluctuations, and financial instability is a process, a trend, not just a mere moment or event. Financial cycles and crises are forms of manifestation of financial instability.

Out of the two great contrary concepts prevailing in the economic science – financial equilibrium and financial instability, for a long time discussed by economists – the second one (instability) has gained ground, which means that the economic theory is turning towards reality and the critical spirit in the Keynesian tradition is winning.

Financial instability, like the economic one, is a dynamic process. A financial crisis is the explosive form of manifestation of the financial instability emerging during the expansion of the business cycle which accumulates tension that diminishes by means of crises.

3.2. Different approaches

Since the existence of financial instability as an obvious and natural process cannot be ignored, economists have different opinions on the causes of this process, on the ways of approaching and interpreting the trends and the manifestation forms. In many analyses of financial instability and crises, the main causes revealed by authors are the shocks caused by greed, irrational luxury, wrong and irrational policies. For example, a often invoked cause is greed searching for profit or high income, which means the investors, banks and financial managers carry out very risky policies, projects or operations or even fraudulent schemes causing shocks to the system.

Other explanations regarding the causes of financial instability and crises that can also be related to the irrational mania come from the supporters of the monetarist doctrine and consist of several variants linked to the monetarist offer or monetary policy errors. In this respect, Wray (2001) mentions the following: 1) the application of extremely high minimum mandatory bank reserves by the central bank; 2) very quick expansion of the money supply; 3) exaggerated response of the central bank to inflation by strong and quick diminution in the money supply; 4) major fluctuations in the exchange rate, especially in countries facing high rates of public and private debt; 5) quick diminution in the money supply from creditors to borrowers following a restrictive policy adopted by central banks, especially in the case of credit crises.

Instability is also considered a natural process causing the fragility of the system, as opposed to robustness. In this case, instability stems from the very dynamics of the structure and mechanism of the capitalist economy. Among the explanations of the causes of financial instability we find that of Marx, adjusted and developed by Keynes and, later, by Minsky. This category of analyses became a new paradigm, characterised by coherence and consistency with reality. In his explanations, Marx considers that in conditions of free market (*laissez faire*), not only they fail to ensure equilibrium, but also they cause anarchy in production, which expands and deepens, and the production cycle begins with money from own sources and loans for buying tools, raw material and wages and ends in more money after selling the merchandise (B-M-B').

When the owner cannot sell the already produced merchandise because of competition or/and low demand or because of the market price at the level or below the level of costs, he tries to find loans in order to improve his business. If he fails, the enterprise becomes bankrupt. The sudden bankruptcy of several companies affects the banking system, since they cannot recover their money and further they cannot fulfil their payment obligations; so panic emerges and the whole economic system is exposed to collapse. The more adequate to free market (in modern language, more deregulated) the institutional structure is, the higher the exposure and the probability to happen are.

Keynes rediscusses and develops Marx's ideas regarding the economic and financial instability of the free market systems in his *General Theory*. According to Marx's postulate that capitalist production begins with money and is expected to produce later more money. Keynes analysed and developed the theory of determining the production equilibrium and the workforce incorporating explicitly expectations. Also, he formulated and developed the theory of investment dealing with the effects of the multiplier and the expectations on the determination of business cycles, risk and uncertainty, as well as the role of some psychological factors such as marginal propensity for consumption, optimism, pessimism and others.

In accordance with Marx's ideas and in opposition to Smith's opinion, Keynes demonstrates that in capitalist economies there are no natural self-adjustment forces for making full use of the workforce. Like Marx, Keynes showed the destructive role of the liquidity, considered a distorting force which hinders the full use of the workforce (Wray, 2001, p. 4)⁷.

⁷ Wray points out that "rising preference for liquidity lowers the demand for capital assets, which diminishes the production of investment goods and, further, the income and the use of the workforce by the multiplier effect".

Unlike Marx, who approached economic and financial instability as a self-destructing and vanishing system process, Keynes, as well as his followers headed by Minsky, treated instability in Schumpeter's spirit, as a natural process of periodical recovery and improvement of the economic and financial system functioning with fluctuations between some maximum and minimum limits, called ceiling and threshold, as constraints accepted by the system and the institutional mechanism as part of the capitalist economic and financial system.

3.3. Minsky's contribution to the development of the theory of financial instability

Following the scientific debates and the evaluations made by many authors in the last decade, the general opinion is that Minsky is the founder of the modern theory of financial instability. He bases his theory on the ideas developed by Marx and Keynes about the instability of the free market system, on the complexity of the structure and of the financial relationships of the developed economies, as well as on his endeavour to answer many fundamental questions such as: 1) What is the relation between financial instability and financial equilibrium? 2) What is the role of financial investments in causing instability? 3) What is the relation between the financial instability and the business cycle? 4) What is the role of institutions in the dynamics of instability and financial crisis?

Further in this section, we present a few data on Minsky's contribution to the development of this theory and answers to some of these questions.

According to Minsky, the capitalist economic and financial system is, in essence, unstable, predisposed to crises, not necessarily produced by external shocks, but by internal causes. After a period of tranquility, we witness an increasing economic and financial boom and, at the same time, increasing tensions caused by the desynchronisation and discrepancy between the incomes predicted and expected and the incomes to be earned in the future. Tensions gather and intensify, the more so as in modern times, on one hand, the funding of investment and production expenditures are based on loans and major accumulation of debts (when uncertainty occurs) and, on the other hand, the financial innovations expand owing to extensive use of securities and financial derivatives, as well as the institutional innovations, with a risk tolerance on behalf of all economic agents, rating agencies, the banking system and supervising agencies, which favours the speculative boom accompanied by inflation.

To explain instability, Minsky resorts first to the theory of the role of investments in relation to consumption in the cycle formation, as well as to the financial theory of investments suggested by Keynes⁸. In his attempts, Minsky links the approach to the financial factors with the approach to the real investment factors of fluctuation in the developed and highly financialized economies, describing the transition from quiet stages (of relative equilibrium)⁹ with a robust financial structure to instability stages (of crisis) with fragile financial structures..

Minsky considers the following funding sources: a) available cash and financial assets; b) profit (after taxation and payment of dividends); c) funds attracted through loans or by issue of securities for participation in the capital.

As the investments in modern economies imply very large amounts and the growing-up periods are also very long, the part attracted from abroad through loans for financing takes on an exaggerated dimension in relation to the economic units' own capital. This trend is mostly determined by both a low cost of the loan (low interest rate/and the expansion of the government guarantees in case that support is given to social (housing) programmes and military strategic programmes.

Within the developed economies, where corporations (limited companies) – if compared to small associations and estates – prevail as business amount, the financial markets and credits have suddenly increased. This boom is produced by the quick expansion of financial innovation. Besides the positive effects, they face risk and uncertainty and, at the same time, they stimulate speculation by trading credit and commercial securities, shares and commercial and financial contracts in various fields. The rising trend of the stock exchange rating leads to accumulation of appreciations of the economic units' capital and increase in prices, along with diminution in the safety margins against risk.

But maintaining this trend for a longer time, without implementing correction policies, produces the so-called crise-triggering bubbles. A significant diminution in the capital market ratings has a major impact on financial instability, by increasing the debt burden as against the value of the assets validated by the capital market and by diminishing the borrowing power of the economic agents involved.

⁸ Unfortunately, these theories were forgotten because of the development of the neoclassic (orthodox) variant of Keynesianism by Hicks, Hansen, Samuelson, etc.

⁹ Minsky borrowed the term “periods of tranquility” from Joan Rodinson instead of the term “equilibrium” that might mislead us (Minsky, 2008, p. 197).

In conclusion, funding the economies and, first of all, the investments for producing capital assets with a long life from borrowed money always causes instability since there is a lack of synchronisation between payments on debts and future collections from product sales, since these collections are influenced by various factors unpredictable at the time the loan was contracted.

Depending on the amount of external funding through loans and the desynchronisation level, the economic units seem to consider financial instability from different positions. Of course, those resorting to less external resources have more opportunities for covering the contract obligations from profit than the economic units resorting to more external funding. The latter have often to resort to more expensive loans to pay their debts.

Minsky generalized this phenomenon in his famous hypothesis of financial instability, which describes synthetically how an economic system may pass from a robust financial structure when most units have a sustainable financial situation (hedge) to a fragile (unstable) financial situation when most units can hardly pay their debts (speculative and Ponzi).

Institutions play a leading role in the relations with financial instability. According to Minsky, instability is not a fatality for capitalism, as Marx said, since the very capitalist institutional structure creates and imposes several constraints, so that the financial system should function within the viable limits of some essential indicators, such as the size of the coefficient of the mandatory minimum bank reserve in relation to own capital, the coefficient of the public credit in relation to the GDP, the coefficient of the budget deficit and of the current account, etc.

When instability seems to become explosive, there are remedies such as constraints for some market processes: compulsory conduct rules as well as the action and intervention of the institutional system of the public authorities, for thwarting some facts and tendencies during the economic boom as well as during the crisis and depression stages¹⁰. “The thwarting systems are analogous to the homeostatic mechanisms which may prevent a system from exploding” (Ferri, Minsky, 1991, p. 12).

To prevent the evil to be done by the anarchic and corrupt free market system in capitalist economies, institutions and authorities are created to

¹⁰ Here we consider the last resort credits granted by the central banks and the direct governmental interventions.

achieve financial and bank supervision, institutions to guarantee the credits, anticorruption institutions, as well as institutions with authority to eliminate the processes and factors that cause more incoherence within the financial system or keep economies blocked in unemployment and deflation. Minsky often pointed out that only big institutions and big governments having the necessary means and authority could be successful in preventing instability, a purpose hardly achievable in less developed countries with weaker institutions.

4. Financial and business cycles: structure and main features

Referring to different approaches to the business cycles, Schumpeter found out that at that time (1939) there were two fundamental groups of theories for formalizing the business cycles: a group accepting a behaviour of the economic system with damping time series and the group accepting a behaviour of the economic system with explosive time series.

Studying the literature dealing with the general contributions to the analysis of the economic and financial cycles and crises in the last half of the century, we find out that Minsky is by far the most original and influential among the researchers in the field. In this respect, there are two types of approaches to the economic and financial cycles and crises. The first type is dealt with in the tradition of Keynes, Hicks, Hansen, Samuelson, in the papers published in 1957 and 1964¹¹. The second type refers to the new interpretation of cycles and crises, i.e. from the angle of financial instability under the impact of (Minsky, 1978; 1992; 2008; Ferri, Minsky, 1992) further developed by Palley (2009), and other economists.

In both cases, reference is made to the two classes of cycles: medium waves and long waves.

Later, Delli Gati, Gallegati and Minsky (1994) added a third group dealing with alternative intertemporal components, reflected in the time series of the interaction of economic variables. Time series can take on not only the non-oscillatory form and that of the undulating movement but also an incoherent behaviour through inflation and deflation of debts.

Because of this incoherence, the capitalist economy bears in itself the seed of degeneration, which can go further to severe failures by triggering devastating crises. The governmental institutional interventions and those

¹¹ Hyman P. Minsky, "Monetary System and Accelerator Model", in *American Economic Review*, Vol. XLVII, No. 6, 1957; pp. 859-883; Hyman P. Minsky, "Longer Waves in Financial Relations: Financial Factors in the More Severe Depression", in *American Economic Association Papers and Proceedings* 1964/54 (May), pp. 824-332.

of the central banks play a positive role or even a saving role when they are adequately made (as opportunity, as a selected moment, as form of intervention and as instrument).

But we should also look at the reverse side, i.e. the institutions and policies themselves cause economic and financial instability. This happens when: a) promoting institutions and implementing policies and instruments which prove to be inadequate, incoherent or even wrong; b) maintaining institutions with a significant erosion level in relation to the evolution of the new social, economic, technologic and managerial realities; c) enforcing excessive regulations that may lead to hypebureacratc decisions and economic and financial mechanisms. All of them cause instability in the economic and financial system. They will be further discussed on the basis of concrete examples.

4.1. The Accelerator-Multiplier Model in Minsky's interpretation

As far back as the beginning of his scientific career, Minsky (1957b, 1964) analysed Samuelson's model of economic cycle (1939)¹². He investigated several properties of the model, namely those related to the explosive character of some variants and those related to the monetary side, to which the selection of consistent policies is added.

a) The explosive character

In his analysis, Minsky points out that this model (the equation with second order differences result from substitutions made for the three equations presented in the footnote), leaving aside the effects of the initial conditions, could generate any of the following time series: (1) monotonous ones, to be balanced; (2) cyclical ones, to be balanced; (3) cyclical ones with

¹² For analysing the relation between accelerator-multiplier and cyclicity, Minsky considers a slightly modified version of Samuelson's model of the interaction of the functions of consumption, C_t , investment, I_t and of income, Y_t , expressed by the following equations:

$$Y_t = C_t + I_t,$$

$$C_t = \alpha Y_{t-1},$$

$$I_t = \beta (Y_{t-1} - Y_{t-2}),$$

From which by substitutions we get the following equation with second order differences:

$$Y_t = (\alpha + \beta) Y_{t-1} - \beta Y_{t-2},$$

which includes the accelerating coefficient, β , which links the demand for investment to the change in incomes, and the consumption coefficient, α , called also the marginal propensity for consumption, which links consumption to income .

constant amplitude; (4) monotonous explosive ones; (5) cyclical explosive ones.

Briefly characterizing each of these types of series, Minsky points out that we must find solutions both for the monotonous explosive type and for the explosive cyclical one, in order to prevent extreme situations. For example, for the type of cyclical series that causes fluctuations beyond the critical values (limits), the thresholds and ceilings should be arranged to confine fluctuations within certain limits through the institutional system and regulations (Minsky, 1957, p. 861). The institutions act for protecting the economic and financial system against destabilisation. Actually, by such constraints, the current destabilisation is interrupted and a new process emerges in new conditions. Minsky reveals that the time function of income generated by the accelerator model produces different processes and results such as: continuous growth, cyclical growth, boom followed by incoherence and distortions, depressions varying in amplitude and length of the cycle phases (Minsky, 1959, pp. 134-135; Papadimitriou, Wray, 1994, p. 9).

b) The monetary side

Minsky applies the accelerator-multiplier model to the study of the relations among incomes, investments (*ex ante*, achieved and funded), saving (*ex ante*), money supply, money rotation velocity, liquidity, etc. He considers that various relations from the model analysed can also be expressed in monetary terms. For this, Minsky uses variants (types) of monetary system, classified by the changes taking place in the rotation velocity and in the money supply. By this criterion, Minsky uses successively the following variants: (1) no change both in the rotation velocity and in the money supply (as they are constant); (2) changes in the rotation velocity; (3) changes in money supply; (4) changes in the rotation velocity and the money supply.

By applying the accelerator-multiplier model, Minsky analysed both the impact of the change in every variant of the four on the financial variables and their interactions.

For example, when Minsky analyses the changes in the money supply (variant 3), he mentions two sub-variants of monetary systems:

1) The first one refers to the infinitely elastic money supply, when the money supply growth may be limitless. Here we find the explosive accelerating process, since it allows for a cumulative growth in the income to be funded by credits granted by the central bank, along with exposure to the inflation rise.

2) The second one refers to the money supply growth by a fixed rate. In this case, the money supply growth rate is an exogenous variant. It is equivalent to the sub-variant according to which the money supply is infinitely elastic when the difference between *ex ante* investment and *ex ante* saving does not exceed the money supply growth (in the given period). Still endogenous limitations may be caused by the worsening of the companies' balance sheets and liquidities.

Another example is the analysis of the variant of changes both in the money supply and in money rotation velocity. His analysis includes several assumptions for assessing the effects of a change in every variable under certain conditions, including the creation and utilisation of the liquidity surplus. For example, if the rotation velocity exceeds unit and if an *ex ante* investment surplus exceeding the *ex ante* savings is financed by a money supply growth, a liquidity surplus results (Minsky, 1957, p. 880). If this liquidity surplus is produced by an initial investment funded through bank credits, it is obvious that this surplus is used to replace the companies' debts to the banks.

c) Adequate financial policies

Minsky points out that the model can be used not only for new interpretations like the monetary ones, but also for formulating effective economic and financial policies. Here he discusses the problem of selecting the best monetary and fiscal policies in order to ensure a steady economic growth necessarily accompanied by the money supply growth. But a geometrical growth rate of money supply (too fast) could cause a very high price rise, i.e. high inflation, and a very slow growth of money supply could cause income diminution.

In the economic policy area, measures should be taken to ensure reasonable correlation among money supply growth, income growth, production capacity growth and full utilisation of the workforce. For example, the best way is that the income growth rate should be equal to the production capacity growth rate able to resist inflation. But usually, decision-makers choose a faster growth in income than in the production capacity, at a low inflation rate, using the workforce better.

4.2. Interpretation of cyclicity and crises through instability and the institutional factor

We notice that the instability of the economic and financial systems may be considered a natural state and the final form of manifestation of instability is explosion. The following questions should be asked about this

final form of manifestation: Why are explosions actually rare¹³ and why are they different in size over time (the amplitude of the time variable oscillations and the geographic expansion)? Or, in other words, why do crises not occur every time there is instability in the system or why do they have different lengths?

As we mentioned in the above section, many attempts and efforts were made to answer these questions. These attempts and efforts may be approached in three ways:

1) The first one implies models which (by ignoring the institutional structure of the economies) reveal, on one hand, the logic of the relations between the dynamics of some physical and value factors and the cyclical behaviour of the system and, on the other hand, a trend towards either equilibrium or chaos.

2) The second way implies models based on the accelerator-multiplier principle, taking into account the institutional system as ceilings and thresholds aiming to restrict or prevent instability, and mostly to prevent the explosive state of the system.

3) The third way is related to the study of the oscillating dynamics of the financial system based on observations, by taking into account, on one hand, the links and the impact of the system under analysis and, on the other hand, the role of the institutional system in stimulating or restricting or preventing instability, in preventing and controlling the explosive state of the system and stimulating the economic growth. Below, we discuss this category, revealing the features of the medium cycles and long cycles under the impact of the institutional system.

As we mention in the first footnote, we consider a broader sense of the institutional system including the following: the system of rules guiding the economy and the society, either enforced by juridical regulations, or agreed on by social groups, or determined by religion, customs and ethics; the system of policies and regulations; the system of organisations that regulate and those enforcing and monitoring regulations. In our opinion the cause of the fluctuations and of the types of fluctuation is finally the institutional system: either its change, its erosion in time or the void created by the lack of new institutions able to replace the obsolete ones.

The way the institutions function produces and influences, to a great extent, two categories or types of economic and financial fluctuation: medium and long.

¹³ This is what Ferri and Minsky asked themselves (1991, p. 4).

4.2.1. *Medium cycles*

The authors interpreting cyclicity through financial instability point out that the process is rather consistent with the dimensions of medium-term cycles.

The main explanation is that this type of cycle results from the internal processes and mechanisms of the economic and financial system with free markets, where the processes take place and end within certain periods of time and are repetitive, and the financial-monetary factor increases the process complexity and the risk. Here processes start with money, continue with saving, credits and investment at present, in order to achieve in an uncertain future the production and the sales, the collection for covering all expenses, including the investment recovery, interest and debt payment, and the achievement of a profit margin.

During the boom, when businesses develop, a general euphoria trend emerges, when the development and investments are stimulated through risky credits, not signalled by the rating agencies, themselves stunned by success. All people join the general belief that this will last for ever.

Raising the financial question from the economic unit level to the aggregate level, the complexity of the processes is more obvious. A complex mechanism (receiving the effects of the entire financial system) emerges due to increasing inflation related to the product prices and the increasing deflation related to the capital assets and other securities, even during the general euphoria. These are the early signs of financial instability, which gradually increases until the crisis starts. Coming down to the microeconomic level and using Minsky's theory of the balance sheet of the economic units (the relation between net income and the payment obligations of the economic units), we notice, as mentioned above, that the boom stage is shown by the prevalence of economic units with a hedged financial situation¹⁴. Instability expands by the beginning of the crisis, while speculative¹⁵ and Ponzi¹⁶ economic units prevail in the economy. Therefore, the dynamics of each of the above-mentioned categories of units characterizes the financial cycle stages. While most of the economic units have hedged balance sheet, the economy is booming and is stable, but some destabilizing seeds begin to develop (inflation rise, debt rise, insolvency, etc.). If the financial structure is dominated by speculative or Ponzi-

¹⁴ The expected income flows are enough to cover the principal and interest payment.

¹⁵ The expected income flows can only cover the interest payment, while the debt needs revolving.

¹⁶ The income flows cannot cover the principal and the interest, which means new debts.

type units, the economy moves from the stable (robust) stage to a fragile stage, when the system instability takes on the form of panic and crisis.

The fluctuations of medium amplitude and wave length occur within relaxed institutional structures or eroded structures, unable to adapt to the new realities. These aspects have been discussed above. Here we only conclude that, in the case of medium fluctuations, the institutional system might act either as constraints or instruments for preventing actions or trends of instability, or as means or instruments for preventing explosive instability or, finally, as means for attenuating the destructive effects of the explosive instability.

4.2.2. Long cycles

The topic of long cycles, although largely discussed in literature, has not yet clarified the question of frequency, amplitude and synchronisation of fluctuations as well as that of the determinant factors. Minsky analysed the long moves and severe depressions from the perspective of the dynamics of the financial instability and the institutional factor, of their change, including government regulations. By his works¹⁷, Minsky contributed to the development of the theory of long cycle, called by Palley (2009) the Minskyan supercycle.

In the Introduction to his paper on long cycles, Minsky evoked the following declaration made by Abramovitz before the Joint Economic Committee¹⁸ of the US Congress: “it is not yet known whether they (the long swings) are the result of some stable mechanism inherent in the structure of the U.S. economy, or whether they are set in motion by the episodic occurrence of wars, financial panics or unsystematic disturbances” (Minsky, 1964). By his answers and explanation given in the above paper and in other studies, Minsky provide us with elements of his opinion on the long cycles in relation to the financial factor and its instability. We should add to this the explanations given in his 1991 article on the role of the institutional system in the dynamics of long swings (Ferri, Minsky, 1991; Minsky, Whalen, 1996).

In his interpretation of the cycles as oscillating dynamic processes of the capitalist economy, Minsky takes into account the existence of both the medium swings and the long swings. The two categories of oscillations are not separated, they overlap and act together. Usually, long cycles consist of

¹⁷ Minsky (1964; 2008); Ferri and Minsky (1991).

¹⁸ United States 86th Congress, Joint Economic Committee, 1959, *Hearings on Employment, Growth and Price Levels*, Part 2, *Historical and Comparative Rates of Production, Productivity and Price*, p. 12 (quoted from Minsky (1964)).

several medium cycles that accumulate tensions and finally come to an explosive state and strong contraction. Therefore, with long cycles, oscillations have a higher amplitude and a severer contraction than with medium cycles, which are caused by the types of factor with special resonance as follows: a) quick and profound institutional changes, causing disturbances, which do not take into account the reality or the adverse effects; b) institutional erosion and stiffening, causing inhibition and stagnation, as destructive as the previous type; c) institutional void, when chaos and corruption emerge.

A long time ago, the economic literature considered that cycles are not based on the dynamics of the financial phenomena and cannot be explained by the movements in the financial sector and by the connections between the real economy and the nominal economy. Rejecting this way of thinking, Minsky points out that medium oscillations (but not the minor ones) are based on significant monetary explanations, and the long swings with explosions and deep depressions show that the monetary side, along with the institutional dynamics, is a significant part of the mechanism causing crises and depression (Minsky, 1964, p. 324).

He writes that the mechanism causing long oscillations is focused on the cumulative changes in the financial variables, in their impact on the expansion and contraction of the financial system. This because money is a significant part of the mechanism producing both stages of the cycle consecutively – expansion and depression (Minsky, 1964, p. 324).

But things should be considered in their complexity. In the two stages of the long-term cycles – expansion and depression – systematic and profound changes take place not only in the financial structure, but also in the structure and dynamics of the sector's institutions and the real economy's institutions. Referring to the role of the institutions as a determinant factor of the changes in the financial variables, Minsky points out that “ the exact nature of the changes that take place in financial variables during long-swing expansions and significance of these changes are sensitive to institutional arrangements. Financial and usages evolve, both in response to market forces and as a result of administrative processes and legislation” (Minsky, 1964, p. 325).

Financial panic, as the main cause of the crises, is closely linked to the institutional system. Minsky questions whether the type of past financial panic (for example, between 1929 and 1933) can also occur today. Trying to answer this questions, he assumes that the present set of institutions and financial regulations is very different from that existing during the 1929-1933 Great Depression. Also, he assumes that financial panic – present in

the deep depression and absent from the medium depression - is not a fortuitous exogenous matter. It rather is an endogenous component of the economy and, therefore, panic is possible and may be triggered by the changes in the financial structure during the long oscillations, provided that there is a certain type of institutional structures – either liberal ones (*laissez faire*) or state-controlled ones (Minsky, 1964, pp. 325).

Trying to develop the ideas of the long cycle, especially those included in the above-mentioned papers, Palley (2009) uses the name of super-cycle for the long cycle, and the name of basic cycle for Minsky's medium cycle. Palley focused on the specific features of each type to compare them as well as on the institutional system's role and behaviour both in each of the two types of cycles and in certain phases thereof.

Table 1 presents on a comparative and synoptic basis the defining elements of the two types of cycle – basic and super-cycle – and the role of the institutional system in the cycle dynamics and modelling.

Table 1

Features of the basic cycles and super-cycles, the role and behaviour of the institutional system in cycle dynamics and modelling

Basic cycle	Super-cycle
<ul style="list-style-type: none"> • Largely known and recognized by scientific circles 	<ul style="list-style-type: none"> • Less known and recognized by scientific circles
<ul style="list-style-type: none"> • It reflects the transition of the financial system from the robust state to the fragile one determined by the situation of the balance sheet of the economic agents and their funding arrangements. The two states reveal the evolution of most economic agents with regard to the transition from the hedged financial situation to the speculative one and further to the Ponzi financial situation. 	<ul style="list-style-type: none"> • It includes several basic cycles. It cumulates unsolved institutional and financial distortions as well as their effects. The distortions and disequilibria feed the cumulation of risks and, thus, violently triggers financial instability and a long deep depression.
<ul style="list-style-type: none"> • During the boom period, optimism prevails when assessing assets and income flows, along with a strong will to risk more, believing in eternal profitable businesses. 	<ul style="list-style-type: none"> • The same excessive optimism during the boom in assessing assets and income flows, along with the will to assume cumulated risk and the same belief in eternal, increasingly profitable business.
<ul style="list-style-type: none"> • Panic is absent owing to the existence and utilisation of new thwarting institutional structures. 	<ul style="list-style-type: none"> • Panic is caused by the size of the disaster and the erosion of the institutions and their inability to hinder the action of destructive factors.
<ul style="list-style-type: none"> • The basic financial cycle is present in every business cycle and acts at the enterprise level for a period covering a business cycle, producing effects in the whole financial system. 	<ul style="list-style-type: none"> • The super-cycle completes the basic cycle and acts for a period including several business cycles at the level of the economic and financial system.

<ul style="list-style-type: none"> • The basic cycle is a process when the institutions dependent on the cycle do not face major erosion, do not change or the changes are not profound. 	<ul style="list-style-type: none"> • The super-cycle consists of several basic cycles, when we notice gradual erosion and increasing inconsistency of institutions with the evolution and requirements of the new economic and social realities. The need to transform the institutions is increasingly urgent as the financial excess is growing and the crisis threat is stronger, unavoidable and expanding within the economic system and geographically. A huge economic and financial explosion – either already triggered or not yet triggered – makes the decision-makers and the business environment adapt the institutions to the new requirements and render them functional.
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Source: Based on the paper of Thomas I. Palley, 2009, “A Theory of Minsky Super-Cycles and Financial Crises”, *IMK Working Paper*, No. 5/2009.

The table includes the general features of the two types of cycles. They are mostly hypothetical. In reality, the cycles and their phases have some specific features. Such features depend on the concrete conditions under which the economic and social processes take place.

To be closer to reality when dealing with the long cycles, first we have to see in what institutional conditions these cycles occur and what is the role of the institutions in the phases of the cycle. As for the long fluctuations, the role of the institutions in the stages of the cycle. As for the long fluctuations, the role of the institutions is approached from a dynamic perspective: profound changes with a strong impact on the instability of the economic and financial system.

As regards the way of approaching the matter and the role and the impact of the institutional change on the explosive character of the economic and financial instability, two hypotheses stemming from the very history of the cycles should be considered:

1) The institutional system is supposed to evolve by itself slowly, without any intervention of the decision-makers. In this case, the institutional system erodes over time because of its inability to adopt the new economic, technological and social conditions, because of its major inertia as well as of the economic agents who find ways to circumvent regulations hindering the free running of their businesses, especially by creating and implementing a wide range of institutional and financial

innovations. Actually, these innovations may lead to circumventing the rules and increasing the speculative side of corruption, which increases the risk and uncertainty of all transactions and expands disorder throughout the economic and social system (Iancu, 2013). This worsening institutional system could cause social discontent ending in an institutional, economic and social crisis of large proportions. Therefore, only quick and profound institutional changes made by political forces could resolve the problem.

2) The institutional system is abruptly and radically changed by the political forces during some phases of the long cycles, namely: a) for overcoming the major depression phase, the political forces usually strengthen regulation and monitoring and limit the freedom of action of the economic agents; b) During the boom period, under the pressure put by economic and financial agents who try to loosen the regulations, the political forces take measures to open the markets through profound deregulation and changes in the structure of the institutional system, which favours over time the emergence and growth of disorder in the system, ending in an economic and financial crisis.

5. Evidence of the role of institutional change in designing the cycles in the CEE countries

Some of the cycles that would be consistent with the specific features presented above are just the cycles that occurred in the former communist countries of Central and Eastern Europe, which became EU members. They could be included in any handbook on economic and financial instability with explosive potential due to profound institutional changes. This example is even more instructive and significant as the path followed by these countries was both ways in a period of over 65 years (1947-2014). The first way, starting in 1947, was the transition from a relaxed market economy to a strictly regulated and centrally planned economy, which began with the nationalisation of the banks and industries. The second way (starting in 1990) was the way back, from a strictly regulated and centrally planned to an economy with relaxed market institution, based on private property and competition.

These are the two ways of the oscillating changes of the institutions, which (either in conditions imposed by the political factors in the CEE countries or in natural, not imposed, conditions) in other countries have repeated in different forms and at different intensities for centuries, in the whole world, at long time intervals.

The repetition of the institutional changes is naturally linked to their life expectancy. Institutions are born from the ruins of older ones, develop by stimulating economic growth and after some time they begin to erode and stiffen and become an obstacle to economic and social development and innovation. Unlike other components of the economic system, the institutions have a high level of inertia and of resistance to change. This high level is mainly linked to human nature and the interests of the existing social structures (Olson, 1965). Social structures consider that the stability of the old institutions means the preservation of the rights and advantages gained or inherited, and the institutional change means the risk of losing the existing positions and some fear of the unknown. Just these features prove that the economic and financial cycles caused by institutional changes are part of the long-cycle class.

If we think about the CEE countries of the 1990s, we see that the transition from a centrally-planned economy to a competitive market economy consisted in a full reconstruction of the economic and financial economic system, starting with the legislation modification, foreign trade liberalisation, wide-range privatisation, price liberalisation, a new monetary and bank system, the establishment and consolidation of organisations specific to market economic, the compliance of the national legislation with the EU one thorough the Community acquis. These changes led to the modelling of the long cycle and caused a profound crisis and deep and long depression in all CEE countries.

The adoption of the new market institutions, as well as the new opportunities offered by the opening of the European markets, including FDI and financial investments, stimulated a strong economic growth in these countries. But once the boom started, gradually a feeling of euphoria developed, which finally turned into a rise in asset prices and speculations, and then into the real estate bubble. To them, we should add the huge growth in the foreign currency indebtedness of the private sector (companies and population) for supporting growth, as well as for consumption, but without increasing productivity and exports. Then, the contagion caused by the global crisis and a new crisis in Romania, like in almost all CEE countries (after eight-year boom) were unavoidable. Unlike the previous one, the new crisis (including major losses) is not caused by and does not imply major institutional changes, similar to those that caused the previous crisis.

Many publications present the transition from the planned economy to the market one as a subjective or mere political innovation and not as an objective, mainly economic motivation, which is unfair. The institutions

based on the planned economy, without competition and profit incentive eroded so much in the 1970s and 1980 that they wasted all the early internal capabilities of promoting economic growth. Moreover, these institutions became a real obstacle to the technological development and the labour productivity rise, while the economies had to switch from extensive development to intensive knowledge-based development and challenge the performing capitalist economies in the world markets. The economic relations based on orders and hierarchical decisions at all levels hindered initiatives.

So, all the above-mentioned caused an unprecedented economic instability, consisting of continuous deterioration of the economies and the social relations as well as the expansion of disequilibria because of severe shortage of foreign currency and raw material, energy, food, etc., diminishing production, price rise and unemployment. The authorities' endeavours to improve the situation by promoting certain relations and market economy institutions (especially in fields like craftsmanship, trade, tourism, housing, etc.) in a socialist economy based on generalized public ownership actually caused further erosion of the socialist state institutions (ownership, planning, decision-making systems, stimulation systems and contracting systems, etc.), having major negative economic and social effects.

The gradual economic and social instability worsened especially between 1989 and 1993 in the CEE countries, along while the start of a social crisis on large scale. This instability was caused by the generalized anarchy after the appearance of a real institutional void because of the abrogation of some regulations, the planning elimination but maintaining the state property, the elimination of some institutions without replacing them with new ones, the premature liberalisation of foreign commercial relations and the privatisation of the foreign trade enterprises, the weakening authority of the state institutions, which caused frequent violation of the rules and regulations in force, further resulting in increasing corruption, failure to punish those committing theft and robbery. These phenomena extended over a long period of time, with destructive effects: a dramatic diminution in production, a dramatic rise in inflation and unemployment, the disappearance of entire industrial branches, as well as frequent bankruptcy.

As we know, the most suggestive dynamic series for expressing economic (business) cycles are those containing the GDP growth rates and unemployment rates, and for expressing the financial cycles we use the series of the inflation (or deflation) and the credit growth rates as well as the stock exchange indexes and housing prices.

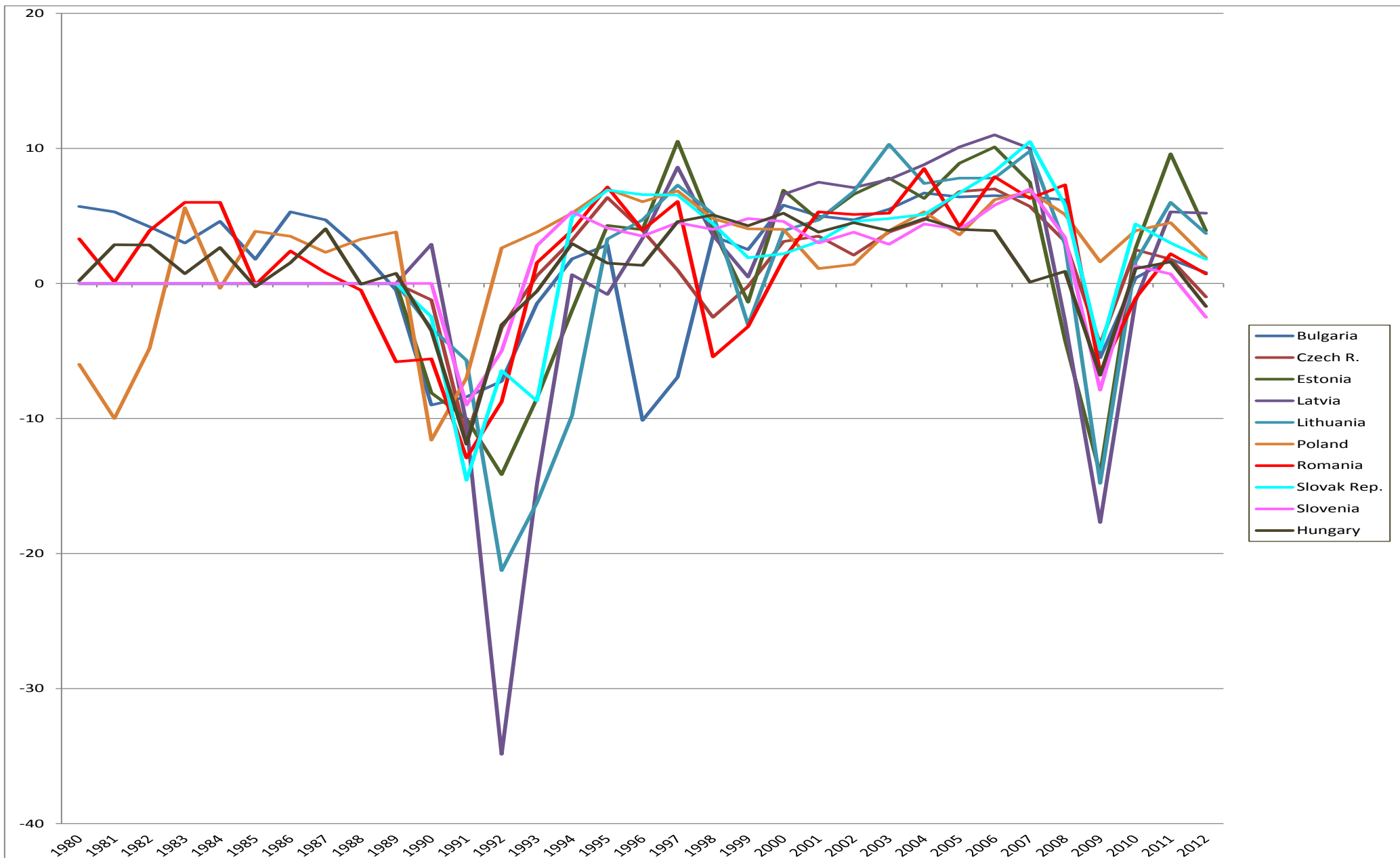
5.1. Business cycles

We could provide data series of the annual GDP growth rates for the whole CEE countries group: for 1980-2012 on four countries (Bulgaria, Poland, Romania and Hungary), and for 1990-2012 on the other CEE countries. These series are presented both as table in Annex 1 and as chart in Figure 1.

The analysis of these series show that the economic crisis began as far back as the planned economy. For example, Poland saw an annual GDP decrease in 1980, 1981 and 1982 by -6.0%, -10% and -4.8% and, again, in 1990 and 1991 by -11.6% and -7.0%. In Romania and Hungary, the crisis, expressed as annual GDP diminution, started in 1988 and lasted till 1992; these countries witnessed the most significant decrease in production in 1991: -12.92% in Romania and -11.9% in Hungary. The severest crisis occurred in the Baltic countries both as recession length (4-5 years) and as amplitude (maximum annual decrease of -14.5% in Estonia, -21.6% in Lithuania and -34.85% in Latvia).

The difference between countries in the proportions of the two features of the cycle – recession length and amplitude – is mostly explained by the readiness of the countries and their citizens to implement reforms, by the existence and quality of some economic and financial reforming programmes, by the ability of the political forces to persuade the population to implement programmes for economic transformation, by the general attitude of the population towards the enforcement of the legal and moral rules, by the way of functioning of the judiciary body a.s.o. Poland, Hungary and former Czechoslovakia were better prepared in this respect; that is why the shock on economic stability between 1989-1992 was smaller in intensity, amplitude and length, if compared to other CEE countries (e.g., Romania and the Baltic countries).

After an economic recovery for 15 years (with some interruptions in a few countries), the 2008-2010 crises started. It affected the CEE countries, except for Poland. Even here we notice some differences between the two indicators – recession length and amplitude – but not so significant as it happened during the previous crisis.



Source: Based pm Annex 1 data.

Figure 1. GDP annual growth rates in CEE member countries, as percentage against the previous year, 1980-2012

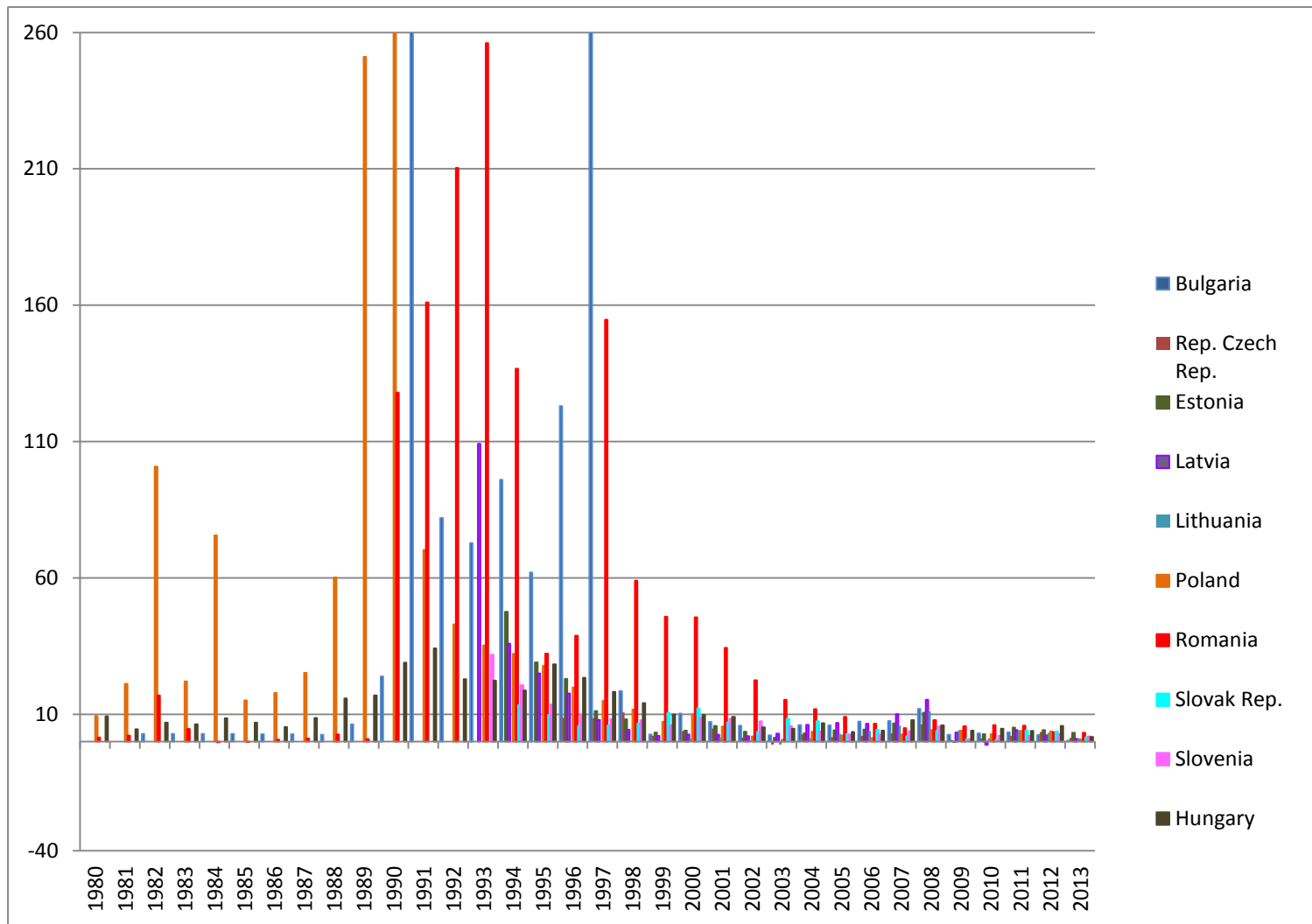
5.2. Financial cycles

While a few decades ago the financial factor was ignored when interpreting and modelling the business cycles, now we largely recognize not only the role of the financial factor in the behaviour of the business cycles but also in the very existence of the financial cycle, interpreted either as a self-sufficient process or in relation to the business cycles. According to the new interpretations, Minsky's theory of the financial cycles could be operationalized by redefining the notion of financial cycle and using a set of adequate indicators, in the form of time series, in order to describe the financial cycle in relation to the business cycle (Sinai, 1992; Claessens *et al.*, 2009; Claessens *et al.*, 2011; Drehmann *et al.*, 2012; Borio, 2012).

Here we use the following indicators presented as time series dependent on data availability: a) annual average inflation rate; b) annual share price rate; c) evolution of the credit/GDP ratio; d) annual rate of housing price fluctuations.

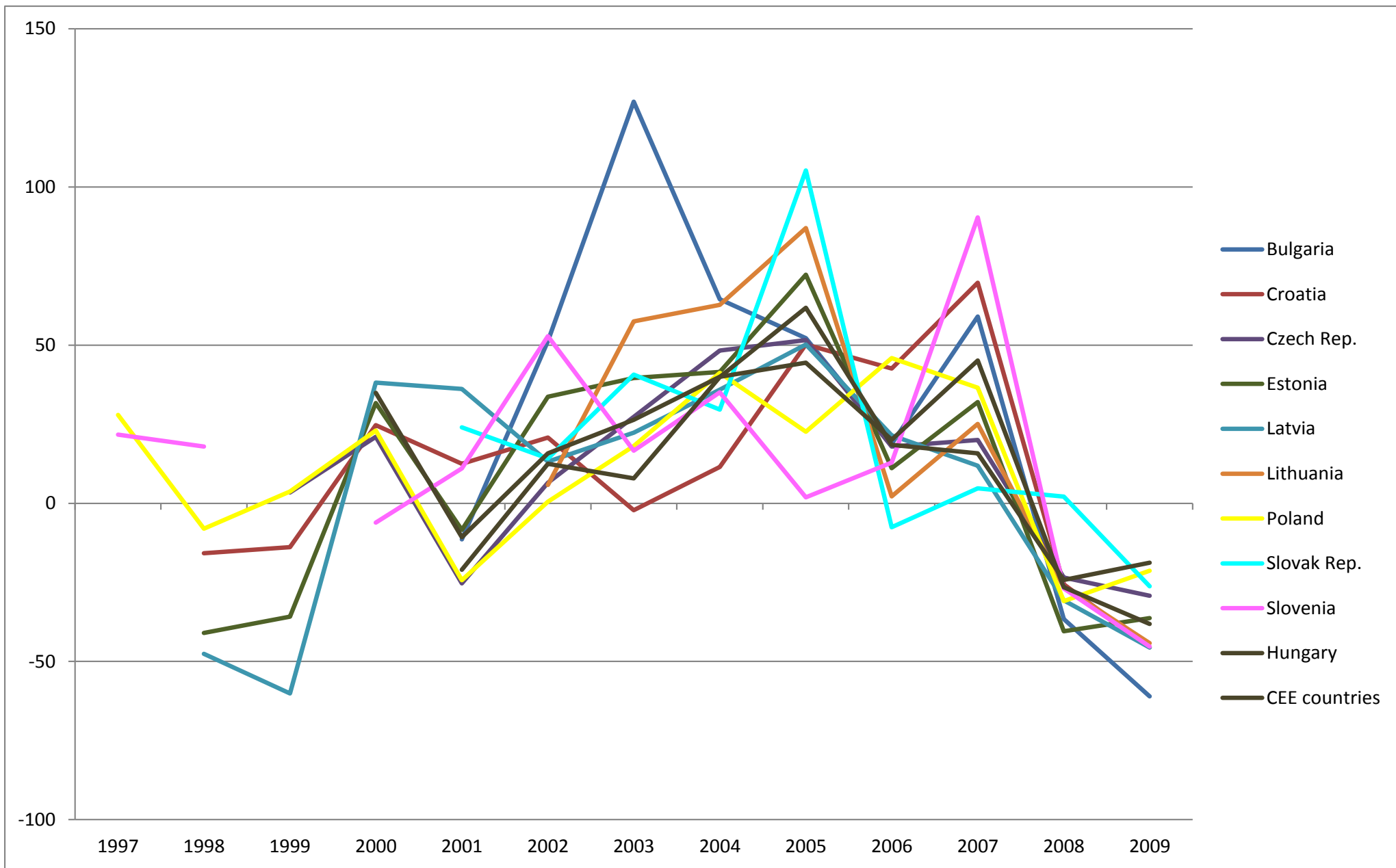
a) The time series of annual average inflation rates for Bulgaria, Poland, Romania and Hungary range between 1980 and 2013, and for the other CEE countries over a shorter period. The data are presented as a table in Annex 2 and as a graph in Figure 2. The analysis of these data shows significant differences between countries in the length and amplitude of the oscillations described by the series of the above-mentioned indicator. For example, in Romania, the inflation level was higher for a longer period as follows: three-digit for six years, two-digit for nine years and one digit in the last nine years. This can be explained by the gradual implementation of the structural reforms and the macro stabilisation programmes, which delayed the reforms, the price liberalisation and the strategy for direct inflation targeting, to which one should add the ineffectiveness of the fiscal and quasifiscal policies (Isărescu, 2009).

b) The series of the annual share price rates is one of the very sensitive indicators expressing the financial fluctuation. The data in Annex 3 and the curves in Figure 3 satisfactorily describe the financial crisis that started in 2008 and deepened in 2009. This indicator is simultaneous with the evolution of other financial indicators as well as with the real economy oscillations.



Source: Based on Annex 2 data.

Figure 2. Annual inflation rate in CEE member countries, 1980-2013

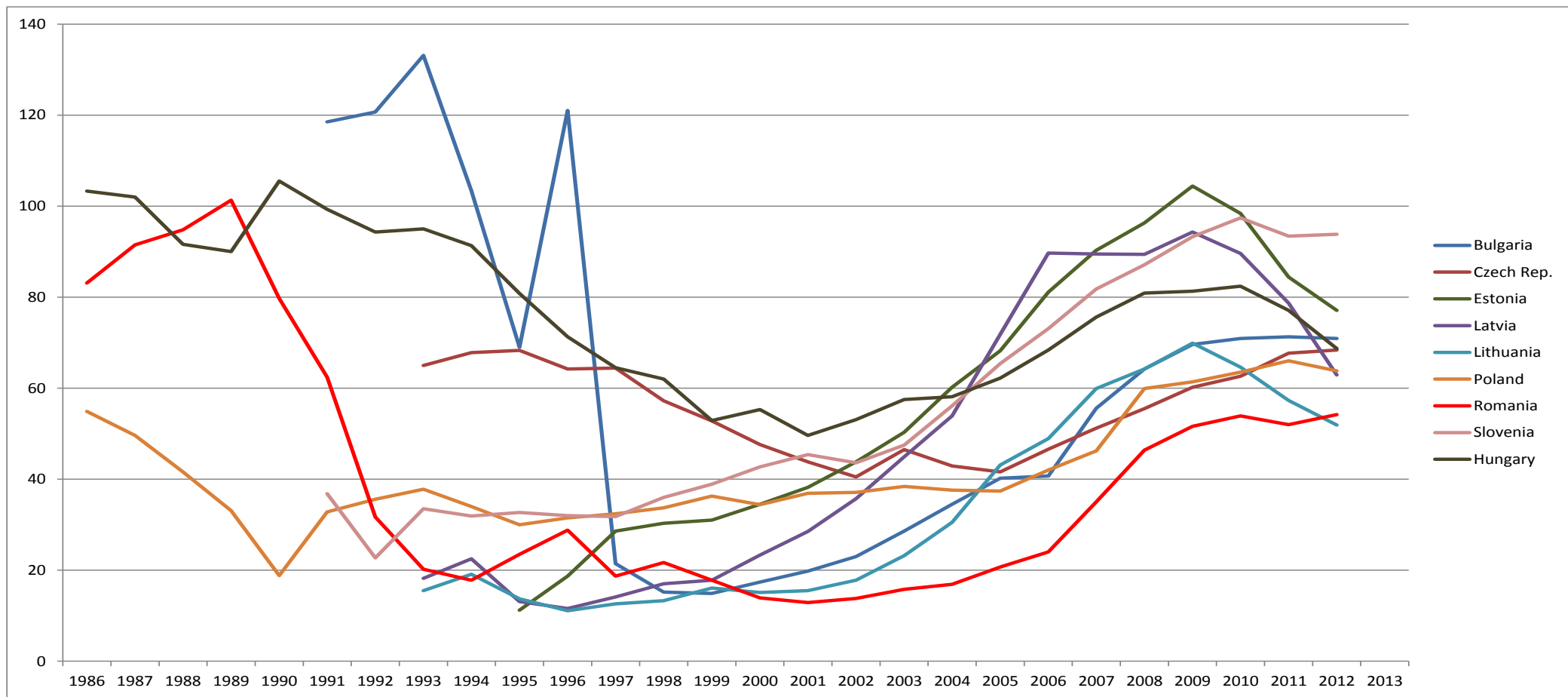


Source: Based on Annex 3 data.

Figure 3. Annual rates of share price fluctuation in CEE member countries, 1997-2009

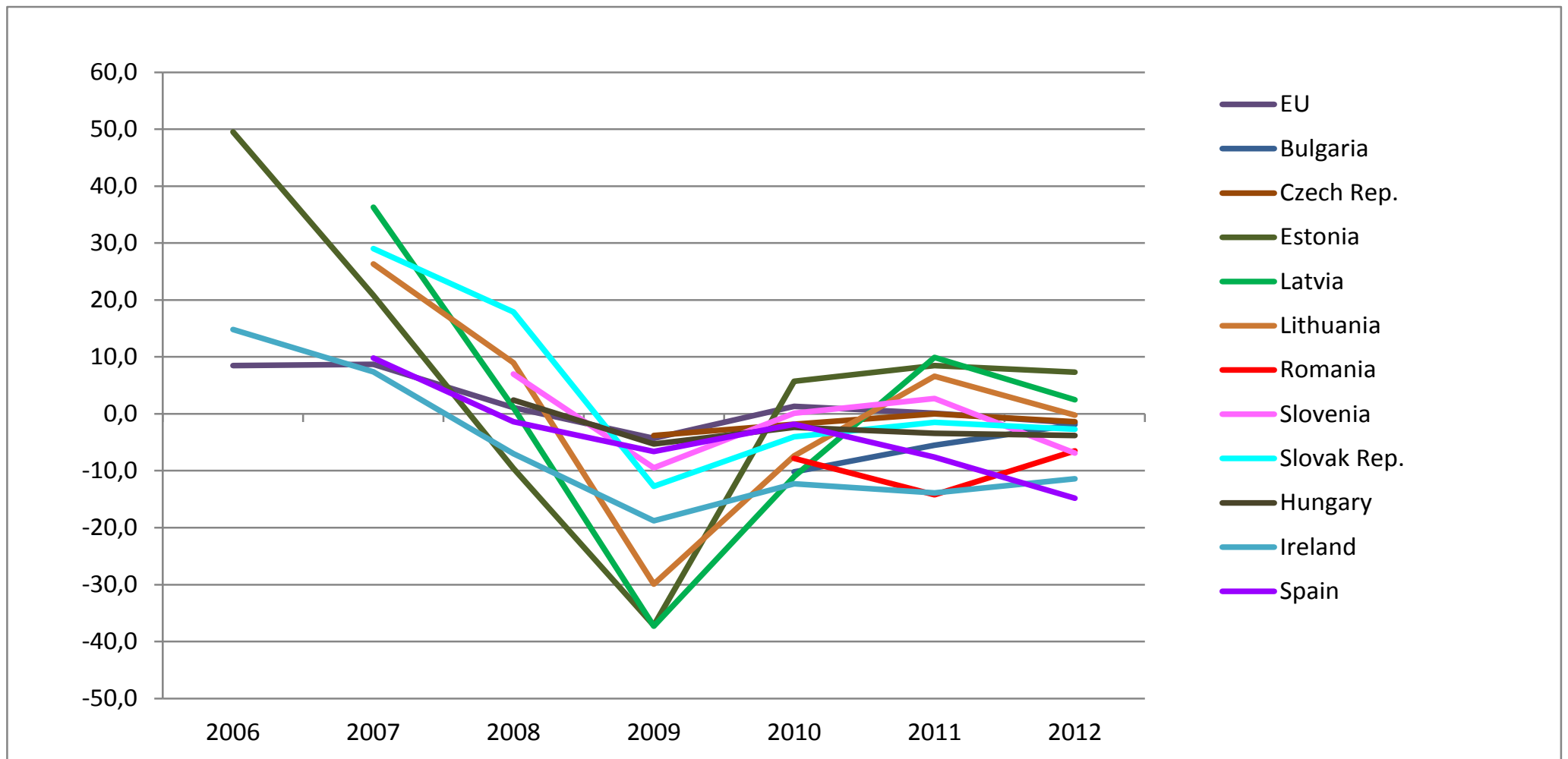
c) The most representative indicators of the financial cycles are the credit evolution indicators. In this paper we present time series of the indicator concerning the credit/GDP ratio. The data are presented as a table in Annex 4 and as a chart in Figure 4. The series have different lengths because of the data available: for Poland, Romania and Hungary the series are longer (1986-2012) and for the other countries the series are shorter. Also, the chart shows bigger swings for Bulgaria, Poland and Romania, and smaller for Hungary. At the same time, there is a rising trend in the Baltic countries and Slovenia and an almost constant one in the Czech Republic.

d) After a substantial rise in housing prices during the boom, the prices began to steeply decrease in 2009. Actually, the decrease occurred in all CEE countries included in the table, as well as in other EU countries (Spain, Ireland, etc.). The table in Annex 5 as well as the chart in Figure 5 contain the 2006-2012 annual average rates of the housing prices. It shows that the longest housing price decreasing period as well as the most significant diminution occurred in Estonia, the Slovak Republic, Hungary, Romania, Ireland and Spain.



Source: Based on Annex 4 data.

Figure 4. Internal credit granted by the banking sector (% in GDP), 1986-2012



Source: Based on Annex 5 data.

Figure 5. Annual rates of housing prices in EU27, in CEE countries and other EU countries (%), 2006-2012

5.3. Comparison between business cycles and financial cycles

An interesting and important issue discussed in the economic literature is the relation between the financial cycle phases and the business cycle (real economy) phases or, in other words, the synchronisation of the swings frequency, the cycle and phase length, the amplitude of the two categories of cycles.

The empirical research conducted by Drehmann *et al.* (2012), Borio (2012) and others, by means of over 50 years time series of some indicators specific to the real economy (GDP) and the nominal economy (credit, share price, housing price, etc.) had significant results. Among them, we find the following: 1) business (real economy) cycle is defined on short term, with swing having relatively small amplitude and length, while the financial cycle, different from the business cycle, is defined on medium term, with swings determined by the credit and the property price; 2) the financial cycle length (measured between two peaks) increased between 1980 and 2012 from 11 to 20 years, and the business cycle is considered to last up to eight years; 3) the financial cycle peaks are closely linked to the banking system crises; 4) although a related, the financial cycle and the business cycle differ as regards the length of some stages. For example, the contraction phase of the financial cycle lasts a few years, while the recession phase of the business cycle does not usually exceed one year.

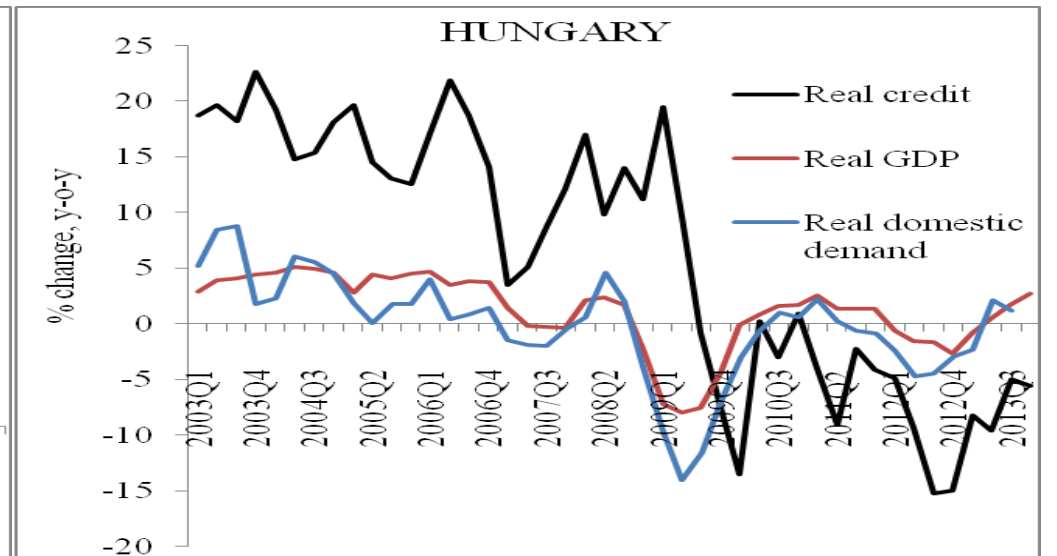
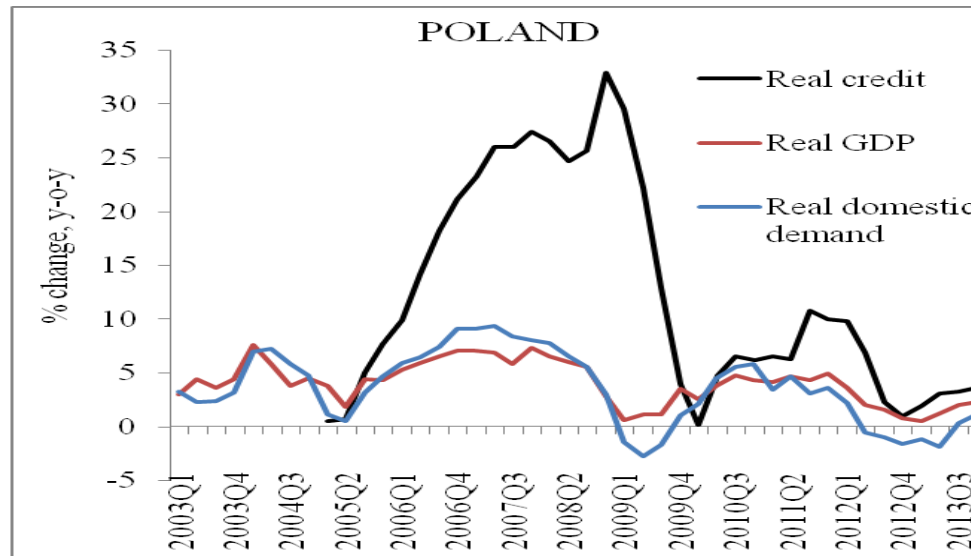
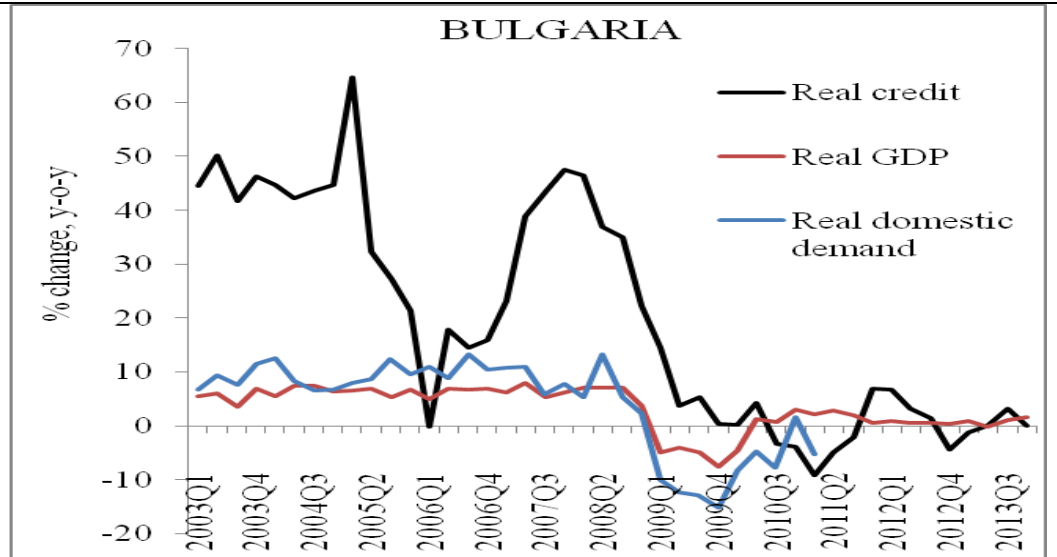
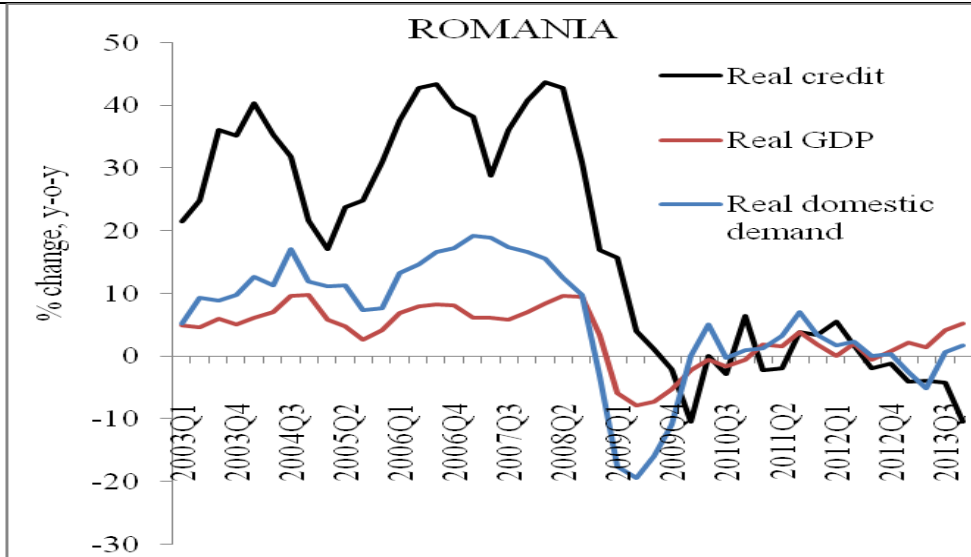
Unfortunately, a similar analysis for the CEE member countries is not possible, first, because these economies (which had to face dramatic changes for geopolitical reasons for a long time, 1947-1989) were kept far from the competitive market mechanisms. Only in the last 10-15 years, we may speak about the transition of these countries to functional market economy mechanisms. That is why the statistical series for a longer period with regard to the nominal sector cannot be conclusive, which hinders any long-term comparative analysis of the two kinds of cycles (financial and business). Still we try to analyse the synchronisation of the phases of the business cycle and the financial cycle, using series of quarterly statistical data, 2002 Q4-2013 Q4.

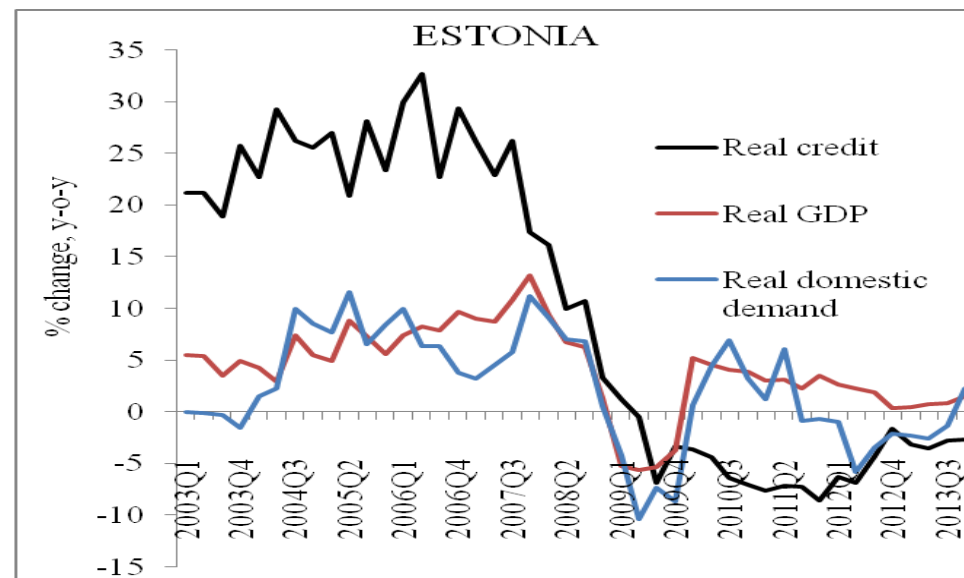
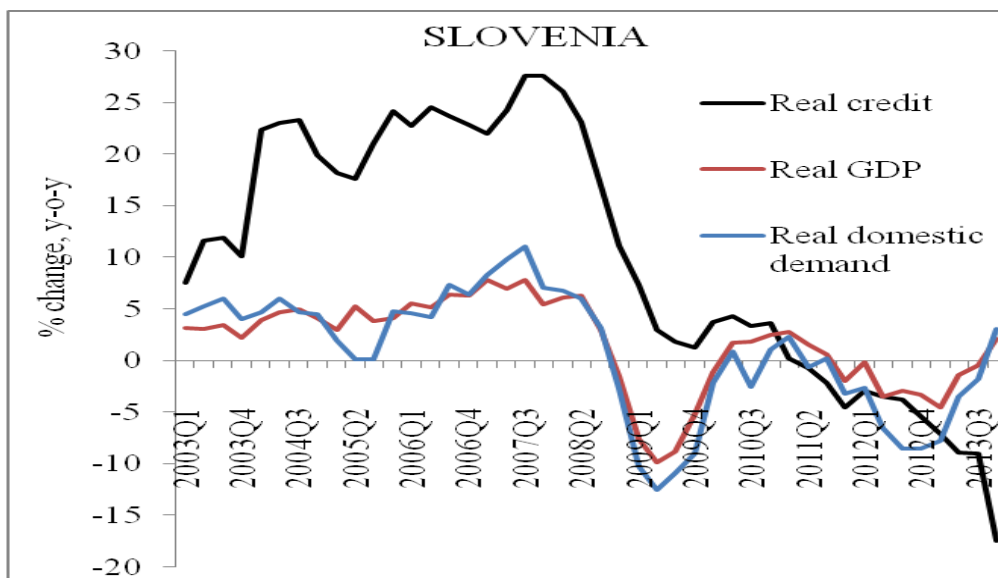
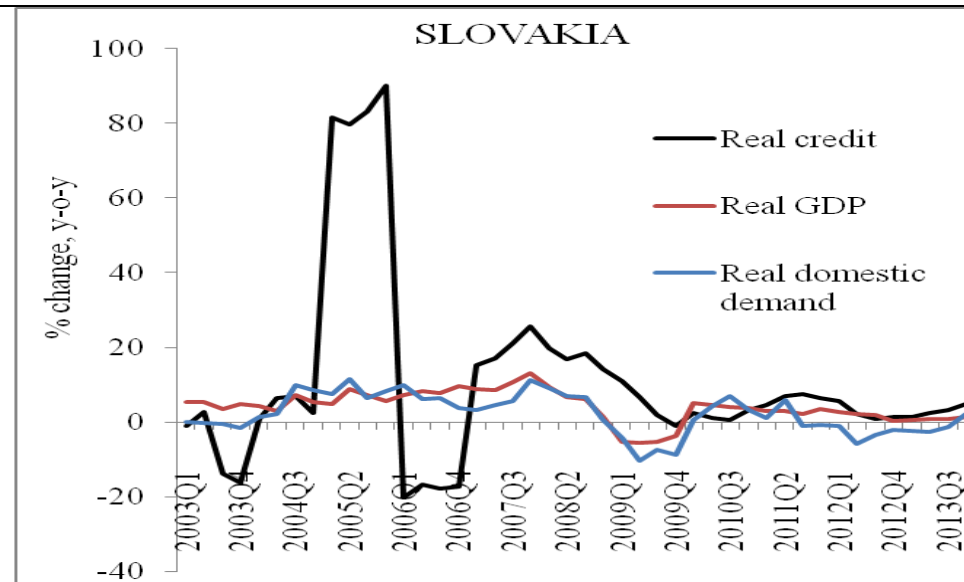
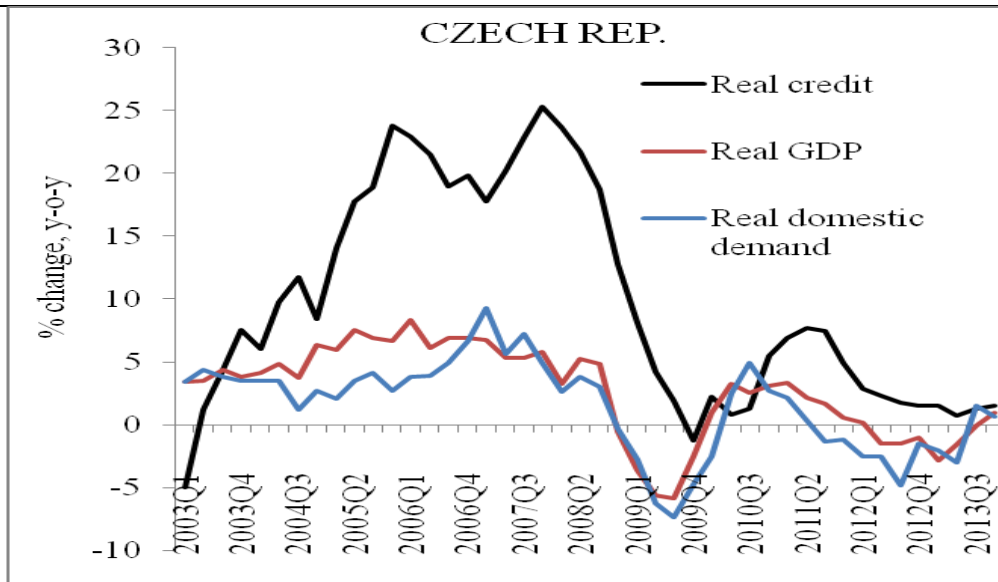
By correlating the quarterly data on the real internal credit rate compared to the GDP growth rate and the internal demand rate for 11 years, as shown in Figure 6, for CEE countries as well as Germany and the United Kingdom, we may draw important hypotheses-conclusions. Among them we may consider the following: 1) there is some synchronisation of the

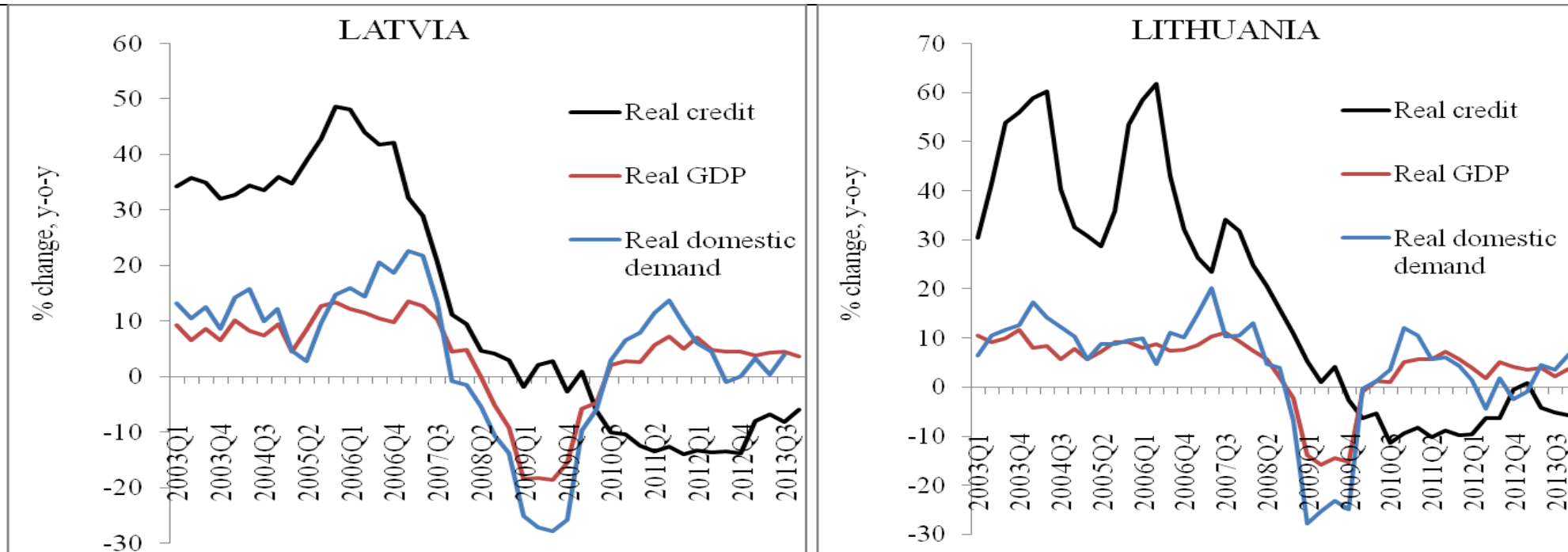
financial cycle with the real economy cycle, as revealed by the fluctuation of the three indicators – real internal credit rate, on one hand, and GDP growth rate and internal demand rate, on the other hand; 2) at the same time, we notice a stronger correlation between credit and internal demand than between credit and GDP; 3) the fluctuation amplitude is higher in the financial cycle than in the business cycle; 4) the recession period of the real economy cycle is longer (1-1.5 years) than the contraction period of the financial cycle (up to 1 year); 5) after recession and contraction, we notice a rather stagnating trend than a recovery of the GDP, internal demand and credit.

All these hypotheses can be validated by a comparative analysis of a set of economic and financial indicators in long series.

The last preponderantly financial crisis with negative effects, different from one country to another was an opportunity for many studies and analyses. Fortunately, these studies and analyses helped to work out and implement large institutional reforms in the EU and in each member state. The question is whether these reforms are enough to eliminate the causes of future violent crises in order to ensure real convergence and nominal convergence of all CEE countries with the developed countries, in a reasonable period of time.







The credit represents the claims of commercial banks to “other sectors”, i.e. all sectors except for the Central Bank and Government.
 The real credit was computed by adjusting the nominal credit by the deflator (prices) of domestic demand, except for Bulgaria, when consumer prices were used because of lack of data.
 The rates are computed in comparison with the same quarter of the previous year to eliminate seasonability.
 Source: FMI International Statistics for credit, Eurostat National Accounts for real internal demanded, real GDP and internal demand deflator and consumer price index.

Figure 6. Correlation between internal credit, GDP and internal demand (quarterly rates compared to the same quarter of the previous year)

6. Conclusions

The question of cyclicity is an old subject of economic research to which no final solution can be envisaged. This is mainly caused by the process complexity, defined by the multitude of impact factors, frequent changes both in real economy and financial systems and in determinants, to which one should add the diversity of policies for preventing and diminishing the explosive character of the economic and financial instability. The attempt to establish in rigorous terms the predictability of crises and cycle stages as well as to take measures for avoiding or/and eliminating the damages caused by the crisis are rather good wishes or intentions. Considering the ideas of his forerunners – Marx, Schumpeter and Keynes – Minsky demonstrated that economic and financial instability is a normal process and the capitalist economy is exposed to explosive instability. Contrary to Marx, who said that instability would have caused the self-destruction of the capitalist system, Minsky saw the role of the institutional system counteracting the self-destruction tendency and attenuating the negative effects of the crises. By applying and developing the multiplier-accelerator model, Minsky rediscusses the question of thresholds and ceilings signalled by Hicks and underlines the role of the institutional system in modelling the explosive state of instability, by counteracting the factors that cause the exceeding of the instability thresholds and ceilings and by the policy aimed to manipulate various financial and fiscal instruments.

Business cycles and financial cycles are determined by fluctuating dynamic components of the processes and are revealed by the time series of some significant indicators – GDP, unemployment, inflation, credit, prices of shares, housing prices, etc. According to Minsky, the cyclical fluctuation and the financial system instability are linked to the balance sheets of the economic agents and, more broadly, to the internal mechanisms of the economy and man's behaviour during the cycle phases.

The obvious conclusion is that there is a mix of business cycles and financial cycles and that any business cycle has a financial component and, therefore, they can be dealt with separately as well.

In this study we set the connection between the character of the institutions, translated into the freedom level and regulation level of the financial and business cycles, on one hand, and the economic and financial instability, on the other hand. It is obvious that capitalist economies with completely free markets – with no rules, regulation or monitoring – do not

exist and nobody can say they have existed in modern times. We speak about the type of viable market, the real questions how we can find a reasonable proportion of more or less regulation and what type of regulation – hierarchical or participative. The history of the cycles shows that not only too much relaxation of rules and regulations but also their strengthening and expansion could cause more instability and, finally, damaging economic and financial crises.

Very often, they say that the collective memory does not retain such shortcomings to learn the necessary lessons both in relation to the policies to be implemented and in relation to conscious and careful collective behaviour. Actually, the real responsible actors are the strong financial groups, which – blinded by immediate interests – rather manipulate the reforms and regulations to their own interest and caste, instead of accepting radical and effective measures to prevent future disasters.

The paper reveals the major impact of the institutions and of their change on the dynamics of the economic and financial instability and on the start of the crises. It underlines that only in the case of long-term cycles and oscillations the institutional changes are determinant factors. The explanation is that institutions reach a high inertia level for the following reasons: a) institutions face longer erosion than other components of the economic and social processes, which requires changes; b) even the business environment and the population appreciate the stability of rules, regulations and organisations for the sake of predictability and comfort and for the fear of the unknown.

While this paper underlines the imminence of financial and business instability and crises as well as the role of the institutions in the dynamics of the cycles, one thing should be further studied, namely, the regulations and policies for overcoming the crisis and achieving economic revival. Among them, austerity is the way recommended and followed by many countries, but also the most criticized ones. Is it necessary and sufficient to overcome the crisis in order to resume economic development and avoid a new crisis? These are stringent questions to which fundamental answers should be given.

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Annual GDP growth rates in CEE countries, percent as compared to the previous year, (1980-2012)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Bulgaria	5.7	5.3	4.2	3.0	4.6	1.8	5.3	4.7	2.4	-0.5
Czech R.	-	-	-	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-	-	-	-
Latvia	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-
Poland	-6.0	-10.0	-4.8	5.6	-0.36	3.86	3.49	2.3	3.28	3.81
Romania	3.3	0.1	3.9	6.0	6.0	-0.1	2.4	0.8	-0.5	-5.8
Slovak R.	-	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	-	-	-	-	-	-	-
Hungary	0.21	2.87	2.84	0.72	2.66	-0.25	1.53	4.05	-0.06	0.74

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bulgaria	-9.000	-8.40	-7.25	-1.48	1.82	2.86	-10.14	-6.94	3.50	2.51	5.80	5.00	4.7	5.5	6.7	6.4	6.5	6.4	6.2	-5.5	0.4	1.8	0.8
Czech R.	-1.22	-11.49	-3.29	0.57	3.21	6.36	3.91	0.98	-2.50	-0.21	3.1	3.5	2.1	3.8	4.7	6.8	7.0	5.7	3.1	-4.5	2.5	1.8	-1.0
Estonia	-8.10	-10.01	-14.15	-8.51	-2.00	4.29	3.98	10.53	4.06	-1.39	6.9	4.7	6.6	7.8	6.3	8.9	10.1	7.5	-4.2	-14.1	2.6	9.6	3.9
Latvia	2.90	-10.41	-34.86	-14.87	0.65	-0.81	3.34	8.61	3.56	0.47	6.6	7.5	7.1	7.7	8.8	10.1	11.0	10.0	-2.8	-17.7	-1.3	5.3	5.2
Lithuania	-3.30	-5.69	-21.26	-16.23	-9.77	3.29	4.71	7.28	5.15	-3.07	3.90	4.70	6.8	10.3	7.4	7.8	7.8	9.8	2.9	-14.8	1.6	6.0	3.7
Poland	-11.60	-7.00	2.63	3.80	5.20	7.00	6.05	6.85	4.80	4.04	4.00	1.10	1.4	3.9	5.3	3.6	6.2	6.8	5.1	1.6	3.9	4.5	1.9
Romania	-5.58	-12.92	-8.77	1.53	3.93	7.14	3.95	6.07	-5.43	-3.19	1.80	5.30	5.1	5.2	8.5	4.2	7.9	6.3	7.3	-6.6	-1.1	2.2	0.7
Slovak R.	-2.47	-14.57	-6.45	-8.70	4.90	6.91	6.58	6.54	4.42	1.90	2.20	3.10	4.6	4.8	5.1	6.7	8.3	10.5	5.8	-4.9	4.4	3.0	1.8
Slovenia	...	-9.0	-5.0	2.8	5.3	4.1	3.5	4.5	4.0	4.8	4.6	3.0	3.8	2.9	4.4	4.0	5.8	7.0	3.4	-7.9	1.3	0.7	-2.5
Hungary	-3.50	-11.90	-3.06	-0.58	2.95	1.50	1.34	4.57	5.07	4.27	5.2	3.8	4.5	3.9	4.8	4.0	3.9	0.1	0.9	-6.8	1.1	1.6	-1.7

Source: *Economic Survey of Europe*. 2000. vol. 2. UN-ECE. Geneva; *WIIW Research Report 283/2002*; Eurostat. *Statistics Database*.

Inflation rate in CEE countries (annual average rates, %)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Bulgaria	...	0.00	2.8	2.8	2.8	2.8	2.7	2.7	2.5	6.40
Czech R.	...	...	...	...	...	...	...	...	...	...
Estonia	...	...	...	...	...	...	...	...	...	...
Latvia	...	...	...	...	...	...	...	...	...	...
Lithuania	...	...	...	...	...	...	...	...	...	...
Poland	9.4	21.2	100.8	22.1	75.6	15.1	17.8	25.2	60.2	251.1
Romania	1.5	2.2	16.9	4.6	-0.32	-0.2	0.7	1.1	2.6	0.9
Slovak R.	...	...	...	...	...	...	...	...	...	...
Slovenia										
Hungary	9.3	4.5	7.0	6.4	8.6	7.0	5.3	8.7	15.8	16.9

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bulgaria	23.9	333.5	82.0	72.8	96.0	62.0	123.0	1061.2	18.6	2.6	10.3	7.3	5.8	2.3	6.1	6.0	7.4	7.6	12.0	2.5	3.0	3.4	2.4	0.4
Czech R.							8.7	8.6	10.7	2.1	3.8	4.7	1.4	-1.1	2.6	1.6	2.1	3.0	6.3	0.6	1.2	2.1	3.5	1.4
Estonia					47.6	29.0	23.0	11.2	8.2	3.3	4.0	5.7	3.6	1.4	3.0	4.1	4.4	6.7	10.6	-0.1	2.7	5.1	4.2	3.2
Latvia				109.2	35.9	25.0	17.6	8.0	4.3	2.1	2.6	2.5	2.0	2.9	6.2	6.9	6.6	10.1	15.3	3.3	-1.2	4.2	2.3	1.0
Lithuania											1.1	1.5	0.3	-1.1	1.2	2.7	3.8	5.8	11.1	4.2	1.2	4.1	3.2	1.2
Poland	585.8	70.3	43.0	35.3	32.2	27.8	19.9	14.9	11.8	7.3	10.1	5.5	1.9	0.7	3.6	2.2	1.3	2.6	4.2	4.0	2.7	3.9	3.7	0.8
Romania	128	161	210.3	256.1	136.7	32.3	38.8	154.7	59.0	45.8	45.6	34.4	22.5	15.3	11.9	9.1	6.6	4.9	7.9	5.6	6.1	5.8	3.4	3.2
Slovak R.					13.4	9.8	5.7	5.9	6.7	10.5	12.2	7.1	3.5	8.4	7.5	2.8	4.3	1.9	3.9	0.9	0.7	4.1	3.7	1.5
Slovenia				31.9	20.7	13.6	9.9	8.3	7.9	6.1	8.8	8.4	7.5	5.7	3.7	2.5	2.5	3.8	5.5	0.9	2.1	2.1	2.8	1.9
Hungary	28.9	34.2	22.9	22.4	18.8	28.3	23.4	18.3	14.1	10.0	9.8	9.1	5.2	4.7	6.8	3.5	4.0	7.9	6.0	4.0	4.7	3.9	5.7	1.7

Source: *Economic Survey of Europe*. 2000. vol. 2. UN-ECE. Geneva; *WIIW Research Report 283/2002*; Eurostat. *Statistics Database*.

Internal credit granted by the banking sector^{x)} (% in GDP)
(1986-2012)

Country	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bulgaria						118.5	120.7	133.1	103.4	69.0	121.0	21.45	15.2	14.9	17.4	19.8	23.0	28.6	34.5	40.2	40.7	55.6	64.2	69.6	70.9	71.3	70.9
Czech R.								65.0	67.8	68.3	64.2	64.4	57.2	52.8	47.6	43.8	40.5	46.5	42.9	41.6	46.6	51.2	55.5	60.2	62.6	67.7	68.4
Estonia										11.2	18.7	28.6	30.3	31.0	34.5	38.2	43.8	50.3	60.2	68.2	81.1	90.3	96.3	104.4	98.4	84.4	77.1
Latvia								18.2	22.5	13.1	11.6	14.1	17.0	17.8	23.3	28.5	35.7	44.9	53.9	71.8	89.7	89.5	89.4	94.3	89.6	78.7	62.9
Lithuania								15.5	19.1	13.7	11.1	12.6	13.3	16.1	15.1	15.5	17.8	23.2	30.5	43.1	48.9	59.9	64.2	69.9	64.6	57.3	51.9
Poland	54.9	49.6	41.6	33.1	18.8	32.8	35.6	37.8	34.0	30.0	31.5	32.4	33.7	36.3	34.4	36.9	37.1	38.4	37.6	37.4	42.0	46.2	59.9	61.4	63.5	66.0	63.8
Romania	83.1	91.5	94.8	101.3	79.7	62.4	31.7	20.2	17.8	23.5	28.8	18.7	21.7	17.8	13.9	12.9	13.8	15.8	16.9	20.7	24.0	35.0	46.4	51.6	53.9	52.0	54.2
Slovenia						36.8	22.7	33.5	31.9	32.7	32.0	31.8	36.0	38.9	42.7	45.4	43.6	47.5	56.1	65.4	73.1	81.8	87.1	93.3	97.4	93.4	93.8
Hungary	103.3	102.0	91.6	90.0	105.5	99.3	94.3	95.0	91.3	80.8	71.3	64.5	62.0	52.9	55.3	49.6	53.1	57.5	58.1	62.2	68.4	75.6	80.9	81.3	82.4	77.1	68.7

^{x)} It contains all credits granted by the banking sector to various sectors, except for governments. The banking sector includes the monetary authorities and monetary deposit banks as well as other banking institutions on which there are data available.

Source: International Monetary Fund. *International Financial Statistics and data files*; World Bank and OECD. *GDP estimates*.

Annex 5

Annual average rates of housing prices in EU27, CEE countries and other EU countries, %, 2006-2012

	2006	2007	2008	2009	2010	2011	2012
EU	8.5	8.7	1.1	-4.3	1.3	0.1	-1.6
Bulgaria					-10.2	-5.5	-1.9
Czech R.				-3.8	-1.8	0.0	-1.4
Estonia	49.5	20.8	-9.6	-37.2	5.7	8.5	7.3
Latvia		36.3	1.1	-37.3	-11.0	9.9	2.5
Lithuania		26.3	9.0	-29.9	-7.4	6.6	-0.2
Poland					-7.8	-14.2	-6.5
Romania			7.0	-9.5	0.1	2.7	-6.9
Slovak R.		29.0	17.9	-12.7	-4.0	-1.5	-2.7
Slovenia			2.4	-5.3	-2.4	-3.4	-3.8
Ireland	14.8	7.4	-7.0	-18.8	-12.3	-13.9	-11.4
Spain		9.8	-1.4	-6.6	-1.8	-7.6	-14.8

Source: Eurostat.