



Yulia Vymyatnina
Mikhail Pakhnin

Application of Minsky's theory
to state-dominated economies

Working paper Ec-03/14
Department of Economics

St. Petersburg
2014

УДК 330.43
ББК 65.01
V99

Европейский университет в Санкт-Петербурге
Юлия Вымятнина, Михаил Пахнин
Применение теории Мински к экономикам со
значительным присутствием государства
На английском языке

Vymyatnina Yu., Pakhnin M. *Application of Minsky's theory to state-dominated economies.* — European University at St. Petersburg, Department of Economics. Working Paper Ec-03/14, 27 p.

Abstract: The global financial crisis of 2007–2008, consequences of which continue to adversely affect the world economy, is often called a 'Minsky crisis'. A prominent American economist Hyman Philip Minsky studied capitalist economic system paying special attention to its major properties, in particular, instability and high importance of money. He developed a consistent way to explain the nature of economic crises, which, according to him, are generated through financial mechanisms. Minsky's financial instability hypothesis states that the fragility of financial system increases in periods of booms and thus crises arise from the very structure of business cycles.

In this paper we give a short review of Minsky's ideas and show that the last financial crisis could be persuasively explained in the framework of financial instability hypothesis. Moreover, we provide the extension of Minsky's hypothesis and apply his insights to the 'state-dominated economies'. Interesting and vivid examples of such economies are modern Russian economy (characterized by weak institutions, resource curse and dominance of state-related companies in the financial as well as non-financial sectors) and planned economy of the Soviet Union. We analyze the financial crisis 2008–2009 in Russia and the breakdown of the USSR and argue that these events could be interpreted along Minsky's line of argument.

Keywords: Hyman Minsky, financial crisis, financial instability hypothesis, endogenous money, planned economies, fall of the USSR, theory of money, business cycles, Minsky moment

JEL Classification: B50, E12, E32, E42, E44, E5, E60, G01, P2

Yulia Vymyatnina. European University at St. Petersburg, 3 Gagarinskaya Str., St.Petersburg, 191187, Russia, yv@eu.spb.ru

Mikhail Pakhnin. European University at St. Petersburg, 3 Gagarinskaya Str., St.Petersburg, 191187, Russia, mpakhnin@eu.spb.ru ; St. Petersburg Institute for Economics and Mathematics (Russian Academy of Science)

Application of Minsky's theory to state-dominated economies¹

Yulia V. Vymyatnina²; Mikhail Pakhnin³

Abstract: The global financial crisis of 2007–2008, consequences of which continue to adversely affect the world economy, is often called a 'Minsky crisis'. A prominent American economist Hyman Philip Minsky studied capitalist economic system paying special attention to its major properties, in particular, instability and high importance of money. He developed a consistent way to explain the nature of economic crises, which, according to him, are generated through financial mechanisms. Minsky's financial instability hypothesis states that the fragility of financial system increases in periods of booms and thus crises arise from the very structure of business cycles.

In this paper we give a short review of Minsky's ideas and show that the last financial crisis could be persuasively explained in the framework of financial instability hypothesis. Moreover, we provide the extension of Minsky's hypothesis and apply his insights to the 'state-dominated economies'. Interesting and vivid examples of such economies are modern Russian economy (characterized by weak institutions, resource curse and dominance of state-related companies in the financial as well as non-financial sectors) and planned economy of the Soviet Union. We analyze the financial crisis 2008–2009 in Russia and the breakdown of the USSR and argue that these events could be interpreted along Minsky's line of argument.

Keywords: Hyman Minsky; Financial crisis; Financial instability hypothesis; Endogenous money; Planned economies; Fall of the USSR; Theory of money; Business cycles; Minsky moment

JEL Classifications: B50, E12, E32, E42, E44, E5, E60, G01, P2

¹ We thank Christine Sinapi and Marc Pilkington for their helpful comments, discussions and suggestions.

² Department of Economics, European University at St. Petersburg, e-mail: yv@eu.spb.ru

³ Department of Economics, European University at Saint Petersburg, St. Petersburg Institute for Economics and Mathematics (Russian Academy of Science), e-mail: mpakhnin@eu.spb.ru

Introduction

The word ‘crisis’ comes from the Greek *κρίσις*, which literally means ‘decision’, ‘turning point’ or ‘dispute’. As John K. Galbraith⁴ has shown, the word ‘crisis’ replaced at the beginning of the 20th century the word ‘panic’ as being less fearful, only to be soon replaced by a succession of other words — ‘depression’, ‘recession’, ‘growth correction’, etc. — used by the public, while economists appropriated the word ‘crisis’ as part of professional jargon. For the general public a ‘crisis’ usually means ‘economic crisis’ and has a clear negative connotation with lowering welfare and security.

We have seen lately a variety of crises — during the last 20 years financial crises have shaken many countries in Southeast Asia, Latin America and Middle East, not to mention Eastern Europe. Moreover, in today’s world the degree of interdependence is such that local crises can easily become global, involving the world economy as a whole. The last financial crisis of 2007–2008 resulted in the global recession of 2009–2010 (also known as the Great Recession), and even in 2014 “most developed economies continued struggling in an uphill battle against the lingering effects of the financial crisis” (United Nations, 2014).

No wonder the event provided economists with much food for thought. The discussion and analysis of this crisis will also last long. What were the causes and premises for the most severe financial crisis since as far back as the Great Depression (1929–1932)? Was there a possibility to prevent it or at least to mitigate its negative effects? Finally, the most important issue concerning the normative theory, what should be done to avoid crises in the future?

The last ‘turning point’ as usual resulted in many ‘disputes’. Many if not most of them included criticism of mainstream economics, which could neither predict the crisis *ex ante* nor give a reasonable explanation for it *ex post*. Thus there naturally occurred an interest in the heterodox economics as well as in some other forgotten theories and ‘decisions’.

It should come as no surprise that nothing is new under the sun. The questions arisen two paragraphs before had been discussed many times by different economists of the past. What is important, some answers were also provided. It began to be widely recognized that the last financial crisis and the global recession could be nicely interpreted in the framework of financial instability hypothesis developed by American economist Hyman Philip Minsky (1919–1996). His ideas were not fully appreciated in his time, but nowadays they achieve the well-deserved recognition and get a second life.

One of the goals of this paper is to pay tribute to Minsky’s concepts and return them into consideration. We discuss Minsky’s financial instability hypothesis, its application to the last financial crisis of 2007–2008 and the fundamental possibility of forecasting crises (spoiler: unfortunately, according to Minsky, there is no such possibility). However, Minsky’s works are interesting not only because they could be successfully used to explain crises, which took place after Minsky’s death. We also argue that his insights are indeed much more powerful than they might seem. It is shown that the financial instability hypothesis developed for the capitalist economy could be extended to planned and transition economies. It turns out that certain features of these types of economies tend to amplify the proneness towards financial crises.

The rest of the paper is organized as follows. Next three sections provide a short review of Minsky’s concepts, including their origins, main statements of financial instability hypothesis and links with monetary policy. After that we apply Minsky’s hypothesis to the

⁴ Galbraith J. K. *Money: Whence it came, where it went*. New York: Penguin books, 1975; p. 113.

analysis of the latest economic crisis. Next section is devoted to the discussion of possible refinements and extensions of the financial instability hypothesis. In particular, we consider the so-called 'state-dominated economies' and argue that Minsky's ideas work well even in such economies. In the next two sections we provide two important examples to support our view: the case of present-day Russia and the case of the Soviet Union in its last days. The last section concludes.

Hyman Minsky and the Post-Keynesian Stone

Hyman Minsky is considered as one of the leading representatives of post-Keynesian economics. John Maynard Keynes was such a comprehensive economist and his works were so all-embracing, that every reader of his works can find something of his own, different from the others. Minsky paid attention to three major issues, which were (from his point of view) ignored in the mainstream interpretation of Keynes. These issues are: "decision-making under uncertainty, the cyclical nature of the capitalist process, and financial relations of an advanced capitalist economy" (Minsky, 1975).

The financial instability hypothesis, on which Minsky worked throughout his whole life (see, e.g., Minsky, 1957a; Minsky, 1964; Minsky, 1975; Minsky, 1982; Minsky, 1986; Minsky, 1991; Minsky and Whalen, 1996), is essentially based on these three issues. According to Minsky, money and finance are the most important parts of the mechanism that generates booms and busts in the economy. He even coined a phrase "money-manager capitalism" to characterize the contemporary stage of economic system with its prevalence of "institutions that manage large portfolios of financial instruments" (Minsky and Whalen, 1996). It is worth noting that this term underlines not only financial aspects of the economy, but also the human factor implying that all decisions are made by agents ('managers') with bounded rationality acting under uncertainty.

For the same reasons Minsky criticized the conventional treatment of Keynesianism and blamed it for turning Keynesian theory into the special case of the new classical economics. As a result, in their mainstream interpretation both Keynesian and new classical economics were just "examining bartering such as might take place at a village fair", while the original idea of Keynes was "a Wall Street paradigm: the economy is viewed from the boardroom of a Wall Street investment bank" (Minsky, 1977).

So bringing back the real Keynes, adopting the Wall Street paradigm and emphasizing the role of finance in the economy, Minsky was actually addressing the following questions. How does this modern 'money-manager' capitalist economy works? Why is growth always followed by a recession? What was the cause of the Great Depression of 1929–1932? Could such a severe crisis repeat in new circumstances (his *opus magnum* is called "Can 'It' happen again?"), and if the answer is positive, then why have not we seen anything alike in all that time?

In his research Minsky combined considerations of many great economists, not just of John Maynard Keynes⁵, but also of Joseph Schumpeter⁶ and of Irving Fisher⁷. This allowed Minsky to introduce a hypothesis that provides a reasonable explanation for observable business cycles in developed economies using financial gears.

⁵ As is well known, post-Keynesians — among many others — claim to be the only true interpreters of his "The General Theory of Employment, Interest and Money".

⁶ Under his supervision Minsky worked on Ph.D. at Harvard University and most likely studied the history of economic thought, learning much about the Great Depression.

⁷ His important concept of debt deflation was useful for Minsky's own work.

As we have already mentioned, works of Minsky were not popular in his time for a number of reasons. First of all, it is the lack of precise mathematical formulation that reduced the propagation of his theory. Minsky's attempt to build the mathematical model in support of his hypothesis (Minsky, 1957b) was futile, "arguably because the foundation he used — the multiplier-accelerator model — was itself flawed" (Keen, 2013). Secondly, Minsky's interpretation of Keynes was quite unorthodox and didn't get well with the mainstream. Thirdly, as a consequence of the previous point, most of Minsky's papers were published in non-mainstream journals (e.g., Journal of Post Keynesian Economics or Nebraska Journal of Economics and Business), the audience of which was relatively small. Finally, what one might call a drawback of Minskian approach is its concentration only on financial markets and agents' financial decisions, neglecting their consumption and savings decisions as well as other markets like those for goods and services or labor.

Hyman Minsky and the Chamber of Financial Instability

Below we consider in some details three major theses of Minsky's instability hypothesis.

Thesis one: Potential instability is an immanent property of economic system, which arises from its inner structure.

There are two fundamentally different points of view on the results of market processes, which could be defined as 'Adam Smith approach' and 'John Maynard Keynes approach'. The first approach is older (18th century) and more optimistic. According to it, every individual acts in a rational way pursuing his/her own interest and thinking only of his/her own profit. However, as a result of this behavior, the market is led by the 'invisible hand' to the situation where the public interest is maximized. Although each agent does not care about either anybody else or the society as a whole, the resulting outcome is favorable for the public welfare.

'John Maynard Keynes approach' is younger ("General Theory" was published in 1936) and more pessimistic. Keynes argued that for agents "speculation predominates over enterprise" (quoted in Minsky, 1991). That is, individual behavior is concerned mostly with attempts to beat the market (using the "psychology of the market") as opposed to the rationality and fair evaluation of assets. Therefore the market evolves under complete uncertainty and the resulting market outcome can be compared to the "by-product of the activities of a casino" (quoted in Minsky, 1991).

Likewise, these approaches differ in their evaluation of equilibria and crises in the economy. General equilibrium theory (associated with such great names as Leon Walras, Kenneth Arrow and Gerard Debreu) with the first welfare theorem plays on the side of 'invisible hand' concept. As stated by Adam Smith, the underlying conditions of crises are small accumulated imperfections in the institutions and external restrictions imposed on the behavior of agents — in short, everything that can interfere with the 'invisible hand'.

There are some strong drawbacks in this approach. To begin with, this idealistic picture is inconsistent with the fundamental second law of thermodynamics. This is a philosophical argument, but the idea is that since the entropy of the isolated system increases, the final state of the system tends to be chaotic. Thus it is hard to believe that the resulting outcome of the complex market system could be arranged (or, indeed, arrange itself) in a required pleasant manner. Next, getting back to the real economics, main results in the general equilibrium framework (e.g., existence of equilibrium) are valid under strict and highly implausible assumptions. Moreover, there are troubles with the uniqueness and stability of this equilibrium. Finally, models of this kind are simply incompatible with reality, as they in

principle lack the main gear of modern economy from Minskian point of view — the *money*. Thus ‘Adam Smith approach’ is convenient, but not suitable for description of the real world.

On the contrary, the ‘Keynes approach’ due to uncertainty and speculative motives results in the concept of business cycles and therefore in the need to study depressions and recessions, thus presenting a closer picture of the real world. Furthermore, Minsky argued that natural laws of evolution of the ‘money-manager’ capitalist economy led to conditions, which promote financial instability. This means that crises in the modern economy are endogenous; they are an intrinsic property of the system, and not the result of exogenous shocks and flaws.

It might be said that in this issue Minsky is close to Karl Marx rather than to Keynes, as the “idea of an endogenously generated crisis and functional depression has always been at the core of Marxian theory” (Crotty, 1980). Another striking common feature of Marxian and Minskian theories is the endogeneity of money supply. Marx was among those economists who embraced the concept of endogenous money, and the same idea is playing an important role in the financial instability hypothesis (see next section).

Another important connection of Minsky’s ideas to the 19th century economic thought should be mentioned here — the works of John Stuart Mill (1806–1873). Though Mill’s position on the source of business cycle might seem at the surface disconnected from Minsky’s — Mill insisted that *money* was not the source of cycles — it is not as different as it seems. Mill was sure that the main source of business cycles was *credit*. In his view, too liberal approach of banks to crediting during periods of economic growth resulted in more credit used for speculations than for investment in real production. As a result, once the general situation in the economy changed, even serious and trustworthy borrowers could not get their credits renewed with very negative consequences for the economy. Though Mill was not counting credit as money, he certainly saw the source of business cycles in much the same vein as Minsky, as next two theses demonstrate.

Thesis two: For a crisis to occur, two types of conditions must be satisfied: systemic (which are common for all crises) and idiosyncratic (which are individual in every case).

Minsky noted that there are always two types of elements present in every crisis (Minsky, 1991). Elements of the first type he called ‘systemic conditions’. They are the same for all crises, past and future. The most important condition of this kind is high level of indebtedness of economic agents. In his original papers, Minsky considered firms that borrow money to invest in some projects, and classified them pursuant to their behavior into three categories: hedge, speculative and Ponzi units. A *hedge* firm is a conservative financial unit, which takes on loans only provided expected profits⁸ from the investment project exceed both interest and principal payments. A *speculative* firm is a less careful financial unit, which raises money when its cash flow is enough to pay interest, but not principle. Finally, a *Ponzi* firm (also known as an *ultra-speculative* firm) is actually building a financial pyramid: its expected revenues are not enough even to meet interest payments liabilities. Thus Ponzi firms must borrow again and again, continually increasing their debt burden.

According to Minsky, a fundamental requirement for every crisis is the high level of indebtedness in the economy. In other words, this is the case when the overwhelming majority of firms (in terms of total assets) in the economy belong to the third category of

⁸ And the cash flow at each point in time!

borrowers (Ponzi units). They are building unstable financial pyramids that are at the point of collapsing and ruining their owners as well as the whole economy.

Elements of the second type Minsky called 'idiosyncratic conditions'. They are individual for each crisis. It is these elements that make it extremely hard (or even impossible) to predict crises and to work against them — each new crisis has its own specific features and thus differs from others. The major part of 'idiosyncratic conditions' for Minsky lies in institutional changes. Constantly and rapidly evolving structure of financial market leads to emergence of new financial institutions/contracts. It turns out that today's institutions prevailing on financial market are completely different even from institutions that were in place some 5–10 years ago, not to mention the times of the Great Depression. Therefore, crises in the new environment are also new.

Thesis three: During periods of economic growth systemic and idiosyncratic conditions accumulate, while instability and fragility of financial system increase.

This is the main insight of Minsky, which at first might seem paradoxical. How can growth, which is definitely a positive and desired feature of economy, be a prerequisite of a crisis? What is more, it follows from Minsky's thesis that the higher the preceding growth rates are, the more severe the future crisis would be, since the bigger you are, the harder you fall.

However, consider the underlying argument. If the economy is expanding (the upward phase of the economic cycle), the income of all agents in the economy (as represented by GDP, firms' profits and/or wages) is increasing. But along with the welfare optimism is also increasing. Agents' expectations about future become brighter, they tend to be more positive about the future, and the situation in the economy naturally reinforces their inclinations. This means that firms gradually become less careful and begin taking loans for more risky projects. In the Minsky's scheme, the number of speculative and Ponzi units as well as the debt-income ratio increase abruptly.

At the same time, in the boom phase of the economic cycle stock market and real estate market prices are going up. Asset prices rise, as in the wake of euphoria these prices include not only achieved growth, but also expected growth. This, in turn, allows firms to refinance their assets and take new loans for riskier investment projects with more uncertain cash flows. Minsky especially stressed the importance of this derivative speculative asset pricing in the case of modern economy, where large corporations are the prevailing form of doing business (Minsky, 1964). Moreover, given this increased demand of firms for credit, financial institutions begin to evolve and change in the ceaseless search for benefit. Thus profit-seeking institutional innovations are aimed at credit supply increase. Both credit market counterparts benefit from this situation and become more interdependent with time.

This means that when economy grows, the interrelation between non-financial and financial sectors of economy deepens, while debt-income ratio increases and liquidity drops. The whole economy is ready to fall — and the slightest push is enough to trigger a sudden change in real cash flows and in liquidity preferences of agents. Such a trigger is usually referred to as 'Minsky moment'. A 'Minsky moment' could be a trouble at only one financial unit or even just rumors about potential troubles. It is interesting to note, that this expression was first used on the occasion of 1998 Russian financial crisis (Vercelli, 2009). Once the 'Minsky moment' occurs, banks start recalculating their risks, and their liquidity preferences increase. Credit supply dries out, as banks prefer to keep liquidity at home. Therefore, Ponzi units are not able to roll-out and service their debts, which might result in bankruptcy of such units and, finally, in market panic.

Subsequently a crisis in the financial sector spreads to the real sector. As the price of capital stock falls below cost price, investments are reduced (a point that is somewhat similar to the Tobin's q approach). This causes the decline in output, trade and employment. The sharp fall in asset prices results in income fall *per se*, while the reassessment of previous bright expectations leads to the revision of liquidity preferences, decrease in consumption and investment demand with even further income fall.

Thus the financial instability hypothesis emphasizes the importance of financial component in the economy, of balancing cash inflows and cash outflows. Particularly noteworthy in this context is Minsky's outlook on the theory of money and monetary policy.

Hyman Minsky and the Prisoner of Monetary Policy

For a long time the quantity theory of money has dominated in the economic theory and debates over the issues of appropriate monetary policy. This theory states that money supply is under direct control of a central bank, and this institution can influence prices (or even real values of macroeconomic variables) by adjusting the money supply. Again it was Keynes who pointed out that firms borrow money from banks in order to finance their capital stock, and this fact should be taken into account (this idea is now known as monetary theory of production).

Minsky, as a prominent representative of post-Keynesian economics, also stressed the importance of interaction between non-financial and financial sectors of economy. He argued that money in the economy is created through credit expansion and changes in money supply reflect expectations of future conditions by firms and banks. This approach casts doubt on the ability of a central bank to pursue an effective monetary policy and to achieve its objectives. Minsky showed the inefficiency of monetary policy along with the importance of institutional changes on the example of U.S. economy in 1954–1957. Federal Reserve System tried then to control for the level of prices by raising interest rates. The idea was clear — banks would lend less and inflation would decrease. If financial institutions were stable, then such a policy would work, as high interest rates cut down credit supply, forcing firms and households to maintain their cash balance, finally reducing demand for credit to its proper level (Minsky, 1957a).

However, a highly competitive financial system even under high interest rates seeks ways to make profit. There are incentives to invent new means for providing credit. In particular, Minsky analyzed such institutional changes of that time as the development of the federal funds market and the increase in financing government bonds by non-financial corporations. He concluded that passive Federal Reserve constraints upon money supply growth did not provide the desired results. The supply of credit merely changed its form; it did not decrease, in fact, it increased. The FRS measures taken did not influence the inflation — they even managed to increase the level of indebtedness (which is one of prerequisites of a crisis).

According to Minsky, such measures could not help in principle, since changes in financial institutions counteract restrictive monetary policy. As a consequence, Minsky warned central banks against “Maginot line mentality” under constantly evolving institutional framework (Minsky, 1957a). Generals should not prepare to fight the last war, and the same is true for central banks. It is impossible to provide regulation in anticipation of innovations in the financial system; therefore, old problems come with each crisis in a new disguise.

Central banks are always one step behind, and all their efforts to control inflation by means of monetary policy are in the best-case scenario ineffective, leading to crises in the worst-case scenario. In the framework of money supply endogeneity monetary policy is impossible, it should be forgotten. The only function Minsky has left to central bank is a lender of last resort for banks facing severe liquidity problems. But even acting in this capacity central banks should stay ahead, without waiting for a crisis to get out of control.

This kind of approach to monetary policy (which we call 'Minsky's impossibility theorem', the obvious analogy being the famous 'Arrow's impossibility theorem') coincides with Keynes' attitude, but they are based on quite different ideas. Keynes regarded the volatility of demand for money as a main factor responsible for the ineffectiveness of monetary policy, while Minsky stressed the impossibility to keep up with the rapidly changing institutional arrangements of money supply.

Hyman Minsky and the Goblet of Crisis

Among many papers analyzing the 2007–2008 financial crisis most authors agree that it was a unique and outstanding event. In our opinion this is the consequence of mainstream economic theories that are more suited for modeling economic growth, but are irrelevant when it comes to depressions. Once mainstream economics could only explain crisis in terms of a rare event that no one could forecast, alternative ideas that gave perfectly reasonable explanation of the crisis gained special attention. No wonder the most cited were Minsky's ideas on financial instability.

Two most often named causes of the last crisis are changes in agents' behavior and changes in the structure of financial market. In the pre-crisis period credit demand increased immensely. Interestingly though, it was largely due to financial sector and households, not firms in the production sector, as in original Minsky's works. Figure 1 provides evidence that for the period 2000–2006 (the boom phase) the indebtedness of households as well as of financial institutions (such as banks, insurance companies, pension and hedge funds) has risen dramatically, while the debt to GDP ratio of non-financial corporations remained more or less the same.

Furthermore, the rise in confidence and optimism was accompanied by the stock market and real estate market growth. Interestingly, the stock market boom in the USA "was fuelled by foreign demand, especially from the emerging economies" (Silipo, 2011). Clearly the increase in asset and real estate prices led to the increase in their value as a collateral, which further promoted the ability to borrow. This is another surprising aspect of interdependence: it is not only responsible for spreading the crisis from local to global scale, but could as well be the indirect source of crisis. This fact also provides support for Minsky's paradoxical idea about the connection of growth with depression: boom in developing markets knocked the U.S. market off its feet. Thus, the analysis of the demand side shows that systemic condition for the crisis was fulfilled. The high level of indebtedness of agents persisted in the global economy.

It is important to stress that most of the indebtedness was related to *non-productive activities* (consumer credit and development of credit within financial sector on re-crediting each other), instead of productive activities, which, according to Minsky and most post-Keynesians, result in producing the assets that provide cash flow securing repayment of credit.

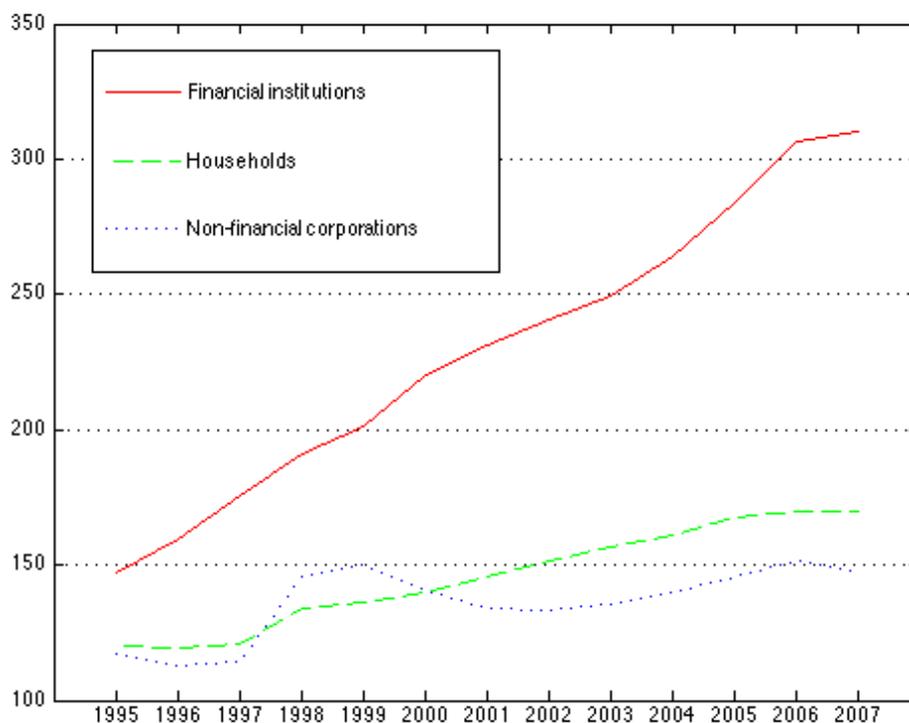


Figure 1. Ratio of Debt to GDP Among Selected Advanced Economies
(In percent, GDP-weighted, 1987=100)
Source: *IMF Global Financial Stability Report (April 2009)*

As for credit supply, it readily adjusted to demand and also rose significantly. To begin with, in 2001 the so-called ‘dot-com bubble’ burst and the lending incentive for banks was spurred by the reduced asset prices volatility. Besides, in order to restore credibility and consumer demand after the aforementioned ‘dot-com bubble’ crash, some central banks (especially Federal Reserve System) substantially lowered real short-term interest rates (see Figure 2). The intention was definitely good, as this facilitated lending by commercial banks and sustained economic growth. However, interest rates were too low for too long. Alan Greenspan, the 1987–2006 FRS chairman, is often blamed for this easy monetary policy in the end of his tenure, and it is hardly a coincidence that the U.S. subprime mortgage crisis came straight after his retirement. Again it turned out that seemingly correct and adequate monetary policy have led to big troubles, in accordance with ‘Minsky’s impossibility theorem’.

Finally, banks wanted both to support the rising demand for credit and to remain consistent with bank regulations (such as Basel I or Basel II Accords). As a result, the structure of financial market evolved. No surprise these institutional changes occurred in a way predicted by Minsky. One of the main financial innovations that helped banks to increase credit supply was securitization, i.e., the conversion of debts into bonds or the so-called collateralized mortgage obligations (CMOs) that are further sold to investors. Before the start of the 2007–2008 crisis it was exactly the securitization that “endogenously determined the volume of credit” (Silipo, 2011). Since securitization was not subject to regulation, it allowed banks to expand the client base keeping within formal restrictions.

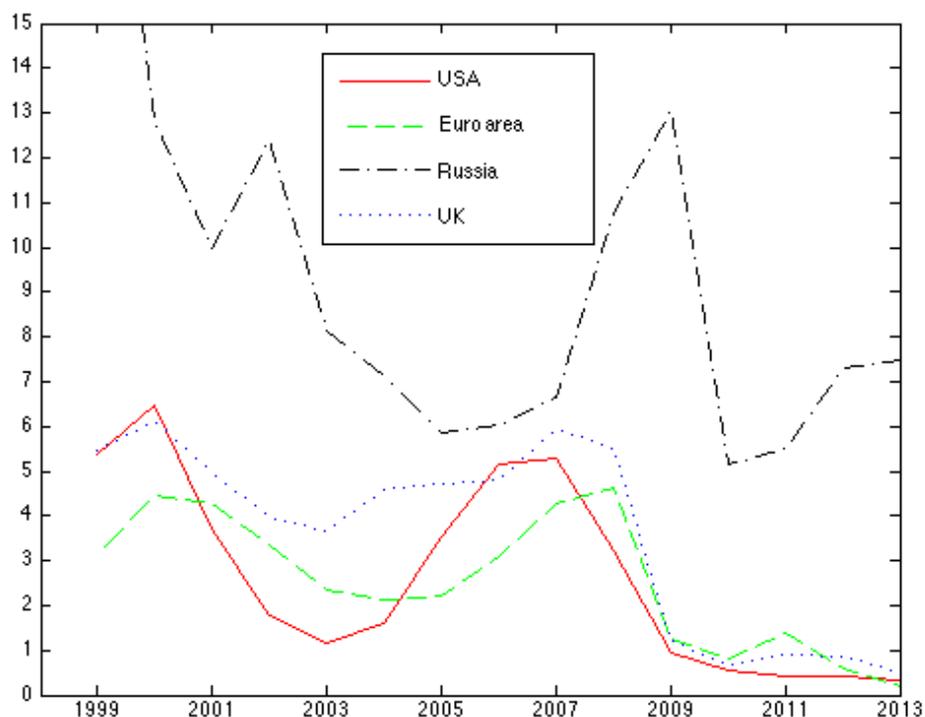


Figure 2. Real Short-term Interest Rates (% per annum)
 Source: *OECD Economic Outlook, Volume 2013 Issue 2*

Although the biggest part of credit risk remained on the side of banks, securitization increased the financial fragility of the whole system to a great extent. It was a major factor that led to growth in the number of Ponzi debtors (not so much firms as in the original Minsky’s works, but rather households and banks themselves!). Under continuously low credit risks and market euphoria, securitization was the tool for extending credit supply, and lending out to riskier borrowers with high probabilities of bankruptcy. And this is exactly Minsky’s story. Moreover, securitization tangled a tight knot on the markets. Involvement of new non-banking funding sources has increased the interconnection between credit and financial markets as well as between different financial institutions. Thus the global financial system entered the crisis being extremely cumbersome and complex.

The exact chronology of the crisis is vast, well known and as unattractive as the analysis of lost chess endgame. The first victim was the collapsed U.S. subprime mortgage market. As Ben Bernanke⁹ noted, the delinquency rate for subprime mortgages with adjustable rates in 2007 “has risen notably ... reaching nearly 16 percent in August, roughly triple the recent low in mid-2005” (Bernanke, 2007). This caused serious troubles with ABS¹⁰.

The fall of subprime mortgage market was marked by a severe drop in the market liquidity. The all-to-all level of indebtedness was so high that interbank markets were virtually frozen. At this moment Federal Reserve System indeed operated as a lender of last resort, preventing a number of major market participants from bankruptcy. Fed’s actions very likely saved the U.S. from another severe depression, worth naming ‘Great’. So it is quite

⁹ The 2006–2014 Federal Reserve chairman, preceded by Alan Greenspan.

¹⁰ Under this abbreviation one can understand Anti-lock braking system, while indeed we are talking about Asset-backed securities collateralized by a subprime mortgage loans (a common example of securitization).

reasonable to consider subprime mortgage crisis as a notorious ‘Minsky moment’ (De Antoni, 2010; Bellofiore and Halevi, 2011).

Unfortunately, Federal Reserve entered the stage (in the only role that Minsky left to central banks) too late. Certain units became insolvent (Lehman Brothers being the sad and striking example) and the crisis spread into the real sector. The latter happened in accordance with the Minsky’s scheme: financial institutions abruptly became risk averse and reconsidered their liquidity preferences. Under increased uncertainty commercial banks reduced credit supply and central banks worldwide were powerless. Neither charging zero interest rates (see again Figure 2) nor injecting cash into the banking system could help.

Figure 3 clearly shows that the total volume of securitization in the U.S. has sharply risen in 2000–2006 and the substantial part of this volume corresponded to mortgage-backed securities (MBS).

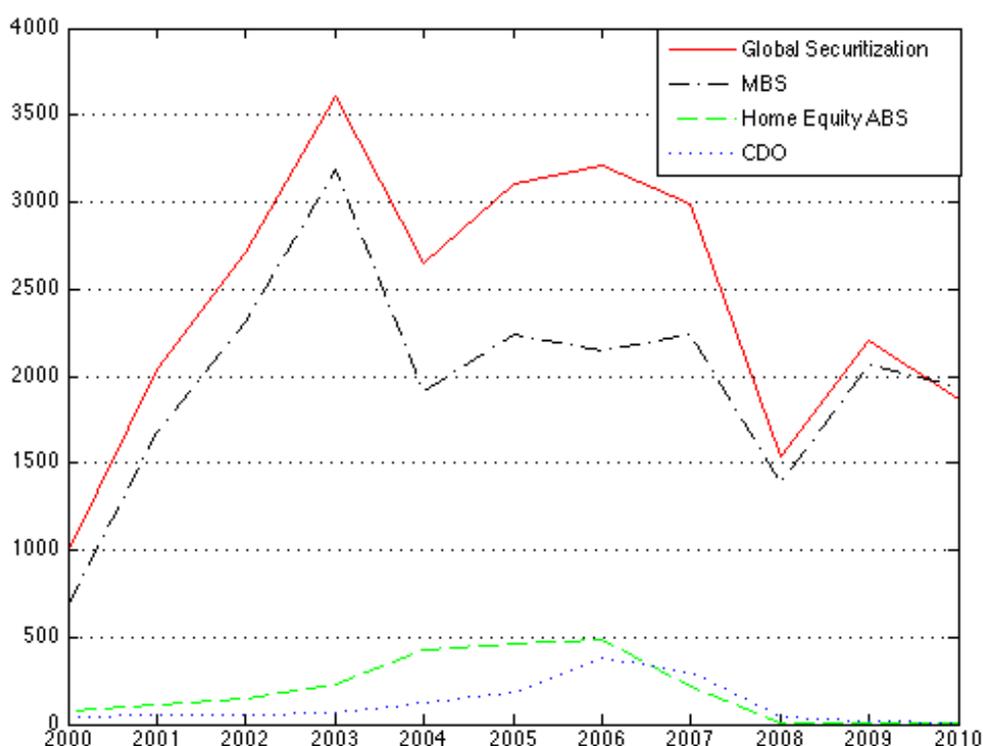


Figure 3. U.S. Securitization Issuance (\$ bln)
Source: SIFMA Global Securitization Update 2010

Such analysis of the supply side and of the financial market structure shows that idiosyncratic conditions (the emergence of completely new financial tools and institutions) were satisfied as well. Thus, although no one could anticipate actual institutional changes and the precise timing of the ‘Minsky moment’, the succession of events of 2007–2012 was hardly unique in a sense that Hyman Minsky had long ago clearly portrayed its main features.

Hyman Minsky and the Order of the State

As the 2007–2008 crisis has demonstrated, not only firms contribute to creating financial instability. Rather, it is financial sector that creates most of financial instability recently,

aided by households (see also discussion in Vercelli, 2009). This stresses the importance of Minsky's attention to cash flows. The original idea of Minsky was that liabilities of a firm (e.g., in the form of loans) should be invested in such assets that would be productive in terms of generating enough cash flow to cover the liabilities due. It could be extended to account for open-economy and international issues (Arestis and Glickman, 2002; Mendoza, 2006; Mendoza and Terrones, 2008). But far more interesting is that Minsky's idea could be also extended to account for other sectors' behavior — especially households and banks or other financial organizations (Wray, 2009; Nasica, 2010; Assenza et al., 2010) — as well as to account for other types of economies with other types of prevailing institutions.

If one tries to apply Minsky's idea to separate households, ideally credits undertaken should be invested in development of human capital. Consumer credit in this scheme can be prudent only to the extent that job-related expectations allow covering of interest and credit payments. And it is highly related to general expectations within the economy, much like in the case of firms. The same is true for financial sector loans with the only remark that financial sector depends on the expectations to a much higher extent than households or non-financial private sector of economy, and at the same time most of innovations in relation to credit market come from financial sector of economy. Financial sector largely forms expectations in the economy and depends on them.

Obviously, institutional changes that allow for more investments (through credits) in prospective production spheres are welcome. At the same time, these innovative changes usually bring in possibilities for investments in non-productive activities that bring about the same or even higher returns and quicker than actual investments in production. This is exactly what has happened during the latest crisis. Once financial sector starts creating credit for itself, it arranges a clear financial pyramid since financial sector by its very nature cannot be self-sustained and has to rely on the 'real' economy for support and successful functioning. The term 'predatory' is usually used to describe this type of financial capitalism, when 'firm-bank' relations are substituted for 'bank-financial market' relation (Rochon and Rossi, 2010).

Apart from extensions of Minsky's ideas to other sectors of economy including international dimension, one might think about extending these ideas to the types of economies different from the modern capitalist economy analyzed initially by Minsky. There are important features of some other types of economies Minsky did not have in mind in his analysis, but that make immediate connection to his ideas and suggest that it is hard to find an economy that would be immune to financial crises.

There is a large class of economies that would be difficult to classify in terms of direct opposition of planned and market economies. Probably, the suitable term for them would be 'state-dominated economies'¹¹. Such economies could comprise a large number of countries, including planned economies (as real examples of such economies were never fully planned and some potential for small market operations was always there), transition economies in the early stage of their transition to market, and economies 'blessed' (or 'cursed') with abundance of demanded natural resources¹² and weak institutions. All these types of economies could be characterized by domination of the state or state-related companies and institutions.

¹¹ We are not aware of a better term, and we use it in want of a better one, trying to escape negative connotations with certain political restrictions.

¹² Oil and gas are obvious examples, but other resources (e.g., diamonds) often bring similar results.

Cases of planned economies and early transition economies are quite similar. They could be characterized by the presence of money supply endogeneity in the sense of accommodationist (horizontalist) approach. In planned economies changes in money supply are always politically motivated decisions, be it changes in the money supply due to extra investments or increase in wages (see also Vymyatnina, 2014, p. 89). Certainly, increase in money supply mostly comes through credit expansion. Several peculiar features of planned economies result in behavior very similar to Ponzi units. Firstly, planned economies could be characterized as 'shortage economies' (Kornai, 1979a). This meant, that in order to be a successful head of an enterprise one had to bargain for a low level of production and at the same time to ask for excessive quantities of intermediate goods. Such excessive order usually sent false signals about the necessity of extra investments in many industries. And this brings us to the second peculiarity. Investments under planned economy are carried out on the unsteady basis of miscalculation, inertia, the need to service existing production facilities around, political reasons, etc. It should come as no surprise that these economies are usually characterized by failing investment projects due to 'soft budget constraints' (Kornai, 1979b). In turn, 'soft budget constraints' meant there was no 'creative destruction' (Schumpeter, 1942), but an increase in credit to accommodate the need to pay interest on existing credit, etc. In the planned economies and early transition economies such credit expansion is guaranteed by the government, and credit demand is accommodated.

Thus, the very basis of planned economies functioning resulted in behavior very similar to the one induced by increasingly bright outlook in Minsky's theory. The difference is that in the case of planned economies this source of credit expansion — unproductive investment not being able to generate enough cash flow to service liabilities — was not based on expectations, but on idiosyncratic characteristics of planned economies. For instance, the biggest source of internal credit expansion in the Soviet Union was related exactly to unproductive investments. However, it was not the only source. Planned economies that are integrated to some extent (and often to a large extent) into the global economy tend to find themselves in need of external borrowing for various reasons: to provide its industries and consumers with the products that are not produced inside the country, to support planned investments or to pacify its population. External borrowing of such countries is usually supported by government guarantees, and thus credit demand is accommodated until some event ('Minsky moment') reverses the trend, and the country finds itself a bankrupt.

These features — unproductive investments leading to internal and external credit expansion — at first seem to be irrelevant for countries subject to resource abundance and weak institutions. However, for these countries a number of political economy models demonstrate that expansion of borrowing abroad in 'good times' (i.e., when resources are in high demand and provide large rents) is an almost universal feature. In a survey (Frankel, 2010) it is shown that such countries are prone to procyclical fiscal and monetary policies as well as procyclical capital flows (see also Kaminsky et al., 2005; Reinhart and Reinhart, 2009; Gavin et al., 1996; Mendoza and Terrones, 2008). The usual explanation of empirically observed facts is that during good times resource-rich countries and their investors/creditors tend to become 'blinded' by high resource prices, form exuberant expectations and engage in all sorts of projects ranging from large-scale 'white-elephant' investment projects to programs of increases of wages, salaries and pensions. Once expectations change (resource prices drop) these countries find themselves with excessive credit burden and almost no cash flow to serve it.

Therefore, Minsky’s approach could be extended from analysis of firms or sectors of economy to countries and their governments, if the latter play a large role in the economy through direct owning of companies, or through high level of regulation imposed on private companies, or both. We support our claim that Minsky’s analysis is relevant for countries with state-dominated economies by looking in details on the two cases: the one of the present-day Russia and the other of the Soviet Union breakdown. Both cases clearly demonstrate that the government could behave in much the same way as separate economic agents, which leads to serious problems (and in extreme cases — to ‘creative destruction’) for the whole countries.

Hyman Minsky and the Half-Market Economy

There are two important features of the financial crisis 2008–2010 in Russia. First, it was clearly a direct consequence of the global financial crisis. Second, comparing two last Russian crises it could be argued that while “Russia’s 1998 was a classic fiscal and currency crisis, ... 2008 was largely a private sector crisis incited by excessive borrowing by the private sector” (World Bank, 2009). Thus it is tempting to apply Minsky’s financial instability hypothesis to analyze what happened in Russia in 2008–2010.

The ‘credit history’ of Russia was excellent, which, as we already know, could not end well. Russian economy after the severe crisis of 1998 was steadily growing; in 1999–2008 GDP at constant prices nearly doubled (increased 1.83 times). Although Russia’s debt markets were “the smallest of the emerging markets” (McKinsey Global Institute, 2010), the indebtedness of all sectors also substantially increased. Debt to GDP ratio for non-financial corporations has risen from 0.16 to 0.4 (see Table 1). Moreover, despite the fact that government debt has decreased from 19% to only 5% of GDP, total level of indebtedness in Russia have raised from 45% to 71% of GDP.

Table 1. Russia’s debt by sector (% of GDP)

	2000	2008
Households	1	10
Financial institutions	9	16
Non-financial business	16	40
Government	19	5
Total	45	71

Source: McKinsey Global Institute, 2010

Although this debt was not really outstanding and was much lower than debt level of advanced economies (see also Figure 1), the warning signal was that most part of it was an external debt in foreign currency. Figure 4 demonstrates that by 2008 Russian banks and corporations had huge debts to Western banks. It is clear from these data that increase of private-sector borrowing abroad coincided with the increase in oil prices, and, in fact, was supported by the high oil prices. It should be also noted that the caption ‘non-financial private’ sector of economy includes companies that are owned by the government to a large extent (e.g., Gazprom, Rosneft, etc.). Therefore, part of these debts was implicitly guaranteed by the government.

In the general case, these debts would have been partly repaid and mostly restructured, so that Russian private sector was supposed to continue borrowing abroad (and U.S. banks

were supposed to continue lending). This is a familiar situation, of which Minsky warned us. The ‘general case’ of refinancing debts under favorable conditions inevitably leads to the emergence of Ponzi units and therefore to a crisis. Precisely following Minsky’s scheme, during the mortgage crisis in the U.S. Western banks drastically changed their liquidity preferences. International markets were frozen and even high-rate loans were not available. It was impossible for Russian banks and corporations to take additional loans on the global market, so that debts should be solely repaid. Thus the worldwide financial crisis could be interpreted as a ‘Minsky moment’ for the Russian crisis.

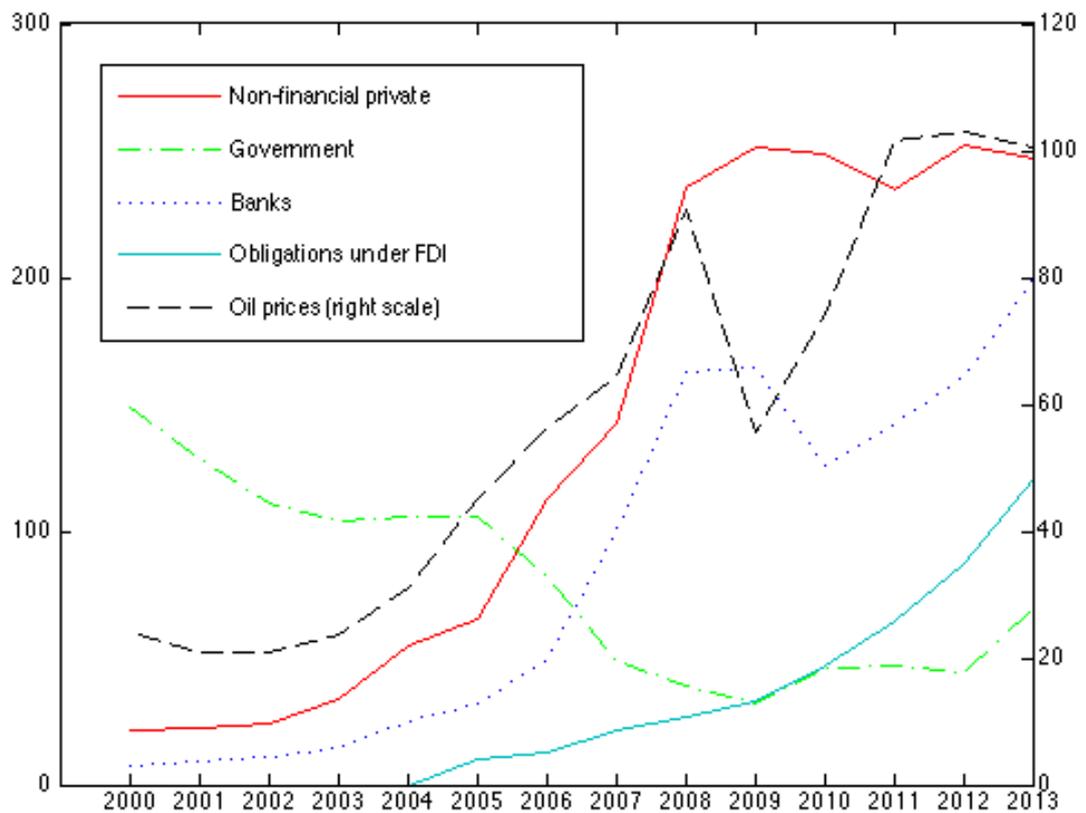


Figure 4. External debt of state and non-state Russian entities, (\$ bln, left-hand scale); Russia's export oil prices, (\$/bbl, right-hand scale).

Source: *Bank of Russia*

A bad situation became even worse because of currency mismatch between assets and liabilities of the banking system and Russian stock market crash. Banks were borrowing from the West in U.S. dollars or euros, while their earnings were mostly in rubles. In these circumstances, the depreciation of ruble naturally resulted in major losses for financial institutions and deepened their liquidity troubles. Moreover, when stock market fell, large corporations also suffered significant losses. From May to September 2008, RTS index have lost about half of its value, which resulted in a “paper loss of about \$700 bln for Russian companies”¹³. However, the pure loss in capitalization of major corporations (Gazprom has lost \$150 bln, Norilsk Nickel — \$30 bln, Lukoil — \$25 bln, Severstal — \$10 bln in market value¹⁴) was only the beginning of the problem. Many companies and their owners (Russian oligarchs) borrowed additional money from Western banks against the value of

¹³ http://www.nytimes.com/2008/09/13/business/worldbusiness/13russia.html?_r=1&

¹⁴ <http://www.wsws.org/en/articles/2008/10/russ-o01.html>

the shares. As the collateral value of their shares decreased, they received margin calls from banks that wanted their money back¹⁵.

This means that Russian corporations and banks in turn were forced to change liquidity preferences. They were in urgent need of cash or other highly liquid assets to repay their debts, so there were no incentives for banks to lend in the domestic market. As a result, credit market in Russia collapsed — in 2009 credit supply growth stopped, while profits of credit organizations almost halved (see Table 2). The concept of endogeneity of money suggests that this should lead to the shortage of money, and in fact the money supply growth in the end of 2008 – beginning of 2009 also became negative (see Figure 5). The lack of money in the economy changed liquidity preferences of all agents. Investments in the economy have practically stopped, firms could not perform normally and real sector also suffered.

The response of the Bank of Russia was rapid and mostly along the same lines as the policies undertaken by other central banks. Most of the measures were directed at providing extra liquidity to the banking system by lowering reserve requirements (almost to zero), increasing funds available under repurchase agreements and extending credit lines with no collateral. Such monetary policy measures led to additional injection of 830 bln rub (about 2% of GDP) in financial system (World Bank, 2009). Moreover, financial system was also strongly supported by fiscal policy measures, consisted mostly of recapitalizations and subordinated loans. For these purposes in 2008 the government spent about 785 bln rub (World Bank, 2009).

Table 2. Credit organizations data

	Loans, deposits and other funds to organizations, individuals and credit institutions (beginning of the year, bln rub.)	Loan growth (%)	Profit obtained by functioning credit organizations (beginning of the year, bln rub.)	Profit growth (%)
2005	4 373	42.1	178	47.3
2006	6 212	48.4	262	41.6
2007	9 218	51.0	372	36.7
2008	13 924	39.1	508	-19.4
2009	19 363	-0.94	409	-49.9
2010	19 180	12.3	205	179.5
2011	21 537	29.6	573	47.9
2012	27 912	17.8	848	19.3

Source: Rosstat

¹⁵ http://www.forbes.com/2008/10/23/billionaires-margin-calls-biz-billies-cx_af_1023billiemargin.html

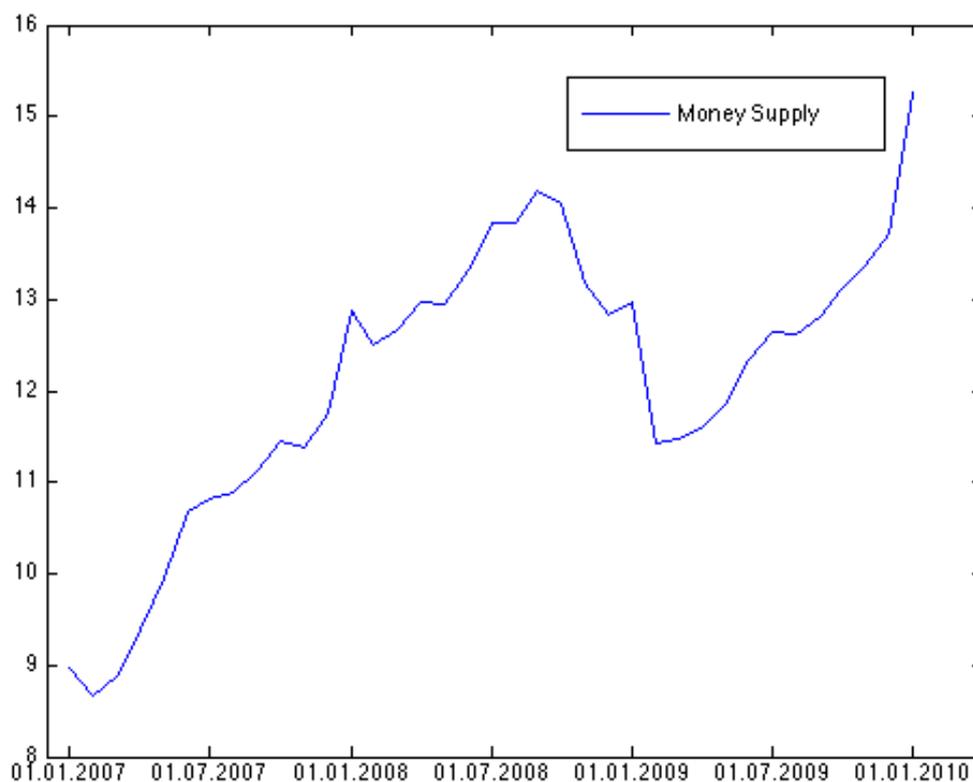


Figure 5. Money Supply (National Definition) in Russia, monthly data 01.2007–01.2010 (Trln rub)
Source: *Bank of Russia*

The response of the banking system was in keeping their liquidity high — until early 2010 there was almost no new credit in the Russian economy. Russian systemic banks preferred to use the extended liquidity on safe gambling on expected currency devaluation — they got cheap credit from the Bank of Russia, bought hard currencies, kept them for a few weeks and then sold it back, paying credit and interest and gaining on the creeping devaluation. This situation continued until February 2009 when the Bank of Russia finally announced official devaluation. Therefore, despite of all measures taken by the authorities, Russian economy was short of money until the beginning of 2010, while GDP was falling (with a prospect of a new recession still looming over in 2014). The situation reversed only when global international markets began to operate as before. As Western banks decreased their liquidity preferences and reestablished the normal functioning of credit system, Russian banks and corporations also gained confidence. Money (in the form of Western loans) returned to the economy and in 2010 credit crunch was overcome.

It is also important to have a look at the response of non-financial private (or ‘quasi-private’) sector to liquidity problems, and to analyze activities of corporations after the crisis. As could be seen in Figure 4, after some time of rolling-over existing debt (and, perhaps, paying out a small portion of it), Russian companies continued to borrow abroad. The careful analysis of Russian corporate sector debt goes beyond the scope of this paper, but a few findings of other scholars (Matovnikov, 2013) in this respect are worth mentioning. Most (up to 60%) of increase of private corporate external debt seems to be related to ‘quasi-dividends’ of Russian private companies to their Russian shareholders situated abroad. Most (up to 75%) of increase of state-owned companies (>50% of shares owned by the government) corporate external debt is explained by *the support of the state*,

that is by the government guarantees backing up the debt. This logically leads to a new important element in Russian sovereign debt analysis, the so-called 'quasi-sovereign' debt (government debt plus the debt of state-owned corporations). Why this measure is important indeed, we shall see in more detail in the next section. One thing to stress here is that Russian corporate sector continues its active borrowing abroad, and a large part of this borrowing is supported by the government in one way or the other.

Russian government itself increased its level of external borrowing after the crisis, though according to all measures, the level of indebtedness is far from being worrisome: government external debt to GDP ratio is less than 3% by the end of 2013. At the same time, the total public external debt (according to the Bank of Russia it includes "liabilities of the General Government, the Central bank, and those entities in the banking and other sectors that are public corporations, i.e., non-financial or financial corporations which are subject to control by government and the Central bank"¹⁶) in relation to GDP was about 17% by the end of 2013¹⁷. This shows exactly the tendency of public corporations to borrow under the auspices of the Russian government. Undoubtedly, important factors supporting most of these credits are high oil and gas prices, as well as expectations of sustained demand on Russian oil and gas.

This brief analysis of the 2008–2010 crisis in Russia provides several important insights. We have seen that Minskian ideas could be extended to cases of state-dominated economies subject to resource dependence. This case also demonstrates that in modern circumstances it is reasonable to argue that over-indebtedness of any group of borrowers (not only firms, but also banks and even households) could create a 'Minsky moment' in the economy. As for Russia, it is clear that lessons of the crisis were not learned. Russian companies are used to credit and, what is worse, they are used to relatively cheap external credit where possible. This means the country is subject to external financial instability that is contagious. At the same time, a large part of credit is used for non-productive purposes of 'quasi-dividends' and investments with low rates of return (due to corruption) within Russia. This means that one might expect problems with future cash flow, especially if gas and/or oil prices fall.

Hyman Minsky and the Deathly Credit

In this section we use Minsky's logic and consider a controversial question about the fall of the Soviet Union. It is well known that in the late 1980s there was a drastic increase in the volume of USSR borrowing. In the period of mid-1985 to the end of 1988 the Soviet Union had a mere \$800 mln of outstanding debt. In 1989 alone net external borrowing amounted to almost \$10 bln, and in the next year net external borrowing reached almost \$45 bln. Although the country successfully attracted medium-term syndicated loans, its liabilities to Western banks mostly consisted of short-term external trade debt ready to mature within a year (Neu, 1991), which is an indication of Ponzi financing schemes. Below we explore main features of the late Soviet economic and political system that played a crucial role in paving the way for the collapse of the USSR.

1) Resource dependence

To begin with, Soviet economy was not an autarky at all, as it certainly preferred to position itself inside the country. Nor was it purely related to the Eastern Bloc (and Council

¹⁶

http://www.cbr.ru/eng/statistics/print.aspx?file=credit_statistics/debt_an_det_new_e.htm&pid=svs&sid=itm_272

¹⁷ Data of the Bank of Russia (<http://www.cbr.ru/eng/statistics/>) and Rosstat (<http://www.gks.ru/>).

for Mutual Economic Assistance member states). On the contrary, the Soviet Union was deeply integrated in the global economy, mainly through markets of grain and oil (Gaidar, 2006).

The Soviet economy was not adequately diversified, and it depended very much on imports. The problem with consumption goods and food was partly solved by barter with countries of the Eastern Bloc, but the USSR still needed much more grain than this barter could provide. The grain was sold on the international market for hard currency, which led to the necessity of exports to earn the currency to be spent on grain. The major USSR export product was oil (and, to a lesser extent, gas, just like in modern Russia). Earnings from oil and gas exports allowed the USSR to pay for imports of consumer goods (a minor part of all imports), imported equipment in attempt of industrial development (a larger share in import layouts), and grain that was badly needed to feed the country (the most important import item).

This meant the Soviet economy was at risk of catching ‘Dutch disease’ during ‘good times’ when resource prices are high, import is relatively cheap, and import reliance increases. It is difficult to use a term ‘Dutch disease’ with respect to USSR for the simple reason — it had no prior own industries developed enough to lose in competition against cheaper imported goods. In fact, the USSR only tried to develop industrial production beyond military and defense industries in order to catch up with the West. The dependence on imports was initially present in the structure of the Soviet economy, and resource dependence only aggravated this tendency.

Besides, the Soviet Union was prone to over-borrowing in ‘good times’ of high oil and gas prices, just like many other resource-dependent countries with state dominance in the economy. In the last years of its existence the USSR increased substantially its imports not only of grain, but also of industrial equipment and consumer goods in an attempt to decrease the perceived industrial gap with the West and to pacify population through provision of consumer goods and food.

2) Inefficiency of investment policy

Soviet industrial development was skewed towards military and defense industries, while other industries, mostly light, were much less developed. In an attempt to close the gap between Soviet and Western economies, a lot of industrial equipment was purchased for installation at plants and factories. Unfortunately, such investments into foreign machinery were mostly misused. According to some estimations (e.g., Bushuev et al., 2013, p. 266) about 25% of all hard currency spending in the 1980s was spent on Western equipment that could not be installed on Soviet plants and factories due to differences in standards, incompetency of local engineers, etc. We could immediately see non-productive investments that are unable to generate any cash flow (let alone, in hard currency) to cover investment expenditures.

The USSR investment policy had too much flaws, mainly due to its central planning basis. It was fostering large-scale projects with uncertain long-term return (in heavy industry), while there were almost no small-scale investments (e.g., in manufacturing). Investment program had an extensive character instead of intensive (quantity was preferred to quality); there was no responsibility for wrong investment decisions (‘soft budget constraints’) or bankruptcies of inefficient companies. Moreover, investment decisions were not based on the efficiency criteria, e.g., capital-output ratio, but rather on some obscure forecasts of production plans (Laurila, 1993) or on decision-making inertia (Gaidar, 2006).

All these tendencies combined resulted in a situation when, in terms of the famous Solow growth model (Solow, 1956), there was too much per capita capital installed (that already results in lower growth rates), and often this capital could not be used properly (non-productive investments). Productive resources were squandering and hard currency (from oil exports and Western loans) was misused. In the end, once oil prices dropped, all these problems led to difficulties with servicing Soviet debt, though the net external debt of the USSR was far from being excessive.

3) The Socialist Man's Burden

Considering the case with oil exports and hard currency debt, we have to take into account a political component. The Soviet Union, being on one side of bipolar world and declaring itself to be the leader of communist states, was inevitably involved in politically motivated economic actions. These actions included export of oil to socialist countries at preferential prices, along with loans to 'developing countries'. At the end of 1989, Soviet claims to 'developing countries' were about \$67 billion (Neu, 1991), far exceeding Soviet debt to industrialized countries. USSR wide lending to countries like India, Syria, Iraq, Afghanistan, Ethiopia, Angola or financial aid to fraternal Communist parties were caused by purely political reasons, and the true value of those claims was close to zero (Neu, 1991). Moreover, the Soviet Union in fact used its positive reputation as a borrower abroad and partly funded loans to 'developing countries' taking cheap external credit itself. This is yet another example of unsuccessful and harmful resources allocation. If we consider such credit as some sort of investments, it could be clearly termed 'non-productive'.

4) Endogenous money supply

Finally, the gap between external debt and internal financial crisis was bridged by endogeneity of money supply (in terms of accommodationist approach). In the state-dominates economies with soft budget constraints lending and investment decisions are always political issues (Vymyatnina, 2014), as we have mentioned above. Domestic loans under central planning are distributed on the basis of political significance of capital investment. Thus, the problem of internal credit was solved through provision of necessary credit under government guarantees and following its orders.

Now we can add up all above-mentioned ingredients to get Minskian picture of the USSR fall. 'Resource curse' in the Soviet Union added instability into the economy and provoked import dependence. The situation was stable while oil prices were high (1980–1985), and that allowed the country to finance its purchase of food (mostly grain) and to support its industrial development programme. In 1986 oil prices sharply decreased, and at the same time Soviet oil production started to decrease since most of easily accessible fields were in their final stages of development. These events meant decrease in hard currency earnings, but the Soviet demand for hard currency remained the same. The country could not afford a decrease in grain imports as this threatened social unrest. The inertia of investment programmes meant the equipment imports continued in the same amounts. Moreover, reducing imports of consumption goods also meant potential social unrest. The only way to continue along familiar lines was to borrow from the West. Thus since 1987 Soviet borrowing has intensified.

The transformation of the USSR from a trustworthy borrower into a Ponzi unit was accelerated by following circumstances. High inflation of the 1970s led Federal Reserve Chairman Paul Volcker to increase interest rates in the U.S. It resulted in a sharp increase of interest rates in Europe through the Eurodollar market, and drove most of the Western countries into recession. High interest rates meant that debt servicing was more difficult

and expensive. Western countries were ready to lend to the Soviet Union for two reasons: Soviet gold reserves were perceived to be reliable collateral, and most of the borrowing was conditional on buying equipment and/or grain from the lender countries. This is an absolutely sound macroeconomic policy — to extend credit to boost consumption of own production.

Good crops of 1986–1987 provided a temporary delay in the debt problem, but could not help in reorganization of the Soviet economy that was already only weakly controlled by central authorities. World crop failures of 1989–1990 inflicted a double strike to the USSR. They resulted in deficit of grain in the USSR itself and at the same time in high grain prices on the global market. As a consequence, 1989 saw “what can only be called a borrowing binge... Soviet borrowing during 1989 was \$9.1 billion — more than ten times the borrowing of the preceding three and a half years” (Neu, 1991).

Western banks (and Western governments) were at the beginning quite confident in the stability of the USSR, so initially they were providing loans without any doubts. A special institute, VEB (Bank for Foreign Economic Activities of the Soviet Union), was responsible for Soviet borrowing. Though there was no explicit guarantee from the Soviet government, an implication that such a bank would not be allowed to fail was enough. Note that this is a clear sign of accommodationist approach in credit extension on political grounds.

To make the problem even worse, a number of firms was allowed to borrow abroad themselves with no proper statistical information collected on this. At first these requests for credit were satisfied on the same basis as VEB’s borrowing, as it was perceived that the Soviet government guarantees these credit requests. However, the government knew nothing about these credits and could not account for them, which became an additional source of creditworthiness problems of the country by the end of 1989 (Gaidar, 2006).

Uncertainty around the USSR and doubts were accumulating. By 1989 the Soviet Union had high external debt with no guarantees, and high proportion of this debt was short-term, which means a classical Ponzi unit. Moreover, the credit risk of VEB had risen, as by mid-1989 about 50% of increase in credit was in the form of highly volatile and unstable interbank deposits (Gaidar, 2006).

‘Minsky moment’ came in the end of 1989. The publication of USSR gold reserves data showed that Western analytics had miscalculated it. It was believed that Soviet gold reserves were about \$36 bln, while in reality they were five times lower, about \$7.6 bln (Gaidar, 2006). After such shocking news, Western banks reassessed the risk and changed their liquidity preferences. Lending stopped, and in early 1990 international financial markets were closed to the Soviet Union. Since then further credit could be extended only with participation and guarantees of governments of foreign countries. One of the countries willing to extend its guarantees to secure Soviet loans was Germany, mostly out of gratitude for Germany’s reunification. But such a situation could not proceed for long, and eventually the USSR could not borrow under any interest rates or guarantees. Clearly, this is a familiar Minsky scheme of the Ponzi unit collapse, only the unit here was the whole country.

As a result, the Soviet Union faced highly unfavourable market conditions for its exports (low oil prices) and its imports (high grain prices) and the extremely tightened (practically closed) credit market. All earned hard currency was spent on servicing the debt. Investments came to a halt, returns from previous investments were negligible, domestic production was insufficient to support existing demand, including demand for necessities (such as food in the first place). The Soviet Union turned out to have feet of clay and fell

down in the process of 'creative destruction' (also known as 'Schumpeter's gale' — a term associated with Minsky's teacher) when a less viable economic system crashes along with its political system.

In fact, West paid ridiculously small price for the fall of the socialist empire (Gaidar, 2006). We could argue that inner systemic problems of the USSR (an analogue to Minsky's 'systemic conditions') along with unfavourable conjuncture (which played a role of 'idiosyncratic conditions') finally turned it from careful hedge unit into Ponzi unit with an inevitable collapse. This is probably the best manifestation of Minsky's laws and 'creative destruction' concept. Thus analysis along Minsky's lines is applicable even to planned economies.

Conclusions

The latest financial crisis of 2007–2008 not only clearly demonstrated the weakness of modern financial system, shadow banking and intensified globalization of the world economy. It also forced economists to revise their theories and turn towards the undeservedly forgotten ideas from the past in search of satisfactory analysis. One of the most popular revisited ideas that provided such analysis was the financial instability hypothesis by Hyman Minsky.

Owing to his main insight about endogenously generated crises in the economy, Minsky could offer a coherent and quite detailed explanation of how a crisis could emerge and why crises in modern capitalist economies are fundamentally unpredictable and unavoidable. As a matter of fact, the increased interest in Minsky's financial instability hypothesis occurred because the last financial crisis of 2007–2008 with a Great Recession afterwards nicely fitted into the framework introduced by Minsky. We tried to show in this paper that it is definitely true, up to some minor details.

It is important that Minsky's explanation provides the unambiguous answer to the particular question 'who is to blame for the last crisis'. Was it mortgage corporations or associations? Was it Alan Greenspan or Barack Obama? Was it greed of economic agents or weak regulations? If you substitute almost any reason you want, nothing would change. Because as Minsky once wrote (though in another context), the answer "is the same as in Agatha Christie's "Murder on the Orient Express" — they all did it" (Minsky and Whalen, 1996). Crises are truly endogenous and "they all" with their actions and properties, voluntary or not, have formed the situation in which the crisis could not but happen. There is no way to prevent a crisis — since systemic and idiosyncratic conditions accumulate whether we want it or not.

In the framework of his hypothesis, Minsky developed Keynes' ideas about ineffectiveness of monetary policy and about creation of money via credit demand by agents in the economy. Indeed, the most important Minsky's starting point is the endogeneity of money. Minsky argued that it is the demand for credit that is at the head of modern capitalist economy and advocated the consequent endogeneity of money. He naturally showed that under endogeneity of money monetary policy is useless, and monetary authorities are unable to achieve their objectives with their instruments. His reasoning could be treated as 'Minsky's impossibility theorem' — the only relevant function of central bank is a lender of last resort.

Moreover, the potent concept of endogeneity of money allows one to develop certain extensions of Minsky's financial instability hypothesis. For instance, in (Arestis and Glickman, 2002) the case of the open 'liberalized' economy is considered. In some sense, in

our paper the opposite is done. We apply Minsky's insights to real economies with state or state-related companies and institutions prevalence. These economies, which we reasonably call 'state-dominated', include planned economies, transition economies and other economies with evidently weak market institutions (like 'resource-cursed' economies).

We use two vivid and close to us examples of such economies and demonstrate, how Minsky's analysis could explain Russian credit crunch of 2008–2009 and the fall of the USSR. It could be finally concluded that in fact Minsky's line of argument is applicable to economies characterized as 'monetary economies' regardless of surrounding political structure.

Same as Minsky was arguing about the productivity of investments that should generate enough cash flow, his own ideas are highly productive and powerful. Minsky's ideas bring together and effectively combine several important lines of economic research: bounded rationality of agents (acting under fundamental uncertainty), endogenous money supply (and, more generally, monetary theory of production), institutional economics (with the idea of institutions playing a large role in the results of economic processes), and in our opinion, theories of resource curse (including 'Dutch disease' issue), and even political economy of natural resources. We look forward to further development of Minsky's ideas, which would inevitably continue to generate interpretations, extensions and restatements flow.

References

1. Arestis, P., Glickman, M., 2002. Financial Crisis in Southeast Asia: Dispelling Illusion the Minskyan Way. *Cambridge Journal of Economics*, 26 (2), pp. 237–260.
2. Assenza, T., Delli Gatti, D., Gallegati, M., 2010. Financial Instability and Agents' Heterogeneity: a Post Minskyan Research Agenda // *The Elgar Companion to Hyman Minsky* / Ed.: D. B. Papadimitriou, L. R. Wray. Cheltenham, UK; Northampton, MA, USA: Edward Elgar, 2010.
3. Bellofiore, R., Halevi, J., 2011. A Minsky moment? The subprime crisis and the "new" capitalism // *Credit, Money and Macroeconomic Policy: a Post-Keynesian Approach* / Ed.: C. Gnos, L.-P. Rochon. Cheltenham, UK; Northampton, MA, USA: Edward Elgar, 2011.
4. Bernanke, B. S., 2007. The Recent Financial Turmoil and its Economic and Policy Consequences (Speech at the Economic Club of New York). New York, October 15, 2007.
5. Bushuev, V., Konoplyanik, A., Mirkin, Ya., 2013. *Oil Prices: Analysis, Tendencies, Forecast* (in Russian). Moscow, 'Energia' Publishing House.
6. Crotty, J. R., 1980. Post-Keynesian Economic Theory: An Overview and Evaluation. *The American Economic Review*, Vol. 70, No. 2, Papers and Proceedings of the Ninety-Second Annual Meeting of the American Economic Association (May, 1980), pp. 20–25.
7. De Antoni, E., 2010. The Subprime Crisis: a Minskyan Phenomenon? // *Macroeconomics, Finance and Money: Essays in Honour of Philip Arestis* / Ed.: G. Fontana, J. McCombie, M. Sawyer. Basingstoke; New York: Palgrave Macmillan, 2010.
8. Frankel, J. A., 2010. The Natural Resource Curse: a Survey. NBER Working Paper No. 15836.
9. Gaidar, E. T., 2006. *Death of the Empire. Lessons for Modern Russia* (in Russian). M.: ROSSPEN, 448 p.

10. 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.
11. 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.
12. Keen, S., 2013. A monetary Minsky model of the Great Moderation and the Great Recession. *Journal of Economic Behavior & Organization*, 86, pp. 221–235.
13. Kornai, J., 1979a. *Economics of Shortage*. Institute for International Economic Studies, University of Stockholm.
14. Kornai, J., 1979b. Resource-Constrained versus Demand-Constrained Systems. *Econometrica*, Vol. 47, No. 4, pp. 801–819.
15. Laurila, J., 1993. The External Debt of the Soviet Union and Russia. // *The Russian Economy in Crisis and Transition* / Ed.: P. Sutela. Bank of Finland, Helsinki.
16. Matovnikov, M. Yu., 2013. The Problem of Russian Corporate External Debt is More Difficult than It Seems (in Russian). *Money and Credit*, No. 9, pp. 39–47.
17. McKinsey Global Institute, 2010. Debt and deleveraging: The global credit bubble and its economic consequences. January 2010.
18. Mendoza, E., 2006. Endogenous Sudden Stops in a Business Cycle Model with Collateral Constraints: a Fisherian Deflation of Tobin's Q. NBER Working Paper No. 12564.
19. Mendoza, E., Terrones, M., 2008. An Anatomy of Credit Booms: Evidence from Macro Aggregates and Micro Data. NBER Working Paper No. 14049.
20. Minsky, H. P., 1957a. Central Banking and Money Market Changes. *The Quarterly Journal of Economics*, Vol. 71, No. 2 (May, 1957), pp. 171–187.
21. Minsky, H. P., 1957b. Monetary Systems and Accelerator Models. *The American Economic Review*, Vol. 47, No. 6 (Dec., 1957), pp. 860–883.
22. 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.
23. Minsky, H. P., 1975. *John Maynard Keynes*. New York: Columbia University Press.
24. 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.
25. Minsky, H. P., 1982. *Can "It" Happen Again? Essays on Instability and Finance*. Armonk, NY: M.E. Sharp.
26. Minsky, H. P., 1986. *Stabilizing an Unstable Economy*. New Haven, CT: Yale University Press.
27. Minsky, H. P., 1991. Financial Crises: Systemic or Idiosyncratic. The Levy Economics Institute of Bard College, Working Paper No. 51. April 1991.
28. Minsky H. P., Whalen C. J., 1996. Economic Insecurity and the Institutional Prerequisites for Successful Capitalism. The Levy Economics Institute of Bard College, Working Paper No. 165. May 1996.
29. Nasica, E., 2010. Rational and Innovative Behaviors at the Core of Financial Crises: Banking in Minsky's Theory // *The Elgar Companion to Hyman Minsky* / Ed.: D. B. Papadimitriou, L. R. Wray. Edward Elgar Publishing, 2010.
30. Neu, C. R., 1991. Soviet International Finance in the Gorbachev Era. Research report. The RAND Publication Series. National Defense Research Institute, RAND, Santa Monica, 103 p.

31. Reinhart, C., Reinhart, V., 2009. Capital Flow Bonanzas: An Encompassing View of the Past and Present. // NBER International Seminar in Macroeconomics 2008 / Ed.: J. Frankel, C. Pissarides. University of Chicago Press.
32. Rochon, L.-P., Rossi, S., 2010. Has 'It' Happened Again? *International Journal of Political Economy*, Vol. 39 (2), pp. 5–9.
33. Schumpeter, J., 1942. *Capitalism, Socialism and Democracy*. New York: Harper and Brothers.
34. Silipo, D. B., 2011. It happened again: A Minskian analysis of the subprime loan crisis. *Journal of Economics and Business*, 63, pp. 441–455.
35. Solow, R. M., 1956. A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics*, 70 (1), pp. 65–94.
36. United Nations, 2014. World Economic Situation and Prospects 2014. URL: http://www.un.org/en/development/desa/policy/wesp/wesp_current/wesp2014.pdf
37. Vercelli, A., 2009. A Perspective on Minsky Moments: The Core of the Financial Instability Hypothesis in Light of the Subprime Crisis. The Levy Economics Institute of Bard College, Working Paper No. 579, October 2009.
38. Vymyatnina, Yu., 2014. *Theory of Money: Lessons from the Crisis* (in Russian). EUSP Press, St. Petersburg.
39. World Bank, 2009. Russian Economic Report No. 18. March 2009.
40. Wray, L. R., 2009. The Rise and Fall of Money Manager Capitalism: a Minskian Approach. *Cambridge Journal of Economics*, 33, pp. 807–828.